60008879

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. 97-399 |
| AUTHOR | G. Langstaff; B. Kastelic; J. Welch; K. Childs |
| DATE OF DOC(S) | 1997-1999 |
| 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; Newmont Gold Co.; Santa Fe Pacific Gold Corp.; Rosebud Joint Venture |
| COMMODITY<br>If not obvious | gold; silver |
| NOTES | Drill log; geology; assay; geochemistry; total depth 1465; receipt; drill hole summary; handwritten notes; directional survey; correspondence<br><br>43 p. 1 oversized sheet |

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 5/5/08
Initials Date

DB:
Initials Date

SCANNED:
Initials Date

Revised: 1/22/08

97-399

60000879
4010

60000879

# SANTA FE PACIFIC GOLD — DRILL HOLE SUMMARY

Project: Rosebud  Location: Dreamland  Drill Hole No.: 97-399

State: NV  Co.: Pershing  T.:  R.:  S.:

Purpose: Deep test Knob Hill Silicit  Results: multiple zones >100 ppb Au diminish w/ depth

Date Started: 6/25/97  Date Finished: 7/1/97

Grid System: State  Northing: 2,207,770  Easting: 478,380  Elevation: 5650

Collar Az/Inc.: — / -90  Drill Site: 1  Total Depth: 1465

Geologist(s): RJK  Log Date(s): 7/2/97  Laboratory: Rosebud Mine Site

HOLE CONSTRUCTION AND HISTORY  CASING (INTERVAL):

| From | To | Hole Type/Size | Started | Completed | Contractor |
|---|---|---|---|---|---|
| 0 | 1465 | RC 155/8 | 6/25/97 | 7/1/97 | Ellund - Welch |
| | | / | | | |
| | | / | | | |
| | | / | | | |

| LITHOLOGIC SUMMARY | | | | ALTERATION/ MINERALIZATION | SIGNIFICANT ASSAYS | | | | |
|---|---|---|---|---|---|---|---|---|---|
| From | To | Formation | Rock Type | | From | To | Width | Au oz/st | Cutoff |
| | | | | | | | | | |

DOWNHOLE SURVEYS

Directional  Date:

Other

| Depth (ft) | Azimuth | Inclination |
|---|---|---|
| | | |
| | see Wetnav Report | |
| | | |
| | | |
| | | |

Water Table Depth:

Water Flow Rate:

COMMENTS

Strong silic + bleach. in upper part of hole, corresp. w/ anom Au. Never reached JFa.

# Newmont Gold Rotary Form

**Hole#** RS-399
**Logged by** G. Langstaff
**Date** 3/24/99
**Area** Dreamland
**Coords**
**Az/Incl** -90
**Total Depth** 1465
**Contractor**



| Footage | Litho: Formation | Litho: Rock type | Litho: Color | Au oz/st | Ag oz/st | Graphic | Structure: fault | Structure: breccia | Structure: vein | Structure: gouge | Comments | Alteration: Silic | Alteration: argillic | Alteration: clay | Alteration: prop | Alteration: Sericite | Alteration: Chlorite | Met.: FEOX | Met.: CO3 | Mineralogy: Sulfide | Mineralogy: Pyrite | Mineralogy: Marcasite | Mineralogy: Calc/Dolo | Mineralogy: Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | big chips down to 30' | tr? | 1? | 0 | 0 | 0 | 0 | 1 | | 0 | 0 | 0 | | |
| | | | | | | | | | | | matrix-supported conglomerate with subrounded to angular clasts variably altered | | | | | | | | | | | | | |
| | | | | | | | | | | | 10-15: shiny blue-black, equant mineral w/cleavage in grey-brown chip, possibly brown when crushed so could be sulfosalt | | 2 | | | | | | | | | | | |
| 20 | | | | | | | | | | | 20-25: oxidized, disseminated marcasite? | | | | | | | | | | | | | |
| | | | red to pale tan | | | | | | | | generally matrix silicified and clasts altered to white clay | | | | | | | 0 | | | | | | |
| 40 | | XSL | | | | | | | | | | | | | | | | | | | | | | |
| | | | pale to very pale tan and grey, minor yellow brown (limonite) | | | | | | | | | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | round qtz pheno? 2mm | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | tr? | | | | | | | | | | | | |
| | | some red | | | | | | | | | lots of chips with clast-supported textures, may be sandy conglomerate, hard brown matrix | | | | | | | 1 | | | | | | |
| 80 | | | | | | | | | | | coarse pyrite chips, some after marcasite? | | | | | | | 0 | | 1 | | | | |
| | | | pale brownish grey | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| 100 | | cSen? | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | some matrix-supported textures in less altered rock | 0 | tr | | | | | 1 | | 0 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| 120 | | ? | medium reddish grey | | | | | | | | no apparent clastic textures<br>feldspar phenos up to 2mm | | 0 | | | | | | | | | | | |
| | | | | | | | | | | | some mud? or alteration | | tr | | | | | | | | | | 3 | |
| | | | | | | | | | | | mmb 1-5mm<br>vein calcite | | | | | | | | | | | | | |
| 140 | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| | | | | | | | | | | | | | 1/2 | | | | | 0 | | 1 | | | | |
| | | | | | | | | | | | green prism | | | | | | | | | | | | 0 | |
| 160 | | Fpr-qtz (mmb) | very pale grey, pink tan | | | | | | | | round qtz pheno <1mm | | | | | | | | | | | | | |
| 180 | | | | | | | | | | | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | | | | | | | | | | | |

# Newmont Gold Rotary Form

Hole# RS-399
Logged by G. Langstaff
Date 3/24/99
Area Dreamland
Coords
Az/Incl -90
Total Depth 1465
Contractor


| Footage | Litho: Formation | Litho: Rock type | Litho: Color | Au oz/st | Ag oz/st | Graphic | Structure: fault | Structure: breccia | Structure: vein | Structure: gouge | Comments | Alteration: Silic | Alteration: argillic | Alteration: clay | Alteration: prop | Alteration: Sericite | Alteration: Chlorite | Met.: FEOX | Met.: CO3 | Met.: Sulfide | Mineralogy: Pyrite | Mineralogy: Marcasite | Mineralogy: Calc/Dolo | Mineralogy: Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 200 | | | | | | | | | | | lumpy texture, locally streaky<br>some clastic textures | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | | 1 | 0 | 0 | |
| | | | | | | | | | | | probable pyritic, clay-altered mmb | | | | | | | | | | | | | |
| 220 | | | | | | | | | | | | | | | | | | | | | | | | |
| 240 | | Fe-gf (m-b)? | very pale grey, tan, yellow, pink | | | | | | | | coarse pyrite chips | | | | | | | | | | | | | |
| | | | | | | | | | | | some loose clay in sample | | 2 | | | | | | | | | | | |
| 260 | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| | | | | | | | | | | | disseminated and vein marcasite | | | | | | | | | | | tr | | |
| 280 | | | | | | | | | | | | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | pyrite chips, marcasite + qtz vein | | | | | | | | | | | tr | | |
| | | | | | | | | | | | | | | | | | | | | | | 0 | | |
| 300 | | | | | | | | | | | looks more clastic, could be breccia or conglomerate<br>most chips with clastic textures are clast-supported<br>lots of sand-size grains<br>subrounded to subangular clasts | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| 320 | | | | | | | | | | | | | | | | | | | | | | | 0 | |
| | | x/bSen | | | | | | | | | | | | | | | | | | | | | | |
| 340 | | | | | | | | | | | | | 1 | | | | | | | | | | | |
| | | | | | | | | | | | | | 0 | | | | | | | | | | | |
| | | Bmxks | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | marcasite? replaced by pyrite in dense cryptocryst. quartz | | | | | | | | | | | tr | | |
| 360 | | | | | | | | | | | | | | 2 | | | | | | | | 0 | | |
| | | | | | | | | | | | | | | 3 | | | | | | | | 2 | | |
| 380 | | | | | | | ? | | | | | | | | | | | | | | | | | |
| | | | | | | | | | 2? | | coarse and very fine pyrite<br>can't really tell what the rock is but looks more volcanic than clastic | | 1 | 1 | | | | | | | | 1 | | |
| | | | | | | | | | | | | | tr | | | | | | | | | | | |
| | | ? | | | | | ? | | | | | | 0 | | | | | | | | | | | |
| 400 | | | | | | | | | | | | | | | | | | | | | | | | |

# Newmont Gold Rotary Form

**Hole#** RS-399 **Az/Incl** -90 **Page** 3 of 8

**Logged by** G. Langstaff **Area** Dreamland **Total Depth** 1465

**Date** 3/24/99 **Coords** **Contractor**

| Footage | Formation | Rock type | Color | Au oz/st | Ag oz/st | Graphic | Structure: fault | Structure: breccia | Structure: vein | Structure: gouge | Comments | Alteration: Silic | Alteration: argillic | Alteration: clay | Alteration: prop | Alteration: Sericite | Alteration: Chlorite | Met.: FEOX | Met.: CO3 | Mineralogy: Sulfide | Mineralogy: Pyrite | Mineralogy: Marcasite | Mineralogy: Calc/Dolo | Mineralogy: Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | | | | | | | | | | | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | | 1 | 0 | 0 | |
| | | | | | | | | | | | laminated chips, some clastic chips | | | | | | | | | | | | | |
| | | | | | | | | | | | more laminated chips | | | | | | | | | | | | | |
| 420 | | Fp-sg, b, f (mmb)? | pale red-grey / pale and very pale tan | | | | | | | | less altered rock has 1 square quartz pheno <1mm, very rare white feldspar pheno <1mm, probable biotite and possible hornblende phenos <1mm and probable mmb, some clastic textures | | tr / 1 | | | | | tr / 0 | | | 0 / 1 | | | |
| | | | | | | | | | | | loose qtz pheno 1.5mm, poor bipyramid | | | | | | | | | | | | | |
| 440 | | med grey v/p/v/f | | | | | | | | | | 1 / 0 | | | | | | | | | 3 / 1 | | | |
| | | | | | | | | | | | vitreous feldspar pheno 1mm in pale grey chip | | | | | | | | | | | | | |
| 460 | | pale red-grey | pale and very pale tan | | | | | | | | grey feldspar phenos <1mm | tr | | | | | | | | | | | | |
| | | | | | | | | | | | | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | white feldspar pheno ~1mm | | | | | | | | | | | | | |
| 480 | | | | | | | | | | | | 2 | | | | | | | | | | | | |
| | | | | | | | | | | | disseminated marcasite | 1 | | | | | | | | | | tr | | |
| | | | | | | | | | | | grey feldspar phenos <1mm | | | | | | | | | | | | | |
| | | | | | | | | | | | | tr | | | | | | | | | | | | |
| 500 | | | | | | | | | | | laminated textures | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | 2mm feldspar mold | 2 | | | | | | | | | | | | |
| | | | | | | | | | | | embayed qtz pheno ~1mm, grey 1mm feldspar in same chip | | | | | | | | | | | | | |
| 520 | | | greenish-white | | | | | | | | disseminated marcasite | 1 | | | | | | | | | | tr | | |
| | | | | | | | | | | | grey feldspar | 2 | | | | | | | | | | 0 | | |
| | | | | | | | | | | | common, unambiguous clastic textures, matrix- and clast-supported | 0 | | | | | | | | | | | | |
| 540 | | x/bSc | | | | | | | | | mostly soft clayey chips but harder chips are clastic | | | 3 | | | | | | | | | | |
| | | | | | | | | | | | chips mostly soft but many have subhedral white feldspar phenos, some chips look like sandstone below possibly sandy conglomerate with porphyritic pebbles | 0 | | | | | | tr | | | 0 | | | |
| | | cSch? | med. grey | | | | | | | | | | | | | | | | | | | | | 3 |
| 560 | | SSp | dark red-grey | | | | | | | | darker rock is sandstone with subrounded v. fine to coarse grains and some finer matrix | | | | | | | | | | | | | |
| | | | | | | | | | | | some chips with green amygdales and white feldspar | | | | | | | | | | | | | |
| | | | | | | | | | | | mostly porphyritic and amygdaloidal rock but these could be pebbles | | | | | | | | | | | | | |
| 580 | | Fp-f(am) | dark grey | | | | | | | | white feldspar commonly in dots, locally up to 5% | | | | | | | | | | | | | |
| 600 | | | | | | | | | | | darker lumps in softer paler chips suggest clastic texture | | | | | | | | | | | | | |

# Newmont Gold Rotary Form

Hole# RS-399 | Az/Incl -90 | Page 4 of 8

Logged by G. Langstaff | Area Dreamland | Total Depth 1465

Date 3/24/97 | Coords | Contractor

| Footage | Formation | Rock type | Color | Au oz/st | Ag oz/st | Graphic | Structure: fault | Structure: breccia | Structure: vein | Structure: gouge | Comments | Silic | argillic | clay | prop | Sericite | Chlorite | FeOx | CO3 | Sulfide | Pyrite | Marcasite | Calc/Dol | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 600 | | Fp(b)f | dk grey | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | tr | | | | 0 | 2 | |
| | | | grey | | | | | | | | some coarse pyrite chips<br>white feldspar phenos ≤1mm | ? | 1 | | | | | 0 | | | 2 | | 0 | |
| | | | | | | | | | | | rare clastic textures | | | | | | | | | | | | | |
| 620 | | | dark red-grey | | | | | | | | ~5% white feldspar phenos usually ≤1mm but locally in clots up to 5mm, ≤1% biotite? phenos <1mm usually altered to brown Fe oxide? | 0 | 0 | | | | | tr | | | 0 | | 2 | |
| | | | | | | | | | | | | | | | | | | | | | | | 3 | |
| | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| 640 | | | pale brn-grey | | | | | | | | vein calcite, trace green clay | tr? | 1 | | | | | 0 | | | 1 | | | |
| | | | | | | | | | | | | 0 | 0 | | | | | tr | | | 0 | | | |
| | | | dark red-grey | | | | | | | | | | | | | | | | | | | | | |
| 660 | | | | | | | | | | | pale clay chips from above? | | | | | | | | | | | | | |
| | | | grey and dark red-grey | | | | | | | | grey pyritic chips also have white feldspar phenos so they may be in place although there is no transition to dark red-grey chips<br>loose 3mm vitreous sanidine crystal-twinned | tr? | 1 | | | | | 0 | | | 1 | | | |
| | | | | | | | | | | | | 0 | 0 | | | | | tr | | | 0 | | | |
| 680 | | | pale brown-grey | | | | | | | | green, white, and pyritic phenos | tr? | 1 | | | | | 0 | | | 2 | | | |
| 700 | | | dark red-grey | | | | | | | | | 0 | 0 | | | | | tr | | | 0 | | | |
| | | | | | | | | | | | | | | | | | | | 0 | | | | | |
| 720 | | | dark grey | | | | | | | | | | | | | | | | | | | | | 3 |
| | | | | | | | | | | | | | | | | | | | | | | | | 2 |
| 740 | | | | | | | | | | | rare amygdules with dark green clay | | | | | | | | | | | | | |
| 760 | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | |
| | | | pale grey | | | | | | | | very fine disseminated marcasite | | | | | | | | | | | | tr | |
| 780 | | | | | | | | | | | green and white phenos <1mm | | | | | | | | | | | | | |
| | | Fo-h?b | mal. blue-grey | | | | | | | | clayey grey chips have chunky (thick) biotite up to 1mm and possibly hornblende but no white feldspar | | | 0 | | | | grey clay | | | | 0 | | |
| | | | red-grey | | | | | | | | | | | | | | | 0 | tr | | | | | |
| 800 | | | | | | | | | | | | | | | | | | | | | | | | |

Alteration | Met. | Mineralogy

# Newmont Gold Rotary Form

**Hole#** RS-399
**Logged by** G. Langstaff
**Date** 3/24/99
**Area** Dreamland
**Coords**
**Az/Incl** -90
**Total Depth** 1465
**Contractor**



| Footage | Formation | Rock type | Color | Au oz/st | Ag oz/st | Graphic | Structure: fault | Structure: breccia | Structure: vein | Structure: gouge | Comments | Silic | argillic | clay | prop | Sericite | Chlorite | FEOX | CO3 | Sulfide | Pyrite | Marcasite | Calc/Dolo | Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 800 | | Fp-b, b | very pale tan-grey | | | | | | | | green, pyritic, or pasty white phenos | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | | tr | 0 | 2 | |
| | | | | | | | | | | | | | | | | | | | | | | | 3 | |
| | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| 820 | | | | | | | | | | | | | | | | | | | | | tr | | | |
| | | | | | | | | | | | some breccia | | 0 | | | | | tr | | | 0 | | | |
| | | | | | | | | | | | <1% biotite phenos, possible hornblende, no feldspar | | | | | | | | | | | | | |
| 840 | | | | | | | | | | | unambiguous hornblende prism | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 0 | | | | | | |
| 860 | | | dark red grey | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | green and pasty white phenos | | 1 | | | | | | | | 1 | | | |
| | | | pale tan grey | | | | | | | | | | | | | | | | | | | | | |
| 880 | | | pale grey | | | | | | | | | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | | ? | | | | | | | | | | | | |
| | | | medi. grey | | | | | | | | calcite, calcite + py, and white clay veins | tr | | 0 | | | | | | | 23 | | | |
| | | | | | | | | | | | pale green phenos | ? | | | | | | | | | | | | |
| | | | | | | | | | | | LCM | 0 | | 2 | | | | | | | 1 | | | |
| | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| 900 | | | very pale grey and tan | | | | | | | | no obvious phenos but probably same as above | | | | | | | | | | | | | |
| | | cSen | | | | | | | | | abundant clastic textures, clast-supported, sandy conglomerate or conglomeratic mudstone | 1 | | | | | | | | | | | | |
| | | | | | | | | | | | | tr | | | | | | | | | | | | |
| 920 | | | | | | | | | | | | 0 | | | | | | | | | | | | |
| | | | very pale grey-green and brown | | | | | | | | vein calcite | | | | tr | | | | | | | | | |
| | | | | | | | | | | | | | | 2? | | | | | | | | | | |
| | | | | | | | | | | | | clay in sample (and LCM) | | | | | | | | | | | | |
| 940 | | | | | | | | | | | | | | 1 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | clay in sample | | | | 1 | | | | | | | | |
| | | | | | | | | | | | | | | | | 2 | | | | | | | | 3 |
| 960 | | | | | | | | | | | | | | | | 1 | | | | | | | | 2 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | +LCM 2 | | | | | | | | | | | | 3 |
| | | could be Fp-b, b | | | | | | | | | breccia and laminated textures | 0 | | | | 0 | | | | | | | | 1 |
| | | | | | | | | | | | fewer clastic textures | | | | | | | | | | | | | 2 |
| 980 | | | pale and very pale grey-brown | | | | | | | | green and pasty white phenos | | | | | | | | | | | | | 3 |
| | | | | | | | | | | | more clastic textures | | | | | | | | | | | | | |
| 1000 | | | | | | | | | | | | | | | | | | | | | | | | 2 |

# Newmont Gold Rotary Form

**Hole#** RS-399 **Az/Incl** -90 **Page** 6 of 8

**Logged by** G Langstaff **Area** Dreamland **Total Depth** 1465

**Date** 3/24/99 **Coords** **Contractor**

| Footage | Litho: Formation | Litho: Rock type | Litho: Color | Au oz/st | Ag oz/st | Graphic | Structure: fault | Structure: breccia | Structure: vein | Structure: gouge | Comments | Alteration: Silic | Alteration: argillic | Alteration: clay | Alteration: prop | Alteration: Sericite | Alteration: Chlorite | Met.: FEOX | Met.: CO3 | Met.: Sulfide | Mineralogy: Pyrite | Mineralogy: Marcasite | Mineralogy: Calc/Dolo | Mineralogy: Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1000 | | <5cm | pale and very pale grey, minor red, gray brown | | | | | | | | conglomerate to at least 1015' but not sure what's below that, could be conglomerate, hbl-and biotite-phyric rock, or aphyric rock | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | | 1 | 0 | 2 | |
| | | | | | | | | | | | | | tr | | | | | | 1 | | | 0 | | 3 | |
| | | | | | | | | | | | | | 1 | | | | | | 0 | | | 1 | | 2 | |
| 1020 | | | pale and minor pale chips | | | | | | | | LCM | | | | | | | | | | | | | 3 | |
| | | ? | | | | ? | | | | | "unaltered" rock is aphyric or nearly so "altered" rock is Fp-hyb and possibly Sc or Fa | | | | | | | | | | | | | 2 | |
| 1040 | | | | | | | | | | | LCM | | ? | | | | | | ? | | | ? | | | |
| | | | | | | | | | | | one biotite pheno in "unaltered" rock | | | | | | | | | | | | | | |
| 1060 | | | mix red grey with minor pale | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | apparently aphyric rock, locally brecciated, tiny black specks | | tr? | | | | | | 0 | | | 0 | | | |
| 1080 | | | grey and pale grey | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | pasty white pheno <.15mm, could be feldspar or mafic | | | | | | | | | | | | | | |
| 1100 | | Fr | | | | | | | | | LCM | | | | | | | | | | | | | 1 | |
| | | | | | | | | | | | | | | 1 | | | | | | | | tr | | 2 | |
| | | | | | | | | | | | | | | | | | | | | | | | | 3 | |
| 1120 | | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| 1140 | | | pale grey | | | | | | | | | | | | tr | | | | | | | tr | | | |
| 1160 | | | mix due to contam.? | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | 0 | 1 | | | | | | | | 0 | | |
| 1180 | | | mix pale grey | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | tr | | | | | | | | | |
| | | | | | | | | | | | | | | tr | 0 | | | | | | | tr | | | |
| | | | | | | | | | | | | | | 0 | | | | | | tr | | 0 | | | |
| 1200 | | | grey | | | | | | | | | | | | | | | | | | | | | | |

mixture of altered pyritic and "unaltered" hematitic chips - contamination? which?

# Newmont Gold Rotary Form

**Hole#** RS-399 **Logged by** G. Langstaff **Date** 3/24/99

**Area** Dreamland **Coords**

**Az/Incl** -90 **Total Depth** 1465 **Contractor**



| Footage | Litho: Formation | Litho: Rock type | Litho: Color | Au oz/st | Ag oz/st | Graphic | Structure: fault | Structure: breccia | Structure: vein | Structure: gouge | Comments | Alteration: Silic | Alteration: argillic | Alteration: clay | Alteration: prop | Alteration: Sericite | Alteration: Chlorite | Met.: FEOX | Met.: CO3 | Met.: Sulfide | Mineralogy: Pyrite | Mineralogy: Marcasite | Mineralogy: Calc/Mole | Mineralogy: Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1200 | | Fa | very pale grey | | | | | | | | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | | | tr | 0 | 0 | |
| | | cSen. | | | | | | | | | clastic chips may be contamination but there are a lot of them | | | tr | | | | | | | 1 | | 2 | |
| 1220 | | | pale grey | | | | | | | | aphyric rock, locally brecciated | | | 0 | | | | | | | tr | | | |
| | | Fa | | | | | | | | | | | | | | | | | | | | | | |
| 1240 | | | | | | | | | | | | | | tr | | | | | | | | | | |
| | | | mix | | | | | | | | LCM | | | | | | | | | | | | | |
| | | | | | | | | | | | sparse disseminated marcasite | | | 0 | | | | | | | | tr | | |
| 1260 | | | pale grey | | | | | | | | LCM | | | | | | | | | | | 0 | | |
| | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| 1280 | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| | | | | | | | | | | | | | | tr | | | | tr | | | 0 | | | |
| | | | mudgy & red | | | | | | | | | | | 1 | | | | 0 | | | tr | | | |
| 1300 | | | very pale grey | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | 1 | |
| | | | | | | | | | | | | | | | | | | | | | | | 2 | |
| 1320 | | | grey | | | | | | | | pasty white pheno, elongate ~1mm | | | tr | | | | | | | 0 | | | |
| 1340 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1360 | | | pale grey | | | | | | | | | | | 1 | | | | | | | | | | |
| | | | | | | | | | | | 1.5mm prismatic pasty white pheno in red chip | | | | | | | | | tr | | | | |
| | | | | | | | | | | | some red clastic chips | | | | | | | | | | | | | |
| | | | grey, pale grey and red | | | | | | | | pyritic and green prisms <1mm in grey chip | | | | | | | | | | | | | |
| 1380 | | | | | | | | | | | | | | | | | | | 0 | | | tr | | |
| | | | very pale grey & yellow | | | | | | | | | | | | | | | | | | | | | 0 |
| 1400 | | | | | | | | | | | | | | | | | | | | | | | | |

# Newmont Gold Rotary Form

Hole# RS-399
Logged by G. Langstaff
Date 3/24/99
Area Dreamland
Coords
Az/Incl -90
Total Depth 1465
Contractor
Page 6 of 8

| Footage | Litho: Formation | Litho: Rock type | Litho: Color | Au oz/st | Ag oz/st | Graphic | Structure: fault | Structure: breccia | Structure: vein | Structure: gouge | Comments | Alteration: Silic | Alteration: argillic | Alteration: clay | Alteration: prop | Alteration: Sericite | Alteration: Chlorite | Met.: FEOX | Met.: CO3 | Met.: Sulfide | Mineralogy: Pyrite | Mineralogy: Marcasite | Mineralogy: Calc/Dolo | Mineralogy: Clay |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1400 | | Fr | very pale yellow grey | | | | | | | | | | 1 | | | | | 0 | | | tr | | 1 | |
| | | | | | | | | | | | some clastic chips - breccia with red matrix | | tr | | | | | tr | | | 0 | | 2 | |
| 1420 | | | grey with some red | | | | | | | | possible mmb | | | | | | | | | | | | | |
| 1440 | | | | | | | | | | | possible mmb | | 1 | | | | | 0 | | | tr | | | |
| | | | very pale grey | | | | | | | | | | tr | tr | | | | | | | | | | |
| 1460 | | | greenish grey | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | T.D. 1465 | | | | | | | | | | | | | |
| 1480 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1500 | | | | | | | | | | | | | | | | | | | | | | | | |

| Poject: ROSEBUD | State: Nevada | Northing: 2,207,770 | Total Depth: 1465 | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: RAK 6/27/97 | County: Pershing | Easting: 478,380 | Bearing: — | |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: 5650 | Inclination: -90 | Page 1 of 9 |

DRILLING NOTES

| DEPTH | COLOR | ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | Breccia | Chalcedony | | | FAULT BXA | GOUGE | GRAPHIC | OTHR SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Dreamland, Site 1 | |
| | Or. Red Brn | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | 4 | | Fill & Alluvium - Composed of silicif. Cgl or | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | Brx, prob. of Badon Fm | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 20 |
| | Pink Gy | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 3 | | | | | F.G. Sandst. w/ irregular wt clay blebs | |
| 40 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | 2 | | | | | | 40 |
| | Or. to Gy | | | | | | | | | | | | | | | | | | | | | | | | 3 | 3 | | | | 1 | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 4 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | 5 | | | | Siliceous bxa. Si Clasts in Gy Chalced matrix | |
| 60 | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | 60 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | |
| 80 | Red to Or. | | | | | | | | | | | | | | | | | | | | | | | | 4 | 4 | | | | 4 | 4 | | | | Silic. Matrix bx w/ wt clay clasts | 80 |
| | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 3 | | | | | | | | | Purple matrix, siliceous | |
| | Pink-Gy | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | 100 |
| | Dk Purple | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | 2 | | | | | Dk Purp. Silt matrix Lithic tuff/wacke | |
| 120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 120 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| 140 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 140 |
| | Purp. Gy | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | 2 | | | | | |
| | Pale Grn Gy | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | 4 | | | | Silic. bxa, wt clay, sandstone? Ash flow? | |
| Lt | Pink Tan | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 3 | 4 | | | | Chalced Silica, often bx clasts of wt clay | |
| 160 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | 3 | 3 | | | | Banded Chalced, sometimes Layered, Sometimes | 160 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | 5 | | 1 | | Circular Patterns. Sometimes Brecciated | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | 1 | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| 180 | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | 180 |

Rclog02.xls

| Poject: ROSEBUD | State: Nevada | Northing: | Total Depth: | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: RAK 6/27/97 | County: Pershing | Easting: | Bearing: | |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: | Inclination: | Page 2 of 9 |

DRILLING NOTES

| DEPTH | COLOR | LITHOLOGY: ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | Breccia (Hyd.) | Chalcedony | | | STRUCT: FAULT BXA | GOUGE | GRAPHIC | ALTERATION & MINERALIZATION: OTHR SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lt Pink Tan | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | 3 | 5 | | | | Chalced. Silica w/clay, as above | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | Silic. matrix=pink, clay=white | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | Lithic mtl looks like ash | |
| 200 | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | 200 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| 220 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 220 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| 240 | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | 240 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | |
| 260 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 260 |
| 280 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 280 |
| 300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 300 |
| 320 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 320 |
| 340 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 340 |
| 360 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 360 |

| Poject: ROSEBUD | State: Nevada | Northing: | Total Depth: | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: RJK 6/27/97 | County: Pershing | Easting: | Bearing: | |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: | Inclination: | Page 3 of 9 |

DRILLING NOTES

| DEPTH | COLOR | ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | Breccia (hydrother.) | Chalcedony | | | FAULT BXA | GOUGE | GRAPHIC | OTHR SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LT Gray | | | / | | | | | | | | | | | | | // | /// | | | | | | | | | 3 | | | 3 | 5 | | | | | |
| | | | | / | | | | | | | | | | | | | | / | | | | /// | | | | | | | | 5 | 2 | | | | Gray clay/gouge. Some silic. chips | |
| | | | | / | | | | | | | | | | | | | | / | | | | /// | | | | | | | | | | | | | | |
| 380 | | | | / | | | | | | | | | | | | | | / | | | | /// | | | | | | | | | | | | | | 380 |
| | | | | // | | | | | | | | | | | | | // | / | | | | /// | | | | | | | | ↓ | ↓ | | | | ↓ | | |
| | | | | // | | | | | | | | | | | | | // | / | | | | | | | | | | | | 3 | 5 | | | | | | |
| | | | | // | | | | | | | | | | | | | // | / | | | | | | | | | | | | | | | | | | | |
| 400 | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | 400 |
| | LT Tan Gy | | | / | | | | | | | | | | | | | // | / | | | | | | | | | | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | // | / | | | | | | | | | 2 | | | | | | | | | | |
| | Lt Grn Gy | | | / | | | | | | | | | | | | | // | / | | | | | | | | | 1 | | | | | | | | | | |
| 420 | DK Gy | | | / | | | | | | | | | | | | | // | / | | | | | | | | | 3 | | | | | | | | | | 420 |
| | | | | / | | | | | | | | | | | | | // | / | | | | | | | | | 1 | | | | | | | | | | |
| | Tan Gy | | | / | | | | | | | | | | | | | // | / | | | | | | | | | 2 | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | // | / | | | | | | | | | 3 | | | | | | | | | | |
| 440 | | | | / | | | | | | | | | | | | | // | / | | | | | | | | | 5 | | | | | | | | -Lots. v.fg PY in dkgy Sil. | 440 |
| | | | | // | | | | | | | | | | | | | // | / | | | | | | | | | 4 | | | | | | | | | | |
| | | | | // | | | | | | | | | | | | | // | / | | | | | | | | | 1 | | | | | | | | | | |
| | med Gy | | | / | | | | | | | | | | | | | / | / | | | | | | | | | 1 | | | | | | | | | | |
| 460 | Pink Tan | | | / | | | | | | | | | | | | | | / | | | | | | | | | 1 | | | | | | | | | | 460 |
| | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | 2 | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | | / | | | | | | | | | 2 | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | | / | | | | | | | | | 2 | | | | | | | | | | |
| 480 | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | 2 | | | | | | | | | | 480 |
| | | | | / | | | | | | | | | | | | | | / | | | | | | | | | 2 | | | | | | | | | | |
| | Pink Gy | | | / | | | | | | | | | | | | | / | / | | | | | | | | | 3 | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | | / | | | | | | | | | | | | | | | | | | | |
| 500 | Pink Tan | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | 500 |
| | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | | / | | | | | | | | | 2 | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | |
| 570 | | | | / | | | | | | | | | | | | | | / | | | | | | | | | | | | | | | | | | | 570 |
| | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | |
| | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | |
| 540 | | | | / | | | | | | | | | | | | | / | / | | | | | | | | | | | | | | | | | | | 540 |

Rclog02.xls

| Poject: ROSEBUD | State: Nevada | Northing: | Total Depth: | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: RJH 6/27/97 | County: Pershing | Easting: | Bearing: | |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: | Inclination: | Page 4 of 9 |

DRILLING NOTES

| DEPTH | COLOR | ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | Bxa (hydrotherm) | chalcedony | | | FAULT BXA | GOUGE | GRAPHIC | OTHR SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lt Grn | | | // | | | | | | | | | | | | | | | | | | | | | | | 2 | | | 5 | 1 | | 3 | | Non-silic., all sift clay altd tuff. 1% | |
| | Brn Gray | | | // | | | | | | | | | | | | | | | | | | | | | 2 | | | | | 4 | | | | | ox | |
| | Gray | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 560 | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 560 |
| | Brn Gy | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | /// | | | | | | | | | | | | | | | | | | | | | | | | | | -Coarser volc. clastic | |
| | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | Green clay-filled vugs/clots | |
| 580 | | | | /// | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 580 |
| | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 600 | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 600 |
| | | | | // | | | | | | | | | | | | | , | | | | | | | | | | | | | 1 | 2 | | | | | |
| | Med Gy | | | | | | | | | | | | | | | | , | // | | | | | | | | | 4 | 4 | | 3 | 4 | | | | py & Si C | |
| | | | | | | | | | | | | | | | | | , | // | | | | | | | | | 4 | 4 | | 3 | 4 | | | | | |
| | | | | | | | | | | | | | | | | | | / | | | | | | | | | 4 | 4 | | 3 | 4 | | | | | |
| 620 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 620 |
| | Dk Brn | | | | | | | | | | | | // | | | | | | | | | | | | 2 | 2 | | | | | | | | | aphanitic andesite. Calc-filled vessicles | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| 640 | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | 640 |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| | Lt Grn Gy | | | | | | | | | | | | // | | | | | | | | | | | | | | 3 | 4 | | | | | | | -Plag phenos | |
| | Dk red brn | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| 660 | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | 660 |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | -contam | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| | Lt Gy | | | | | | | | | | | | // | | | | | | | | | | | | | | 3 | 4 | | 3 | 3 | | 4 | | -contam | |
| 680 | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | mixed w/unalt. andes. | 680 |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | 4 | | | | | | | | | |
| 700 | | | | | | | | | | | | | // | | | | | | | | | | | | | | 3 | | | | | | | | | 700 |
| | Dk Gy | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | Variably contam. | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| 720 | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | 720 |

Rclog02.xls

| Poject: ROSEBUD | State: Nevada | Northing: | Total Depth: | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: RJK 6/28/97 | County: Pershing | Easting: | Bearing: | |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: | Inclination: | Page 5 of 9 |

DRILLING NOTES

| DEPTH | COLOR | LITHOLOGY: ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | STRUCT: FAULT BXA | GOUGE | GRAPHIC | ALTERATION & MIINERALIZATION: OTHR SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DK GY | | | | | | | | | | | | // | | | | | | | | | | | | | | | | 4 | | Andesite, unalt., as above. Calc. in vesicles | |
| 740 | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | 740 |
| 760 | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | 760 |
| | LT GY | | | // | | | | | | | | | // | | | | | | | | | | 4 | 5 | | 3 | | | | | F.G. Ash Tuff(?) Bleached? Pyritic, Some clay but not Silicif. | |
| 780 | | | | // | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | 780 |
| | Med GY | | | // | | | | | | | | | | | | | | | | | | | | | | 2 | | | | | V.f.G. tuff(?), less altered | |
| | DK GY | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 800 | DK Red GY | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 800 |
| | V.LT GY | | | | | | | | | | | | | // | | | | | | | | | 3 | 5 | | | | | | | white, extr. f.g. rk, massive, no texture Bleached? Tuff? Not silicif Poss. occ'l. Phenos, green, platy shaped | |
| 820 | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | 820 |
| | DK red Brn GY | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | andesite, as above. Micro-felted texture | |
| 840 | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | 840 |
| | DK red | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | |
| 860 | DK Pink-GY | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | 860 |
| | Lt GY | | | | | | | | | | | | // | | | | | | | | | | 2 | | | 1 | | | | | Porcelain-Like f.g. rk, Lt gy volc. rk. Poss | |
| 880 | | | | | | | | | | | | | | // | | | | | | | | | 2 | | | 1 | | | 2 | | felds. phenos, altd to green clay | 880 |
| | DK GY | | | | | | | | | | | | | // | | | | | | | | | 3 | | | 1 | | | | | | | |
| | Lt GY | | | | | | | | | | | | | // | | | | | | | | | 3 | | | 1 | | | | | | | |
| 900 | Pale Grn Lt gy | | | | | | | | | | | | | // | | | | | | | | | 3 | | | 5 | | | | | Hard, soap-like clay, v. white | 900 |
| | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | | | | | |

Rclog02.xls

| Poject: ROSEBUD | State: Nevada | Northing: | Total Depth: | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: TLLK 6/28/97 | County: Pershing | Easting: | Bearing: | |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: | Inclination: | Page 6 of 9 |

DRILLING NOTES

| DEPTH | COLOR | ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | | Breccia | | | | FAULT BXA | GOUGE | GRAPHIC | OTHR SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Lt Gy | | | // | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | | 1 | | ash tuff, v.f.g. Str. Contam. | |
| | | | | // | | | | | | | | | | | | | | | | | | | | | | | | 3 | | | | | | 1 | | | |
| | Tan Gy | | | | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | 2 | 3 | | 1 | | Breccia, wt Silic clasts in Silic brn tan matrix | |
| 920 | | | | | | | | | | | | | | | | | | // | | | | | | | | | | | | | 4 | | | 1 | | Looks like hydrothermal bxa further up hole. | 920 |
| | ↓ | | | | | | | | | | | | | | | | | // | | | | | | | | | | | | | 3 | | | 1 | | wt clay in clasts. Str contam, mixed | |
| | Pale Grn Gy | | | | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | 4 | | | 3 | | Lithologies | |
| | Grn Gy | | | | | | | | | | | | | | | | | // | | | | | | | | | | 3 | | | 4 | | | | | | |
| 940 | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 3 | | | 4 | | | | | | 940 |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 3 | | | 2 | | | | | | |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | 2 | | | | | -Hvy Contam | |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | 4 | 3 | | | | silic. brx w/ lt grn + tan matrix, wt clasts | |
| 960 | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | 4 | 3 | | | | of hard clay, also Silic tuff(?). Green clay too. | 960 |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | ↓ | ↓ | | | | | |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | 4 | 4 | | | | Lt Grn Vitreous Silica + Clay | |
| | Lt tan Gy | | | | | | | | | | | | | | | | | // | | | | | | | | | | 3 | | | 3 | 4 | | | | -sy sil. units, banded | |
| 980 | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | 3 | 4 | | | | wk contam | 980 |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | 3 | 4 | | | | Contam | |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | 2 | 3 | | | | Contam | |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | - | | | 1 | 2 | | | | Contam. | |
| 1000 | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | 1 | 2 | | | | " | 1000 |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | 2 | 3 | | | | " | |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | 2 | 3 | | | | " | |
| | Dk or Red | | | | | | | | | | | | | | | | | // | | | | | | | | 3 | | | | | | | | | | " | |
| 1020 | Lt Grn Gy | | | | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | | | | | | " | 1020 |
| | | | | | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | " | |
| | Dk Purp Gy | | | | | | | | | | | | // | | | | | | | | | | | | | 2 | 1 | | | | | | | | | cpharitic andesite, massive | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | " | |
| 1040 | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | " | 1040 |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | " | |
| | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | " | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | Latite (?) Black tiny specks, poss. Ufg Qz & ns | |
| 1060 | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | 1060 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | Tons! of contam. | |
| | Med. Gray | | | | | // | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | -Some Autobxa med. contam | |
| | | | | | | // | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | |
| 1080 | | | | | | // | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | | | 1080 |

Rclog02.xls

| Poject: ROSEBUD | State: Nevada | Northing: | Total Depth: | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: RAK 7/1/97 | County: Pershing | Easting: | Bearing: | |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: | Inclination: | Page 7 of 9 |

DRILLING NOTES

| DEPTH | COLOR | ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | FAULT BXA | GOUGE | GRAPHIC | OTHR SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | med. Gy | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 3 | | Latite(?) as above. mod. contam | |
| | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | | | | | aphanitic exc. for tiny black specks. Nbl? Biot? | |
| | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | | | | | | |
| 1100 | | | | | | // | | | | | | | | // | | | | | | | | | | 2 | | | | | | | | 1100 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | Pale Grn | | | // | | | | | | | | | | | | | | | | | | | 1 | 2 | | | | | | | VERY f.g. tuff | |
| 1120 | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1120 |
| | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| | | | | // | | | | | | | | | | | | | | | | | | | 2 | | | | | | | | | |
| 1140 | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1140 |
| | | | | // | | | | | | | | | | | | | | | | | | | | | | | | | 2 | | | |
| | Gray | | | // | | | | | | | | | | | | | | | | | | | | 1 | | | | | 3 | | | |
| 1160 | | | | // | | | | | | | | | | | | | | | | | | | | 1 | | | | | | | | 1160 |
| Lt | Grn Gray | | | | | | | | | | | | | // | | | | | | | | | | 4 | | | | | | | aphanitic Volc. w/ tiny black grains. Leucoxene noted. | Lots of Contam |
| | | | | | | // | | | | | | | | // | | | | | | | | | | | | | | | | | -some auto bx | |
| 1180 | | | | | | // | | | | | | | | // | | | | | | | | | | | | | | | | | " | 1180 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | Lots - contam. | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| 1200 | Gray | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | | | | | | 1200 |
| | white | | | | | | | | | | | | | // | | | | | | | | | | 4 | | | | | 1 | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 1 | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 1 | | | |
| 1220 | Lt Grn Gy | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 2 | | -contam. | 1220 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 2 | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 2 | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 3 | | | |
| 1240 | V. Lt Gray | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 3 | | | 1240 |
| | | | | | | | | | | | | | | // | | | | | | | | | 1 | | | | | | 3 | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 3 | | LOTS of Contam. | |
| | | | | | | // | | | | | | | | // | | | | | | | | | | | | | | | 2 | | | |
| 1260 | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 2 | | | 1260 |

Rclog02.xls

| Poject: ROSEBUD | State: Nevada | Northing: | Total Depth: | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: RJL 7/1/97 | County: Pershing | Easting: | Bearing: | |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: | Inclination: | Page 8 of 9 |

DRILLING NOTES

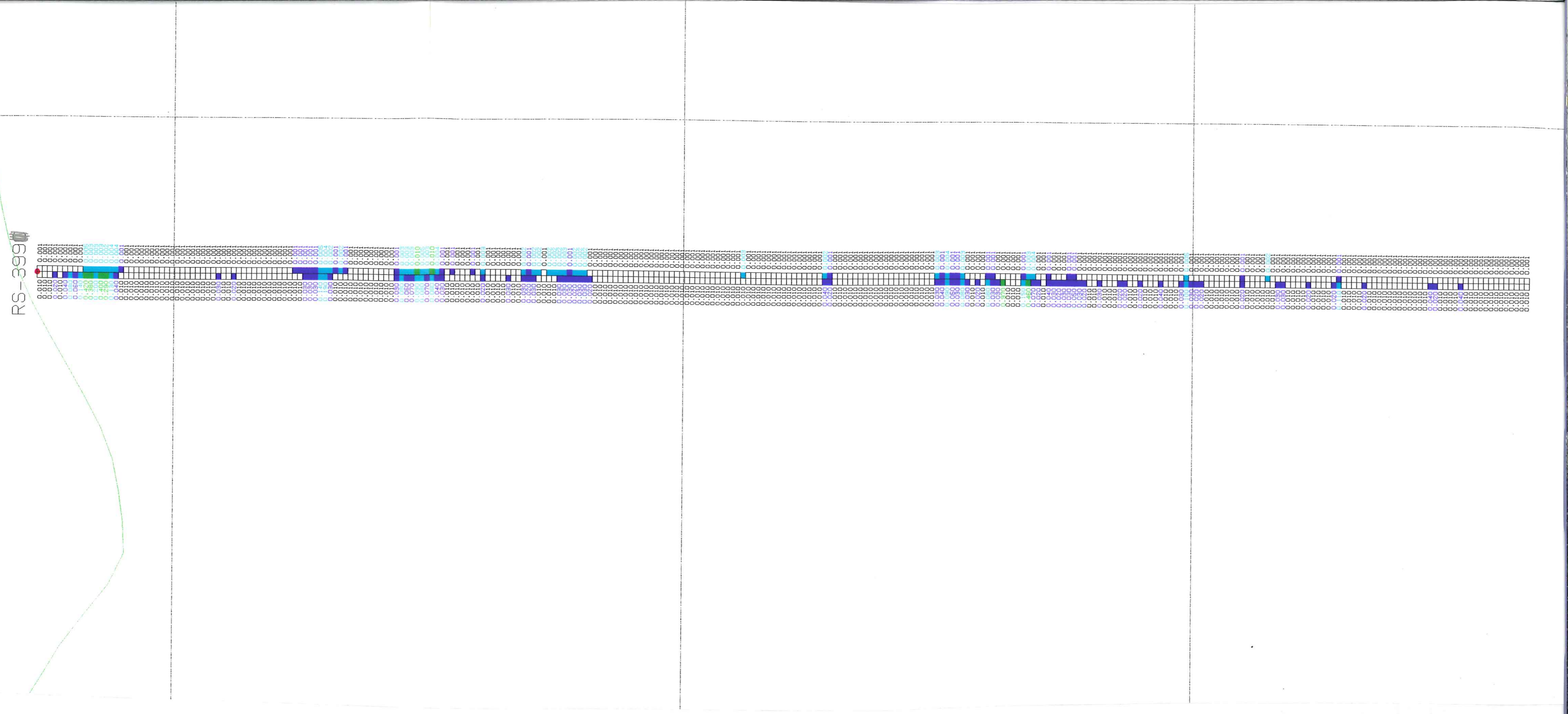
| DEPTH | COLOR | ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | FAULT BXA | GOUGE | GRAPHIC | OTHER SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | V. Lt Grn GY | | | | | | | | | | | | | // | | | | | | | | | | 4 | | | | | 2 | | massive aphanitic volcanic plc as above. | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | Fewer black specks - esp. where bleached | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| 1280 | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | 1280 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | Purp. GY | | | | | | | | | | | | | // | | | | | | | 2 | | | 2 | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | 2 | | | | | | | | | | | |
| 1300 | Lt Grn. GY | | | | | | | | | | | | | // | | | | | | | | | | 4 | | | | | | | | 1300 |
| | | | | | | | | | | | | | | // | | | | | | | | | | 4 | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | 4 | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | 3 | | | | | | | | |
| 1320 | DK Grn GY | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | | | | | | 1320 |
| | | | | | | | | | | | | | | // | | | | | | | | | | — | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 3 | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| 1340 | | | | | | 1/ | | | | | | | | // | | | | | | | | | | | | | | | | | - lots of blk specks in bxa matrix | 1340 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | mod. Contam | |
| 1360 | Med. Gray | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | 1360 |
| | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | | | | | | |
| | Purp. GY | | | | | | | | | | | | | // | | | | | | | 2 | | | | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| 1380 | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | 1380 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | White to Pink | | | | | | | | | | | | | // | | | | | | | 1 | 1 | | 4 | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | 1 | 1 | | | | | | | | | | |
| 1400 | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | 1400 |
| | | | | | | | | | | | | | | // | | | | | | | | 1 | | | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | 1 | 1 | 1 | 2 | | | | | 2 | | oxides on fpx coatings? | |
| | Purp. Gray | | | | | | | | | | | | | // | | | | | | | 2 | | | 2 | | | | | 2 | | | |
| | | | | | | | | | | | | | | // | | | | | | | 2 | | | | | | | | 1 | | | |
| 1420 | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | 1 | | | 1420 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | // | | | | | | | | | | 2 | | | | | 1 | | | |
| 1440 | | | | | | | | | | | | | | // | | | | | | | | | | 1 | | | | | 1 | | | 1440 |

| Poject: ROSEBUD | State: Nevada | Northing: | Total Depth: 1465 | Hole No. 97-399 |
|---|---|---|---|---|
| Log'd by: RAK 7/7/97 | County: Pershing | Easting: | Bearing: — | Page 9 of 9 |
| UTM# NK 11-10-06 | Sec. T. N, R. | Elevation: | Inclination: -90 | |

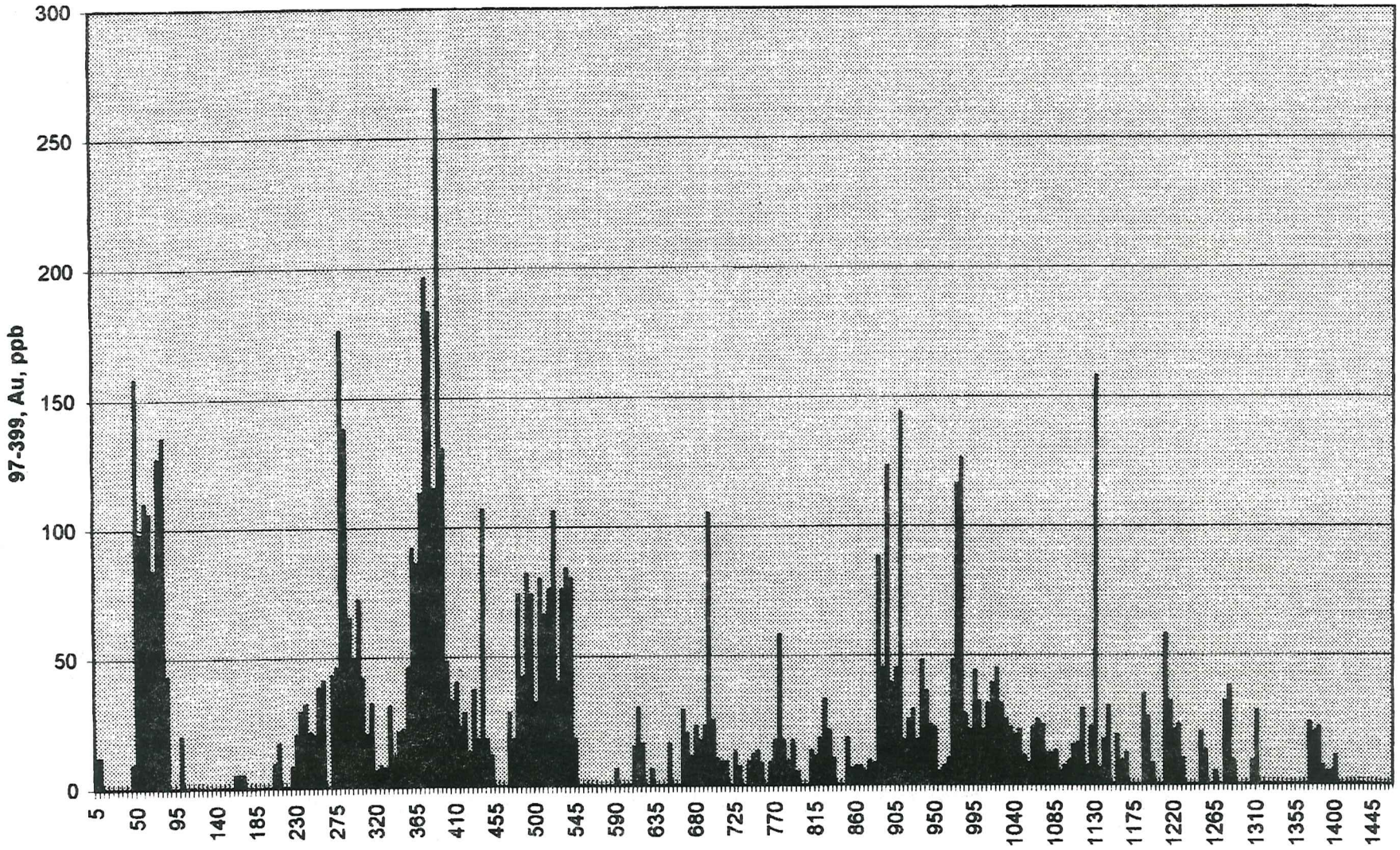
DRILLING NOTES

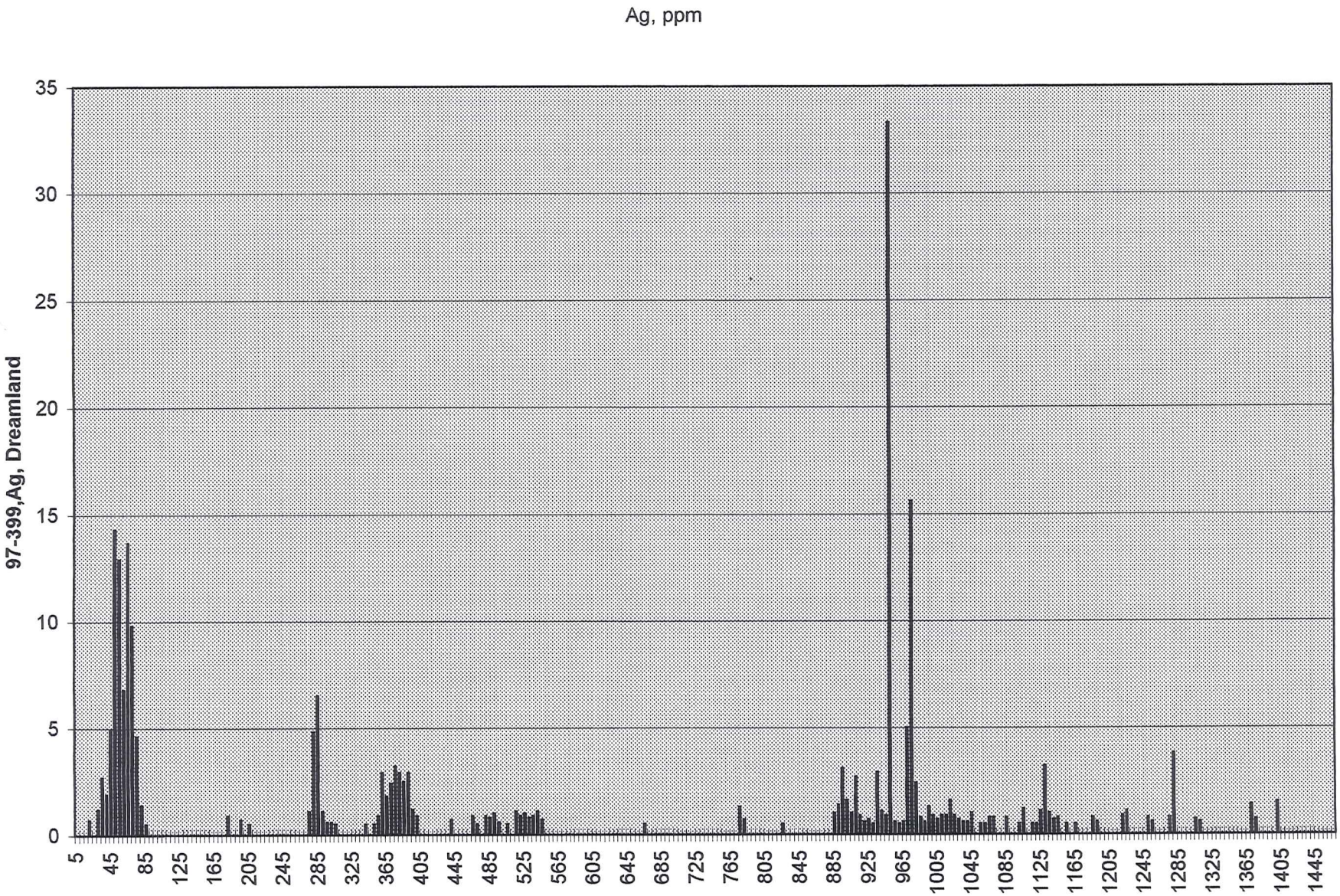
| DEPTH | COLOR | LITHOLOGY: ALLUVIUM | SURG TUFF | ASH FLOW | LAVA flow | AUTOBXA | INTUSIVE | LITH TUFF | SANDSTONE | PHYLLITE | SHALE | BASALT | ANDESITE | LATITE | DACITE | RHYOLITE | | | | | STRUCT: FAULT BXA | GOUGE | GRAPHIC | ALTERATION & MIINERALIZATION: OTHR SULF | HEMATITE | LIMONITE | PYRITE | BLEACHED | PROPYL | ARGIL | REPL SIL | VEIN QTZ | CALCITE | GRAPHIC | DESCRIPTION | DEPTH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gray w/Purp | | | | | | | | | | | | | // | | | | | | | | | | | 2 | 1 | | 2 | | | | | 1 | | Lith. as above. | |
| | White | | | | | | | | | | | | | // | | | | | | | | | | | 1 | 1 | | 4 | | | | | 2 | | | |
| | Green Gray | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | massive aph. vole. w/ leucox., tiny black specks | |
| 1460 | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | Poss Hab(?) | 1460 |
| | | | | | | | | | | | | | | // | | | | | | | | | | | | | | | | | | | | | & | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | T.D. 1465 | |
| 1480 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1480 |

Rclog02.xls

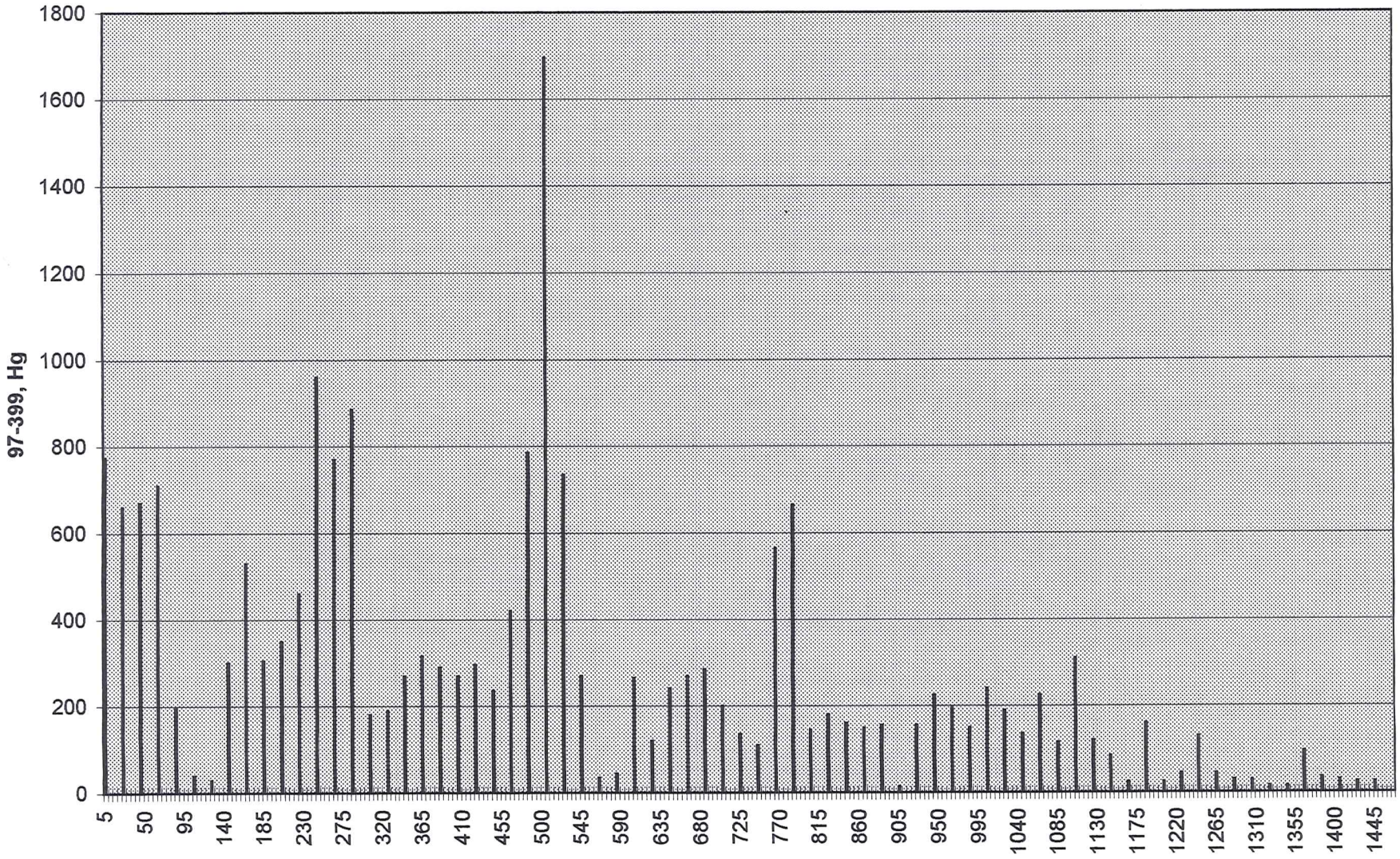

RS-399

Au, ppb


97-399, Au, ppb
300
250
200
150
100
50
0
5
50
95
140
185
230
275
320
365
410
455
500
545
590
635
680
725
770
815
860
905
950
995
1040
1085
1130
1175
1220
1265
1310
1355
1400
1445

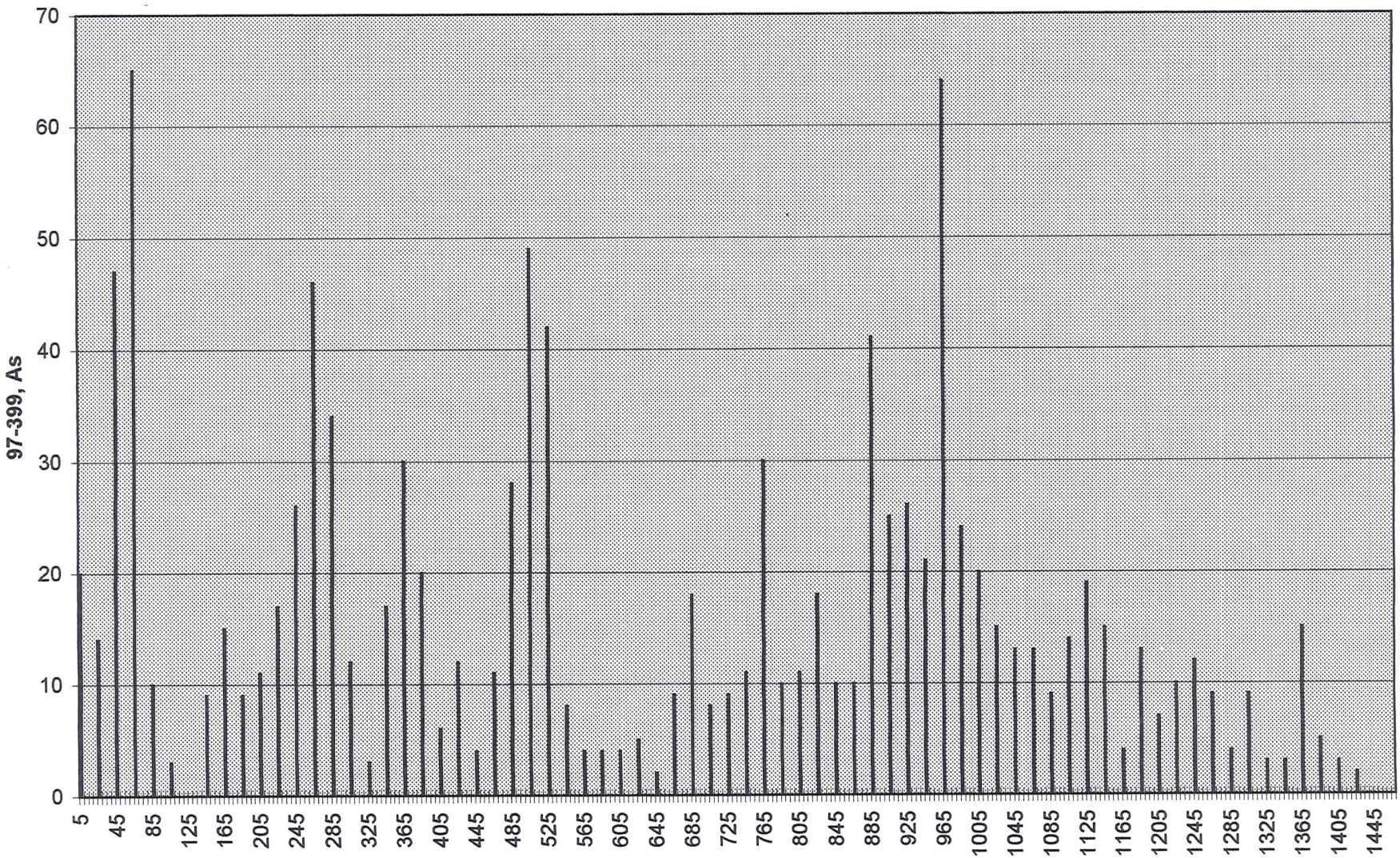

Ag, ppm
97-399,Ag, Dreamland
35
30
25
20
15
10
5
0
5
45
85
125
165
205
245
285
325
365
405
445
485
525
565
605
645
685
725
765
805
845
885
925
965
1005
1045
1085
1125
1165
1205
1245
1285
1325
1365
1405
1445

Hg, ppb


97-399, Hg
1800
1600
1400
1200
1000
800
600
400
200
0
5
50
95
140
185
230
275
320
365
410
455
500
545
590
635
680
725
770
815
860
905
950
995
1040
1085
1130
1175
1220
1265
1310
1355
1400
1445

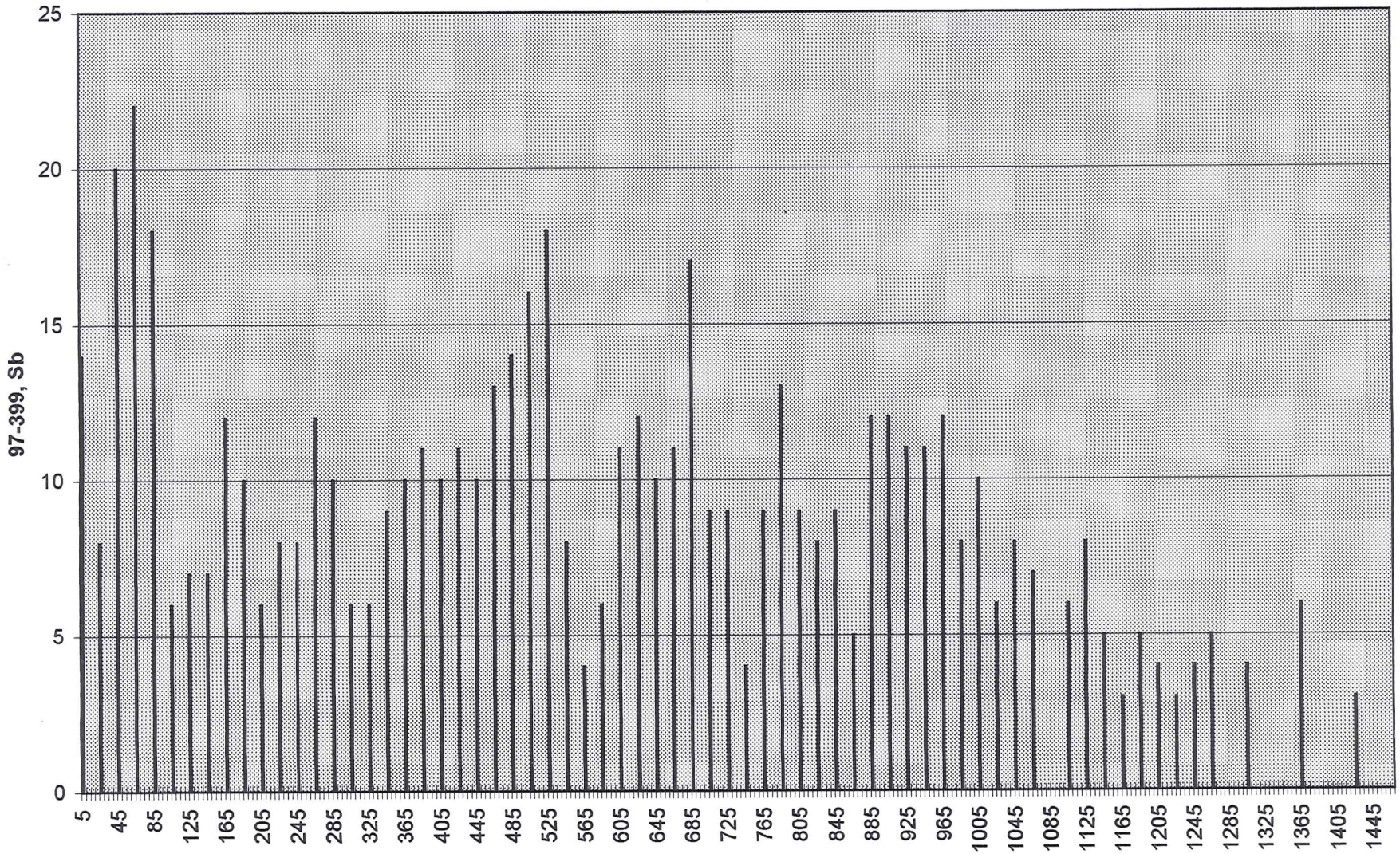
As

As, ppm


97-399, As
70
60
50
40
30
20
10
0
5
45
85
125
165
205
245
285
325
365
405
445
485
525
565
605
645
685
725
765
805
845
885
925
965
1005
1045
1085
1125
1165
1205
1245
1285
1325
1365
1405
1445

Sb

Sb, ppm


97-399, Sb
25
20
15
10
5
0
5
45
85
125
165
205
245
285
325
365
405
445
485
525
565
605
645
685
725
765
805
845
885
925
965
1005
1045
1085
1125
1165
1205
1245
1285
1325
1365
1405
1445

xAMERICAN ASSAY LABORATORIES
# ANALYSIS REPORT SP045202

American Assay Laboratories

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

## SANTA FE PACIFIC GOLD

COPIES TO : BOB KASTELIC
: RICK LISLE
:
:

CLIENT REFERENCE No: 97-399 RECEIVED : 2 JUL 1997

No. SAMPLES : 293 REPORTED : 2 JUL 1997

MAIN SAMPLE TYPE : DRILL CUTTINGS

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 | FA30 | 15% | ppb | 5 |
| Au(R) | FA30 | 15% | ppb | 5 |
| Au(OZ) | FA30 | 15% | OPT | 0.001 |
| Au(RZ) | FA30 | 15% | OPT | 0.001 |
| Ag | D210 | 10% | ppm | 0.5 |
| Ag(OZ) | D210 | 10% | OPT | 0.02 |

SIGNATORY : Susan King M.S.

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 0000-0005 | 12 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0005-0010 | 12 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0010-0015 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0015-0020 | <5 | | <0.001 | | 0.7 | 0.02 |
| 97-399 0020-0025 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0025-0030 | <5 | | <0.001 | | 1.2 | 0.04 |
| 97-399 0030-0035 | <5 | | <0.001 | | 2.7 | 0.08 |
| 97-399 0035-0040 | <5 | | <0.001 | | 1.9 | 0.06 |
| 97-399 0040-0045 | 9 | | <0.001 | | 4.9 | 0.14 |
| 97-399 0045-0050 | 158 | 142 | 0.005 | 0.004 | 14.3 | 0.42 |
| 97-399 0050-0055 | 98 | | 0.003 | | 12.9 | 0.38 |
| 97-399 0055-0060 | 110 | | 0.003 | | 6.8 | 0.20 |
| 97-399 0060-0065 | 106 | | 0.003 | | 13.7 | 0.40 |
| 97-399 0065-0070 | 84 | | 0.002 | | 9.8 | 0.29 |
| 97-399 0070-0075 | 127 | | 0.004 | | 4.6 | 0.13 |
| 97-399 0075-0080 | 135 | 136 | 0.004 | 0.004 | 1.4 | 0.04 |
| 97-399 0080-0085 | 43 | | 0.001 | | 0.5 | <0.02 |
| 97-399 0085-0090 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0090-0095 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0095-0100 | 20 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0100-0105 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0105-0110 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0110-0115 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0115-0120 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0120-0125 | <5 | | <0.001 | | <0.5 | <0.02 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 0125-0130 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0130-0135 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0135-0140 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0140-0145 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0145-0150 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0150-0155 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0155-0160 | 5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0160-0165 | 5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0165-0170 | 5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0170-0175 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0175-0180 | <5 | | <0.001 | | 0.9 | 0.03 |
| 97-399 0180-0185 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0185-0190 | <5 | <5 | <0.001 | <0.001 | <0.5 | <0.02 |
| 97-399 0190-0195 | <5 | | <0.001 | | 0.7 | 0.02 |
| 97-399 0195-0200 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0200-0205 | 9 | | <0.001 | | 0.5 | <0.02 |
| 97-399 0205-0210 | 17 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0210-0215 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0215-0220 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0220-0225 | 8 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0225-0230 | 20 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0230-0235 | 29 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0235-0240 | 32 | 30 | <0.001 | <0.001 | <0.5 | <0.02 |
| 97-399 0240-0245 | 21 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0245-0250 | 20 | | <0.001 | | <0.5 | <0.02 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 0250-0255 | 38 | | 0.001 | | 0.5 | <0.02 |
| 97-399 0255-0260 | 41 | | 0.001 | | 0.5 | <0.02 |
| 97-399 0260-0265 | 44 | | 0.001 | | 1.0 | 0.03 |
| 97-399 0265-0270 | 43 | | 0.001 | | 1.0 | 0.03 |
| 97-399 0270-0275 | 46 | | 0.001 | | 1.1 | 0.03 |
| 97-399 0275-0280 | 176 | 148 | 0.005 | 0.004 | 4.8 | 0.14 |
| 97-399 0280-0285 | 138 | 116 | 0.004 | 0.003 | 6.5 | 0.19 |
| 97-399 0285-0290 | 65 | | 0.002 | | 1.1 | 0.03 |
| 97-399 0290-0295 | 49 | | 0.001 | | 0.6 | <0.02 |
| 97-399 0295-0300 | 72 | | 0.002 | | 0.6 | <0.02 |
| 97-399 0300-0305 | 42 | | 0.001 | | 0.5 | <0.02 |
| 97-399 0305-0310 | 20 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0310-0315 | 32 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0315-0320 | 6 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0320-0325 | 8 | <5 | <0.001 | <0.001 | <0.5 | <0.02 |
| 97-399 0325-0330 | 7 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0330-0335 | 31 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0335-0340 | 12 | | <0.001 | | 0.5 | <0.02 |
| 97-399 0340-0345 | 21 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0345-0350 | 22 | | <0.001 | | 0.5 | <0.02 |
| 97-399 0350-0355 | 46 | | 0.001 | | 0.9 | 0.03 |
| 97-399 0355-0360 | 92 | | 0.003 | | 2.9 | 0.08 |
| 97-399 0360-0365 | 86 | 70 | 0.003 | 0.002 | 1.8 | 0.05 |
| 97-399 0365-0370 | 113 | | 0.003 | | 2.4 | 0.07 |
| 97-399 0370-0375 | 196 | | 0.006 | | 3.2 | 0.09 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 0375-0380 | 183 | | 0.005 | | 2.9 | 0.08 |
| 97-399 0380-0385 | 115 | | 0.003 | | 2.5 | 0.07 |
| 97-399 0385-0390 | 269 | | 0.008 | | 2.9 | 0.08 |
| 97-399 0390-0395 | 130 | | 0.004 | | 1.2 | 0.04 |
| 97-399 0395-0400 | 48 | | 0.001 | | 0.9 | 0.03 |
| 97-399 0400-0405 | 33 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0405-0410 | 40 | | 0.001 | | <0.5 | <0.02 |
| 97-399 0410-0415 | 23 | 20 | <0.001 | <0.001 | <0.5 | <0.02 |
| 97-399 0415-0420 | 28 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0420-0425 | 13 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0425-0430 | 37 | | 0.001 | | <0.5 | <0.02 |
| 97-399 0430-0435 | 18 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0435-0440 | 107 | | 0.003 | | 0.7 | 0.02 |
| 97-399 0440-0445 | 18 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0445-0450 | 12 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0450-0455 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0455-0460 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0460-0465 | <5 | | <0.001 | | 0.9 | 0.03 |
| 97-399 0465-0470 | 28 | | <0.001 | | 0.5 | <0.02 |
| 97-399 0470-0475 | 18 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0475-0480 | 74 | 80 | 0.002 | 0.002 | 0.9 | 0.03 |
| 97-399 0480-0485 | 42 | | 0.001 | | 0.8 | 0.02 |
| 97-399 0485-0490 | 82 | | 0.002 | | 1.0 | 0.03 |
| 97-399 0490-0495 | 74 | | 0.002 | | 0.6 | <0.02 |
| 97-399 0495-0500 | 32 | 26 | <0.001 | <0.001 | <0.5 | <0.02 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 0500-0505 | 80 | | 0.002 | | 0.5 | <0.02 |
| 97-399 0505-0510 | 66 | | 0.002 | | <0.5 | <0.02 |
| 97-399 0510-0515 | 76 | | 0.002 | | 1.1 | 0.03 |
| 97-399 0515-0520 | 106 | 96 | 0.003 | 0.003 | 0.9 | 0.03 |
| 97-399 0520-0525 | 40 | | 0.001 | | 1.0 | 0.03 |
| 97-399 0525-0530 | 76 | | 0.002 | | 0.8 | 0.02 |
| 97-399 0530-0535 | 84 | | 0.002 | | 0.9 | 0.03 |
| 97-399 0535-0540 | 80 | | 0.002 | | 1.1 | 0.03 |
| 97-399 0540-0545 | 18 | | <0.001 | | 0.7 | 0.02 |
| 97-399 0545-0550 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0550-0555 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0555-0560 | <5 | <5 | <0.001 | <0.001 | <0.5 | <0.02 |
| 97-399 0560-0565 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0565-0570 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0570-0575 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0575-0580 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0580-0585 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0585-0590 | 6 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0590-0595 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0595-0600 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0600-0605 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0605-0610 | 15 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0610-0615 | 30 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0615-0620 | 16 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0620-0625 | <5 | <5 | <0.001 | <0.001 | <0.5 | <0.02 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 0625-0630 | 6 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0630-0635 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0635-0640 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0640-0645 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0645-0650 | 16 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0650-0655 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0655-0660 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0660-0665 | 29 | | <0.001 | | 0.5 | <0.02 |
| 97-399 0665-0670 | 20 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0670-0675 | 11 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0675-0680 | 23 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0680-0685 | 17 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0685-0690 | 23 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0690-0695 | 105 | 92 | 0.003 | 0.003 | <0.5 | <0.02 |
| 97-399 0695-0700 | 25 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0700-0705 | 10 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0705-0710 | 9 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0710-0715 | 9 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0715-0720 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0720-0725 | 13 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0725-0730 | 7 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0730-0735 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0735-0740 | 9 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0740-0745 | 12 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0745-0750 | 13 | | <0.001 | | <0.5 | <0.02 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 0750-0755 | 8 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0755-0760 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0760-0765 | 9 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0765-0770 | 17 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0770-0775 | 58 | | 0.002 | | 1.3 | 0.04 |
| 97-399 0775-0780 | 47 | | 0.001 | | 0.7 | 0.02 |
| 97-399 0780-0785 | 9 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0785-0790 | 17 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0790-0795 | 5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0795-0800 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0800-0805 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0805-0810 | 13 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0810-0815 | 11 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0815-0820 | 18 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0820-0825 | 33 | 30 | <0.001 | <0.001 | 0.5 | <0.02 |
| 97-399 0825-0830 | 21 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0830-0835 | 10 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0835-0840 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0840-0845 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0845-0850 | 18 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0850-0855 | 6 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0855-0860 | 7 | 10 | <0.001 | <0.001 | <0.5 | <0.02 |
| 97-399 0860-0865 | 7 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0865-0870 | 5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0870-0875 | 9 | | <0.001 | | <0.5 | <0.02 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 0875-0880 | 8 | | <0.001 | | <0.5 | <0.02 |
| 97-399 0880-0885 | 88 | | 0.003 | | 1.0 | 0.03 |
| 97-399 0885-0890 | 45 | | 0.001 | | 1.4 | 0.04 |
| 97-399 0890-0895 | 123 | | 0.004 | | 3.1 | 0.09 |
| 97-399 0895-0900 | 39 | | 0.001 | | 1.6 | 0.05 |
| 97-399 0900-0905 | 45 | | 0.001 | | 1.0 | 0.03 |
| 97-399 0905-0910 | 114 | | 0.003 | | 2.7 | 0.08 |
| 97-399 0910-0915 | 17 | | <0.001 | | 0.9 | 0.03 |
| 97-399 0915-0920 | 25 | | <0.001 | | 0.6 | <0.02 |
| 97-399 0920-0925 | 29 | | <0.001 | | 0.7 | 0.02 |
| 97-399 0925-0930 | 17 | | <0.001 | | 0.5 | <0.02 |
| 97-399 0930-0935 | 48 | | 0.001 | | 2.9 | 0.08 |
| 97-399 0935-0940 | 36 | | 0.001 | | 1.1 | 0.03 |
| 97-399 0940-0945 | 23 | | <0.001 | | 0.9 | 0.03 |
| 97-399 0945-0950 | 22 | | <0.001 | | 33.3 | 0.97 |
| 97-399 0950-0955 | 5 | | <0.001 | | 0.6 | <0.02 |
| 97-399 0955-0960 | 7 | | <0.001 | | 0.5 | <0.02 |
| 97-399 0960-0965 | 10 | | <0.001 | | 0.6 | <0.02 |
| 97-399 0965-0970 | 48 | | 0.001 | | 5.0 | 0.15 |
| 97-399 0970-0975 | 116 | | 0.003 | | 15.6 | 0.46 |
| 97-399 0975-0980 | 126 | 124 | 0.004 | 0.004 | 2.4 | 0.07 |
| 97-399 0980-0985 | 27 | | <0.001 | | 0.8 | 0.02 |
| 97-399 0985-0990 | 21 | | <0.001 | | 0.6 | <0.02 |
| 97-399 0990-0995 | 44 | | 0.001 | | 1.3 | 0.04 |
| 97-399 0995-1000 | 32 | | <0.001 | | 0.9 | 0.03 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 1000-1005 | 24 | | <0.001 | | 0.7 | 0.02 |
| 97-399 1005-1010 | 31 | | <0.001 | | 0.9 | 0.03 |
| 97-399 1010-1015 | 39 | | 0.001 | | 0.9 | 0.03 |
| 97-399 1015-1020 | 45 | | 0.001 | | 1.6 | 0.05 |
| 97-399 1020-1025 | 31 | | <0.001 | | 0.9 | 0.03 |
| 97-399 1025-1030 | 25 | 23 | <0.001 | <0.001 | 0.7 | 0.02 |
| 97-399 1030-1035 | 22 | | <0.001 | | 0.6 | <0.02 |
| 97-399 1035-1040 | 19 | | <0.001 | | 0.6 | <0.02 |
| 97-399 1040-1045 | 21 | | <0.001 | | 1.0 | 0.03 |
| 97-399 1045-1050 | 11 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1050-1055 | 8 | 11 | <0.001 | <0.001 | 0.5 | <0.02 |
| 97-399 1055-1060 | 22 | | <0.001 | | 0.5 | <0.02 |
| 97-399 1060-1065 | 25 | | <0.001 | | 0.8 | 0.02 |
| 97-399 1065-1070 | 23 | | <0.001 | | 0.8 | 0.02 |
| 97-399 1070-1075 | 12 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1075-1080 | 12 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1080-1085 | 13 | | <0.001 | | 0.8 | 0.02 |
| 97-399 1085-1090 | 5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1090-1095 | 7 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1095-1100 | 9 | | <0.001 | | 0.6 | <0.02 |
| 97-399 1100-1105 | 15 | | <0.001 | | 1.2 | 0.04 |
| 97-399 1105-1110 | 16 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1110-1115 | 29 | | <0.001 | | 0.5 | <0.02 |
| 97-399 1115-1120 | 7 | | <0.001 | | 0.5 | <0.02 |
| 97-399 1120-1125 | 22 | | <0.001 | | 1.1 | 0.03 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 1125-1130 | 158 | | 0.005 | | 3.3 | 0.10 |
| 97-399 1130-1135 | 6 | | <0.001 | | 1.0 | 0.03 |
| 97-399 1135-1140 | 17 | | <0.001 | | 0.7 | 0.02 |
| 97-399 1140-1145 | 30 | | <0.001 | | 0.8 | 0.02 |
| 97-399 1145-1150 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1150-1155 | 19 | 27 | <0.001 | <0.001 | 0.6 | <0.02 |
| 97-399 1155-1160 | 9 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1160-1165 | 12 | | <0.001 | | 0.5 | <0.02 |
| 97-399 1165-1170 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1170-1175 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1175-1180 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1180-1185 | 35 | | 0.001 | | 0.8 | 0.02 |
| 97-399 1185-1190 | 26 | 31 | <0.001 | <0.001 | 0.6 | <0.02 |
| 97-399 1190-1195 | 8 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1195-1200 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1200-1205 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1205-1210 | 58 | | 0.002 | | <0.5 | <0.02 |
| 97-399 1210-1215 | 32 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1215-1220 | 21 | | <0.001 | | 0.9 | 0.03 |
| 97-399 1220-1225 | 23 | | <0.001 | | 1.1 | 0.03 |
| 97-399 1225-1230 | 10 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1230-1235 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1235-1240 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1240-1245 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1245-1250 | 20 | 21 | <0.001 | <0.001 | 0.8 | 0.02 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 1250-1255 | 13 | | <0.001 | | 0.6 | <0.02 |
| 97-399 1255-1260 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1260-1265 | 5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1265-1270 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1270-1275 | 32 | | <0.001 | | 0.8 | 0.02 |
| 97-399 1275-1280 | 38 | | 0.001 | | 3.8 | 0.11 |
| 97-399 1280-1285 | 9 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1285-1290 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1290-1295 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1295-1300 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1300-1305 | 9 | 13 | <0.001 | <0.001 | 0.7 | 0.02 |
| 97-399 1305-1310 | 28 | | <0.001 | | 0.6 | <0.02 |
| 97-399 1310-1315 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1315-1320 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1320-1325 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1325-1330 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1330-1335 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1335-1340 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1340-1345 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1345-1350 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1350-1355 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1355-1360 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1360-1365 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1365-1370 | 24 | 32 | <0.001 | <0.001 | 1.4 | 0.04 |
| 97-399 1370-1375 | 20 | | <0.001 | | 0.7 | 0.02 |

AMERICAN ASSAY LABORATORIES

# ANALYSIS REPORT SP045202

American Assay Laboratories

CLIENT : SANTA FE PACIFIC GOLD
PROJECT : ROSEBUD EXPLORATION
REFERENCE : 97-399

REPORTED : 2 JUL 1997

| SAMPLES | Au FA30 ppb | Au(R) FA30 ppb | Au(OZ) FA30 OPT | Au(RZ) FA30 OPT | Ag D210 ppm | Ag(OZ) D210 OPT |
|---|---|---|---|---|---|---|
| 97-399 1375-1380 | 22 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1380-1385 | 7 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1385-1390 | 5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1390-1395 | 5 | 9 | <0.001 | <0.001 | <0.5 | <0.02 |
| 97-399 1395-1400 | 11 | | <0.001 | | 1.5 | 0.04 |
| 97-399 1400-1405 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1405-1410 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1410-1415 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1415-1420 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1420-1425 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1425-1430 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1430-1435 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1435-1440 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1440-1445 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1445-1450 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1450-1455 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1455-1460 | <5 | | <0.001 | | <0.5 | <0.02 |
| 97-399 1460-1465 | <5 | | <0.001 | | <0.5 | <0.02 |

# AMERICAN ASSAY LABORATORIES

## AAL 01-2 ICP PACKAGE DETECTION LIMITS

| ELEMENT | Ag | Al | As | B | Ba | Bi | Ca | Cd | Co | Cr | Cu | Fe | Hg | K | La | Mg | Mn | Mo | Na | Ni | P | Pb | Sb | Sr | Th | Ti | U | V | W | Zn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLES | ppm | % | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | % | ppb | % | ppm | % | ppm | ppm | % | ppm | % | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm |
| | 0.3 | 0.01 | 2 | 3 | 1 | 2 | 0.01 | 0.2 | 1 | 1 | 1 | 0.01 | 5 | 0.01 | 1 | 0.01 | 2 | 1 | 0.01 | 1 | 0.001 | 3 | 2 | 1 | 2 | 0.01 | 5 | 1 | 2 | 1 |

0.500 GRAMS OF PULP IS DIGESTED WITH HYDROCHLORIC AND NITRIC ACID AT 95 DEGREE CENTIGRADE FOR ONE HOUR.
DIGEST IS PARTIAL FOR B, Ba, Ca, Cr, Fe, La, Mg, Mn, Sr, Ti AND W.
DIGEST IS LIMITED FOR Al, K AND Na.

1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (702) 356-0606
FAX: (702) 356-1413

CLIENT: *ROSEBUD EXPLORATION*
CLIENT REF: ROSEBUD EXPLORATION
AAL REF: SP045202
METHOD: AAL 01-2

| ELEMENT SAMPLES | Ag ppm | Al % | As ppm | B ppm | Ba ppm | Bi ppm | Ca % | Cd ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Hg ppb | K % | La ppm | Mg % | Mn ppm | Mo ppm | Na % | Ni ppm | P % | Pb ppm | Sb ppm | Sr ppm | Th ppm | Ti % | U ppm | V ppm | W ppm | Zn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 97-399 0000-0020 | < .3 | 0.92 | 20 | 11 | 138 | < 3 | 0.53 | 0.9 | 2 | 14 | 16 | 3.6 | 775 | 0.24 | 12 | 0.18 | 383 | 3 | 0.08 | 10 | 0.024 | 6 | 14 | 65 | 8 | 0.01 | < 8 | 19 | < 2 | 29 |
| 97-399 0020-0040 | < .3 | 0.58 | 14 | < 3 | 86 | < 3 | 0.21 | 0.4 | < 1 | 5 | 7 | 1.94 | 660 | 0.3 | 9 | 0.03 | 81 | 2 | 0.02 | 5 | 0.004 | 21 | 8 | 45 | 8 | < .01 | < 8 | 3 | < 2 | 11 |
| 97-399 0040-0060 | 6.3 | 0.45 | 47 | 7 | 218 | < 3 | 0.17 | 0.5 | < 1 | 3 | 8 | 2.45 | 670 | 0.31 | 11 | 0.02 | 63 | 2 | 0.02 | 2 | 0.006 | 11 | 20 | 60 | 8 | < .01 | < 8 | 4 | < 2 | 19 |
| 97-399 0060-0080 | 7.9 | 0.37 | 65 | < 3 | 140 | < 3 | 0.07 | 0.5 | < 1 | 7 | 9 | 2.69 | 710 | 0.3 | 15 | 0.01 | 175 | 3 | < .01 | 9 | 0.008 | 13 | 22 | 49 | 9 | < .01 | < 8 | 2 | < 2 | 17 |
| 97-399 0080-0100 | < .3 | 0.77 | 10 | 4 | 60 | < 3 | 0.19 | 1.1 | 1 | 4 | 5 | 1.79 | 195 | 0.3 | 18 | 0.03 | 150 | 1 | 0.02 | 4 | 0.005 | 21 | 18 | 56 | 11 | < .01 | 9 | 2 | < 2 | 58 |
| 97-399 0100-0120 | < .3 | 0.62 | 3 | < 3 | 58 | < 3 | 0.57 | 0.7 | < 1. | 4 | 4 | 1.81 | 40 | 0.27 | 14 | 0.02 | 487 | 1 | 0.01 | 3 | 0.003 | 16 | 6 | 46 | 11 | 0.01 | < 8 | 2 | 2 | 32 |
| 97-399 0120-0140 | < .3 | 0.82 | < 2 | 5 | 32 | < 3 | 1.85 | 0.3 | < 1 | 4 | 5 | 1.77 | 30 | 0.34 | 10 | 0.03 | 844 | 1 | 0.01 | 1 | 0.004 | 25 | 7 | 84 | 9 | < .01 | < 8 | 3 | 2 | 23 |
| 97-399 0140-0160 | < .3 | 0.67 | 9 | < 3 | 120 | < 3 | 0.63 | 1.2 | < 1 | 4 | 6 | 1.86 | 300 | 0.35 | 12 | 0.03 | 2962 | 2 | 0.01 | 4 | 0.004 | 22 | 7 | 44 | 10 | < .01 | < 8 | 1 | < 2 | 173 |
| 97-399 0160-0180 | < .3 | 0.54 | 15 | 4 | 67 | 3 | 0.26 | 0.8 | < 1 | 4 | 9 | 2.97 | 530 | 0.24 | 11 | 0.02 | 4886 | 2 | 0.01 | 4 | 0.006 | 24 | 12 | 26 | 10 | < .01 | < 8 | 1 | < 2 | 326 |
| 97-399 0180-0200 | < .3 | 0.58 | 9 | < 3 | 22 | < 3 | 0.22 | 0.7 | < 1 | 5 | 7 | 2.65 | 305 | 0.25 | 16 | 0.02 | 4517 | 2 | 0.01 | 6 | 0.008 | 22 | 10 | 24 | 11 | < .01 | < 8 | 1 | < 2 | 350 |
| 97-399 0200-0220 | < .3 | 0.41 | 11 | < 3 | 40 | < 3 | 0.18 | 0.5 | < 1 | 5 | 7 | 2.62 | 350 | 0.22 | 22 | 0.02 | 2495 | 2 | 0.02 | 3 | 0.009 | 19 | 6 | 21 | 12 | < .01 | < 8 | 1 | < 2 | 212 |
| 97-399 0220-0240 | < .3 | 0.43 | 17 | 3 | 38 | < 3 | 0.17 | 0.2 | 1 | 4 | 8 | 2.62 | 460 | 0.22 | 22 | 0.02 | 2044 | 2 | 0.02 | 3 | 0.009 | 22 | 8 | 20 | 11 | < .01 | < 8 | 1 | < 2 | 178 |
| 97-399 0240-0260 | < .3 | 0.32 | 26 | < 3 | 45 | < 3 | 0.13 | 0.3 | 1 | 3 | 8 | 1.92 | 960 | 0.16 | 22 | 0.01 | 1480 | 1 | 0.01 | 1 | 0.003 | 20 | 8 | 17 | 12 | < .01 | < 8 | 1 | < 2 | 154 |
| 97-399 0260-0280 | 1.7 | 0.35 | 46 | < 3 | 43 | < 3 | 0.1 | 0.2 | 1 | 5 | 8 | 2.26 | 770 | 0.17 | 20 | 0.01 | 104 | 2 | 0.02 | 2 | 0.006 | 17 | 12 | 20 | 11 | < .01 | < 8 | < 1 | < 2 | 80 |
| 97-399 0280-0300 | 2.5 | 0.42 | 34 | < 3 | 40 | < 3 | 0.1 | 0.3 | < 1 | 4 | 7 | 2.3 | 885 | 0.21 | 20 | 0.01 | 97 | 2 | 0.02 | 1 | 0.004 | 16 | 10 | 17 | 12 | < .01 | < 8 | 1 | < 2 | 109 |
| 97-399 0300-0320 | < .3 | 0.38 | 12 | 3 | 27 | < 3 | 0.12 | 0.7 | < 1 | 5 | 11 | 2.23 | 180 | 0.2 | 20 | 0.02 | 1327 | 1 | 0.01 | 1 | 0.004 | 31 | 6 | 14 | 11 | < .01 | < 8 | 1 | < 2 | 105 |
| 97-399 0320-0340 | < .3 | 0.34 | 3 | 3 | 67 | < 3 | 0.11 | 0.2 | < 1 | 5 | 7 | 1.39 | 190 | 0.19 | 21 | 0.01 | 316 | 1 | 0.02 | 1 | 0.004 | 17 | 6 | 16 | 12 | < .01 | < 8 | 1 | < 2 | 87 |
| 97-399 0340-0360 | 0.9 | 0.44 | 17 | 3 | 23 | < 3 | 0.17 | < .2 | < 1 | 4 | 8 | 2.02 | 270 | 0.23 | 13 | 0.01 | 96 | 1 | 0.01 | 3 | 0.005 | 16 | 9 | 36 | 10 | < .01 | < 8 | 1 | < 2 | 78 |
| 97-399 0360-0380 | 2.2 | 0.47 | 30 | 3 | 27 | < 3 | 0.19 | < .2 | < 1 | 2 | 6 | 2.5 | 315 | 0.22 | 16 | < .01 | 106 | 1 | 0.02 | 3 | 0.006 | 18 | 10 | 52 | 10 | < .01 | < 8 | < 1 | < 2 | 81 |
| 97-399 0380-0400 | 1.8 | 0.61 | 20 | < 3 | 38 | < 3 | 0.21 | < .2 | < 1 | 3 | 7 | 2.1 | 290 | 0.24 | 12 | 0.01 | 118 | 1 | 0.01 | < 1 | 0.006 | 20 | 11 | 45 | 8 | < .01 | < 8 | 1 | < 2 | 71 |
| 97-399 0400-0420 | 0.3 | 0.55 | 6 | < 3 | 62 | < 3 | 0.11 | 0.5 | < 1 | 1 | 3 | 1.9 | 270 | 0.2 | 18 | < .01 | 90 | 1 | 0.02 | < 1 | 0.005 | 21 | 10 | 27 | 11 | < .01 | < 8 | 2 | 2 | 92 |
| 97-399 0420-0440 | 0.5 | 0.68 | 12 | < 3 | 52 | < 3 | 0.13 | 0.5 | 1 | 2 | 4 | 1.99 | 295 | 0.25 | 18 | 0.01 | 110 | 1 | 0.03 | 1 | 0.007 | 19 | 11 | 34 | 12 | < .01 | < 8 | 2 | 2 | 68 |
| 97-399 0440-0460 | < .3 | 1.08 | 4 | < 3 | 96 | < 3 | 0.1 | 0.2 | 1 | 4 | 6 | 1.44 | 235 | 0.32 | 18 | 0.01 | 95 | 2 | 0.02 | 2 | 0.005 | 21 | 10 | 23 | 11 | < .01 | < 8 | 2 | < 2 | 78 |
| 97-399 0460-0480 | 0.3 | 0.72 | 11 | 3 | 45 | < 3 | 0.1 | 0.7 | 1 | 4 | 6 | 2.01 | 420 | 0.16 | 22 | 0.01 | 96 | 2 | 0.01 | 3 | 0.005 | 17 | 13 | 16 | 12 | < .01 | < 8 | 1 | < 2 | 79 |
| 97-399 0480-0500 | 0.5 | 0.75 | 28 | < 3 | 37 | < 3 | 0.06 | 0.6 | 1 | 4 | 4 | 2.27 | 785 | 0.18 | 19 | 0.01 | 89 | 1 | 0.02 | 2 | 0.004 | 18 | 14 | 10 | 10 | < .01 | < 8 | 3 | < 2 | 81 |
| 97-399 0500-0520 | 0.7 | 0.9 | 49 | 3 | 37 | < 3 | 0.07 | 2.9 | 1 | 5 | 8 | 2.65 | 1695 | 0.19 | 19 | 0.01 | 102 | 2 | 0.02 | 2 | 0.009 | 14 | 16 | 22 | 11 | < .01 | < 8 | 2 | < 2 | 119 |
| 97-399 0520-0540 | 0.8 | 0.67 | 42 | 3 | 31 | < 3 | 0.14 | 0.5 | < 1 | 3 | 3 | 3.68 | 735 | 0.2 | 31 | 0.01 | 1854 | 1 | 0.02 | 4 | 0.017 | 21 | 18 | 20 | 12 | < .01 | < 8 | 1 | < 2 | 220 |
| 97-399 0540-0560 | 0.3 | 0.75 | 8 | 3 | 97 | < 3 | 0.94 | 0.2 | < 1 | 1 | 4 | 2.58 | 270 | 0.21 | 46 | 0.06 | 877 | < 1 | 0.02 | < 1 | 0.032 | 28 | 8 | 64 | 11 | 0.01 | < 8 | 2 | 2 | 111 |
| 97-399 0560-0580 | < .3 | 1.56 | 4 | < 3 | 52 | < 3 | 3.38 | 0.7 | 2 | 6 | 5 | 3.09 | 35 | 0.29 | 27 | 0.19 | 1016 | < 1 | 0.02 | 1 | 0.067 | 13 | 4 | 124 | 7 | 0.02 | < 8 | 16 | < 2 | 50 |
| 97-399 0580-0600 | < .3 | 1.88 | 4 | 8 | 134 | < 3 | 3.4 | 0.7 | 4 | 5 | 8 | 4.24 | 45 | 0.23 | 29 | 0.27 | 885 | < 1 | 0.05 | < 1 | 0.108 | 14 | 6 | 156 | 6 | 0.02 | < 8 | 24 | < 2 | 69 |
| 97-399 0600-0620 | < .3 | 1.12 | 4 | < 3 | 32 | < 3 | 1.68 | 1.2 | 8 | 3 | 10 | 5.07 | 265 | 0.21 | 24 | 0.12 | 469 | 1 | 0.03 | 2 | 0.115 | 20 | 11 | 95 | 7 | 0.01 | < 8 | 10 | 2 | 100 |
| 97-399 0620-0640 | < .3 | 1.19 | 5 | 6 | 107 | < 3 | 1.72 | 0.9 | 3 | 4 | 5 | 4.31 | 120 | 0.31 | 33 | 0.12 | 615 | 1 | 0.03 | < 1 | 0.119 | 13 | 12 | 83 | 10 | 0.07 | < 8 | 24 | 2 | 65 |
| 97-399 0640-0660 | < .3 | 1.25 | 2 | 8 | 69 | < 3 | 1.92 | 1.3 | 8 | 3 | 5 | 4.76 | 240 | 0.3 | 30 | 0.15 | 906 | 1 | 0.04 | < 1 | 0.123 | 13 | 10 | 92 | 10 | 0.05 | < 8 | 18 | 3 | 95 |
| 97-399 0660-0680 | 0.3 | 0.97 | 9 | < 3 | 66 | < 3 | 1.48 | 0.9 | 4 | 5 | 11 | 3.94 | 270 | 0.23 | 27 | 0.11 | 872 | 1 | 0.02 | < 1 | 0.092 | 15 | 11 | 86 | 9 | 0.03 | < 8 | 13 | < 2 | 112 |
| STANDARD C3 | 5.4 | 1.89 | 57 | 20 | 151 | 25 | 0.57 | 23.7 | 11 | 159 | 59 | 3.42 | 915 | 0.16 | 17 | 0.66 | 743 | 25 | 0.05 | 34 | 0.09 | 32 | 19 | 29 | 19 | 0.1 | 25 | 78 | 19 | 156 |

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (702) 356-0606
FAX: (702) 356-1413

CLIENT: *ROSEBUD EXPLORATION*
CLIENT REF: ROSEBUD EXPLORATION
AAL REF: SP045202
METHOD: AAL 01-2

| ELEMENT SAMPLES | Ag ppm | Al % | As ppm | B ppm | Ba ppm | Bi ppm | Ca % | Cd ppm | Co ppm | Cr ppm | Cu ppm | Fe % | Hg ppb | K % | La ppm | Mg % | Mn ppm | Mo ppm | Na % | Ni ppm | P % | Pb ppm | Sb ppm | Sr ppm | Th ppm | Ti % | U ppm | V ppm | W ppm | Zn ppm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 97-399 0680-0700 | < .3 | 0.91 | 18 | 4 | 29 | < 3 | 2.1 | 1.3 | 6 | 4 | 9 | 4.68 | 285 | 0.23 | 24 | 0.1 | 979 | 2 | 0.03 | < 1 | 0.099 | 16 | 17 | 89 | 8 | 0.02 | < 8 | 10 | 3 | 102 |
| 97-399 0700-0720 | < .3 | 0.88 | 8 | 5 | 79 | < 3 | 2.12 | 1.4 | 4 | 6 | 9 | 3.9 | 200 | 0.21 | 28 | 0.12 | 595 | 2 | 0.03 | < 1 | 0.107 | 17 | 9 | 115 | 8 | 0.04 | < 8 | 19 | < 2 | 80 |
| 97-399 0720-0740 | < .3 | 1.13 | 9 | 6 | 103 | 7 | 3.59 | 1.5 | 7 | 5 | 9 | 4.33 | 135 | 0.28 | 30 | 0.17 | 723 | 1 | 0.04 | < 1 | 0.113 | 20 | 9 | 173 | 7 | 0.04 | < 8 | 19 | < 2 | 86 |
| 97-399 0740-0760 | < .3 | 1.35 | 11 | 7 | 103 | < 3 | 3.23 | 1 | 3 | 5 | 9 | 4.03 | 110 | 0.3 | 33 | 0.2 | 800 | 1 | 0.03 | < 1 | 0.115 | 17 | 4 | 214 | 7 | 0.02 | < 8 | 20 | 2 | 75 |
| 97-399 0760-0780 | 0.8 | 0.89 | 30 | < 3 | 56 | < 3 | 1.82 | 1.5 | 3 | 5 | 8 | 3.19 | 555 | 0.29 | 21 | 0.1 | 518 | 1 | 0.02 | < 1 | 0.061 | 20 | 9 | 123 | 7 | 0.01 | < 8 | 8 | < 2 | 94 |
| 97-399 0780-0800 | 0.4 | 0.81 | 10 | < 3 | 101 | < 3 | 1.67 | 0.9 | 2 | 3 | 5 | 2.38 | 665 | 0.34 | 27 | 0.05 | 662 | 1 | 0.02 | 1 | 0.048 | 27 | 13 | 125 | 10 | 0.01 | < 8 | 6 | 2 | 94 |
| 97-399 0800-0820 | < .3 | 0.76 | 11 | 4 | 75 | < 3 | 2.26 | 0.3 | 1 | 3 | 4 | 2.02 | 145 | 0.28 | 22 | 0.07 | 657 | 1 | 0.02 | < 1 | 0.037 | 24 | 9 | 138 | 9 | < .01 | < 8 | 3 | < 2 | 63 |
| 97-399 0820-0840 | < .3 | 0.71 | 18 | 5 | 70 | < 3 | 1.21 | 0.4 | 2 | 3 | 6 | 2.34 | 180 | 0.3 | 22 | 0.05 | 520 | 1 | 0.02 | 1 | 0.04 | 20 | 8 | 108 | 9 | < .01 | < 8 | 2 | < 2 | 76 |
| 97-399 0840-0860 | < .3 | 0.56 | 10 | < 3 | 85 | < 3 | 1.76 | 0.2 | 2 | 4 | 6 | 2.25 | 160 | 0.24 | 21 | 0.04 | 684 | 1 | 0.02 | < 1 | 0.039 | 20 | 9 | 124 | 9 | 0.01 | < 8 | 4 | 2 | 52 |
| 97-399 0860-0880 | 0.3 | 0.64 | 10 | < 3 | 73 | < 3 | 2.09 | 0.3 | 1 | 4 | 6 | 2.1 | 150 | 0.27 | 22 | 0.06 | 781 | 1 | 0.01 | 2 | 0.035 | 17 | 5 | 125 | 9 | 0.01 | < 8 | 6 | 2 | 63 |
| 97-399 0880-0900 | 1.7 | 0.74 | 41 | 3 | 41 | < 3 | 1.55 | 0.7 | 1 | 7 | 9 | 2.81 | 155 | 0.35 | 17 | 0.05 | 507 | 2 | 0.02 | 2 | 0.037 | 27 | 12 | 127 | 6 | < .01 | < 8 | 3 | < 2 | 73 |
| 97-399 0900-0920 | 0.9 | 0.82 | 25 | 4 | 50 | < 3 | 0.78 | 0.2 | 2 | 5 | 7 | 2.51 | 145 | 0.35 | 19 | 0.05 | 225 | 2 | 0.03 | 1 | 0.036 | 27 | 12 | 123 | 7 | < .01 | < 8 | 2 | < 2 | 82 |
| 97-399 0920-0940 | 1.7 | 0.76 | 26 | < 3 | 66 | < 3 | 1.76 | 0.8 | 2 | 7 | 9 | 2.54 | 155 | 0.32 | 22 | 0.06 | 476 | 2 | 0.02 | 3 | 0.03 | 22 | 11 | 143 | 7 | < .01 | < 8 | 3 | < 2 | 62 |
| 97-399 0940-0960 | 12.9 | 0.72 | 21 | 6 | 91 | < 3 | 1.93 | 0.7 | 1 | 6 | 7 | 2.01 | 225 | 0.35 | 24 | 0.05 | 603 | 2 | 0.02 | 2 | 0.027 | 32 | 11 | 160 | 7 | < .01 | < 8 | 2 | < 2 | 77 |
| 97-399 0960-0980 | 3.6 | 0.54 | 64 | 4 | 54 | < 3 | 1.56 | 0.6 | 1 | 7 | 12 | 2.5 | 195 | 0.31 | 19 | 0.04 | 492 | 2 | 0.01 | 4 | 0.025 | 31 | 12 | 126 | 7 | < .01 | < 8 | 1 | < 2 | 62 |
| 97-399 0980-1000 | 0.9 | 0.5 | 24 | 6 | 60 | < 3 | 1.33 | 0.3 | 1 | 8 | 8 | 2.3 | 150 | 0.3 | 19 | 0.04 | 468 | 2 | 0.02 | < 1 | 0.03 | 30 | 8 | 109 | 7 | < .01 | < 8 | 2 | < 2 | 50 |
| 97-399 1000-1020 | 0.9 | 0.65 | 20 | 4 | 63 | < 3 | 1.73 | 0.9 | 1 | 6 | 7 | 2.5 | 240 | 0.3 | 18 | 0.05 | 570 | 2 | 0.02 | 1 | 0.034 | 26 | 10 | 126 | 7 | < .01 | < 8 | 3 | < 2 | 65 |
| 97-399 1020-1040 | 0.4 | 0.47 | 15 | < 3 | 66 | < 3 | 1.59 | 0.7 | 1 | 7 | 6 | 2.25 | 190 | 0.24 | 18 | 0.04 | 826 | 2 | 0.03 | 1 | 0.027 | 24 | 6 | 112 | 6 | 0.01 | < 8 | 2 | < 2 | 54 |
| 97-399 1040-1060 | 0.5 | 0.47 | 13 | 3 | 91 | < 3 | 1.57 | 1.1 | 1 | 7 | 8 | 2.59 | 135 | 0.24 | 20 | 0.04 | 822 | 1 | 0.04 | 2 | 0.033 | 23 | 8 | 113 | 6 | 0.01 | < 8 | 2 | < 2 | 47 |
| 97-399 1060-1080 | 0.3 | 0.53 | 13 | 3 | 79 | < 3 | 1.48 | 0.4 | 1 | 12 | 12 | 2.75 | 225 | 0.28 | 29 | 0.04 | 817 | 3 | 0.04 | < 1 | 0.027 | 18 | 7 | 115 | 9 | 0.01 | < 8 | 3 | 2 | 71 |
| 97-399 1080-1100 | 0.3 | 0.52 | 9 | 4 | 63 | 4 | 1.41 | 0.2 | < 1 | 10 | 9 | 2.1 | 115 | 0.28 | 39 | 0.05 | 545 | 2 | 0.05 | 4 | 0.02 | 22 | < 3 | 107 | 11 | 0.01 | < 8 | 2 | < 2 | 49 |
| 97-399 1100-1120 | 0.4 | 0.67 | 14 | 5 | 60 | < 3 | 1.17 | 0.7 | 1 | 9 | 8 | 2.3 | 310 | 0.31 | 30 | 0.04 | 516 | 2 | 0.04 | 1 | 0.024 | 27 | 6 | 98 | 9 | < .01 | < 8 | 2 | < 2 | 79 |
| 97-399 1120-1140 | 1.2 | 0.6 | 19 | 4 | 51 | < 3 | 0.97 | 0.6 | 2 | 12 | 7 | 2.13 | 120 | 0.33 | 30 | 0.03 | 421 | 2 | 0.04 | 1 | 0.018 | 21 | 8 | 103 | 9 | < .01 | < 8 | 2 | < 2 | 64 |
| 97-399 1140-1160 | 0.8 | 0.64 | 15 | < 3 | 66 | < 3 | 1.34 | 0.4 | 1 | 21 | 8 | 1.74 | 85 | 0.31 | 28 | 0.04 | 462 | 3 | 0.04 | 2 | 0.023 | 24 | 5 | 135 | 9 | < .01 | < 8 | 2 | < 2 | 50 |
| 97-399 1160-1180 | < .3 | 0.59 | 4 | 4 | 44 | < 3 | 0.82 | 0.2 | 1 | 12 | 12 | 1.33 | 25 | 0.31 | 48 | 0.03 | 466 | 2 | 0.05 | 3 | 0.01 | 20 | 3 | 77 | 12 | < .01 | < 8 | 2 | < 2 | 59 |
| 97-399 1180-1200 | 0.5 | 0.59 | 13 | < 3 | 57 | < 3 | 1.41 | 0.6 | 1 | 10 | 7 | 2.28 | 160 | 0.26 | 26 | 0.04 | 494 | 2 | 0.05 | 1 | 0.02 | 24 | 5 | 93 | 9 | < .01 | < 8 | 3 | < 2 | 68 |
| 97-399 1200-1220 | 0.3 | 0.41 | 7 | 3 | 44 | < 3 | 0.41 | 0.2 | 1 | 5 | 8 | 0.97 | 25 | 0.28 | 46 | 0.02 | 158 | 2 | 0.05 | 3 | 0.011 | 21 | 4 | 57 | 11 | < .01 | < 8 | 1 | < 2 | 24 |
| 97-399 1220-1240 | 0.4 | 0.5 | 10 | < 3 | 31 | < 3 | 0.96 | 0.3 | 1 | 10 | 11 | 1.63 | 45 | 0.28 | 34 | 0.02 | 333 | 2 | 0.05 | 3 | 0.011 | 19 | 3 | 82 | 9 | < .01 | < 8 | 1 | < 2 | 43 |
| 97-399 1240-1260 | 0.4 | 0.66 | 12 | 4 | 60 | < 3 | 1.2 | 0.4 | < 1 | 13 | 8 | 1.69 | 130 | 0.3 | 32 | 0.05 | 441 | 2 | 0.04 | 1 | 0.02 | 25 | 4 | 95 | 9 | < .01 | 8 | 2 | < 2 | 57 |
| 97-399 1260-1280 | 0.5 | 0.56 | 9 | 5 | 56 | < 3 | 1.04 | 0.3 | 1 | 10 | 9 | 1.8 | 45 | 0.26 | 36 | 0.04 | 469 | 2 | 0.07 | 2 | 0.011 | 24 | 5 | 84 | 11 | < .01 | < 8 | 2 | < 2 | 40 |
| 97-399 1280-1300 | < .3 | 0.41 | 4 | 4 | 22 | < 3 | 0.6 | 0.3 | < 1 | 5 | 8 | 1.62 | 30 | 0.2 | 41 | 0.02 | 322 | 1 | 0.05 | 1 | 0.009 | 21 | < 3 | 58 | 11 | 0.01 | < 8 | 1 | < 2 | 22 |
| 97-399 1300-1320 | 0.3 | 0.67 | 9 | 4 | 27 | < 3 | 0.72 | 0.6 | < 1 | 4 | 8 | 2.29 | 30 | 0.29 | 34 | 0.02 | 505 | < 1 | 0.06 | 2 | 0.007 | 17 | 4 | 65 | 10 | < .01 | < 8 | 1 | < 2 | 33 |
| 97-399 1320-1340 | < .3 | 0.61 | 3 | < 3 | 25 | < 3 | 0.64 | 0.2 | < 1 | 4 | 8 | 1.82 | 15 | 0.29 | 60 | 0.02 | 653 | 1 | 0.07 | 3 | 0.007 | 14 | < 3 | 57 | 14 | 0.01 | < 8 | 1 | < 2 | 73 |
| 97-399 1340-1360 | < .3 | 0.69 | 3 | < 3 | 33 | < 3 | 0.65 | 0.3 | < 1 | 5 | 9 | 1.82 | 15 | 0.33 | 66 | 0.02 | 686 | 1 | 0.09 | 2 | 0.007 | 16 | < 3 | 49 | 16 | 0.01 | < 8 | 1 | < 2 | 70 |
| STANDARD C3 | 5.4 | 1.92 | 56 | 20 | 152 | 22 | 0.57 | 23.3 | 12 | 159 | 64 | 3.38 | 915 | 0.16 | 18 | 0.64 | 706 | 25 | 0.04 | 31 | 0.087 | 34 | 17 | 29 | 20 | 0.09 | 18 | 77 | 20 | 160 |

AMERICAN ASSAY LABORATORIES
1500 GLENDALE AVE.
SPARKS, NV 89431
PHONE: (702) 356-0606
FAX: (702) 356-1413

CLIENT: *ROSEBUD EXPLORATION*
CLIENT REF: ROSEBUD EXPLORATION
AAL REF: SP045202
METHOD: AAL 01-2

| ELEMENT | Ag | Al | As | B | Ba | Bi | Ca | Cd | Co | Cr | Cu | Fe | Hg | K | La | Mg | Mn | Mo | Na | Ni | P | Pb | Sb | Sr | Th | Ti | U | V | W | Zn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SAMPLES | ppm | % | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm | % | ppb | % | ppm | % | ppm | ppm | % | ppm | % | ppm | ppm | ppm | ppm | % | ppm | ppm | ppm | ppm |
| 97-399 1360-1380 | 4.5 | 0.46 | 15 | 4 | 56 | < 3 | 1.12 | 0.5 | 1 | 11 | 13 | 1.9 | 95 | 0.28 | 33 | 0.03 | 413 | 3 | 0.05 | 3 | 0.017 | 18 | 6 | 97 | 8 | 0.01 | < 8 | 2 | < 2 | 43 |
| 97-399 1380-1400 | 0.6 | 0.52 | 5 | < 3 | 36 | 5 | 0.45 | 0.4 | 1 | 17 | 13 | 1.6 | 35 | 0.3 | 45 | 0.02 | 240 | 3 | 0.06 | 3 | 0.01 | 17 | < 3 | 71 | 12 | < .01 | 10 | 1 | < 2 | 33 |
| 97-399 1400-1420 | 0.3 | 0.51 | 3 | < 3 | 36 | < 3 | 0.62 | 0.2 | 1 | 15 | 12 | 1.59 | 30 | 0.29 | 55 | 0.01 | 368 | 2 | 0.07 | 4 | 0.007 | 15 | < 3 | 63 | 14 | 0.01 | < 8 | 1 | 3 | 43 |
| 97-399 1420-1440 | 0.4 | 0.42 | 2 | < 3 | 35 | < 3 | 0.46 | < .2 | < 1 | 16 | 11 | 1.49 | 25 | 0.27 | 61 | 0.01 | 308 | 2 | 0.07 | 3 | 0.008 | 16 | 3 | 67 | 15 | 0.01 | < 8 | 1 | < 2 | 33 |
| 97-399 1440-1465 | < .3 | 0.64 | < 2 | < 3 | 25 | < 3 | 0.52 | < .2 | < 1 | 16 | 9 | 1.74 | 25 | 0.3 | 55 | 0.03 | 572 | 2 | 0.07 | 1 | 0.007 | 16 | < 3 | 64 | 14 | < .01 | < 8 | 1 | 2 | 71 |

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
Fax
(702) 356-1413

Tucson Office
2775 E. Ganley
Tucson, AZ 85706
Telephone
(520) 294-8078
Fax
(520) 294-6352

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 Exploration

Address:

City Winnemucca State Zip

Telephone Number: ( ) 623-6912 Fax Number: ( )

Project Name: R.B. Expl. Purchase Order Number:

Date Submitted: 7/1/97 Number of Samples: 293

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

| SAMPLE IDENTIFICATION | TYPE | ELEMENTS REQUIRED |
|---|---|---|
| 97-399 | RC | Au, Ag FA-AA each sample |
| 0-1465 TD | | |
| | | And |
| | | |
| | | ICP Pkg on 20' composites, |
| | | (4 samples) |
| | | |
| | | And: |
| | | Hg on each composite |
| | | (ppb) |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

**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: Bob Kastelic

Results to: Bob K.
Rick Lisle
Charlie Muerhoff

**Comments:**

CLIENT FILE COPY

# SANTA FE PACIFIC GOLD CORP.
## DRILL HOLE ABANDONMENT

Project: Rose Bud
Hole No.: 97-399 Date Completed: 7-1-97
Hole Depth: 1465 Hole Size: 5"
Artesian: _____ Est. flow: _____ g.p.m. Depth: _____ ft.
Non-Artesian: x

**BENTONITE SLURRY ABANDONMENT**

Mud Viscosity: _____ sec./qt. (at completion) (Fluid-drilled holes only)
Mud Viscosity: _____ sec./qt.(abandonment fluid) (All holes)
Mud Weight: _____ lbs./gal. (abandonment fluid) (All holes)

**SURFACE SEAL**

Cement Weight: _____ lbs./gal.
Placed in Hole: From _____ ft. to _____ ft.

**CEMENT ABANDONMENT (Artesian Holes)**

Cement Weight: _____ lbs./gal.
Placed in Hole: From _____ ft. to _____ ft.
From _____ ft. to _____ ft.

**MATERIALS MIXED**

| Qty. | Size | Product | Brand Name |
|---|---|---|---|
| | 50 lb | Enviroplug Coarse | Wyo-Ben |
| | 94 lb | Cement | Nevada Cement |
| 36 | 50 lb | Abandonite | Wyo-Ben |

**GROUND WATER INFORMATION**

| Depth/ft. | GPM | Temp. | Depth/ft. | GPM | Temp. |
|---|---|---|---|---|---|
| 100 | | | | | |
| 200 | | | | | |
| 300 | | | | | |
| 400 | | | | | |
| 500 | | | | | |
| 600 | | | | | |
| 700 | | | | | |
| 800 | | | | | |

**OTHER**

15% SOLIDS

SANTA FE PACIFIC GOLD CORP.

By: _____
Title: _____

CONTRACTOR E.D.C
Rig No. 586
By: Joh Weller
Title: Driller

WELLBORE NAVIGATION, INC.
TUSTIN, CALIFORNIA

JOB NUMBER: 29-0521-311 WELL NAME: 97-399 / S-N SECTION

INRUN SURVEY
BY MINIMUM CURVATURE

| MEAS. DEPTH | VERT. DEPTH | VERT. SECT. | L/R PROP. | INCL | BEARING AZIMUTH | COORDINATES LATITUDE | COORDINATES DEPARTURE | D-LEG /100 | D-LEG /CL | STATION DISP. | DISPLACEMENT DIRECTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50.0 | 50.00 | 0.33 | -0.468 | -88.69 | 305.10 | 0.33 N | 0.47 W | 2.62 | 1.31 | 0.57 | AT 305.10 |
| 100.0 | 99.97 | 0.79 | -1.859 | -87.86 | 278.24 | 0.79 N | 1.86 W | 2.27 | 1.14 | 2.02 | AT 293.05 |
| 150.0 | 149.94 | 0.94 | -3.682 | -87.94 | 270.95 | 0.94 N | 3.68 W | 0.56 | 0.28 | 3.80 | AT 284.32 |
| 200.0 | 199.91 | 0.56 | -5.419 | -87.87 | 244.57 | 0.56 N | 5.42 W | 1.92 | 0.96 | 5.45 | AT 275.86 |
| 250.0 | 249.86 | -0.50 | -7.256 | -87.26 | 236.54 | 0.50 S | 7.26 W | 1.39 | 0.70 | 7.27 | AT 266.04 |
| 300.0 | 299.79 | -1.77 | -9.572 | -86.67 | 245.33 | 1.77 S | 9.57 W | 1.50 | 0.75 | 9.73 | AT 259.54 |
| 350.0 | 349.69 | -2.81 | -12.631 | -85.89 | 256.01 | 2.81 S | 12.63 W | 2.08 | 1.04 | 12.94 | AT 257.47 |
| 400.0 | 399.55 | -3.90 | -16.199 | -85.54 | 250.28 | 3.90 S | 16.20 W | 1.11 | 0.55 | 16.66 | AT 256.48 |
| 450.0 | 449.39 | -5.29 | -19.949 | -85.28 | 248.94 | 5.29 S | 19.95 W | 0.56 | 0.28 | 20.64 | AT 255.15 |
| 500.0 | 499.23 | -6.70 | -23.670 | -85.59 | 249.59 | 6.70 S | 23.67 W | 0.63 | 0.31 | 24.60 | AT 254.19 |
| 550.0 | 549.08 | -8.19 | -27.203 | -85.61 | 244.75 | 8.19 S | 27.20 W | 0.74 | 0.37 | 28.41 | AT 253.25 |
| 600.0 | 598.93 | -9.80 | -30.727 | -85.50 | 246.13 | 9.80 S | 30.73 W | 0.31 | 0.15 | 32.25 | AT 252.31 |
| 650.0 | 648.76 | -11.40 | -34.576 | -84.93 | 248.45 | 11.40 S | 34.58 W | 1.20 | 0.60 | 36.41 | AT 251.75 |
| 700.0 | 698.59 | -12.70 | -38.451 | -85.68 | 255.18 | 12.70 S | 38.45 W | 1.86 | 0.93 | 40.49 | AT 251.73 |
| 750.0 | 748.45 | -13.67 | -42.084 | -85.69 | 254.73 | 13.67 S | 42.08 W | 0.07 | 0.04 | 44.25 | AT 252.00 |
| 800.0 | 798.32 | -14.17 | -45.536 | -86.24 | 269.77 | 14.17 S | 45.54 W | 2.38 | 1.19 | 47.69 | AT 252.71 |
| 850.0 | 848.19 | -14.88 | -49.046 | -85.42 | 249.47 | 14.88 S | 49.05 W | 3.35 | 1.68 | 51.25 | AT 253.12 |
| 900.0 | 898.01 | -15.72 | -53.233 | -84.67 | 266.47 | 15.72 S | 53.23 W | 3.28 | 1.64 | 55.51 | AT 253.54 |
| 950.0 | 947.76 | -15.56 | -58.242 | -83.78 | 276.53 | 15.56 S | 58.24 W | 2.69 | 1.35 | 60.28 | AT 255.04 |
| 1000.0 | 997.49 | -15.44 | -63.366 | -84.40 | 265.53 | 15.44 S | 63.37 W | 2.58 | 1.29 | 65.22 | AT 256.30 |
| 1050.0 | 1047.33 | -15.02 | -67.277 | -86.33 | 292.50 | 15.02 S | 67.28 W | 5.72 | 2.86 | 68.93 | AT 257.42 |
| 1100.0 | 1097.25 | -13.13 | -69.213 | -86.89 | 340.33 | 13.13 S | 69.21 W | 5.59 | 2.79 | 70.45 | AT 259.26 |
| 1150.0 | 1147.18 | -10.43 | -69.414 | -86.69 | 010.17 | 10.43 S | 69.41 W | 3.33 | 1.66 | 70.19 | AT 261.45 |
| 1200.0 | 1197.09 | -7.61 | -68.416 | -86.36 | 027.92 | 7.61 S | 68.42 W | 2.24 | 1.12 | 68.84 | AT 263.66 |
| 1250.0 | 1246.95 | -5.18 | -65.727 | -84.95 | 062.13 | 5.18 S | 65.73 W | 5.78 | 2.89 | 65.93 | AT 265.50 |
| 1300.0 | 1296.71 | -3.82 | -61.057 | -83.70 | 083.14 | 3.82 S | 61.06 W | 4.81 | 2.40 | 61.18 | AT 266.42 |
| 1350.0 | 1346.39 | -3.99 | -55.472 | -83.33 | 099.88 | 3.99 S | 55.47 W | 3.84 | 1.92 | 55.62 | AT 265.89 |
| 1375.0 | 1371.23 | -4.48 | -52.615 | -83.35 | 099.54 | 4.48 S | 52.61 W | 0.18 | 0.04 | 52.80 | AT 265.13 |
| 1500.0 | 1495.38 | -6.91 | -38.323 | -83.33 | 099.79 | 6.91 S | 38.32 W | 0.03 | 0.03 | 38.94 | AT 259.77 |

**********
* ******** *
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ******** *
* 1500.0 FEET EQUALS 38.94 FEET AT 259.77 *
* ******** *
**********

WELLBORE NAVIGATION, INC.
TUSTIN, CALIFORNIA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

**********
* NEWMONT ROSEBUD *
**********

JOB NUMBER: 29-0521-311

WELL NAME: 97-399 / S-N SECTION

LOCATION: ROSEBUD

SURVEY DATE: 7-1-97

SURVEY ENGINEER: KENT CHILD

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 000.00

**********
****** DEPTH MEASURED IN FEET *******
**********

COMMENTS: EKLUND DRILLING
JOHN WELCH
PROJECTED F/1375 T/1500

**********
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
**
**
**
**********
COMPANY REPRESENTATIVE
**
**
**
**
**********

WELLBORE NAVIGATION, INC.
TUSTIN, CALIFORNIA

JOB NUMBER: 29-0521-311 WELL NAME: 97-399 / VERTICAL

INRUN SURVEY
BY MINIMUM CURVATURE

| MEAS. DEPTH | VERT. DEPTH | VERT. SECT. | L/R CLOS. | INCL | BEARING AZIMUTH | COORDINATES LATITUDE | COORDINATES DEPARTURE | D-LEG /100 | D-LEG /CL | STATION DISP. | DISPLACEMENT DIRECTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50.0 | 50.00 | 0.40 | 0.406 | -88.69 | 305.10 | 0.33 N | 0.47 W | 2.62 | 1.31 | 0.57 | AT 305.10 |
| 100.0 | 99.97 | 1.69 | 1.109 | -87.86 | 278.24 | 0.79 N | 1.86 W | 2.27 | 1.14 | 2.02 | AT 293.05 |
| 150.0 | 149.94 | 3.46 | 1.579 | -87.94 | 270.95 | 0.94 N | 3.68 W | 0.56 | 0.28 | 3.80 | AT 284.32 |
| 200.0 | 199.91 | 5.23 | 1.509 | -87.87 | 244.57 | 0.56 N | 5.42 W | 1.92 | 0.96 | 5.45 | AT 275.86 |
| 250.0 | 249.86 | 7.23 | 0.794 | -87.26 | 236.54 | 0.50 S | 7.26 W | 1.39 | 0.70 | 7.27 | AT 266.04 |
| 300.0 | 299.79 | 9.73 | -0.039 | -86.67 | 245.33 | 1.77 S | 9.57 W | 1.50 | 0.75 | 9.73 | AT 259.54 |
| 350.0 | 349.69 | 12.93 | -0.519 | -85.89 | 256.01 | 2.81 S | 12.63 W | 2.08 | 1.04 | 12.94 | AT 257.47 |
| 400.0 | 399.55 | 16.63 | -0.957 | -85.54 | 250.28 | 3.90 S | 16.20 W | 1.11 | 0.55 | 16.66 | AT 256.48 |
| 450.0 | 449.39 | 20.57 | -1.664 | -85.28 | 248.94 | 5.29 S | 19.95 W | 0.56 | 0.28 | 20.64 | AT 255.15 |
| 500.0 | 499.23 | 24.48 | -2.391 | -85.59 | 249.59 | 6.70 S | 23.67 W | 0.63 | 0.31 | 24.60 | AT 254.19 |
| 550.0 | 549.08 | 28.22 | -3.227 | -85.61 | 244.75 | 8.19 S | 27.20 W | 0.74 | 0.37 | 28.41 | AT 253.25 |
| 600.0 | 598.93 | 31.98 | -4.185 | -85.50 | 246.13 | 9.80 S | 30.73 W | 0.31 | 0.15 | 32.25 | AT 252.31 |
| 650.0 | 648.76 | 36.05 | -5.081 | -84.93 | 248.45 | 11.40 S | 34.58 W | 1.20 | 0.60 | 36.41 | AT 251.75 |
| 700.0 | 698.59 | 40.09 | -5.666 | -85.68 | 255.18 | 12.70 S | 38.45 W | 1.86 | 0.93 | 40.49 | AT 251.73 |
| 750.0 | 748.45 | 43.84 | -5.981 | -85.69 | 254.73 | 13.67 S | 42.08 W | 0.07 | 0.04 | 44.25 | AT 252.00 |
| 800.0 | 798.32 | 47.33 | -5.862 | -86.24 | 269.77 | 14.17 S | 45.54 W | 2.38 | 1.19 | 47.69 | AT 252.71 |
| 850.0 | 848.19 | 50.91 | -5.934 | -85.42 | 249.47 | 14.88 S | 49.05 W | 3.35 | 1.68 | 51.25 | AT 253.12 |
| 900.0 | 898.01 | 55.18 | -6.020 | -84.67 | 266.47 | 15.72 S | 53.23 W | 3.28 | 1.64 | 55.51 | AT 253.54 |
| 950.0 | 947.76 | 60.08 | -4.968 | -83.78 | 276.53 | 15.56 S | 58.24 W | 2.69 | 1.35 | 60.28 | AT 255.04 |
| 1000.0 | 997.49 | 65.10 | -3.942 | -84.40 | 265.53 | 15.44 S | 63.37 W | 2.58 | 1.29 | 65.22 | AT 256.30 |
| 1050.0 | 1047.33 | 68.87 | -2.831 | -86.33 | 292.50 | 15.02 S | 67.28 W | 5.72 | 2.86 | 68.93 | AT 257.42 |
| 1100.0 | 1097.25 | 70.44 | -0.628 | -86.89 | 340.33 | 13.13 S | 69.21 W | 5.59 | 2.79 | 70.45 | AT 259.26 |
| 1150.0 | 1147.18 | 70.16 | 2.063 | -86.69 | 010.17 | 10.43 S | 69.41 W | 3.33 | 1.66 | 70.19 | AT 261.45 |
| 1200.0 | 1197.09 | 68.68 | 4.664 | -86.36 | 027.92 | 7.61 S | 68.42 W | 2.24 | 1.12 | 68.84 | AT 263.66 |
| 1250.0 | 1246.95 | 65.60 | 6.580 | -84.95 | 062.13 | 5.18 S | 65.73 W | 5.78 | 2.89 | 65.93 | AT 265.50 |
| 1300.0 | 1296.71 | 60.76 | 7.086 | -83.70 | 083.14 | 3.82 S | 61.06 W | 4.81 | 2.40 | 61.18 | AT 266.42 |
| 1350.0 | 1346.40 | 55.30 | 5.926 | -83.33 | 099.88 | 3.99 S | 55.47 W | 3.84 | 1.92 | 55.62 | AT 265.89 |
| 1375.0 | 1371.23 | 52.57 | 4.937 | -83.35 | 099.54 | 4.48 S | 52.61 W | 0.18 | 0.04 | 52.80 | AT 265.13 |
| 1500.0 | 1495.38 | 38.94 | 0.002 | -83.33 | 099.79 | 6.91 S | 38.32 W | 0.03 | 0.03 | 38.94 | AT 259.77 |

```
*************************************************************
*                          ********                         *
*      THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF          *
*                          ********                         *
*  1500.0 FEET EQUALS     38.94    FEET AT   259.77         *
*                          ********                         *
*************************************************************
```

Geology

WELLBORE NAVIGATION, INC.
TUSTIN, CALIFORNIA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

Entered

FOR

**********
* NEWMONT ROSEBUD *
**********

JOB NUMBER: 29-0521-311

WELL NAME: 97-399 / VERTICAL

LOCATION: ROSEBUD

SURVEY DATE: 7-1-97

SURVEY ENGINEER: KENT CHILD

GYRO REFERENCE BEARING: TRUE NORTH

**********
****** DEPTH MEASURED IN FEET *******
**********

COMMENTS: EKLUND DRILLING
JOHN WELCH
PROJECTED F/1375 T/1500

**********
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
**
**
**
COMPANY REPRESENTATIVE
**
**
**********

WELLBORE NAVIGATION, INC.
TUSTIN, CALIFORNIA

JOB NUMBER: 29-0521-311 WELL NAME: 97-399 / W-E SECTION

INRUN SURVEY
BY MINIMUM CURVATURE

| MEAS. DEPTH | VERT. DEPTH | VERT. SECT. | L/R PROP. | INCL | BEARING AZIMUTH | COORDINATES LATITUDE | COORDINATES DEPARTURE | D-LEG /100 | D-LEG /CL | STATION DISPLACEMENT DISP. DIRECTION |
|---|---|---|---|---|---|---|---|---|---|---|
| 50.0 | 50.00 | -0.47 | -0.329 | -88.69 | 305.10 | 0.33 N | 0.47 W | 2.62 | 1.31 | 0.57 AT 305.10 |
| 100.0 | 99.97 | -1.86 | -0.791 | -87.86 | 278.24 | 0.79 N | 1.86 W | 2.27 | 1.14 | 2.02 AT 293.05 |
| 150.0 | 149.94 | -3.68 | -0.940 | -87.94 | 270.95 | 0.94 N | 3.68 W | 0.56 | 0.28 | 3.80 AT 284.32 |
| 200.0 | 199.91 | -5.42 | -0.556 | -87.87 | 244.57 | 0.56 N | 5.42 W | 1.92 | 0.96 | 5.45 AT 275.86 |
| 250.0 | 249.86 | -7.26 | 0.502 | -87.26 | 236.54 | 0.50 S | 7.26 W | 1.39 | 0.70 | 7.27 AT 266.04 |
| 300.0 | 299.79 | -9.57 | 1.767 | -86.67 | 245.33 | 1.77 S | 9.57 W | 1.50 | 0.75 | 9.73 AT 259.54 |
| 350.0 | 349.69 | -12.63 | 2.807 | -85.89 | 256.01 | 2.81 S | 12.63 W | 2.08 | 1.04 | 12.94 AT 257.47 |
| 400.0 | 399.55 | -16.20 | 3.896 | -85.54 | 250.28 | 3.90 S | 16.20 W | 1.11 | 0.55 | 16.66 AT 256.48 |
| 450.0 | 449.39 | -19.95 | 5.291 | -85.28 | 248.94 | 5.29 S | 19.95 W | 0.56 | 0.28 | 20.64 AT 255.15 |
| 500.0 | 499.23 | -23.67 | 6.701 | -85.59 | 249.59 | 6.70 S | 23.67 W | 0.63 | 0.31 | 24.60 AT 254.19 |
| 550.0 | 549.08 | -27.20 | 8.188 | -85.61 | 244.75 | 8.19 S | 27.20 W | 0.74 | 0.37 | 28.41 AT 253.25 |
| 600.0 | 598.93 | -30.73 | 9.798 | -85.50 | 246.13 | 9.80 S | 30.73 W | 0.31 | 0.15 | 32.25 AT 252.31 |
| 650.0 | 648.76 | -34.58 | 11.403 | -84.93 | 248.45 | 11.40 S | 34.58 W | 1.20 | 0.60 | 36.41 AT 251.75 |
| 700.0 | 698.59 | -38.45 | 12.697 | -85.68 | 255.18 | 12.70 S | 38.45 W | 1.86 | 0.93 | 40.49 AT 251.73 |
| 750.0 | 748.45 | -42.08 | 13.673 | -85.69 | 254.73 | 13.67 S | 42.08 W | 0.07 | 0.04 | 44.25 AT 252.00 |
| 800.0 | 798.32 | -45.54 | 14.174 | -86.24 | 269.77 | 14.17 S | 45.54 W | 2.38 | 1.19 | 47.69 AT 252.71 |
| 850.0 | 848.19 | -49.05 | 14.881 | -85.42 | 249.47 | 14.88 S | 49.05 W | 3.35 | 1.68 | 51.25 AT 253.12 |
| 900.0 | 898.01 | -53.23 | 15.724 | -84.67 | 266.47 | 15.72 S | 53.23 W | 3.28 | 1.64 | 55.51 AT 253.54 |
| 950.0 | 947.76 | -58.24 | 15.559 | -83.78 | 276.53 | 15.56 S | 58.24 W | 2.69 | 1.35 | 60.28 AT 255.04 |
| 1000.0 | 997.49 | -63.37 | 15.441 | -84.40 | 265.53 | 15.44 S | 63.37 W | 2.58 | 1.29 | 65.22 AT 256.30 |
| 1050.0 | 1047.33 | -67.28 | 15.019 | -86.33 | 292.50 | 15.02 S | 67.28 W | 5.72 | 2.86 | 68.93 AT 257.42 |
| 1100.0 | 1097.25 | -69.21 | 13.129 | -86.89 | 340.33 | 13.13 S | 69.21 W | 5.59 | 2.79 | 70.45 AT 259.26 |
| 1150.0 | 1147.18 | -69.41 | 10.431 | -86.69 | 010.17 | 10.43 S | 69.41 W | 3.33 | 1.66 | 70.19 AT 261.45 |
| 1200.0 | 1197.09 | -68.42 | 7.607 | -86.36 | 027.92 | 7.61 S | 68.42 W | 2.24 | 1.12 | 68.84 AT 263.66 |
| 1250.0 | 1246.95 | -65.73 | 5.176 | -84.95 | 062.13 | 5.18 S | 65.73 W | 5.78 | 2.89 | 65.93 AT 265.50 |
| 1300.0 | 1296.71 | -61.06 | 3.819 | -83.70 | 083.14 | 3.82 S | 61.06 W | 4.81 | 2.40 | 61.18 AT 266.42 |
| 1350.0 | 1346.39 | -55.47 | 3.990 | -83.33 | 099.88 | 3.99 S | 55.47 W | 3.84 | 1.92 | 55.62 AT 265.89 |
| 1375.0 | 1371.23 | -52.61 | 4.479 | -83.35 | 099.54 | 4.48 S | 52.61 W | 0.18 | 0.04 | 52.80 AT 265.13 |
| 1500.0 | 1495.38 | -38.32 | 6.914 | -83.33 | 099.79 | 6.91 S | 38.32 W | 0.03 | 0.03 | 38.94 AT 259.77 |

**********
* ******** *
* THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF *
* ******** *
* 1500.0 FEET EQUALS 38.94 FEET AT 259.77 *
* ******** *
**********

WELLBORE NAVIGATION, INC.
TUSTIN, CALIFORNIA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

**********
* NEWMONT ROSEBUD *
**********

JOB NUMBER: 29-0521-311

WELL NAME: 97-399 / W-E SECTION

LOCATION: ROSEBUD

SURVEY DATE: 7-1-97

SURVEY ENGINEER: KENT CHILD

GYRO REFERENCE BEARING: TRUE NORTH

VERTICAL SECTION CALCULATED IN A
PROPOSAL DIRECTION OF: 090.00

**********
****** DEPTH MEASURED IN FEET *******
**********

COMMENTS: EKLUND DRILLING
JOHN WELCH
PROJECTED F/1375 T/1500

**********
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
**
**
**
COMPANY REPRESENTATIVE
**
**
**********

WELLBORE NAVIGATION, INC.
TUSTIN, CALIFORNIA

JOB NUMBER: 29-0521-311 WELL NAME: 97-399 / VERTICAL

INRUN SURVEY
BY MINIMUM CURVATURE

| MEAS. DEPTH | VERT. DEPTH | VERT. SECT. | L/R CLOS. | INCL | BEARING AZIMUTH | COORDINATES LATITUDE | COORDINATES DEPARTURE | D-LEG /100 | D-LEG /CL | STATION DISP. | DISPLACEMENT DIRECTION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50.0 | 50.00 | 0.40 | 0.406 | -88.69 | 305.10 | 0.33 N | 0.47 W | 2.62 | 1.31 | 0.57 | AT 305.10 |
| 100.0 | 99.97 | 1.69 | 1.109 | -87.86 | 278.24 | 0.79 N | 1.86 W | 2.27 | 1.14 | 2.02 | AT 293.05 |
| 150.0 | 149.94 | 3.46 | 1.579 | -87.94 | 270.95 | 0.94 N | 3.68 W | 0.56 | 0.28 | 3.80 | AT 284.32 |
| 200.0 | 199.91 | 5.23 | 1.509 | -87.87 | 244.57 | 0.56 N | 5.42 W | 1.92 | 0.96 | 5.45 | AT 275.86 |
| 250.0 | 249.86 | 7.23 | 0.794 | -87.26 | 236.54 | 0.50 S | 7.26 W | 1.39 | 0.70 | 7.27 | AT 266.04 |
| 300.0 | 299.79 | 9.73 | -0.039 | -86.67 | 245.33 | 1.77 S | 9.57 W | 1.50 | 0.75 | 9.73 | AT 259.54 |
| 350.0 | 349.69 | 12.93 | -0.519 | -85.89 | 256.01 | 2.81 S | 12.63 W | 2.08 | 1.04 | 12.94 | AT 257.47 |
| 400.0 | 399.55 | 16.63 | -0.957 | -85.54 | 250.28 | 3.90 S | 16.20 W | 1.11 | 0.55 | 16.66 | AT 256.48 |
| 450.0 | 449.39 | 20.57 | -1.664 | -85.28 | 248.94 | 5.29 S | 19.95 W | 0.56 | 0.28 | 20.64 | AT 255.15 |
| 500.0 | 499.23 | 24.48 | -2.391 | -85.59 | 249.59 | 6.70 S | 23.67 W | 0.63 | 0.31 | 24.60 | AT 254.19 |
| 550.0 | 549.08 | 28.22 | -3.227 | -85.61 | 244.75 | 8.19 S | 27.20 W | 0.74 | 0.37 | 28.41 | AT 253.25 |
| 600.0 | 598.93 | 31.98 | -4.185 | -85.50 | 246.13 | 9.80 S | 30.73 W | 0.31 | 0.15 | 32.25 | AT 252.31 |
| 650.0 | 648.76 | 36.05 | -5.081 | -84.93 | 248.45 | 11.40 S | 34.58 W | 1.20 | 0.60 | 36.41 | AT 251.75 |
| 700.0 | 698.59 | 40.09 | -5.666 | -85.68 | 255.18 | 12.70 S | 38.45 W | 1.86 | 0.93 | 40.49 | AT 251.73 |
| 750.0 | 748.45 | 43.84 | -5.981 | -85.69 | 254.73 | 13.67 S | 42.08 W | 0.07 | 0.04 | 44.25 | AT 252.00 |
| 800.0 | 798.32 | 47.33 | -5.862 | -86.24 | 269.77 | 14.17 S | 45.54 W | 2.38 | 1.19 | 47.69 | AT 252.71 |
| 850.0 | 848.19 | 50.91 | -5.934 | -85.42 | 249.47 | 14.88 S | 49.05 W | 3.35 | 1.68 | 51.25 | AT 253.12 |
| 900.0 | 898.01 | 55.18 | -6.020 | -84.67 | 266.47 | 15.72 S | 53.23 W | 3.28 | 1.64 | 55.51 | AT 253.54 |
| 950.0 | 947.76 | 60.08 | -4.968 | -83.78 | 276.53 | 15.56 S | 58.24 W | 2.69 | 1.35 | 60.28 | AT 255.04 |
| 1000.0 | 997.49 | 65.10 | -3.942 | -84.40 | 265.53 | 15.44 S | 63.37 W | 2.58 | 1.29 | 65.22 | AT 256.30 |
| 1050.0 | 1047.33 | 68.87 | -2.831 | -86.33 | 292.50 | 15.02 S | 67.28 W | 5.72 | 2.86 | 68.93 | AT 257.42 |
| 1100.0 | 1097.25 | 70.44 | -0.628 | -86.89 | 340.33 | 13.13 S | 69.21 W | 5.59 | 2.79 | 70.45 | AT 259.26 |
| 1150.0 | 1147.18 | 70.16 | 2.063 | -86.69 | 010.17 | 10.43 S | 69.41 W | 3.33 | 1.66 | 70.19 | AT 261.45 |
| 1200.0 | 1197.09 | 68.68 | 4.664 | -86.36 | 027.92 | 7.61 S | 68.42 W | 2.24 | 1.12 | 68.84 | AT 263.66 |
| 1250.0 | 1246.95 | 65.60 | 6.580 | -84.95 | 062.13 | 5.18 S | 65.73 W | 5.78 | 2.89 | 65.93 | AT 265.50 |
| 1300.0 | 1296.71 | 60.76 | 7.086 | -83.70 | 083.14 | 3.82 S | 61.06 W | 4.81 | 2.40 | 61.18 | AT 266.42 |
| 1350.0 | 1346.40 | 55.30 | 5.926 | -83.33 | 099.88 | 3.99 S | 55.47 W | 3.84 | 1.92 | 55.62 | AT 265.89 |
| 1375.0 | 1371.23 | 52.57 | 4.937 | -83.35 | 099.54 | 4.48 S | 52.61 W | 0.18 | 0.04 | 52.80 | AT 265.13 |
| 1500.0 | 1495.38 | 38.94 | 0.002 | -83.33 | 099.79 | 6.91 S | 38.32 W | 0.03 | 0.03 | 38.94 | AT 259.77 |

```
*************************************************************
*                         ********                          *
*     THE HORIZONTAL DISPLACEMENT AT THE DEPTH OF           *
*                         ********                          *
*  1500.0 FEET EQUALS    38.94   FEET AT   259.77           *
*                         ********                          *
*************************************************************
```

Operations

WELLBORE NAVIGATION, INC.
TUSTIN, CALIFORNIA

GYROSCOPIC DIRECTIONAL SURVEY
BY MINIMUM CURVATURE

FOR

**********
* NEWMONT ROSEBUD *
**********

JOB NUMBER: 29-0521-311

WELL NAME: 97-399 / VERTICAL

LOCATION: ROSEBUD

SURVEY DATE: 7-1-97

SURVEY ENGINEER: KENT CHILD

GYRO REFERENCE BEARING: TRUE NORTH

**********
****** DEPTH MEASURED IN FEET *******
**********

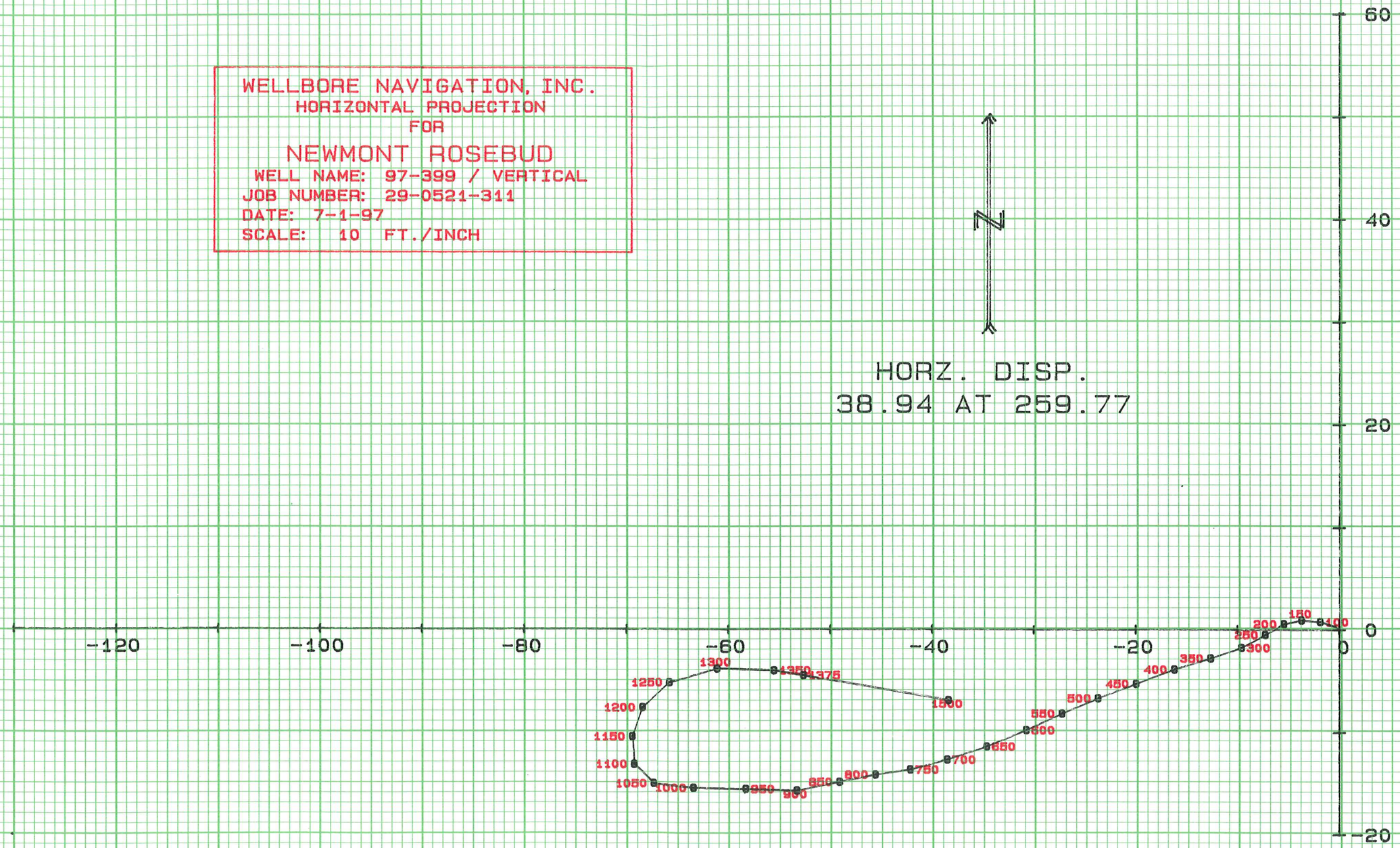
COMMENTS: EKLUND DRILLING
JOHN WELCH
PROJECTED F/1375 T/1500

**********
**********
*** THIS DIRECTIONAL SURVEY REPORT IS ****
** CORRECT TO THE BEST OF MY KNOWLEDGE ***
* AND IS SUPPORTED BY ACTUAL FIELD DATA! *
**
**
**
COMPANY REPRESENTATIVE
**
**
**********

WELLBORE NAVIGATION, INC.
HORIZONTAL PROJECTION
FOR

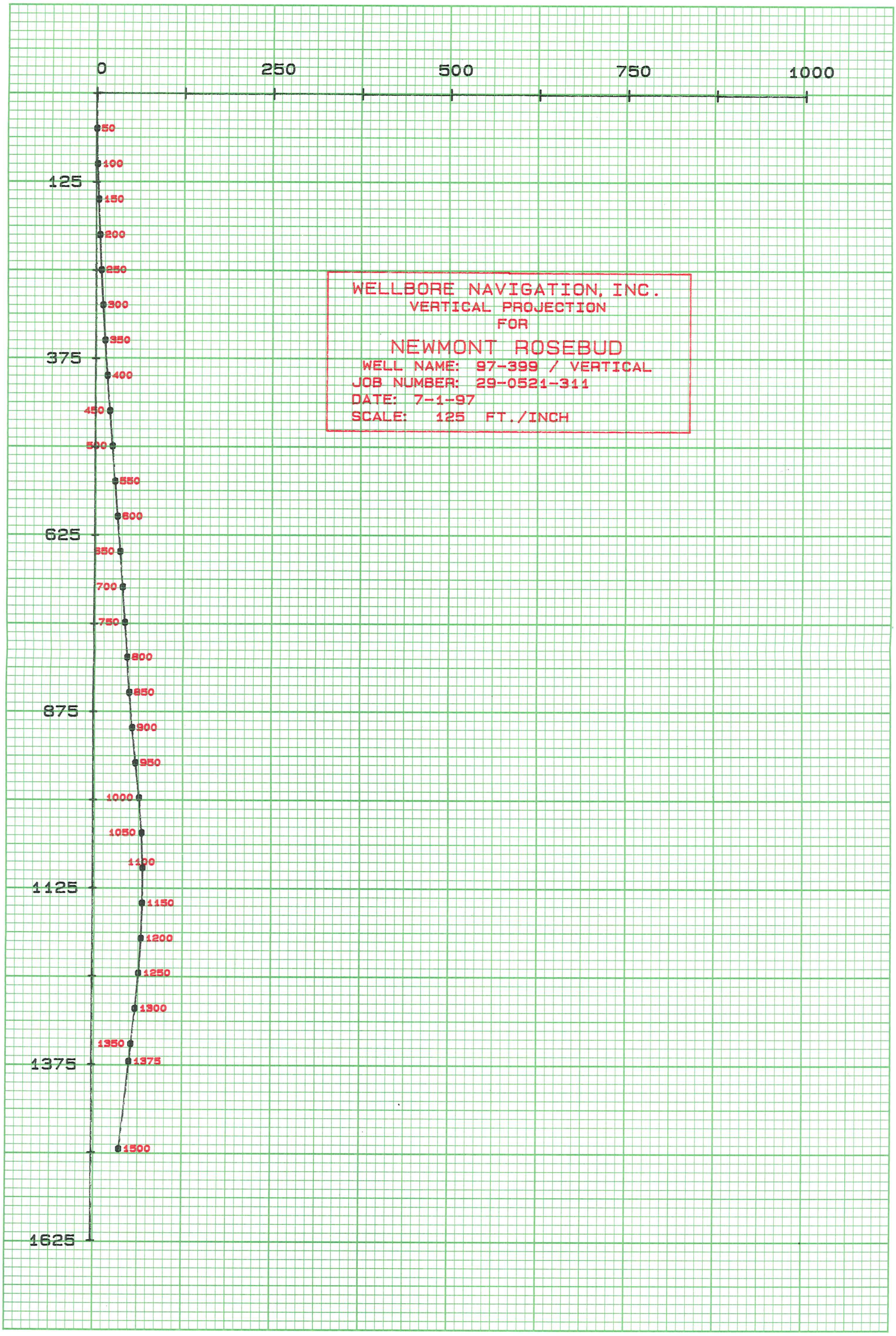
NEWMONT ROSEBUD

WELL NAME: 97-399 / VERTICAL
JOB NUMBER: 29-0521-311
DATE: 7-1-97
SCALE: 10 FT./INCH

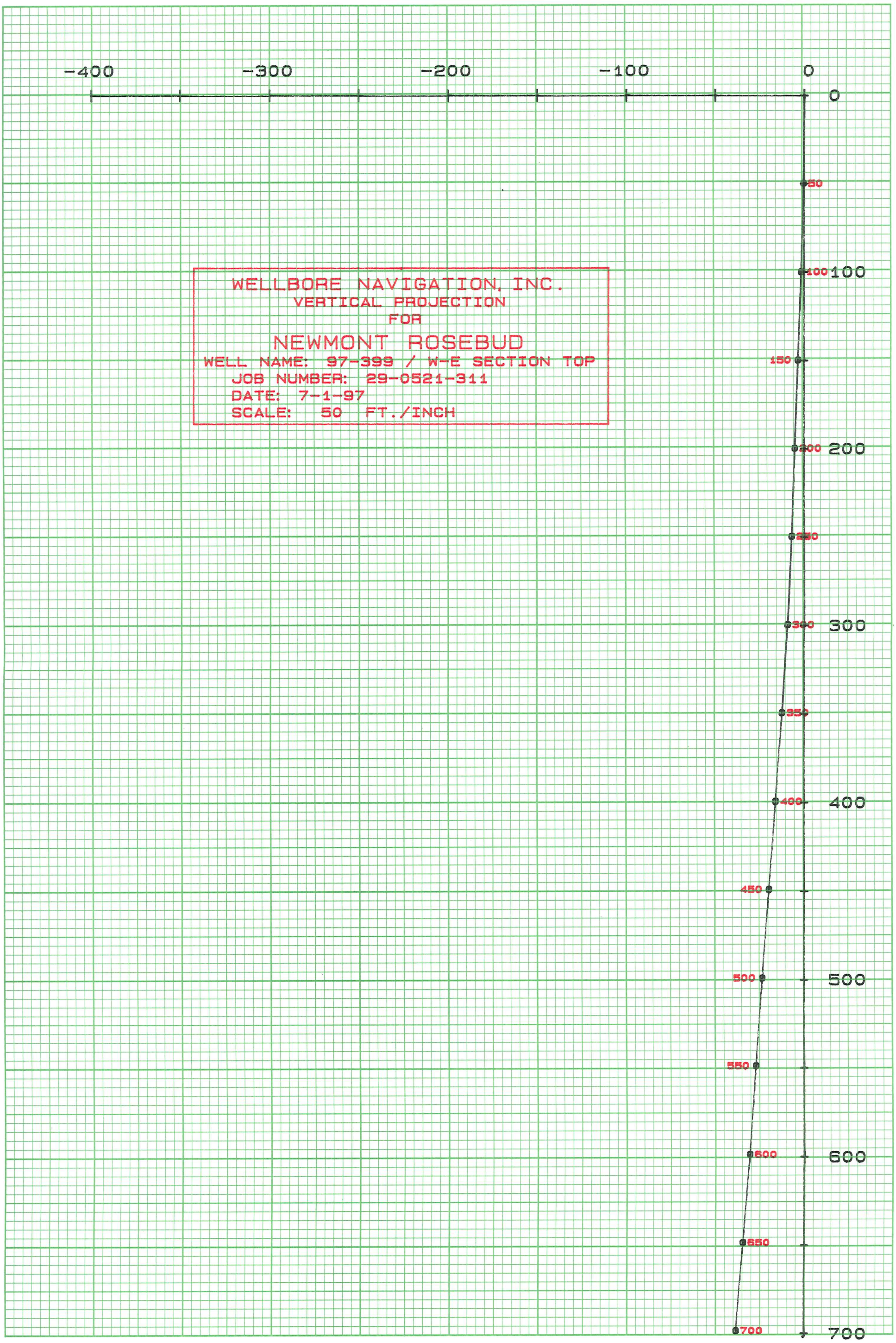



CK PRINTING CENTER (801) 467-2841

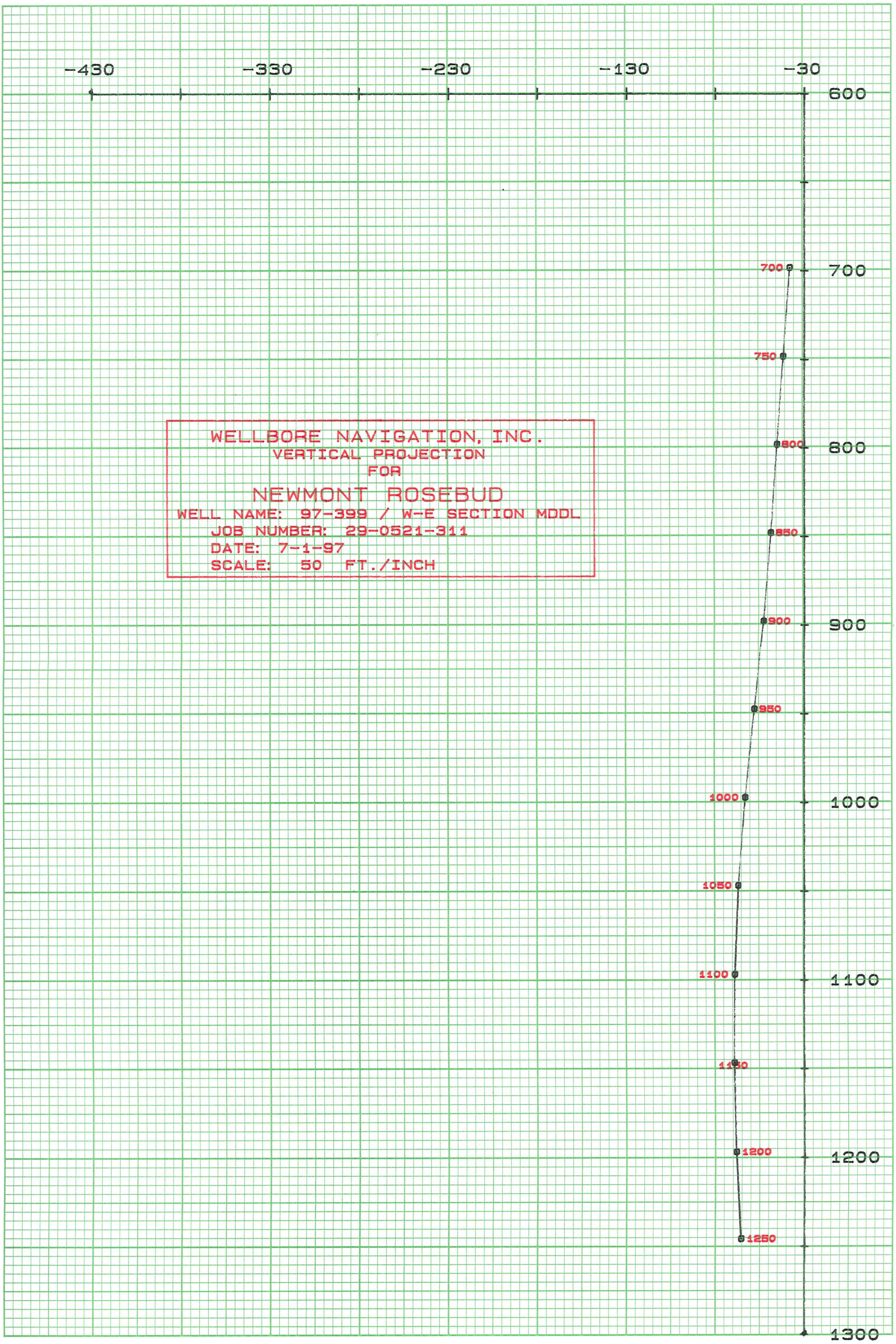
CK PRINTING CENTER (801) 467-2841



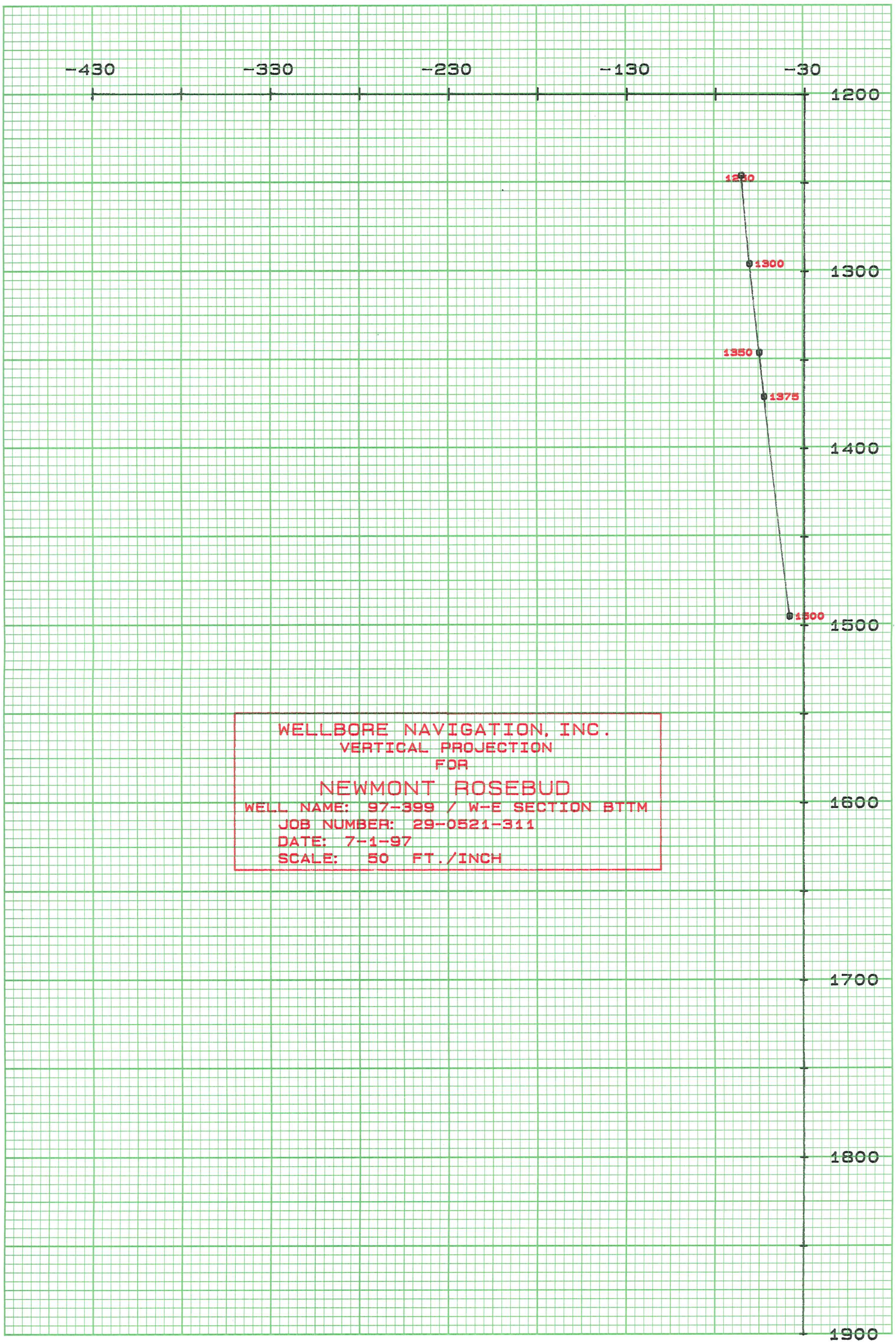
CK PRINTING CENTER (801) 467-2841



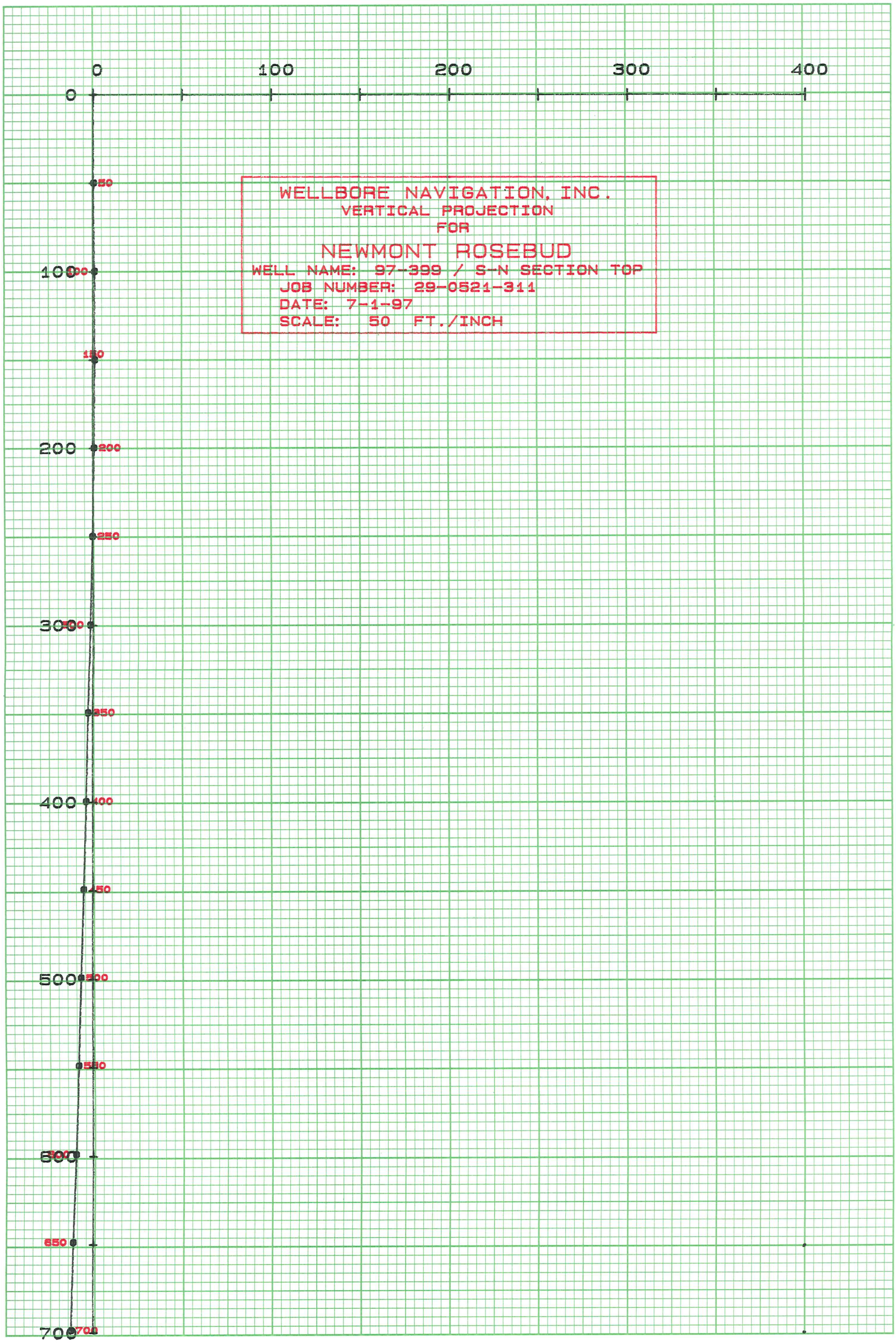
CK PRINTING CENTER (801) 467-2841



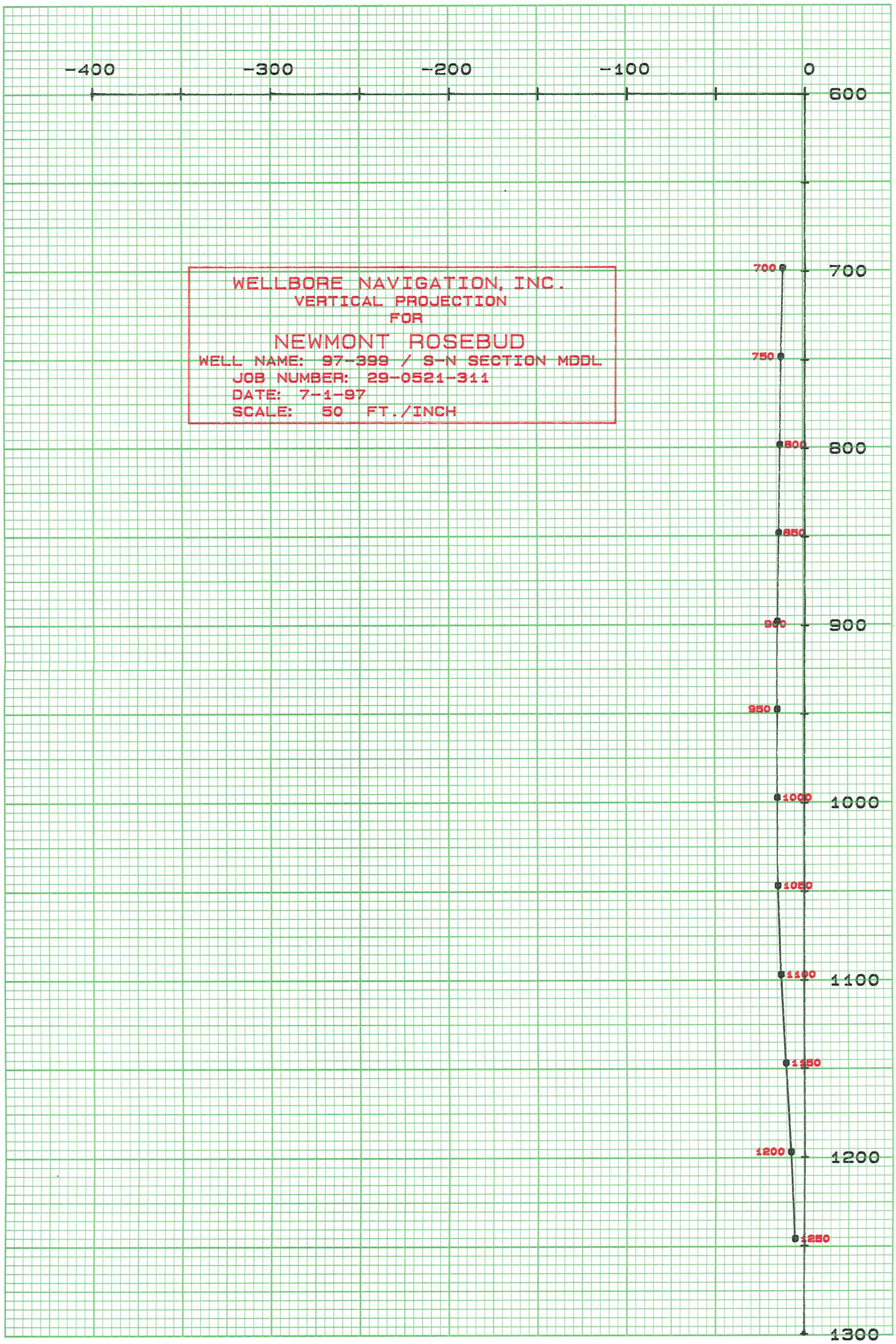
CK PRINTING CENTER (801) 467-2841



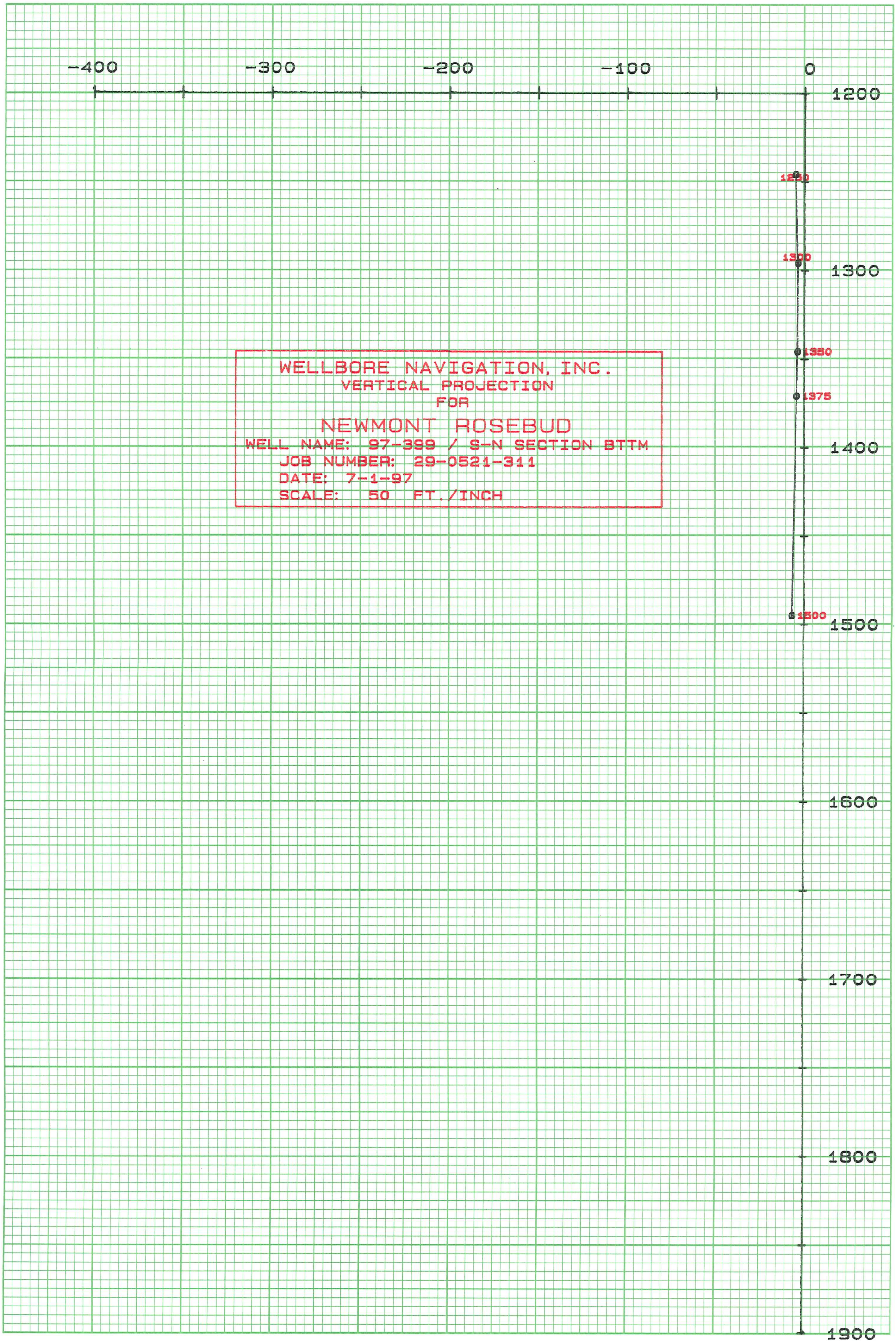
CK PRINTING CENTER (801) 467-2841



CK PRINTING CENTER (801) 467-2841



CK PRINTING CENTER (801) 467-2841



**NEWMONT GOLD COMPANY**
**ROSEBUD J.V.**

To: Whomever Date: November 23, 1998

From: George Langstaff

Subject: **GL's Descriptive Rock Nomenclature for Rosebud Logging**

Rocks are identified as felsic volcanic rock (F), mafic volcanic rock (M), tuff (T), breccia (B), or sedimentary rock (S) as follows:

A. **Volcanic Rocks** (dominantly aphanitic)

1. Root Name – Composition
   - **F** – felsic, few mafic minerals (e.g., trachyte, dacite)
   - **M** – mafic, more mafic minerals (e.g., andesite, trachyte)
2. Prefix - Structure
   - **b** – brecciated (includes flow breccia as well as strongly fractured rock)
   - **s** – pseudobreccia (formed by alteration along fractures)
3. 1st Suffix – Texture
   - **a** – aphyric (no phenocrysts >=1 mm)
   - **p** – porphyritic
     - distinctive varieties:
     - **sp** – sparsely porphyritic (=<1% phenocrysts)
     - **cp** – coarsely porphyritic (some phenocrysts >4 mm)
   - a. 2nd Suffix – Minerals (precede with dash; if more than one, list from least to most abundant, left to right, e.g., Fp-q,p,k)
     - **q** – quartz
     - **f** – feldspar
     - **p** – plagioclase
     - **k** - K-feldspar
     - **b** - biotite
     - **h** - hornblende
     - **y** - pyroxene
     - **o** - olivine
4. Parentheses – Descriptive Features
   - **am** – amygdaloidal
   - **bd** – banded
   - **gl** - glassy
   - **lm** – laminated (planar features =<2 mm)
   - **mmb** – contains mafic magma blobs
   - **sp** - spherulitic
   - **ve** - vesicular

Examples: Mcp-y,p – coarsely porphyritic pyroxene < plagioclase-phyric basalt
bFa – brecciated, aphyric rhyolite
Fsp-f(mmb) – sparsely porphyritic, feldspar(can't be identified)-phyric latite with mafic magma blobs

**Note: Alteration can eliminate mafic phenocrysts, can make K-feldspar and plagioclase indistinguishable, and can make porphyritic rocks appear to be aphyric.**

**The abundance of phenocrysts can vary within the same unit and some types of phenocrysts (e.g., quartz) may not be present everywhere.**

B. **Pyroclastic Rocks**

1. Root Name
   **T** - Tuff
2. 1st Suffix – Fragment Type (if more than one, list from least to most abundant left to right and separate by slashes, e.g., Tv/c)
   **a** – ash (=<2 mm by definition but more useful to identify pyroclasts >=1 mm as lithic, vitric, or crystal)
   **b** - blocks ± lapilli ± ash (>6.4 cm)
   **l** - lithic lapilli ± ash
   **v** - vitric lapilli ± ash (icludes shards and pumice)
   **c** - crystal lapilli ± ash
   a. 2nd Suffix – Minerals
   see A.3.a. above
3. Parentheses – Descriptive Features
   **lp** - lithophysal
   **sw** - strongly welded
   **ww** - weakly welded
   and see A.4. above

Examples: Ta – ash tuff
Tl/c-q,k – lithic < crystal lapilli-ash tuff with quartz < sanidine phenocrysts

C. **Breccias** – if extrusive, pyroclastic, or sedimentary origin is uncertain; otherwise use protolith root name; can include fault breccias if protolith is uncertain

1. Root Name
   **B** - Breccia
2. 1st Suffix – Number of Clast Types
   **m** – monomict
   **p** - polymict
3. 2nd Suffix – Support
   **c** – clast-supported
   **x** – matrix-supported
4. 3rd Suffix – Rounding of Clasts
   **r** – rounded
   **s** – subrounded to subangular
   **a** – angular

Examples: Bmca – monomict, clast-supported breccia with dominantly angular clasts
Bpxa/s – polymict, matrix-supported breccia with subrounded clasts more abundant than angular clasts

D. Sedimentary Rocks

1. Root Name

   **S** – clastic sedimentary rock

2. 1st Suffix – Dominant Clast Size

   **c** – conglomerate (>2 mm)

   a. Prefix – Support

      **c** – clast-supported

      **x** – matrix-supported

   **s** – sandstone (.0625 to 2 mm)

   **m** – mudstone (<.0625 mm, includes silt and clay)

3. 2nd Suffix – Secondary Clast Size (if more than one, list from least to most abundant and separate by slashes, e.g., Sst/p)

   **p** – pebbly, conglomeratic

   **n** - sandy

   **d** - muddy

   **t** - tuffaceous

4. 3rd Suffix – Structure

   **1** - massive (beds >10 m thick)

   **2** - thick-bedded (.05-10 m thick)

   **3** - medium-bedded (.01-.05 m thick)

   **4** - thin-bedded (1-10 cm thick)

   **5** - laminated (<1 cm thick)

5. Parentheses – Descriptive Features

   **bt** - bioturbated

   **cs** - cross stratification

   **fs** - fossils

   **gn** - normally graded bedding

   **gr** - reversely graded bedding

   **sf** - syn-sedimentary folds

Examples: xSct1 – tuffaceous, matrix-supported conglomerate without apparent bedding

Ssd4(gn) – thin-bedded, muddy sandstone with normally graded bedding

Sm – massive mudstone