60001817

Mining District File Summary Sheet

DISTRICT	Rosebud
DIST_NO	4010
COUNTY If different from written on document	Pershing
TITLE If not obvious	Rosebud; Rock Collection for Rosebud Age-Dating
AUTHOR	Allen, K; Mitchell P; Lisle R; Vance R; John D; Wallace A; Henry C; Garside L
DATE OF DOC(S)	1999
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Sulphur 7½'
P_M_C_NAME (mine, claim & company names)	Rosebud Mine; Newmont Mining Corp.; South Zone; East Zone; North Zone
COMMODITY If not obvious	gold; silver
NOTES	Correspondence about collecting samples for age dating 2p.

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)

	Initials	Date
SS:	DP	7/31/08
DB:		
SCANNED:		

Revised: 1/22/08

Age Dates

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4010

C000 1817 4010

Newmont Mining Corp. - Rosebud
Winnemucca, Nevada

Memorandum

To: Kurt Allen
Peter Mitchell
Rick Lisle

Date: October 22, 1999

Fr: Randy Vance

Subj: Rock Collection for Rosebud Age-Dating

On September 15 four government geologists visited Rosebud: David John, USGS (Menlo Park), Alan Wallace, USGS (Reno), and Chris Henry and Larry Garside, NBMG (Reno). The intent of the tour was to compare the deposit to other low-sulfidation systems they have seen, and to evaluate samples suitable for age-dating.

After I gave them a 20-minute introduction of the property geology and stratigraphy, Kurt described the deposits and presented a brief look at the mine plans and sections. Alex Davidson led a tour of the mine, in which we visited stopes 13 (South Zone), 41 and 42 (East Zone), and 34 (North Zone). Using the PIMA, Alex analyzed two samples of white clay collected during the tour and they showed illite-smectite and illite, respectively. After the mine tour we examined core and surface outcrops with the specific intent of collecting rocks suitable for age-dating. Chris Henry prefers fresh sanidine-bearing rocks for Ar40/Ar39 dating. We examined core hole RS-349-99 (East Zone), and collected about 5 pieces of sanidine-bearing, weakly to moderately altered Bud Marker Porphyry. Chris has reported that the sanidines look very good for dating.

During our quick examination of the Sharkfin outcrops, Chris found several pieces of float from Big Chocolate Mtn showing good sanidine. I later collected four bedrock samples from the top of the summit (NWRA 2652B, -C, -D, -E) of the massive rhyolitic lava, which I sent to Chris today. He selected "B" as the best of the four.

We traveled to White Alps to collect sanidine-bearing RQL. Eventually a specimen (NWRA 2651) from the "Arch" area was satisfactory. (Arch is the ridge about 800 feet northeast of RS-459.)

Chris also looked at the two alunite samples (D275-98 at 328', and Muck Bay 64320) from the North Zone deposit, which, along with the illite sample, will help constrain the age of mineralization. This alunite is believed to be hypogene, as it co-exists with auriferous sulfide, and is at least 900 ft beneath the surface. Although their very fine-grained nature sometimes causes "recoil" problems during the irradiation, we will attempt to date them and see how they turn out. He will run alunite 64320.

In summary, the samples collected to date are:

1. Alunite (PIMA), North Zone, Drill hole D275-98, 328 feet. Contains 0.004 oz/st Au and 0.06 oz/st Ag.
   Nevada State Plane: 2,204,193 North, 482,244 East, 4414 ft elevation
   (*Henry will date alunite #2 instead.*)

2. Alunite (PIMA), North Zone muck bay 64320 (stope 32), PISP + 94' Face # 4.
   Contains 0.191 oz/st Au and 2.07 oz/st Ag.
   Nevada State Plane: 2,204,450 North, 482,020 East, 4385 ft elevation

3. Illite (PIMA), North Zone stope 34, Primary 3, Face 1
   Nevada State Plane: 2,204,390 North, 482,115 East, 4315 ft elevation

4. Sanidine in Bud Marker Porphyry, RS-D349-99, 86 feet (85-87.5)
   (East Zone, FW to SRF)
   Nevada State Plane: 2,203,662 North, 483,333 East, 4690 ft elevation

5. Sanidine, Rosebud quartz latite (RQL), Arch ridge, White Alps (NWRA2651)
   Nevada State Plane: 2,209,810 North, 477,630 East, 6180 ft elevation

6. Sanidine in lava flow, on NW flank of Big Chocolate Mtn (NWRA2652B-E).
   Nevada State Plane of "B": 2,201,750 North, 484,340 East, 5950 elevation

Chris will complete the mineral separates in Reno, and will date the samples by 40Ar/39Ar at a lab in Socorro, New Mexico or Las Vegas, Nevada. Once we give him approval to proceed, results should be available by mid-December. The cost of each sanidine sample is $500; the cost of each alunite or illite is about $700.

These dates will help us understand the temporal relationship of gold deposition to the age of the host rocks, faulting and hydrothermal alteration. This suite should offer a good spread on the age of the volcanics (#6), the age of late intrusions(#4,#5), and the age of mineralization(#2,#3). They will also define the age of mineralization at Rosebud relative to the age of the nearby Hycroft system (Ebert and Rye, 1997, Econ. Geol., v. 92, p. 578-600).