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GEOLOGICAL SOCIETY OF NEVADA
MARCH - 1984, MEETING ANNOUNCEMENT

115
Item 21

******* NOTE: OUR MEETING PLACE HAS CHANGED *******

DATE: Friday, March 23, 1984

TIME: No-host cocktails at 6:00 PM; Cold buffet dinner at 7:00 PM; Business Meeting and Speaker at 8:00 PM

PLACE: Airport Plaza Hotel, 2nd Floor, 1981 Terminal Way, Reno, Nevada

COST OF DINNER: STILL $10.00, please bring check or exact change.

SPEAKER: Dr. F.W. Dickson, Dickson and Co. and Oak Ridge National Laboratory, Oak Ridge, Tenn.

SUBJECT: Carlin-type Gold Deposit and Kuroko Base Metal Deposits: Different but the Same.

ABSTRACT: Carlin-type gold deposits and Kuroko base metal deposits have essentially the same mode of origin. The many differences in mineralogy, petrology, geochemistry, textures and structures reflect the difference between continental and marine settings. Both are caused by delivery of magmatic heat to levels of the earth's crust where aqueous fluids can dissipate the heat by convective movement.

Initially cool waters, on sinking, modify in composition because of interaction with rocks and rise in temperature. Minerals precipitate and dissolve along the pathway. Components are extracted from country rocks. Carlin fluids, initially meteoric, and Kuroko fluids, initially seawater, at deep levels rise in ionic strength by dissolution of minerals and abstraction of H_2O from solution by hydration reactions; for Carlin-types, from nearly zero in rainwater to 3 to 5 percent NaCl equivalent; and for Kuroko types, from 3.5 percent of seawater, to 10 percent NaCl equivalent and higher. These reactions produce fluids capable of dissolving different sets of elements: Carlin-type dilute solutions with sulfide sulfur, which complexes with Au, Hg, Sb, and possibly Tl; and Kuroko-type, which are chloride-dominanted, and which complex with Pb, Zn, Cu and Ag. The ore-bearing solutions migrate upward along fractures and punctures in the crust caused by igneous intrusions, to places suitable for deposition: permeable, thin-bedded silty carbonate rocks in the Carlin-type; and places near and on the sea floor, for Kuroko fluids. Both represent the integrated effects of individual pulses of magmatic heat, injected into water-containing rocks, that trigger characteristic sequences of crustal events, and which result in Carlin-type deposits on the continents, and Kuroko deposits on the sea floor.

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DREGS MEETING: March 5, 1984, 7:00 PM, Ramada Inn-North, Lakewood, Colorado
TALK: BELT SYMPOSIUM II: A Decade of Mapping and Exploration in the Belt Basin
by Jon P. Thorson, Exxon Minerals, Missoula, Montana

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NOTE: IF YOU MAKE A RESERVATION, AND YOU CAN NOT ATTEND, YOU MUST CANCEL BY 1:00 PM, MARCH 20, OR WE WILL HAVE TO BILL YOU FOR THE DINNER. G.S.N. cannot afford to pay these hotels for no-shows after reservations are made.

Geological Society of Nevada - March 23, 1984 - Dinner and Meeting Reservation Form

Name _____ Affiliation _____ Phone _____

We must receive your reservation by 2:00 PM, Friday, March 16, 1984 and we MUST have cancellation of any reservation by 1:00 PM, March 20, 1984. Phone reservations will be accepted at 359-3211 or you may return this form to:

T.F. Cudzilo, GSN, 390 Freeport Blvd., #12, Sparks, Nevada 89431