

The crystalline igneous and metamorphic rocks of the Precambrian basement, the Paleozoic and Mesozoic sediments of the Beacon Group, and the Cenozoic and recent volcanic rocks have been examined. Localized concentrations of radioactive minerals have been detected in Precambrian rocks, but only small concentrations have been found associated with pegmatites.

Thus far, the area covered by the radiometric survey has been too limited to provide any detailed assessment of the uranium resource potential of Antarctica. In general, however, it appears that the potential for uranium resources in the ice-free areas is essentially the same as that of the surface area of any other continental landmass.

DRESHER, WILLIAM H., Univ. Arizona, Tucson, Ariz.

#### Federal Barriers to Energy Resource Development

It has been almost 5 years since the American people suffered the rude awakening to the fact that its energy supply no longer was in United States control. Since that time, the American people have witnessed a circus-like performance of institutions, political movements, and individual politicians, both local and national, as they have used the energy issue as a vehicle to achieve their goals to reorder society and to jockey for a redistribution of power. The energy "crisis" has been manna from heaven for the common denominator for most of the evils which it seeks to correct in our society. The net result of actions taken to correct the energy problems has been a barrage of recommended and enacted regulations which, rather than improve energy supply, act to inhibit it severely. More often than not actions taken by the federal government in the name of correcting the energy problem are more oriented toward increasing the severity of the problem.

Federal policies and regulations which act to inhibit energy-resources development range from limitations and restrictions to the exploration for energy resources to the development of new technologies to create and use energy. Every step in the process of discovering, producing, delivering, and using energy has come under federal control by a myriad of federal agencies.

As a technologist and a pragmatist, it is hard for me to accept the "crisis" atmosphere of the energy issue when so many are accepting the proclamation of so few that "up" is "down" and the "moon is made of green cheese." It is time for thinking people to knuckle down and to dispel the energy myths with truth and fact in order that we, the American people, can get on with our business of assuring ourselves a viable future as an industrial society based on the free enterprise system. I fear that if we falter on this mission it will mean the end of the standard of living and the personal freedoms we have worked so hard to establish and to maintain in the United States of America.

DUNHAM, JOHN B., Union Oil Research Center, Brea, Calif., and ERIC R. OLSON, PetroCanada, Calgary, Alta.

Shallow Subsurface Dolomitization of Subtidally Deposited Carbonate Sediment in Hanson Creek For-

mation (Ordovician-Silurian), Central Nevada—Evidence for Groundwater Mixing

Stratigraphic sequences of the Hanson Creek Formation are grouped into two categories based on differing paleogeographic settings and diagenetic histories. Sequences in northeastern Eureka County record deposition in shallow subtidal to peritidal environments. Replacement dolomitization was the main diagenetic process affecting the original calcium carbonate skeletal grains, ooids, and mud. Lack of associated evaporite minerals or their pseudomorphs precludes sabkha diagenesis. Stratigraphic sequences in southwestern Eureka County consist of laminated carbonate and shale of moderately deep-water deposition, succeeded by a shoaling-upward sequence capped by oolitic grainstone. Stabilization of original carbonate sediment to low-magnesian calcite was the main diagenetic process affecting these rocks.

Thin sections stained with potassium ferricyanide indicate that  $Fe^{++}$  did not have a role in the formation of Hanson Creek dolomites.  $Sr^{++}$  concentrations of the dolomites (20 to 91 ppm) are much lower than values reported for Holocene dolomites. The low values indicate reaction with solutions of strontium/calcium ratio lower than that of seawater. For Hanson Creek dolomites,  $\delta O^{18}$  values range from  $-0.75$  to  $-6.73$  parts per thousand PDB. Such distinctly light values reflect the influence of solutions depleted in  $O^{18}$  relative to normal seawater. The data suggest that dolomitization occurred in the shallow subsurface as a result of the mixing of meteoric-derived groundwater and marine pore water. Intrusion of fresh water into subtidally deposited sediment took place as a result of lateral extension of freshwater lenses developed beneath subaerially exposed tracts of the inner carbonate platform. Dolomite-to-limestone transitions mark the lateral extent of freshwater lenses in the subsurface. Undolomitized deeper water carbonates of southwestern Eureka County, remote from areas of freshwater recharge, were positioned beyond the greatest lateral extent of freshwater lenses and were not subjected to the early influence of meteoric derived groundwater.

DUNLAP, JOHN B., JR., PaleoData Inc., New Orleans, La.

Applied Biostratigraphy, South Louisiana and Gulf of Mexico

Paleontologic control in south Louisiana and the adjacent Gulf of Mexico is among the best in the world. With this control it is possible to construct relatively detailed paleogeographic maps and interval-isopach maps based on biostratigraphic markers. Careful study of these maps clearly defines areas having maximum potential for hydrocarbon accumulation. Currently accepted biostratigraphic units as defined by Foraminifera range in age from Paleocene through Pleistocene.

DUTTON, SHIRLEY P., Bur. Econ. Geol., Austin, Tex.

Facies Patterns and Depositional Models, Pennsylvanian System, Palo Duro Basin, Texas Panhandle