STANDING...INDEPENDENCE...FREEDOM

by William V. Knight, Executive Director

Last month I discussed the various types of organizations and where AIPG fits into the general scheme of things. To review, one of AIPG's many roles is to provide cohesiveness in professional affairs which is needed to advance the entire profession of geology. Our objective in this is to obtain maximum possible standing in the public arena while we retain maximum possible independence and freedom for the individual geologist.

In order to move toward this end (and we probably never will reach "the end"), I will be working with our various sections, state geologists, state registration boards and other geoscience, professional, and technical organizations. We will be trying to establish uniform or compatible policies, examinations, and standards of practice among the States and organizations.

Now, before some of you get all stirred up about the pros and cons of registration, let me make AIPG's position very clear. What we practice and really favor, very strongly, is peer certification as a Certified Professional Geologist to be recognized by the States as equivalent to registration. Obviously, this has not occurred in most jurisdictions. There are conditions under which geologists in a state become convinced that registration in their state is necessary and they take steps to bring it about. Then, we strongly encourage them to involve members from across the entire spectrum of our profession. And, we try to give them as much help as we can to assure that any law written will be one with which all professional geologists can live. Our participation in this process should not be misinterpreted as our favoring registration per se.

Those of you who are golfers know that you have to "play the course as you find it and play the ball as it lies." The same principle applies to life in general and to registration in particular. Some of our colleagues, particularly those concerned with engineering, water, and environmental matters, feel very strongly that registration is necessary for the protection of the public. Others, especially in the extractive industries, feel just as strongly that registration is unnecessary to the public interest. Thus, we see specialty organizations taking strong positions, either for or against.

This frequently has led them and some of their members to become highly adversarial in their inter-organizational, and even personal, relationships. The result is that (1) a lot of geologists get mad at each other; (2) the legislators get confused; and (3) other professions that profit from our disarray gleefully tell the world that we are not qualified professionals, but merely technicians whose work must be supervised by them. In short, folks, our working at cross purposes is killing us.

My charge, then, is to try to identify the common ground, as well as the differences, and find ways to bring us together to accomplish that objective of standing, independence, and freedom to which I referred above.

To this end, I have begun contacting section officers, officers and directors of other organizations, State Geologists, and registration board administrators and members. I have scheduled a series of meetings with them and in some cases with entire sections. More will be scheduled. I will be attending AIPG Section Executive Committee meetings, as well as general membership meetings, whenever and wherever I can meet their schedules. I also am attending meetings of other geoscience, professional, and technical organizations when I feel my attendance might be productive. Right now I am listening more than talking. I carry a small notebook which is rapidly filling with ideas from our members and from others. Some of them are new and quite innovative. Others are old, but sound, and worth new consideration or emphasis, or both.

I am finding a lot of good will and enthusiasm. I am constantly re-impressed by the quality of the people in AIPG, both old and new. I cannot help reflecting that, with such people to work with, this task really is possible. We really can accomplish that objective of maximum possible standing, balanced with maximum possible independence and freedom. It will take a lot of hard work by a lot of people and a lot more of that good will and cooperative spirit which I have been seeing. But, we can work together and we can find solutions with which we all can live. Indeed, we can and we will because we must!
Advisory Committee on Water Data for Public Use

Harry LeGrand, CPG 2719
and John Vecchioli, CPG 1614

The twenty-second meeting of the Advisory Committee on Water Data for Public Use was held May 22-25, 1989, at the Grecenlefe Resort and Conference Center near Orlando, Florida. The Committee represents the interests of the non-federal community by advising the Department of Interior, through the U.S. Geological Survey (USGS) on (a) plans, policies, and procedures relating to water data acquisition programs, and (b) the effectiveness of the planning in meeting national water data needs. The Committee, chaired by Dallas Peck, Director, USGS, includes representation from several technical societies and associations, various associations of state administrators, Freshwater Foundation, National Association of Conservation Districts, Chemical Manufacturers Association, and University Council on Water Resources.

At the meeting, the Committee considered various improvements in the dissemination of water resources information. Recently Congress requested the USGS to study the establishment of a clearinghouse of ground-water information. Specifically, the clearinghouse was to disseminate information to Federal agencies, State and local governments, and others on:

(a) ground-water assessment, management, protection, and remediation,

(b) remedies for ground-water contamination and depletion, and

(c) the relationship between ground-water quality and quantity and surface water quality and quantity.

Because no new funding is likely to become available for the program, it is not known to what extent it will develop.

The Committee also reviewed the expanding program of the USGS relating to water-quality changes as a result of agricultural practices.

WRITE IT RIGHT

Organize for Readers’ Benefit: Part 1 of 4
By Hugh Hay-Roe, CPG 3291

To help readers get your message easily, state your main point(s) first, followed by supporting information in the sequence that readers would want it during a face-to-face conversation. A clear statement of the main point(s) is the key to a successful start in any on-the-job writing task.

"How to win friends and influence readers" could be the subtitle of the sequence of four columns beginning this month. Perhaps unintentionally, all too many of us use an organizing principle that is logical but author-oriented rather than reader-oriented.

In a transfer of information, the first thing your readers need is an answer to the question, "WHAT (is the NEWS)?" My earlier column explained how an analysis of readers and of your true purpose in writing will lead you to define your NEWS.

Consistently, the most effective method yet found for communicating is the face-to-face conversation. If you need something from a colleague, you ask for it; if you have information others can use, you offer it. What you want or what you offer is your NEWS, and it sets up the ensuing dialogue. It generates a sequence of questions that you answer as they come up. Your answers provoke other questions. The transfer of information is just that simple and direct.

When you apply this approach to writing a plain statement of the NEWS is the opening of an imaginary dialogue with your readers that you should visualize in a systematic way. You can imagine that you are conversing with key readers in your office, or by telephone, or while making an informal presentation. This approach is made easier by the fact that the toughest part of writing has already been taken care of: (a) you have already defined the NEWS, which calls forth the reader's questions you will be answering, and (b) you can anticipate those questions and phrase them accurately because you have also taken the time to identify your reader's interest:

You can count on the NEWS to be the first interest in nearly every case, and perhaps 98 percent of the time you can get to that point immediately, without any traditional build-up (such as Statement of Problem; Background; Objectives; Methods; Data; Discussions; etc. that so commonly delay the NEWS in geological reports).

Of course there are times (that other two percent) when you should not or cannot be so direct. For example, a short delay of the NEWS would make sense if the subject required definition before it could be discussed; readers need to be able to understand the discussion. And as mentioned in a previous column, certain special problems (like bad news or antagonistic readers) can also justify a brief delay.
Keep in mind that delay can be counter productive. Here is a rule of thumb: do not withhold your main point any longer than readers would tolerate the suspense if they were present and could interrupt with questions.

An important reminder: never confuse a promise of news to come with the NEWS itself. Some writers offer a mere teaser and think they have met their obligation to expectant readers. Among the worst teasers are abstracts that announce:

In this report, so-and-so is reviewed; such-and-such is analyzed; for the first time, this-and-that have been measured; finally, this detailed study has made it possible to draw totally new conclusions about such-and-such.

Abstracts like that, called descriptive abstracts, are all too similar to the old girlie shows in a carnival, which revealed to the hicks gawking outside just enough to get them to buy a ticket. It is hard to be patient with geowriters who insist on using this worn-out ploy; in effect treating their readers like bumpkins who have to be lured into reading their latest geoliterary gem.

In one of Jerry Murray's technical writing classes a testy old supervisor, resisting the up-front delivery of his NEWS, grumbled: "Dang it, you're askin' me to give my punchline first! That ruins the story!" But a manager in the class straightened him out: "When I want to be entertained, I won't be reading your 'story,' buddy; I'll read a murder mystery or go the the movies. Don't pull your punches with me - hit me between the eyes with your NEWS."

From Texas Section Newsletter

LETTERS TO THE EDITOR

Dear Editor:

It was just brought to my attention that the front page of the November 1988 issue of The Professional Geologist lists Virginia as one of the states which have provisions for mandatory registration. This is not true because at the present time Virginia has only a voluntary certification of geologists. It was my pleasure to have served on the Virginia Board of Geology for the past seven years, so, even though I am no longer on it, I am sure of my statement.

Bruce K. Goodwin, CPG 4547

Dear Mr. Knight:

It was an honor to meet you at the May Colorado Section meeting; the Colorado Board is pleased that you have determined to help AIPG.

Earlier this year, I received a request from the Colorado School of Mines Library for back issues of the national newsletter. The request was published in TPG and J. D. Traxler, CPG 366, responded generously with complete bound sets of the AIPG newsletters from 1964. Mr. Traxler also included a set of California Section newsletters, which contain the record of that state's transition to registered geologists.

I enclose a copy of a 1976 newsletter, wherein J. D. Haun describes the early efforts at unification of AAPG and AIPG. For your reference, the complete set of newsletter is accessible at:

Colorado School of Mines
Arthur Lakes Library
Golden, CO 80401
Attn: Steve Katz: (303) 273-3024

and, the set will soon be identified on the inter-library computer reference system:

Colorado Association of Research Libraries
On-Line Public Access Catalog (PAC)
Reference Desk Number (303) 273-3689

Ron W. Pritchett, CPG 7063
Secretary Colorado Section AIPG

Editors Note: Much mail has been received about recent columns, especially President Proctor's April Message. Such responses, expressing both agreement and disagreement are welcome and encouraged, but space permits printing only a representative sampling. Brevity must be a major consideration in selecting letters for publication.

Dear Editor:

The President's Message in the April issue of TPG is an excellent essay on the wilderness issue. It is well reasoned, factual, and even stated and, in my opinion should be given wider distribution, particularly in view of some of the near-hysterical outries that are being heard from some environmentalists since the unfortunate Valdez spill.

With your approval I would like to distribute copies of President Proctor's message to my representatives in Congress and to several local newspaper editors who have been expressing a hard line against ANWR development. They have recently reproduced articles by such people as the president of The Sierra Club and I think another point of view should be heard.

Very truly your,

H. A. Kuehnert, CPG 537

Dear Editor:

Regarding the President's message in the April '89 TPG issue. A wilderness area should evoke visions of a pristine area. An area where a fawn could nuzzle your back. A brown bear might curiously investigate your gold pan. Herds of elk might stand stock still in surprise at seeing a human. A bald eagle could be seen catching a duck and a speckled trout could easily be caught using a safety pin for a hook.

Not being the hardiest of humans, I've still canoed from Idaho to the Pacific and paddled for gold in mountain streams twenty miles from a road. I've explored caves that were closed to the public (to avoid vandalism but people vandalized them anyway).
Pristine areas that are readily accessible by RV aren’t pristine. We have sufficient dams and reservoirs for recreation. If cities experience water problems, they might just become more interested in hydrology and wise water management. They might even quit building cities in deserts.

We bulldoze our forests to feed our insatiable appetite for burgers. We cut down magnificent redwoods for our backyard decks and we spill oil here and there as we run our modern conveniences. Let’s leave wilderness areas alone. The attitudes expressed in AIPG will eventually lead to pristine botanical gardens enclosed in glass. The rest will have been trashed for our “convenience and recreation.”

After a significant oil spill in Alaska, it seems tasteless to have your cover article still expounding opening up the ANWR for our exploration. Why not just write “If it moves, shoot it. If it’s pretty, trash it. If it grows, cut it down?”

Raymond U. Roberts, CPG 6670

P.S. I am sending more money to environmental groups.

Dear Editor:

Mr. Proctor’s message in the April issue on the subject of the use, or misuse, of wilderness areas, specifically the ANWR, was excellent except on one point. Mr. Proctor said:

“We geologists are the best trained observers of the physical environment, and we understand natural processes better than any other professionals.”

Not so. Collectively we as geologists are trained to observe and comment on the rocks. Collectively we have little or no training that would qualify us as expert witnesses to the impact on the environment (especially an arctic environment) of a drilling and production operation. Who is qualified? (1) The engineers who must move the rig to the location, set it up and operate it. (2) The engineers who must operate the producing wells. (3) The engineers who must design, build, and operate the pipeline required to move the oil. (4) The foresters and plant biologists who can judge the impact on the flora. (5) The fish and game biologists who can judge the impact of the fauna. (6) The soil scientists who can judge the impact on the soils (permafrost). (7) Sociologists and economists who may be competent to judge the social and economic impact on the local population. (8) Representative of the local population to testify in their own interests.

Is there no role for geologists? Yes, there is, but we must protect our credibility by speaking only from expert knowledge. There is a small group of geologists (probably mostly academicians) who, by virtue of training and experience, are entitled to call themselves physiographers. Their study of the origin and evolution of land forms and the role of erosional processes qualifies them to make a unique and invaluable contribution to the debate if they have specialized in arctic physiography. Physical geographers could be similarly qualified. A larger group of geologists that should be heard are the economic geologists. They should address the issue of the present and future impact of having, or not having, those reserves on stream. That is a point equal in importance to any other, and it’s one that some are trying to bury. They would force the issue to resolution solely on environmental concerns. We mustn’t allow that. Towards that end, Mr. Proctor’s message, with the exception noted, is an excellent contribution.

H. C. Phillips, CPG 797

Dear Dick:

How nice to see you in San Antonio but I regret we did not have a chance to visit more. Having been a "fan" of yours since AGI days, my judgment has been vindicated by your election to the AIPG Presidency and by your quality performance in the role. Your President’s Message in the April issue is top-notch and right on target. Keep it up!

With best personal regards and wishes for continued success.

Grover E. Murray, CPG 94

Dear Editor:

We must drill for oil in northeast Alaska. The concerns of the Sierra Club for the environment are laudable and, certainly, those who despoil it should be restrained. Nonetheless, there is even greater concern among Americans for our survival in the 21st century. Our increasing dependency on crude oil from other nations also at the expense of their own environments, is hurting our economy and security.

I believe many self-appointed environmentalists have little first-hand knowledge of the Alaskan environment or, for example, the habits of the Alaskan caribou. During five seasons on the Arctic plains of Alaska this writer saw tremendous caribou herds pass through our camp sites. They flowed around us with their calves without panicking and we were able to walk out among them. This should not be surprising, considering that caribou are related to the domesticated reindeer of Lapland.

Post ice-age warming is slowly changing the earth’s vegetational cover, and man has also affected it for better or worse. With increasing permafrost melt, often accelerated by human activity, much tundra is becoming savanna grassland with great increase of annual flowering plants. Such changing conditions may account in part for the considerable increase of the Anaktuvuk caribou herd since the Prudhoe Bay oil discovery. Contrary to popular notions, caribou seem to prefer grass and juicy flowers to most of the less nutritious tundra plants.

I have also observed how the tracked vehicles of the oil explorers have altered the Arctic environment. The initial unsightly mess of crushed tundra and muddy melt-water gullies soon become chains of small sedge-encircled ponds which provide nesting areas for wild birds.

Oil seeps alarm many people, especially the producing oil companies who see them as reduced earnings. Yet Arctic Alaska is full of natural seeps that annually pour thousands of barrels of oil out upon the tundra and into the sea. A line of natural seepages even stains the Arctic ice on the north shore of the wildlife refuge.

We should develop the needed oil resources of our Arctic wilderness areas with proper restraint and wisdom to even improve the environment both for us and wildlife. Let us reason together.

Allan P. Bennison, CPG 2824
Meeting of Association of State Boards of Geology (ASBOG) 
by Norman K. Olson, CPG 1611

On April 6, 1989, the third meeting of representatives from geologists' registration boards in the southeast was held in Atlanta. Board members from seven southeastern states - Arkansas, Florida, Georgia, North Carolina, South Carolina, Tennessee, and Virginia met at the Georgia Secretary of State's Office, Examining Boards Division, to discuss several agenda items. Board representatives were: Gus Ludwig, Chairman and Don E. Williams, CPG 1340 (AR); George L. Freeland, CPG 4448 (FL); James W. Furlow, Chairman, CPG 2616, Thomas J. Crawford and William H. McLemore (GA); Neil J. Gilbert, CPG 4981 and Edwin E. Andrews, III, CPG 6213 (NC); James L. Carew, Chairman, Charles R. Sherman, and Norman K. Olson, CPG 1611 (SC); Jackie Granstaff (TN), and Suzette M. Kimball (VA), Executive Director Barbara Wilkerson (GA), and Executive Director Sam Swinehart (SC) also participated.

Gus Ludwig moved to adopt the name "Association of State Boards of Geology" (ASBOG) and the motion was adopted.

Tom Crawford moved that the South Carolina representative be the chairman of the ASBOG Steering Committee (which will be composed of one designated board member per state); this was also approved.

Changes in the resolution adopted at the second meeting (November 19, 1988, at St. Simons Island, Georgia) were discussed. At that meeting of state boards of geology, it was recognized that there are common interests in issues related to reciprocity, examinations, policies, and procedures. It was also recognized that all of the boards represented are experiencing similar challenges in administering their responsibilities. And, there was unanimous agreement by the participants that they should continue to interface for the purpose of sharing experiences and resources for their mutual good. In the resolution of November 19, 1988, Paragraph 1 remains the same. Paragraph 2 was amended as follows,

"Therefore, be it resolved that a committee of seven members, one from each of the states represented - Arkansas, Florida, Georgia, North Carolina, South Carolina, Tennessee, and Virginia - shall develop a charter, bylaws, and proposed budget for the Association of State Boards of Geology."

Chairman Carew asked for discussion on the proposed "Path Forward" document, a timetable of tasks and meetings for the remainder of calendar year 1989. Changes in some dates were adopted by mutual consent of the group. The timetable is:

A. Develop charter "Purpose," "Objective," and "Organization" by July 30, 1989. Conducted by phone and/or working meetings

B. Develop bylaws by July 30, 1989. Conducted by phone and/or working meetings

C. First-year budget by July 30, 1989. Conducted by phone and/or working meetings

D. Develop method of funding proposal by July 30, 1989. Conducted by phone and/or working meetings


Tom Crawford moved that the Association of State Boards of Geology prepare a contract with Unicorn Unlimited, the firm owned by Sam Swinehart, Executive Director of the South Carolina Board. The contract is to include providing of administrative management of ASBOG on a preliminary basis until such time as a permanent association is funded. Such preliminary expenses will be paid by the South Carolina Board, and when the ASBOG has operating funds the South Carolina Board will be reimbursed for expenses incurred on behalf of the Association.

In other business, Tom Crawford and Barbara Wilkerson agreed to assist the ASBOG Steering Committee with general information on charters and bylaws of other national associations.

Neil Gilbert moved that the Steering Committee notify the other states in the nation with registration/certification laws. (If those states express interest in joining our group they are certainly welcome; no attempt will be made to exclude any interested state.) In addition, Mr. Gilbert asked that a copy of the amended resolution only be sent to these national geological organizations:

American Association of Petroleum Geologists, Division of Professional Affairs (AAPG/DPA)
American Institute of Professional Geologists (AIPG)
Association of American State Geologists (AASG)
Association of Engineering Geologists (AEG)
National Water Well Association (NWWA)
Society of Independent Professional Earth Scientists (SIPES).
FOR PRESIDENT-ELECT 1990

**HAYDN MURRAY**

CPG 2795

Bloomington, Indiana

**EDWARD B. NUHFER**

CPG 2808

Platteville, Wisconsin

**COLLEGE:**
- University of Illinois
- University of Illinois
- University of Illinois

**DEGREES:**
- B.S. 1948
- M.S. 1950
- Ph.D. 1951

**PROFESSIONAL HISTORY:**
- Indiana University
  - Assistant and Associate Professor - Geology 1951-57
  - Clay Mineralsologist 1951-57
  - Director of Research 1957-60
  - Manager of Operations 1960-62
  - Vice President of Operations 1962-64
  - Executive Vice President 1964-73
  - Ch. - Dept. of Geology 1973-84
  - Professor of Geology 1984-present

- Indiana University
  - AIGP Activities:
    - Illinois-Indiana Section
    - Illinois-Indiana Section
    - AIGP National
    - Illinois-Indiana Section
    - Illinois-Indiana Section
    - Illinois Indiana Section

**DEGREES:**
- A.A. 1961
- B.S. 1966
- M.S. 1967
- Ph.D. 1979

**PROFESSIONAL HISTORY:**
- Petroleum Geologist 1967-69
- Instructor 1969-71: 1973-75
- Economic Geologist 1975-77
- Research Petrologist 1979-89
- Professor 1979-89
- W.A.E. Faculty Res. Assoc. 1980-89

**AIGP ACTIVITIES:**
- National AIGP
- National AIGP
- National AIGP
- National AIGP
- National AIGP

**FOR VICE-PRESIDENT 1990**

**GERALD MENDELL**

CPG 996

Midland, Texas

**RICHARD YOUNG**

CPG 3356

Parippany, New Jersey

**COLLEGE:**
- University of Nebraska
- University of Nebraska

**DEGREES:**
- B.S. 1951
- M.S. 1953

**PROFESSIONAL HISTORY:**
- The Pure Oil Company
  - Geologist 1957-65
- District Explor. Geologist 1965-81
- Regional Manager 1981-84
- Senior Geologist 1984-87
- Owner 1987-present

- Odessa College
  - AIGP Activities:
    - Texas Section
    - Texas Section
    - Texas Section
    - Texas Section
    - Texas Section
    - Texas Section
    - National AIGP
    - National AIGP
    - National AIGP

**DEGREES:**
- B.A. 1968

**PROFESSIONAL HISTORY:**
- Grade Control Geologist 1968-69
- Exploration Project Geol. 1969-76
- Senior Uranium Specialist and Manager of Technology Assessment & Dev. 1976-present

- Executive Comm. Member 1978-86
- Advertising Sales Mgr. 1980-present
- Publisher-Newsrlr & Dir.1980-present
- Editor-Director of Membrn 1980-87
- Vice President 1981-82
- Ad Hoc Investigative Comm. 1982-84
- Adv. Sales in Nati'l Publ. 1982-84
- President 1983-84
- Advisory Board Rep. 1985-86
- Co-founder of Tagliacozzo Geol. Scholarship 1986
- Presidential Certificate of Merit 1988
EXECUTIVE DIRECTOR'S ITINERARY
(subject to change)

Beginning in July, the Executive Director will be visiting various Sections, agencies, campuses, and other organizations. He will be both talking and listening, exchanging information and ideas. Members are encouraged to attend these meetings wherever and whenever possible. His itinerary for the next six months, as presently scheduled, is:

July 8-16: International Geological Congress, Washington, DC
July 12: Capitol Section, Washington, DC
July 17: Northeast Section and New Jersey state agencies, Trenton, NJ
July 21-23: Institute Executive Committee, Arvada, CO
August 4: Arizona state agencies, Phoenix, AZ
August 5: Arizona Section, Casa Grande, AZ
August 18: Washington state agencies, Olympia and Seattle, WA
August 19: Washington Section, Seattle, WA
September 11: Colorado Section, Denver, CO
September 15: Texas Section, Houston, TX
October 3-7: AIPG Annual Meeting and Virginia Section, Crystal City, VA
October 11: Pennsylvania Section, Pittsburgh, PA
October 12: West Virginia Section and West Virginia Univ. and state agencies, Morgantown, WV
October 13: Ohio Section and The Ohio State Univ. and state agencies, Columbus, OH
October 16: Illinois-Indiana Section and Univ. of Illinois, Champaign and Urbana, IL
October 19: Univ. of South Carolina and state agencies, Columbia, SC
October 20: Carolina Section, Orangeburg, SC
October 28-30: Society of Exploration Geophysicists, Dallas, TX
November 3: Kentucky Section, and Univ. of Kentucky, Lexington, KY
November 4-8: Geological Society of America, St. Louis, MO
November 10: Tennessee Section and Univ. of Tennessee, Knoxville, TN
December 1-4: Nevada Section and Univ. of Nevada and state agencies, Carson City and Reno, NV
Financing Geologically Worthy Gold Deposits - The Oftentimes Neglected Considerations and Ignored Aspects

by Hans W. Schreiber, CPG 1337
President, Behre Dolbear & Company, Inc.

Foreword

With the exodus of major mining companies from the New York metropolitan area over the past some 3 to 4 years, there has been a propensity by association to accord the metropolitan area a declining role in the financing of mineral projects, specifically their development to production. This has not been the case, especially as regards gold-related projects. Rather, with the blurring and melding of the traditionally once sharply defined functions of the major "money center" banks and investment banking houses, New York remains more than ever a true "shopping center" for the owner of a deposit or mining operation seeking funding.

The "potpourri" of commercial banks, investment, and merchant banking houses resident in New York faces a potpourri of gold deposits and operations whose variety in basic characteristics has likely not been heretofore experienced in "single metal situations," namely:

1. in size, from perhaps 150,000 to several million contained ounces of gold;

2. in mining, from simple open pit to fairly complex cut-and-fill underground methods;

3. in processing, from "apparently simple" heap leaching of oxide ores to highly complex pressure oxidation of sulfide ores;

4. in environmental and regulatory matters, from "neutral" operations employing physical means (jigging, heavy media) to highly polarizing operations employing chemical means (cyanide).

Only as regards marketing do both the operator and the financier face less challenges as compared with other metallic deposits and operations.

The potpourri of funding institutions and the variety of gold deposits and operations have brought out an array of considerations and aspects which are often neglected and ignored by the seekers of funding. This article sets forth some of the considerations and aspects, and seeks to emphasize that they are often inter-related. A given is that there are no perceived technical problems or flaws with the deposit or in the operation, and that the basic operating and cost parameters indicate economic feasibility in keeping with a return-on-invested capital competitive with capital markets. Put into other words, why, when in the eyes of the owner a deposit or an operation is a "money-maker," is it nonetheless such an effort to obtain financing, often with adverse terms and conditions?

Historical Perspective

Balance sheet or corporate debt financing is almost always in vogue. It is relatively inexpensive, no dilution is suffered, and the period of principal repayment is usually generous. Unfortunately, usually only well-established corporations with positive cash flows from on-going operations can qualify.

During the 70's and early 80's, non-resource or project debt financing had its heyday. While somewhat more costly with somewhat more restrictive covenants than balance sheet debt return for the borrowed principal not being a part of the debt/equity ratio. In turn, commercial banks were prepared to lend funds against the cash flow of the specific deposit, in part because of higher spreads between banks were able to realize.

Almost as a forerunner to what was to develop in the later 80's, Sunshine Mining in the very early 80's introduced a form of hybrid financing by offering bonds giving lenders a choice of being repaid in cash or in a fixed number of ounces per unit of principal. Sunshine was thus able to reduce its interest cost. Bond holders in essence locked in a price at which they could obtain silver over a period longer than that usually afforded by purchasing forward or buying options.

By the early to mid 80's, metal prices had severely declined, causing - if not outright defaults on project financings - delays in the abilities of mining companies to repay principal or to service debt. In some of the large copper projects, the interest cost approached the direct cash operating cost. Project financing became almost impossible to obtain.

Concurrently with the decline in metal prices, gold prices began to experience significant real increases, and the general public became enamored with gold as a "storehouse" of purchasing power. A veritable boom in the sale of producing gold companies' equities developed. According to data compiled by Goldman Sachs, some $200 million in gold mining equities were sold to the public during 1985, some $400 million during 1986, and about $1.0 billion during 1987 before the October "crash." For "quality" equities, the public was paying:

1. price-earnings multiples of 30 to 50;

2. $250 to 350 for each ounce of gold as proven and probable reserves in the ground;

3. a market capitalization of $4,000 to 5,000 for each ounce of annual production.

While such heady multiples did not apply to companies of lesser quality (i.e., those without established production), equity financing was nonetheless available to such companies without significant equity dilution. Where quality companies were able to obtain such highly favorable
multiples for as little as 5 or 10% of their equity, the boom accorded lesser quality companies - as long as such companies controlled an economically feasible gold deposit - somewhat less favorable multiples for as little as 10 to 25% of their equity.

The sharp drop in the equity markets of October, 1987, ended the boom in equity financing of gold producing companies. By the end of 1988, while the equity markets had to a large degree recovered, the gold price generally decreased over the "recover" period from October, 1987 through to the end of 1988. Consequently, quality gold producing equities experienced modest recovery, as shown in the table below (data compiled by Burns Fry Limited):

<table>
<thead>
<tr>
<th>Company</th>
<th>P-E ratio (1)</th>
<th>Market value per oz. reserves</th>
<th>Market valuation per oz. annual '89 production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amax Gold</td>
<td>29.2</td>
<td>368</td>
<td>2,907</td>
</tr>
<tr>
<td>Bettle Mn</td>
<td>23.6</td>
<td>359</td>
<td>2,952</td>
</tr>
<tr>
<td>Echo Bay</td>
<td>23.7</td>
<td>145</td>
<td>2,023</td>
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<tr>
<td>FMC Gold</td>
<td>16.0</td>
<td>307</td>
<td>2,552</td>
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<tr>
<td>Freeport</td>
<td>17.6</td>
<td>221</td>
<td>2,038</td>
</tr>
<tr>
<td>McMoRan</td>
<td>24.8</td>
<td>107</td>
<td>1,675</td>
</tr>
<tr>
<td>Homestake</td>
<td></td>
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<tr>
<td>Newmont</td>
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</tbody>
</table>

(1) 1989 estimated earnings at $400/oz. gold price

The lesser-quality companies simply could not obtain equity financing without, in essence, unacceptable levels of equity dilution offered at "give-away" multiples.

With the difficulty in obtaining project financing and the unattractive conditions associated with selling equity, a strong market has developed in "hybrid financing," which, today, has a great many variations but consists dominantly of a combination of debt (in the form of gold loans) and equity (in the form of (a) "kickers," (b) warrants, and (c) options). The considerations and aspects associated with such financings are many and are inter-related, and are seldom focused upon by the seekers of funds.

Considerations and Aspects

Financing based on equity sale is particularly susceptible to:

1. the public's perception of management;

The adage, "there is no shortage of capital, only of good people," is diagnostic. The public has an excellent memory as to whether a company's performance has tended to be positive or negative, especially in relation to pronouncements and predictions made by management. Thus, a positive track record - such as that exhibited by Newmont - serves as a huge advantage. A negative track record - such as that exhibited by Galactic - serves as a serious obstacle. No track record - as is the case with many companies wishing to develop their first deposit - is also an obstacle requiring other attributes of particular favorability as a counter-balance.

2. the public's perception of the use of proceeds;

Raising funds is a costly activity. Consequently, companies exhibit a tendency to attempt to raise more capital than may be immediately required. The excess is viewed as a "war chest" or "blind pool" and is usually viewed adversely. The greater the ratio between the "war chest" and the defined immediate use of proceeds, the greater the dilution of equity to raise the wished-for amount.

3. the public's perception of "what comes after";

The public is fickle, and consequently assumes - that is, discounts - the economic performance of the deposit or project for which funds are being raised. Something in addition to "the known" is required to engender investment. That addition, while "blue sky," must have a basis for quantifiable projection, as, for instance, the unexplored acreage controlled by Newmont along the Carlin trend. The public, cognizant of Newmont's exploration skill, its exploration budget, and the number of deposits and/or operations along the trend, will fondly extrapolate future discoveries and will be willing to pay for the prospect that its extrapolations have some supportable basis for becoming fact.

4. the public's perception of management's likely dedication and tendency towards self-enrichment;

Management should not have activities or obligations other than those directly concerned with the company. Nor should management have in-place warrant and option overhangs under such terms that modest price increases in the equity being sold will render management "instant millionaires." Finally, the percent of total authorized equity being offered greatly affects pricing, as the public tends to be keenly aware of possible subsequent dilution through secondary offerings.

5. the underwriter's perception of what will drive the equity;

Current driving forces in the selling of equities are the public's obsession with and syndromes regarding "number of ounces" and "cost per ounce." Generally, a production level of at least 25,000 ounces of gold per year is a prerequisite. The "what comes after" consideration must provide some supported hope for increasing the initial level of production. Both initial and future levels of production need to have direct cash operating costs which roughly equate to about half, or only very modestly exceed half the price of gold.

6. The underwriter's internal condition and public relations situation;

Clearly, the underwriter's financial condition is paramount to the degree of risk he can accept in having to take a part or all of the issue for his own account. Thus the fixing of critical terms and conditions may vary considerably from company to company, although the general health of "the stock market" serves as a common denominator to the
financial health of the investment banking houses. Additionally, an underwriter under legal scrutiny and thus the subject of poor press (for example, Drexel Burnham Lambert) may be prepared to sacrifice some profitability to maintain a desired level and frequency of underwritings.

7. the underwriter's perception of relative performance of the equity as a component of selected and specialized funds;

Market outlets consist not only of retail investors but also of institutional entities. Institutional (mutual funds; pension funds) managers tend to be more astute and critically discerning than the general public. Usually a part of any offering is or must be placed with institutional entities. Consequently, the underwriter must attempt to analyze whether the institutional manager will perceive the future price performance of the offering equity to be poorer, about the same, or better than that of similar equities previously purchased by fund manager.

8. the combined underwriter's and public's perception of the rapidity of earnings' generation;

The equity market is essentially a heartless place. There is only a single purpose - namely, for sellers and buyers to make money, and this sooner rather than later. The public is "short term" and is seldom interested in earnings more than one year in the future. Consequently, long lead times to production and long break-in periods to reach production design levels are a detriment to both pricing and marketability. Available funds will choose equities of equal but quicker projected earnings.

Financing based on debt is essentially based on:

1. the lender's perception as to the percentage of production or cash flow which can be devoted to principal amortization;

In the case of a gold loan, generally a third of total annual gold production must be available for repayment. In the case of a cash loan, usually not less than 20% of the operating cash flow must be available.

2. the borrower's willingness to forego participation in future price increases;

Lenders attempt to avoid price risk, consequently will require the borrower to sell his production forward, especially when there is an appreciable spread between cost and price. The greater the flexibility of the borrower in the percentage of his production subject to forward selling, the greater the propensity of the lender to provide funds.

3. the lender's perception as to the ability of the borrower to obtain or provide equity funds;

Lenders will usually only provide a portion of the total needed capital. The maximum amount a lender is likely to provide is the present value of the after-tax cash flow, divided by two. The discount factor is often the prime rate plus a spread of 1 to 2%. The thus derived maximum amount tends to range between 50 and 75% of the total needed amount.

And equally applicable to both equity and debt based financing are:

1. the company's maturity, - is the project a first operation, or an expansion of the first operation, or a second operation? The longer the maturity, the easier the financing.

2. the strength of the company's balance sheet, - what degree of adversity can the company withstand until cash flow is achieved?

Conclusions

The "public" is clearly accorded astuteness as regards pricing and market capitalization. This contrasts sharply with the general impression that the public will purchase "most anything," as long as the nature of the company's business is in vogue and adequate "hype" supports the sale effort. Although such a general impression indeed has some justification, the article is concerned dominantly with "quality situations," that is, where a properly conducted feasibility study has established the economic merit of the situation requiring financing. Equity sales, at least initially, need outlets to the institutional markets (mutual funds, pension funds, etc.), where managers are astute. Retail sales (sales to the general public usually effected by a myriad of brokers calling customers on a one-on-one basis) are not usually adequate to sell out an issue, at least not an initial public offering (IPO).

The owner of a deposit or a mining operation has limited input into the critical terms and conditions (pricing, timing, etc.) of his equity or debt issue. He is in a position to refuse terms and conditions, but his options may be limited by his (need for) capital position. Clearly, the underwriters and the lenders are in control, and their considerations center on conditions and aspects which, to the degree possible, assure them a profit. Such considerations are highly specialized, and must be for survival in the very competitive market of the "New York shopping center." The owner of a deposit or a mining operation, by virtue of his priorities, has a different perspective as to the considerations and aspects fundamental to providing him with the capital required to develop his deposit or run his mining operation. Although unfavorable circumstances affecting a single consideration and/or aspect will seldom deny the owner access to equity or debt capital, circumstances affecting a critical combination of considerations and aspects will cause a turn-down. Such circumstances may have little to do with the technical and economic merits of the project. The judgment of the underwriter and/or banker is the final arbiter.

All of the above is essentially to say that a strong balance sheet and an attractive economic deposit are a better combination than a net one dollar balance sheet and the "most superb deposit in the world" - at least as far as the "jungle" or "shopping center" of financing institutions is concerned.

Edited by the author from the original published in the Newsletter of the Northeast Section.
The Winds of Change - Are They Blowing Or Do I Just Feel Good 'Cause It’s Spring

By Russ Slayback, CPG 2305
Editorial from Northeast Section Newsletter, Spring 1989

Geologists are among the least appreciated professionals in the universe, or so it has seemed. Lawyers and engineers beat us up on a regular basis, and John Q. Public doesn’t even know what we do. As proper masochists, we also beat up on each other, with geologists in academia, the oil patch, mining, and the environmental games all vigorously opposing the issue of importance to their supposed professional colleagues. On a practical level, we are as bad as the Jews and Arabs, or the Irish and English - we don’t see eye to eye and we don’t talk about it; we’d rather fight than change. Who is the loser? - every person who has dedicated himself or herself to a career as a professional geologists.

But circumstances seem to be driving improvements in the status of geologists in our world. I now pick up my newspaper and read about geologists on a regular basis. Jim Mellett, CPG 7406, was featured in the NY Times for his use of ground penetrating radar to locate archaeological features in lower Manhattan. Haig Kasabach, CPG 1461 and Frank Markewicz, CPG 852, were featured in articles on career opportunities and ground-water supply protection. Charles Dimmick, CPG 3886, has been invited to participate in an educational seminar program in which he will discuss the geologic aspects of inland wetlands. David Miller, CPG 1757, is frequently quoted on ground-water contamination issues. Klaus Jacob and Charles Merquarian were prominently featured in the NBC week-long feature on seismic risk in the metropolitan New York area, with special emphasis on the lack of seismic protections in local building codes.

We find now that oil companies are hiring hydrogeologic consultants to clean up their subsurface spills and even to depressurize tar sand mines, a classic reservoir engineering case in the old days. Mining engineers are calling in geologists to evaluate water problems in open pit and underground workings. Lawyers now reach out to geologists rather than engineers for subsurface problems. We may not reach professional equality with engineers in my lifetime, but it seems that we are gaining.

I take particular pleasure from the slowly changing attitudes of engineers toward geologists. In the hydrogeologic and environmental fields, many consulting civil engineers are no longer doing geology and botching it - they are recognizing their limits and calling in geologists, either as subcontractors or as independent members of multi-disciplinary project teams. To borrow a horrible old line, some of my best friends are engineers. Larger environmental engineering firms have or are developing their own hydrogeology departments, and a few are even managed by geologists! (Only a few, but that's another story.)

The momentum toward legal recognition of geology, by legislative definition or by certification, licensure, or registration, is perking along. At last count, 15 states have registration or certification programs and 3 more have legal definitions of geology in the state code. The National AIPG Committee on the Status of Registration forecasts that as many as 10 more states may enact some form of registration in the next five years. Our 8-state region has traditionally been a hotbed of registration activity, but with little result. Only Maine has a certification program. Attempts in New York and New Jersey fell by the wayside, and Connecticut even resisted a bill defining geology and professional geologist.

Lately, the climate seems to be improving. A registration bill in Massachusetts has been introduced and a public hearing held. Joe Sinnott, CPG 1997, State Geologist, reports that he and Boyd Allen spoke for government, and Jim Skehan, CPG 1505, and Henry Russell spoke for AIPG/AEG and industry among eight parties who spoke for the bill, with none against. Joe expects that some refinements to the bill may be proposed before the bill is advanced. As a sardonic sign of the times, on the morning the geologic registration bill was heard, a bill to register fortune tellers was also on the hearing agenda. We've come a long way, baby!

Brian Fowler, CPG 3954, reports that AIPG members, organized as the New Hampshire Association of Professional Geologists, have succeeded in having a certification bill introduced to the State Senate by Senator Sheila Roberge, and heard on January 25. Again, some restructuring of the bill is expected before legislative action. Dennis Sasseville, CPG 6814, and Dave Woodhouse, CPG 3742, have also been active in this effort. Way to go, guys!

Even in court or hearing rooms that climate seems to be improving. Lawyers who try to discredit geologists because they are not state-registered professional are finding that judges or hearing examiners lose patience with this tactic. Gradually, the idea that geology should be practiced by people trained as geologists is taking hold.

What a screwy idea!

Anyone Can Teach Earth Science!

Edward B. Nuhfer, CPG 2808

In the September, 1986 issue of Geotimes, Andrew J. Verdon, Jr., noted that more than 40% of earth-science teachers in the U.S. are unqualified. In this year when AGI and its affiliated societies are making major commitments to improve the pre-college earth science curriculum, I hope that one basic question gets a solid no-nonsense answer - "What qualifies one to teach 'earth science'?"

Currently, undergraduates seem to obtain introductory instruction under three main headings: "physical geology," "physical geography," and introductory "earth science." Distinctions between these courses are blurred in the minds of students, faculty, and school administrators and with
good reason. One doesn’t have to look far in Books in Print to find introductory textbooks under all three headings written by the same authors. Examination of these books quickly shows a tremendous overlap in subject content, text, tables, and illustrations. For authors and publishers, there is an obvious incentive to do just this very thing. If profit from textbooks is the business you’re in and you can sell texts to three different courses while using the same color separations, tables, and basic text, why not do that?

From the standpoint of quality of education, there is good reason for us to demand better clarification about what earth science is and who should teach it. When competence to teach the content of geology is claimed by several academic areas, the identity of the basic physical science of geology (and ultimately the profession of geology) becomes obscured in the shuffle. When a college catalogue specifies that a student cannot take both physical geology and physical geography for the same lab science credit, there is an admission already that duplication in content exists and that a degree in geology is not really required in order to be able to teach that content. The ultimate message being conveyed, unopposed, to colleges and state departments of education is that "Anyone can teach earth science!"

Textbooks printed by reputable companies and authored by non-geologists have already provided students with some unusual ideas about geology and geologists. For instance, fill in the blank: _______ are interested in what the rock can tell us about the origin of the earth as a home for human beings or in the significance of certain types of rock for the distribution of mineral resources or fertile soil.

If you said "geologists," you blew it. The 1988 textbook, Introduction to Geography by Getis, Getis, and Fellman published by W. C. Brown of Dubuque, Iowa, tells freshmen that this is the work geographers do. In the chapter titled "Physical Geography: Landforms," 34 color illustrations that range from the display of lithospheric plate boundaries through past configuration of continents appear with a lack of cited primary sources in the captions. This format certainly encourages the uneducated reader to believe that all these facts were deduced by geographers. To be certain that this message is conveyed, the chapter culminates with a list of eight more geography books for suggested reading. The words "geology" and "geologist" are studiously avoided in the three chapters grouped under what Getis, Getis, and Fellman claim is "The Earth Science Tradition" of geography.

Apparently part of the "tradition" permits ignoring the AGI Glossary of Geology wherein scientists already have published what is accepted usage for common geological terms. Some quotes from this same text provide a good lesson in what happens when non-geologists assume control of teaching earth science. "Sedimentary rocks are composed of particles of gravel, sand, silt and clay that were eroded from already existing rocks." (In case you wondered what happened to non-clastics, some are covered two paragraphs down by "Sedimentary skeletons." And you thought that "organic" rocks applied to coal or kerogen!) For you sedimentologists, "Sedimentary rocks evolve under water in horizontal beds called strata." And for you mineralogists, "Some well-known minerals are quartz, feldspar, and silica." Nor are you petrologists ignored with "The name for underground molten material is magma; above ground it is lava" or "With other components, grains of quartz combine to form the rock called granite." Structural geologists will note that "A fault is a break or fracture in rock." The chapter these quotes came from could keep Hugh Hay-Roe's column in Geotimes in business for a year, yet neither the authors nor the editors probably have the foggiest idea of why. What is accurately revealed is a lack of even undergraduate competency in mineralogy, petrology, sedimentology, stratigraphy, or structural geology and this is expected because these areas are the basic preview of geology, not geography. Unfortunately, these areas are also the basis for most of the content area within the syllabi of "earth science," "physical geography," and "physical geology" - the main difference appearing to be that one need not take courses in the basic areas in order to be "qualified" to teach or write textbooks under the first two labels. Using the cover of "geography" or "earth science" apparently gives license to offer students third-rate discourses on geology.

It is not surprising that Ron Abler of the National Science Foundation can write "...Geomorphology is disdained by geologists;..." in The Chronicle of Higher Education and get away with it. If even experts who write textbooks don’t know what a "granite" or a "fault" or a "mineral" actually is, why should the public (including college administrators) educated on such cheese-whiz science question that geologists abhor a repulsive-sounding thing like "geomorphology?" They are as likely to believe that geologists abhor "mineralogy," "hydrology," "geochemistry," or "evolution."

Other culprits have been state departments of education and colleges of education looking for the "quick fix." Many courses that satisfy teaching requirements are constructed around content areas. If the content says in essence "Our teachers need to know about rocks, minerals, landforms, the atmosphere, oceans, maps, earth processes, earth structures, economic deposits, and earth environment." And the answer comes from across campus, "We have all that right here in physical geography," it is not likely that the education college is going to require 30 credits of geology plus meteorology and oceanography and, particularly, to demand that these all be taken under instructors who have actually taken these courses for credit. Within the American school system, there is one physical geoscience and that is geology - the basic stuff that appears under the QE science section of all U.S. libraries. As geologists, we have been far to timid in affirming this. Our tolerance has obscured the identity of geology, has allowed it to be taught by those whose expertise ranges from superb to absolutely zilch, and has degraded "earth science" into the public laughing stock among sciences in the primary and secondary school curricula. Our science deserves better, our qualified teachers deserve better and our young people deserve better.

AGI will do itself, legitimate geoscientists, and the public a great favor if it publishes solid recommendations for qualifications in order to teach earth science in primary and secondary schools and (Please, Oh please!!) physical geology/geography at the freshman level.
Geo-perestroika

The United States and the Soviet Union have entered into a framework agreement on cooperation in basic scientific research. The agreement addresses several broad areas for cooperative research related to the practice of geology, geosciences, engineering sciences, scientific problems of the Arctic and Northern environments, and scientific policy. Implementation of the agreement will be through memoranda of understanding (MOU), currently under consideration are one MOU between the National Science Foundation and the Soviet Academy of Sciences, and another MOU between the U.S. Geological Survey and the Soviet Ministry of Geology. The NSF and USGS are to provide funding for U.S. projects. The agreement is unusual in that it stresses proposals to be initiated by cooperating individuals. Upon completion of peer review, submitted project proposals will be considered for funding and implementation under the agreement.

Arrangements have also been made for a U.S. delegation of petroleum geologists and engineers to visit herefore closed oil fields in the Soviet Union and to participate with Soviet counterparts in presenting papers of mutual interest in exploration and development. John B. Gustavson (AIPG #2637) is Chairman of this exchange program.

Landsat Transfused

EOSAT, the company that operates the Landsat satellite service which was scheduled to shut down in March due to lack of funds (TPG - April 89) has received federal funding to continue operations through the current fiscal year, September 30, 1989. Vice President Dan Quayle, in his capacity as Chairman of the National Space Council, arranged for $8.9 million emergency funds. The funding commitment comes from several federal agencies that utilize Landsat imagery, the departments of State, Defense, Agriculture, and Commerce as well as the Office of Management and Budget. The National Space Council has undertaken a study to assess the value of the service. This study is planned to be completed prior to the end of the fiscal year. The original agreement between EOSAT and Commerce called for a federal subsidy until 1994, but Commerce announced earlier in the year that no funds were available after March 31, 1989 to continue the program.

DOI Offshore Policy Review

Secretary of the Interior Manuel Lujan announced at the OCS Policy Committee meeting in April, a two phase plan to assure that OCS hydrocarbon resources are developed in an environmentally effective manner. The MMS was directed to undertake an immediate review of existing operational regulations and policies to assure their effectiveness to mitigate potential oil spill damage in the OCS. The Secretary also announced that the Department will initiate a research program on oil spill technology. The six million dollar activity will address oil spill detection, containment, and clean up technology. The American Petroleum Institute will share the funding costs.

AIPG members, Bob Jordan, Bill Fisher, and Ken Weaver are members of the Policy Committee.

Interstate Conference on Water Policy Liaison Meeting

The USGS held its first liaison meeting with officials of the Interstate Conference on Water Policy (ICWP). The ICWP is a national association of State and regional water officials concerned with the use, development, and administration of water resources.

Information on earth-science data and research needs and priorities was exchanged.

Modernization of Mapping

The USGS and the Defense Mapping Agency (DMA) recently signed a Memorandum of Understanding that provides for coordinated modernization of their mapping systems.

Under the agreement, compatible hardware and software for digital data management and map production will be developed or procured jointly, assuring duplicate capabilities during national emergencies and greatly reducing modernization costs.

U.S. Scientific Team Investigates Armenian Earthquake

A team of USGS and National Academy of Sciences scientists and engineers traveled to Armenia and worked closely with Soviet scientists to further define geological, seismological, and engineering features in parts of Armenia affected by the December 7, 1988, magnitude-6.9 earthquake.

A network of 20 seismometers was installed to record continuing seismic activity. USGS scientists also identified and mapped a fault trending from Spitak, near the epicenter of the earthquake, to Leninakan. Preliminary information suggests that nearly 5 ft. of displacement has occurred along the fault. The scientific and engineering team completed their assessments and returned to the United States in January. Another USGS scientist was sent to the Soviet Union to maintain a limited seismic network for a few additional weeks. Information gained during this joint venture is expected to help U.S. scientists and engineers develop methods for reducing domestic earthquake hazard potential.

New and Pending Regulatory Issues

EPA


MMS

Proposed 1991 Lease Sales in the Gulf of Mexico OCS Region; Call for Information and Nominations; Notice of
Intent to prepare EIS. Contact: MMS, New Orleans, La. (504) 736-2519. 54 FR 18828.

OSMRE

Final Rule 30 CFR Part 845 - Surface Coal Mining and Reclamation Operations; Permanent Program Inspections and Enforcement Procedures; Civil Penalties. Effective date: June 5, 1989. Contact: Raymond Aufmuth (202) 343-7952. 54 FR 19342.

NPS


BIA/OSMRE

Final Rule - 25 CFR Parts 200 and 750, Surface coal mining and reclamation operations; Federal program for Indian lands. Effective date: June 21, 1989. Contact: Suzanne Hudak (202) 343-4540. 54 FR 22132

EPA


EPA


NRC


One Last Word

Why Not the Best? - Revisited

Fifties fads are returning to consumer advertising. Remember the movie theater classic called "Smell-O-Rama," where aromas were released during a film to intensify the effect of certain scenes? According to Advertising Age, an industry trade magazine, the "Smell-O-Rama" concept has resurfaced in an unlikely scratch-and-sniff consumer ad, titled "The Smell of Victory."

"The Smell of Victory" will be used by BEI Defense Systems Co., a weapons manufacturer, according to Advertising Age. The ad, which will appear in military magazines, will picture a helicopter releasing the company's Hydra 70 weapon. It will carry a scratch-end-sniff panel designed to release the aromas of cordite, the smell that follows a rocket explosion.

Just one more contribution to society from the science of geology.

CONSULTANTS' COLUMN

Konsultants! Kontribute to the Kause!
This is YOUR Kolumn
Fred L. Fox, CPG 1273

Item One: Dick Proctor is on my case about the new AIPG booklet which WE are preparing ("Starting Your Own Consulting Practice"). You may recall that the last column asked for committee members and contributions to the effort. YOU are the source of an untapped treasury of great ideas, suggestions and even what-to-do-and-how-to-do-its. Only YOU can deal with the unique problems of GEOLOGIC consulting. All contributions will be credited to the proper source! YOU can make it a success! Call or write! We still have a couple of months to "get it together!"

Item Two: There are a lot of us who do consulting but in leafing through the directory, I find relatively few who really are consultants in the sense that they do the whole thing. Working for a consultant is not the same as being a consultant, any more than working in an established "profession" means that the practitioner necessarily is a professional. I'd like to compile a list of those of us who ARE true consultants in the sense that we find business, get business, do business, report and defend our findings, collect our own fees and make the world a better place by doing so. A post card will do - I'll follow up from there.

Item Three: Environmental Geology. What is it, who does it, and what do they do? Definitions, descriptions, whatever. Again, a call or a post card.

Item Four: War Stories. Any true consultant has several of these. They involve political foibles, ethical lapses (?), quirks of fate, stupidity, and any of a number of other phenomena. Send them along, or point me at them.

Item Five: Certification. There still are a number of us who would rather "do it ourselves" than be regulated by faceless bureaucracies with no real clue as to what's really flying. REAL national certification program which will enable us to rise ABOVE the problems of registration is within the grasp of AIPG. I visualize this as including impeccable credentials, a significant amount of applicable experience, bulletproof references, meaningful peer review, and continuing education requirements. Such a program would compel respect rather than legislate it. What do YOU think? Because this is the lifeblood of AIPG, I expect a ton of mail on this one (at least from consultants).

Item Last: This is YOUR column. It's a place we can air problems and develop solutions. YOUR INFLUENCE COUNTS - USE IT!
Applications Received

Applicants for certification must meet AIPG's standards as set forth in its Constitution on education, experience and competence, and personal integrity. If any member has any factual information as to any applicant's qualifications in regard to these standards, whether that information might be positive or negative, please mail that information to Headquarters within thirty (30) days. This information will be circulated only so far as necessary to process and make decisions on the applications.


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(as of June 30, 1989)

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BAILEY, Palmer K., CPG 7638, Fort Carson, CO
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HERZOG, Beverly L., CPG 7628, Farmer City, IL
KUHNS, Mary Jo P., CPG 7622, Minneapolis, MN
LANG, William J., CPG 7629, Aurora, IL
MANSON, Robert D., CPG 7639, Woodstock, GA
MARTINEK, Brian C., CPG 7640, Golden, CO
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SLATTEN, Mark H., CPG 7656, Simi Valley, CA
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TOMIK, John C., CPG 7625, Liverpool, NY
TROOST, Kathy G., CPG 7644, Seattle, WA
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Forest Service to Begin Certifying Mineral Examiners

Beginning May 1, 1990, the U.S. Forest Service will require certification of mineral examiners that investigate and evaluate unpatented mining claims located on National Forest System lands.

"We are initiating this specific certification process to ensure that uniform standards are used agency wide and that examiners are fully qualified," said Buster LaMoure, director of the minerals and geology staff. "We are the first federal agency to adopt this kind of certification requirement."

Under the certification program, mineral examiners must be mining engineers or geologists, have training in mineral examination, and have direct experience in mining claim validity examinations, surface use determinations, or mining law related actions.

Additionally, the Forest Service will certify review mineral examiners, who perform technical reviews of mineral reports and evaluations.

LaMoure said the agency will have approximately 80-100 mineral examiners and 10 to 20 review mineral examiners certified by next May.

Under the 1872 Mining Law as amended, approximately 70 percent of National Forest System lands are open to prospecting for hardrock minerals, which are mined and processed for recovery of metals. Most of the lands occur in the Western United States. Mineral examiners investigate and make recommendations on the validity of mining claims by evaluating the mineral deposit and determining if the anticipated cost of producing minerals from that claim is more or less than the claim's value. The examiners then recommend whether or not a patent should be issued or a mineral contest initiated.

The purpose of AIPG is to strengthen the geological sciences as a profession with all reasonable actions, to establish professional qualifications, to certify those qualifications to the public, and to evaluate continuously the ethical conduct of its members. Further, the Institute establishes ethical standards to protect the public and geological sciences from nonprofessional practices, monitors governmental and other activities affecting the geological sciences, and communicates with the public.