The Professional GEOLOGIST

Government And The Geologist
Part 1

A publication of The American Institute of Professional Geologists
**TPG ARTICLES**

AIPG needs quality articles for future issues of *The Professional Geologist*. Members are encouraged to submit articles or call Headquarters and recommend individuals who should be asked to submit articles. Submissions should be 800 to 1600 words in length. Articles submitted on diskette along with a hard copy are appreciated. Headquarters uses DOS, WordPerfect 5.1, and can utilize 3 1/2 or 5 1/4 diskettes. Photographs, figures, tables, etc. are welcome. Photographs enhance articles and make great TPG covers. Be sure to send photographs when possible with your articles OR send your favorite photograph for consideration as the cover for a future TPG issue. Submission deadline is six weeks preceding month of issue.

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Send your article and/or photograph TODAY to:
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**NEXT ISSUE**

**THEME: Government And The Geologist - Part 2**

- Geologists And The Internal Revenue Service
  *Earl G. Hoover, CPG-2739*

- The Role Of Mineral Professionals In The Bureau Of Land Management
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The Professional GEOLOGIST

FEATURES

Special Report... Government And The Geologist - Part 1

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Submitted by Andrew H. Rorick, CPG-7203, article on page 5.

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Government And The Geologist
Part 1

Geology at work in the Shawnee National Forest: Unique rock formations in the Pounds Member of the Pennsylvanian Caseyville Formation (Morrowan) in Garden of the Gods Recreation Area.

Photo Credit: U.S. Bureau of Mines
The Geologist And The U.S. Forest Service

Andrew H. Rorick, CPG-7203

The Forest Service is an agency of the U.S. Department of Agriculture. The agency's mandate is to manage National Forest System lands (totaling about 191 million acres) to provide a continuing flow of natural resource goods and services to help meet the needs of the Nation. Among the "goods" are energy and mineral resources. Among the "services" are safe roads and trails, and geologic interpretation of some of the Nation's most spectacular scenery and recreational settings. Forest Service geologists provide the technical and professional expertise for these purposes.

The National Forest System hosts this country's largest lead and fluorspar mines (Mark Twain N.F., MO and Shawnee N.F., IL, respectively), the most productive coal mines (Thunder Basin National Grasslands, WY), and the only platinum mine (Custer N.F., MT). It was the U.S. Congress that opened public lands, including National Forests and Grasslands, to energy and mineral development, which is undertaken by private industry in partnership with the government. Federal laws and regulations and Forest Service policy demand close scrutiny of proposals for such developments--the agency establishes the terms and conditions under which development may take place--and provides continual oversight of the surface-disturbing activities. This is to ensure that (1) there is no undue degradation of other natural resources and (2) the disturbed lands are reclaimed to other productive uses. Experienced Forest Service geologists define what undue degradation is, and help provide the necessary scrutiny and oversight.

The National Forest System has hundreds of thousands of miles of roads and trails, many over steep ground or through terrain subject to earthquakes, landslides and avalanches. Forest Service geologists provide some of the expertise necessary to insure these travelways are safe and stable on the land. Many National Forest System roads are gravel surfaced; Forest Service geologists locate pits and quarries to supply the road surfacing material. There are also hundreds of dams on National Forests and Grasslands, located and designed by Forest Service teams that included geologists.

To most people, National Forests are places of unsurpassed natural splendor. Many visitors are curious about how and why such beauty came to be. Geological processes are primarily responsible for the Nation's most beautiful scenery: mountains, mesas, cliffs, canyons, caves, waterfalls, glaciers, volcanoes, rivers, the sculpture of the natural world. Forest Service geologists contribute to interpretive stations and brochures so that visitors' curiosity may be satisfied and their visits made more enjoyable: beauty is enhanced by understanding. These scenic areas are often host to rare natural communities, small-scale ecosystems. Geology is an integral part of all ecosystems; its interpretation helps Forest Service ecologists, botanists and biologists understand, restore and protect such precious places.

Each National Forest and Grassland is managed under the guidance of a formal document called the Land and Resources Management Plan. The geology and minerals underlying a National Forest or Grassland are among the resources to be managed. Hence one of the most important tasks for Forest Service geologists is effectively to integrate minerals and geology with the wildlife, recreation, vegeta-

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tive and water resources, and with the social and economic environment, to develop a sound, comprehensive, useful Plan. An environmental impact statement (EIS) accompanies each Plan. The Plan and EIS are required under federal laws: the National Forest Management Act and the National Environmental Policy Act, respectively. A thorough knowledge of the mineral and geology resources in the planning area is essential. In fact, development of these documents demands good, thorough science from all contributing disciplines, and takes, at a minimum, several years to complete; a large, complex task indeed.

Some Forest Service geologists work in positions that demand special, certified or registered expertise, such as examining mining claims for validity under law or ensuring public safety in road location. Others need more generalized knowledge. Often a Forest Geologist is expected to be the local expert on mining, ground water, oil and gas, earthquakes, radon and other geohazards, solid-waste disposal, assessing mineral resources, aspects of engineering and reclamation. It has been the author's personal experience that the job is fun and frustrating, energizing and enervating, in many ways rewarding (but not monetarily). It is a job that demands dedication and a constant desire and willingness to learn things beyond the geological realm and, at this point, one the author wouldn't trade.

*See Ted Mullin's "Special Report" in the April TPG for more on energy and mineral production from National Forest System lands.*

Mr. Rorick is the Forest Geologist for the Shawnee National Forest.

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**Regulatory Vs. Exploratory**

**Mark Hostetter, CPG-5066**

After working as an industrial minerals exploration and mining geologist for 10 years and now having served as geologist and technical advisor for the Commonwealth of Kentucky for 10 years, I feel qualified to reflect upon the similarities, differences, rewards, benefits, and frustrations of the two working environments.

My change in employment direction resulted primarily from a downturn in the mining industry and an upswing in regulatory oversight within our state. Concern for environmental quality resulted in many new jobs becoming available.

As an exploration geologist who longs to be outdoors, the opportunity to research, explore, drill, develop, and ultimately be part of the production and sale of a raw material to the market is not available to a government geologist. He, on the other hand, is now in an oversight position of companies who may be doing those things he once did. Wherein he is now not finding or producing any salable product. This fact tends to be quite distressing if you feel as strongly as I do about the exploratory role of geologists.

I have found one profound similarity between the two employees in that each environment requires the geologist to continually be explaining the important and valuable contributions he can make when allowed some creative flexibility and understanding from his co-workers. It seems that geology is a fascinating but very mysterious science for the layman, as well as other professionals. Therefore, each of us must do our part in public education as the opportunity presents itself.

As a regulator, you hope that the facts you gather will be used wisely and, if necessary, only result in meaningful and positive regulations. There exists a similar parallel in exploration in that you hope your data gathering and exploratory efforts will one day become a successful mine or productive well. In either situation, we must strive to be as professional as possible, and simply do the best we can toward making positive contributions for the future.

I have found that being a friend to those you regulate is far better than trying to be the big shot from the capital. Industry contacts and friendships will last a lifetime if properly cultivated, and these same contacts feel much better about government if they feel you are working with and for them instead of against them.

One very significant difference is that governments rarely go bankrupt, go out of business, cause layoffs, or suffer corporate shakeups as are seen elsewhere; and one's income remains reasonably secure long-term. And if you can find your niche within the government arena that satisfies you, then congratulations; but if not, then head for the great outdoors and explore and discover.

Regardless of your position, the following quotation by Scottish geologist, Hugh Miller, in his book, *The Old Red Sandstone*, 1841, serves as a warning to us all:

*Such is the state of progress in geological science, that the geologist who stands still for but a very little, must be content to find himself left behind.*

Mr. Hostetter is Geologist and Technical Advisor for the Commonwealth of Kentucky.
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Government And The Geologist - A Personal View

David L. Cole, CPG 6951

Introduction
I would like to share with the readers of TPG some of my experiences, observations, and conclusions that relate to the theme: Government and the Geologist. I shall begin this article from a historical perspective, starting from the time I graduated from college with a B.S. Degree in Geology, and how that led into jobs doing geology-related work for government agencies.

Experiences
At the end of Spring Term, 1978, I graduated from the University of Oregon in Eugene, Oregon, with a Bachelor of Science in Geology. Immediately following commencement activities, I moved back home to Portland, Oregon, and took up residence once again with my parents. During the next week I spent time at the Portland State University office, checking out job leads that were posted on the office bulletin board. Within another week, the U.S. Geological Survey, Geological Division, Menlo Park, California, through the Oregon Department of Geology and Mineral Industries, known locally as DOGAMI, hired me to locate some 350 field sites for more remote seismograph placements, as part of the U.S.G.S. Seismic Study of the Oregon Cascades from Mt. Hood to Crater Lake.

To me, this was like a dream come true. What more could a college graduate ask for than to get a job in his chosen field of study, within a mere two weeks out of school? And what more could a budding geologist want than to work in the Oregon Cascades in the summer time?

Although this was only a seasonal and not a permanent position, it left a good initial "taste in my mouth" regarding Government and the Geologist.

At this point in my budding career, I entered the Master's Program in the Earth Sciences Department at Portland State University (P.S.U.). In my first year I completed the course requirements for the degree. The rest of my time as a graduate student at P.S.U. was spent putting together and finishing my thesis. While still working on my thesis, I became a private contractor doing business with the city of Portland's Bureau of Water Works in January 1980. Specifically, I was to become an integral part of their Ground Water Development Program, the goal of which was to construct a series of production water wells designed to supplement the City's existing surface water supply for periods of drought or contamination (a good idea, in light of the recent volcanic activity at Mt. St. Helens, and noting that the City's main water supply comes from lakes and reservoirs that were within Mt. Hood's potentially destructive sphere of influence).

I started out at a half-time clip, learning the rounds on measuring water levels in the City's pilot and exploratory water wells. During the summer months of this first year while working for the City, I became a Hydrologist for the U.S.G.S., Water Resources Division, based in Oregon. This was a half-time, temporary position. Essentially I was a liaison between the U.S.G.S. and the City. In the mornings I would collect field data as a contractor for the City, and in the afternoon I brought the data back with me to the U.S.G.S. to help them develop and refine a computer-generated ground water model, which attempted to predict the behavior of the City's proposed water wells under various pumping regimes. The fact that my position with the U.S.G.S. was temporary, with no guarantees of permanent future employment, did not please me much. Consequently, I left the U.S.G.S. and began consulting full-time for the City, because it paid better and had no less guarantees of continued work than the U.S.G.S. Over the next three years my contract continued to get renewed, as I became progressively responsible for duties involved in the City's Ground Water Development Program.

In November of 1982 I defended my Master's Thesis successfully. The following year my contract with the City expired and it was not renewed, despite the fact that I was experienced and I charged about 1/3 the price of the consulting firm that the City hired to complete the Ground Water Development Program. Rumor had it the City made this move to demonstrate that it did not have a monopoly on the ground water work, or the City was not playing favorites. Still, in the end analysis, it could be shown that it was in the City's best interest to renew my contract. When it did not happen I was understandably upset. This just points out that the best of business logic cannot always compete successfully against politics. There may have been other factors that played roles in the City choosing a more expensive consulting firm than me, but it would still, in all probability not console me very much, because I counted on that job to keep my bills paid, plus I genuinely enjoyed the work.

After my contract expired in November of 1983, and until I found permanent work with the State Highway Division in July of 1985, I floated between an assortment of odd jobs, such as car selling (1 week), temporary
services in heavy industrial work (6 weeks), radiographic mini-filmation technician work (microfilming medical X-rays and documents, 3 months) and teaching general science to talented and gifted grade school children (3 months).

Initially, I was overjoyed at getting a job with the State. For the first time in my life I had a full-time, permanent job, with benefits—something that I had never had before. As time wore on. However, I became less than satisfied with the situation. Despite my academic and professional training and experience in geology, I was unable, over five years, to get a geology position with the State Highway Division. What I encountered was a "Catch-22" type of situation. It was not that I was unqualified, but rather I had insufficient experience that they were looking for. But how can you get the experience if you don't get hired? And how can you get hired if you don't have the experience? I tried unsuccessfully to get a rotational position created so I could get the experience, but no one with a geology position wanted to swap with me, so the position and opportunity never materialized. Patience and persistence paid off, though. Eventually I got a promotional opportunity, still within the Highway Division, that took me out of the construction section and into the environmental section. This happened in March of 1990. For the next year and a half I broadened my project management, writing, computer, and environmental skills. Although I continued to be unsuccessful in obtaining a rotational assignment in a geology office, my growing bank of skills led to my latest promotion. I am still with the state, but a different agency. I now work for the Department of Environmental Quality, as a Groundwater Monitoring Specialist.

Although I am not doing basic geology, I am much closer to hydrogeology, which is the field that I was involved in when I was consulting for the City of Portland, during their design and installation of water wells. At this point, I foresee a good future for myself in ground water, which is of great interest and concern to me.

Observations and Conclusions

In retrospect, at least in my particular case, it is not so much who you know, although that can, and usually does help, but what you know. In particular, practical experience, related directly to the type of work that you want to do, is most important. Also, being at the right place at the right time is a decided advantage, but no one can plan on this consistently, or even occasionally. People are dynamic creatures, and what is good and fun one day, or year, may not stay that way as time marches on. While one is in school, it is important to get as much practical experience as possible, through courses that offer field labs. In this way, one can attack the job market with not only academic proficiency, but practical experience as well. This can make the difference between someone who is theoretically capable of doing a given job, and someone who is proven to be capable of doing that job. So take advantage of as much schooling as you can. The situation is similar to the one in which a researcher would rather have too much, than too few data. To prepare yourself for a rewarding professional career, you are much better off with too much education than not enough.

Working for the government can be quite rewarding, not only from a financial standpoint, but mentally as well. Although the hourly rate or salary in a government job is usually less than the same job in private industry, the government job tends to be more secure. Also, the pressure in a government job tends to be less than the same job in the private sector. It's nice to be able to leave work after an 8-hour day, and then go home to spend high quality time with your family. Working for the government is not for everyone, but it certainly deserves a good, long, hard look, since the reward and benefits can stand up well against jobs in the private sector.

Mr. Cole is a Ground Water Modelling Specialist for the Oregon Department of Environmental Quality.

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The Government Geologist
Who Are We Working For Anyway?

Larry P. Coen, CPG-8394, CHMM-2980

The field of environmental science is characterized by a fast-paced, stress-including race to handle one problem so that another can be tackled. Clients are understandably threatened by the cost of environmental compliance as well as the interruption of business activities, if things go too far wrong. Clients are also stressed by the number of regulatory changes which often cannot be managed smoothly. The tricky part is that what the client needs from the consultant does not really match what he wants. The client wants to cut losses and make a profit, but compliance is expensive. Consultants face the stress of trying to facilitate environmental compliance for a client. Sometimes consultants even get conflicting guidance from different governmental sources which makes compliance even more frustrating. In addition, the consultant must budget time project concerns so that hours are always billable; but the work load is never too far behind.

Problems develop when the industry and the public cannot agree on a course of action. There is always some sensitive public need that cries out to be regulated. The public needs clean air, clean water, and clean soil. The public also needs industrial products and services, but the public should not have to give up clean environment in trade for technological innovations. Thus, regulations are born, the "high wire"act of balancing industry and environment begins, and the stresses soar.

Ground water protection is the basic need that is becoming more and more regulated. Before regulation, ground water was severely degraded by landfill, buried tanks, agricultural chemicals, and numerous other common activities. Rural areas near large cities were often used for the disposal of dioxin, radioactive wastes, other hazardous wastes and drums of unwanted products. These nefarious activities affected ground water quality and produced surface exposure to nearby residents. These improper actions went absolutely unchecked until regulations were developed. Overall, getting industry to change business practices often requires regulation; but changes are just not that easy to make.

Entering The Regulatory Tray

All practicing geologists must learn to interface with local, state, and federal government for permits, approvals, and guidance. To be a successful geologist, you must also become successful negotiator and salesman. Your best resources, your scientific problem solving, and your technical expertise will be wasted if you cannot sit around the table in a government office with your client and sell your side of the story. To sell your story to those in government service means that you need to know your audience, who may be a government geologist like myself.

I would like to help you understand my position as a government geologist. Contrary to much public opinion, stress is also extremely high for government professionals in the environmental field. The fact that government employees have numerous clients is one reason for stress. Our first client is the public as a whole and their welfare.

In addition, in my meetings, I am introduced to specific individuals who also become my clients. At this point, I sometimes begin to wonder who my client really is. Let me explain. When the owner or operator of a facility comes to me for my assistance, he or she is a client. When a

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consultant submits work for approval on behalf of industry, that consultant becomes my client. When a third party registers a complaint against a company, that grieving individual becomes my client. When a publicly elected official contacts me to follow up on a story, that elected official becomes a client. When a news reporter calls, I have a new client. When an attorney visits my office, I have a new client. When a student seeks information for a class project, I have a client. When a distraught mother calls about some unknown substance that her children have found, I have a client. When governmental management wants an update on sensitive issues, I have a client.

Sometimes these "client" relationships change due to a variety of circumstances. An individual who begins a relationship with my office as a client may in fact become the subject of an investigation. Protracted non-compliance may lead to enforcement. Complaints may turn out to be unfounded or even prejudiced. Companies who begin compliance may later get out of compliance because of subsequent decisions. Some who come seeking information may later use the collated data to challenge state policies and decisions. While this is certainly within individual purview, it causes me to wonder at times "Who is my client?", "What services do I owe them?", or "What are the facts?".

Keep this in mind when you first meet the government geologist. While you are wondering how to sell your story, he or she will be wondering what is the "real story". Let me be the first to say that most companies and individuals bend over backwards to do the right thing. The percentage of conscientious environmental professionals is simply outstanding. All the suspicion, all the apprehension, and all the wariness comes from those few cases where the government employee has been left holding the "bag" of environmental noncompliance which somehow slipped past the system. After I have had my feet in the fire and my face in the spotlight a couple of times, I have learned not to take assumptions (or presentations!) at face value. In addition, it is part of my job to question, probe, and leave no stone unturned. It is, after all, my duty to the general public to ensure a job well done.

Making The Most Of Your Meeting

Now that I have introduced you to the daily concerns of your government contact, I would like to give some basic guidelines so you can have a successful meeting when your business is at stake.

1. I appreciate the common courtesy of an appointment. It is not good etiquette, good business, nor good planning to simply show up and expect to be entertained. You cannot imagine how often this happens. While the sunshine laws make the files open, they do not make personal offices open. Remember, I have a backlog of work and schedules to keep too. Besides, it will not improve my first impression of you if I have to drop everything just to accommodate your schedule. If you really do not care what I think, then by all means, just barge right in!

2. When you set up a meeting, send notes and maps in advance. You have been working on this site for weeks or months, but I have never seen it before. I cannot prepare for our meeting without some information beforehand. Too often, I have been asked to give on-the-spot approval when there has not been time for review or follow-up questions that can only come after absorbing the data.

3. When you arrive for the meeting, be able to hand out information and present simple ideas in an orderly manner. Details can come later, but I need to understand the overall issues up front. Details are meaningless unless I have a grasp of the big picture first. Also, make my time count. I am swamped with new regulations, thousands of sites and many sensitive issues. I will make the time to deal with the real problems, but I do not have any time to give away.

4. Be up front with everything. If I have to drag information out of you, I will wonder what else you are not telling me. There seems to be prevailing fear that disclosure leads to penalties and enforcement. My experience tells me that early disclosure solves problems, allays fears, and prevents enforcement. Penalties may occur but should be minimized. If you try to hide anything, some third party or disgruntled employee may help you disclose problems. Then it will be too late to be cooperative.

5. Remember that my supervisors expect me to get it in writing. To them, I have not done my job properly, otherwise. Although I grew up in an era when a person's word meant something, today that is just not the case with many people. I simply cannot count the times that I have been promised something over the phone or in a meeting that never came to pass. I am confident that you have experienced the same lesson. So be prepared to put it in writing. Of course, this works both ways. Most state agencies have a provision that basically allows the state to revoke an employee's commitment to his client, but only when a state employee has agreed to something which is illegal or not in accordance with the law. Decisions are NOT revoked simply because of a difference of opinion.

6. Use the standardized forms required by the agency. Each agency of the state will more likely have an established procedure and may have published guidelines for maintaining compliance. From my point of view, the only way to effectively deal with a backlog of an ever-increasing number of sites and laws is standardized submittals. This also benefits you. If I know where to look and what I should see when I look there, I can process your submittal much more quickly than attempting to digest a free-lance document. Free-lance documents may be acceptable, but they take a lot longer to thoroughly read and re-read. My speed of review can be increased as much as ten-fold if your document format is familiar to me. If you do not like the state guidelines, then let's talk about it. I want the best guidelines that can be produced, but changes must be made only after considering the repercussions. If you
are a consultant, you are doing your
closest a great disservice to use his site
to challenge state regulations and
guidelines unless your client has re-
quested this action. Just consider
your goals. If your goal is to get your
client through the process as
smoothly and as quickly as possible,
then follow the guidelines. If your
client wants to change or challenge
history, then it is your right to chal-
lenge. Just do not expect the “chal-
lenge” process to be smooth or quick.

7. Send follow-up letters. They
remind where this site is going. They
keep the record straight for you.
Copied to interested parties, the fol-
low-up letter keeps everyone in-
formed and involved. Do not assume
that everything is going well. If things
are headed in the wrong direction,
you will not find out until the
“damage reports” start arriving. Then
it may be too late to adjust course if
damages have already accrued to
your project and goals. Your client is
going to be much happier when you
can show that course adjustments
were made before the project was
damaged. (That, in turn, will also
make your boss happy, which is not
a bad side benefit.) Follow-up letters
are a tool just as much as any drilling
rig or photoionization detector.

Obviously, I could go on; but I
hope that I have passed along
some insight which will work for
you. Just use some common
sense when you have your next
meeting with your government
contact. Use some of these
pointers before, during, and after
your meetings. They are just as
effective and important as any
other environmental tool.

I'm Working For The Future
It’s quite a challenge to manage an
environmental unit in state govern-
ment. Government staff are working
for the common good. We want to
provide citizens with clean air, clean
soil, and clean water. We also want to
see technology improve our quality of
life. Sometimes, however, it becomes
complex to figure out what is good
and what is not. Sometimes you may
not agree with recommendations and
regulations that I support. Some-
times you may wonder who I am
working for; but there is far more to
be gained if we all communicate well.
Then, we will have more clean water
in the future. From that standpoint,
I am working for you too.

Mr. Coen is Supervisor of the Leak-
ing Underground Storage Tank Unit
Environmental Services Program for
the Missouri Department of Natural
Resources*

LETTER TO THE EDITOR

Dear Editor:
I was amazed, and ashamed, when I saw the cover picture on Volume
29, No. 9 of The Professional Geologist. Perhaps your Life and Health
Insurance Program manager has likewise commented on your obvious
blunder. The same mistake was made in your photograph featured with
the lead article. Have you figured out the unforgettable sin portrayed in
both photographs? Let me explain. None of the people shown working
around either of the two drill rigs is wearing hard hats. It doesn’t matter
if they are drillers or geologists. If they are in the shade of the mast they
should be wearing protective head gear.

These photographs illustrate a non-professional practice that should
never be tolerated by professional geologists working in the field. If it is
for just a brief moment when the drill rig is shut down, it is certainly not
documented in a photograph that ends up being published in a profes-
sional trade magazine. I hope that any future issues showing either drillers
or geologists working around a drill rig will be wearing proper protective
head gear. I’m sure that your insurance program managers will agree.

Gary L. Hix, CPG-6903
Registered and Certified Geologist
Certified and Licensed Driller

Editor's Response: Oops!
AIPG Certification
Before Regulation Through Legislation

Richard C. Fountain, CPG-1750

Addressing the question: "What can AIPG do for me now that I am a licensed professional geologist in my home state?" -The Florida experience.

The establishment of unified professional activities and goals for geologists before regulation through some type of legislation has been needed for some time in many states. Rapid population growth, heavy industrialization, and increasing development of mineral resources have brought the need for regulation of our profession to the attention of the public and various governmental agencies over the past years.

A section of AIPG was established in Florida during the early 1970s, many years prior to the passage of legislation resulting in a requirement for the licensing of geologists performing certain types of professional services. In the early years after the section was established, the rate of increase in membership was slow for several reasons, the geographic distribution of professional geologists within the state being one. However, during this early period the Florida Section of AIPG did serve as a coordinating body which brought different disciplines in the geological sciences together on an occasional, more or less, social basis to discuss the growth and changes in our profession which were taking place in the state.

With increased population and industrial growth geologists in the state became more aware of and involved with the development, regulation, and implementation of environmental regulations involving the profession. The writer is of the opinion that this one facet of involvement by members of our profession was the prime driving force that led the Florida Section of AIPG to become the lead professional organization in Florida for organizing the coordinated efforts of geologists within the state, which ultimately led to the passage of legislation in 1987, designed specifically for the regulation of the professional activities of geologists within the state. The resulting legislation, Chapter 492, Florida Statutes, mandated the licensing of professional geologists for the performance of certain activities in Florida as a means of safeguarding the life, health, property, and well being of the citizens of that state.

Chapter 492 of the Florida Statutes carries a provision for grandfathering geologists with certain qualifications, and also a provision which requires passing a written examination to become licensed if the grandfathering provisions were not met.

Once licensing was established, a feeling of apathy seemed to develop within the members of the geological profession in the state in regards to their interest in either continuing membership in AIPG or in membership, in the case of non-members, if previously licensed under Florida law. The main question posed by potential AIPG membership candidates was, "What can AIPG do for me now that I am a licensed professional geologist under the laws of Florida?" Some of the members of the Florida Section found this question difficult to answer to themselves, much less to a non-member inquiring into AIPG membership. Consequently, over the past five years, we, in the Florida Section, experienced a reduction in interest in membership in AIPG which fortunately, appears to be turning around at this time, thanks to one of our very active members, Rick Powers. Several years ago, during his tenure as Vice President of the Florida Section and in charge of programs, we implemented a new format for section meetings and converted what previously had been primarily a social function with several presented papers, social hour, dinner and after dinner technical speaker. Attendance at meetings has dramatically increased and we are experiencing a renewed interest in application for membership in AIPG.

In the course of this turnaround of events and because of the participation of some of our members in various capacities at the Institute level, we have been able to begin to make the professional geologists in Florida aware that AIPG is a central coordinating body for the activities of our profession within the United States and aware that this professional organization and certification for membership is the answer to unifying the efforts of geologists towards reaching goals such as obtaining reciprocity between states for licensing, and as regulation of our profession becomes more stringent, developing insurance plans for self-employed individuals, and similar issues. After being licensed by state legislation, the Institute still serves to fill a void in a geologist's everyday activities. Certification by AIPG should not be the only reason for membership in the Institute.
U.S. 24035
TOPIC: ENERGY
SUMMARY: Issues blanket certificates of public convenience and necessity authorizing jurisdictional gas sales for resale at market negotiated rates to all persons who are not interstate pipelines.
CITATION: 18 CFR 284
PROPOSAL DATE: 08/11/92
COMMENT DEADLINE 09/24/92

U.S. H 5944
AUTHOR: Kostmayr
TOPIC: RES. MGMT. AND PRESERVATION
SUBTOPIC: LAND
SUMMARY: Designates certain public lands in the States of Idaho, Montana, Oregon, Washington, and Wyoming as wilderness, wild and scenic rivers, national park and preserve study areas, wild land recovery areas, and biological connecting corridors.
STATUS: 9/15/92 INTRODUCED.

AZ 1186
AGENCY: Oil and Gas Conservation Comm.
TOPIC: ENERGY
SUMMARY: Updates and clarifies language, consistency and accuracy, accounting for the regulation of the regulated industry and incorporates language to include geothermal resources; allows the Oil and Gas Commission to collect bond money, examine and approve applications, prescribe well-spacing requirements, and regulate drilling, casing, and testing of wells to conserve resources and protect public health, public safety, and the environment; requires operators to post performance bonds, apply for drilling permits, dedicate acreage to each well drilled, properly identify completed or abandoned wells, build environmentally safe pits that contain drill cuttings and drilling mud, drill vertical wells to protect energy resources and surfaces and subsurface waters.
AGENCY CONTACT: Steven L. Rauzi, Arizona Geological Survey, 845 N. Park Ave., #100, Tucson 85719, (602) 882-4795
CITATION: AAC R12-7-102 TO R12-7-118
PROPOSAL DATE: 09/01/92
COMMENT DEADLINE: 10/02/92
HEARING DATE: 10/25/92

CO 2831
AGENCY: Dept. Regulatory Agencies/Division of Registration/Board of Registration Engineers/Surveyors
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: Changes the bylaws and rules of procedure of the State Board of Registration for Professional Engineers and Professional Land Surveyors. Adds a rule of procedure relating to construction supervision. Adds a rule on solicitation of professional employment. Adds a rule on exercising independent professional judgment. Revises rules of order. Revises rules on experience, education, sealing of documents, physical standards for monumentation, and standards for property boundary surveys. Revises professional conduct rules as they relate to the safety, health, and welfare of the public in the performance of their professional duties.
AGENCY CONTACT: Susan Miller, Program Administrator, 1560 Brady, Suite 1370, Denver, CO, 80202, (303) 894-7788
CITATION: 4 CCR 730-1 Changes to Bylaws and Rules of Procedure of Board of Registration for Professional Engineers and Surveyors
PROPOSAL DATE: 09/10/92
COMMENT DEADLINE: 10/09/92
HEARING DATE: 10/19/92

FL 10896
AGENCY: Department of Professional Regulation/Board of Prof. Eng.
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: Clarifies use of terms in practice of engineering as a sole proprietor which constitute use of a fictitious name.
AGENCY CONTACT: Angel Gonzalez, Executive Director, Board of Professional Engineers, Northwood Centre, 1840 N. Monroe St., Tallahassee, FL, 32399-0750
CITATION: FAC 21H-19.001
PROPOSAL DATE: 08/29/92
COMMENT DEADLINE: 09/18/92
HEARING DATE: 09/30/92

FL 10935
AGENCY: Dept. of Prof. Regulation/Board of Architecture and Interior Design
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: Raises the asbestos consultant fees as set forth by the Board of Architecture and Interior Design.
AGENCY CONTACT: Angel Gonzalez, Executive Director, Board of Architecture and Interior Design, Northwood Centre, 1840 North Monroe Street, Tallahassee, FL, 32399-0750
CITATION: FAC 21B-19.001, Asbestos Consultants, Licensure
PROPOSAL DATE: 09/04/92
COMMENT DEADLINE: 10/06/92
HEARING DATE: 10/06/92

IL 5071
AGENCY: Department of Mines and Minerals
TOPIC: ENERGY
SUMMARY: Concerns the Oil and Gas Act, establishes requirements for the content and filing of utilization petitions, conduct of hearings, integration petitions, drilling units, establishes standards for the amounts of civil penalty assessments for violations of the Act based on the nature of the violation, past history of violations by permittees, actions he has permitted with respect to the violation, and seriousness of the violation, allows the Department of Mines and Minerals to see a Cessation Order against a permittee for operating awell in violation of the Department's spacing requirements or for operating wells without having paid the permittee's annual well fees.
AGENCY CONTACT: Gunnar Gunnarson, Legal Counsel, Department of Mines and Minerals, 300 West Jefferson, Suite 300, Springfield, IL 62701-0157
CITATION: 62 IAC 240.151 TO .190
PROPOSAL DATE: 09/11/92
COMMENT DEADLINE: 09/25/92
HEARING DATE: 09/29/92

KY 8343
AGENCY: Natural Resources & Environmental Protection Cabinet/Surface Mining Reclamation & Enforcement
TOPIC: RES. MGMT. AND PRESERVATION
SUMMARY: FLW Relates to surface coal mining reclamation operations; designates that which is applicable to all coal exploration and surface coal mining and reclamation operations, and specifies those activities to which regulation does not apply, reflects jurisdiction of Natural Resources and Environmental Protection Cabinet over coal exploration and surface coal mining and reclamation operations and sets forth certain non-jurisdictional activities.
AGENCY CONTACT: Jim Villines, Department of Surface Mining, 2 Hudson Hollow Road, Frankfort, KY 40601
CITATION: 405 KAR 7:030 Applicability.
PROPOSAL DATE: 08/01/92
HEARING DATE: 08/27/92

ME 4057
AGENCY: Board of Licensure for Professional Land Surveyors
TOPIC: BUSINESS AND CORPORATIONS
SUMMARY: FLW Complies with the changes in the national exam procedures for land surveyors, requires surveyors to continuously further their professional development by the use of different programs.
AGENCY CONTACT: Kelly Webster, Board of Licensure for Professional Land Surveyors, State House Station 35, Augusta, ME 04333 (207) 682-4723
CITATION: [UNCODED] Chapter 3: Requirements for Licensure, Chapter 4: Professional Development
PROPOSAL DATE: 09/02/92
COMMENT DEADLINE: 09/25/92
HEARING DATE: 09/15/92

MT 1881
AGENCY: Dept. of Public Service Regulation
TOPIC: UTILITIES AND APPLIANCES
SUMMARY: FLW Relates to cogeneration and small power production, establishes policy guidelines on intertaged least cost resource planning for electric utilities in Montana.
AGENCY CONTACT: Robin A. McHugh, Public Service Commission, 1701 Prospect Ave., Helena, MT 59623-2601
MT 1886
AGENCY: Board of Oil and Gas Conservation
TOPIK: ENERGY
SUMMARY: Refer to definitions, bonding of oil and gas wells, reports, well plugging requirements and referral of administrative matters.
AGENCY CONTACT: Timothy C. Fox, 2355 St. Johns Avenue, Billings, MT 59102
CITATION: 53.22.302, 36.22.1242, 36.22.1308, Rules I and II
PROPOSAL DATE: 09/19/92
COMMENT DEADLINE: 10/08/92
HEARING DATE: 10/08/92

MA 6053
AUTHOR: Manred
TOPIK: NUCLEAR ENERGY AND RADIOACTIVE SUBSTANCES
SUMMARY: Authorizes the Department of Public Health to promulgate rules and regulations for the testing for radon gas emissions in municipal and state residential dwellings.
STATUS: 8/5/92 INTRODUCED.

WI 6740
AGENCY: Architects, Professional Engineers, Designers and Land Surveyors Examining Board
TOPIK: BUSINESS AND CORPORATIONS
SUMMARY: Requires applicants for licenses to include examination, application, examination, and annual renewal fees.
AGENCY CONTACT: Office of Administrative Rules, Dept of Regulation and Licensing, P.O. Box 8935, Madison, WI 53708
CITATION: A-E 4.05
PROPOSAL DATE: 08/31/92
COMMENT DEADLINE: 09/29/92
HEARING DATE: 09/11/92

OH 3754
AGENCY: Board of Engineers and Surveyors
TOPIK: BUSINESS AND CORPORATIONS
SUMMARY: Concerns licensure for engineers and surveyors including application, examination, registration and annual renewal fees.
AGENCY CONTACT: Mason Plicher, Board of Engineers and Surveyors, 77 South High Street, Floor 16, Columbus, OH 43266-0314, (614) 466-8848
CITATION: [UNCODIFIED] 1 Rule Application, Examination, Registration and Annual Renewal Fees
PROPOSAL DATE: 07/13/92

OR 9009
AGENCY: Department of Justice
TOPIK: BUSINESS AND CORPORATIONS
SUMMARY: Provides procedures for direct appointment and informal or formal selection of qualified professional consultants to perform architectural engineering personal service contracts for public contracting agencies in State of Oregon.
AGENCY CONTACT: W. Douglas Marshall, Dept. of Justice, General Counsel Div., 100 Justice Bldg., Salem, OR 97310. (503) 378-4620
CITATION: OAR 137-35-000 thru 137-35-080
PROPOSAL DATE: 09/01/92

TN 2201
AGENCY: Department of Commerce and Insurance/Div. of Regulation Boards
TOPIK: BUSINESS AND CORPORATIONS
SUMMARY: Provides that a nonrefundable application fee of fifty dollars shall accompany an application for registration as a geologist or professional geologist.
AGENCY CONTACT: Office of Admin. Rules, Rules, P.O. Box 8035, 1400 E. Washington Ave., Rm 171, Madison, WI 53708, (608) 266-0495
CITATION: A-E 4.08(2)
PROPOSAL DATE: 08/31/92
COMMENT DEADLINE: 09/29/92

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NOVEMBER 1992 • The Professional Geologist 15
By the time you read this article, you will have had the opportunity to influence the future of the United States. I hope that more of you voted in the national elections than did in the AIPG election of officers this year. Your response was abysmal. If you didn't vote, you have no right to complain. I had the privilege to counsel my youngest son in a similar fashion before he voted in his first Presidential election this year. I don't know how he voted and I don't care. He did vote -- that is what counts.

From the Public Lands News, Vol. 17, No. 20 (Oct. 15, 1992) comes the following...

Comprehensive reform of the 1872 Mining Law reached the House floor for the first time October 3rd and 4th, but the House did not have time for final passage.

Test votes indicate environmentalists have enough support to secure House passage next year, assuming only minor changes in the Congressional line-up. And those test votes indicate strong support for the most important revision - an 8 percent royalty on all minerals produced. The 1993 Appropriations Bill, signed by the President on October 5, included a $100 per year holding fee for mining claims. This fee is to replace the annual assessment requirements under the mining law. The same bill also had a moratorium on the issuance of mining claim patents, fair market value for surface patent, reversion clause in the event of unauthorized use and reclaims where there are no state standards. These provisions were killed in the House-Senate Conference.

It seems to me that the mining industry has lost the race in this one. The relationship between Senator Bumpers and Mr. Clinton is too close to assume that Bumpers' goal to eliminate the 1872 Mining Law will not come to fruition.

My guess is that -- the mining law, as we have known it, will be replaced with a lease type system. There will be a royalty paid the government, there will be no more patents issued, the land managing agencies will have full control with the power to deny any mining (through land management planning, zoning or from political pressure) and the $100 holding fee will remain. In short, industry loses and the environmental groups get almost everything they want. It is the first big step to a total closure of the federal lands to the extractive industries. I hope that I am wrong. Only time will tell.

The Senate approved the Omnibus Energy Bill and the President is expected to sign it into law. The bill set all federal oil and gas leased to a 10 year lease term, a change from the House-Senate proposal of 5 years.

The valid existing rights question was answered by ordering the DOI to continue using the standard set by the November 10, 1986 regulations.

Oil shale mining claimants who received a first-half patent certificate may patent the claims. Others who had not received the certificate could patent mineral only or retain the claim by paying a $550 per year holding fee.

The Forest Service regulation of private oil under federally acquired land was allowed, but only for the Allegheny National Forest in Pennsylvania.

The life of the Abandoned Mine Land fund was extended to the year 2010. It would cost coal miners 15 cents per ton for underground coal and 35 cents a ton for surface coal. This amounts to $4 billion by the year 2010.

The speculation of who would receive federal appointments under a Clinton administration is speculative; however, retiring Senator Tim Wirth (D-CO) has been mentioned as being in line for the next Secretary of Interior or Energy, or EPA Administrator's job.

Also mentioned for the Interior and Energy jobs is former Gov. Bruce Babbit (D-AZ). Hawaii Gov. John Waihee has also been mentioned for the Interior job. Rep. Phillip Sharp (D-IN), the lead architect of the energy bill has been mentioned for the Energy Department.

Just a couple of noteworthy items from the Federal Register this month.


The zinger of the month has to be this one in the 10/7/92, Vol. 57, No. 195 issue of the FR.

The EPA has published a notice of delegation of administration of auctions and sales under section 416 of the Clean Air Act from the Administrator of the EPA to the Chicago Board of Trade.

Summary

Pursuant to Title IV of the Clean Air Act, the administrator must promulgate regulations to reduce emissions of sulfur dioxide (SO\textsuperscript{2}) and nitrogen oxides (NO\textsubscript{x}), precursors of acid rain. The centerpiece of the SO\textsuperscript{2} control program is the allocation of transferable allowances, or authorizations to emit SO\textsuperscript{2} which are distributed in limited quantities for existing utility units and which must eventually be held by all utility units to cover their SO\textsuperscript{2} emissions. These allowances may be transferred among polluting sources and others, so that market forces may govern their ultimate use and distribution, resulting in the most cost-effective sharing of the emission control burden. In addition, the Administrator is directed under section 416 of the Act to conduct annual auctions and sales of allowances. Auctions and sales are expected to stimulate and support such a market in allowances and to provide a public source of allowances, particularly to new units for which no allowances are allocated.
What Does AIPG Do For Its Members? - Political Action

William V. Knight, CPG-153

In two recent issues we have tried to provide some of the many answers to the question of what AIPG does for its Members. So far, we have addressed two kinds of insurance, i.e., Professional Liability and Health, Accident & Life. We have also described continuing efforts to develop some sort of portable pension plan for Members, as well as insurance coverage for the employees of Members. There are many more categories of services which the Institute undertakes.

One which is particularly relevant in this election year is political action.

I am frequently distressed, when talking to some of our Members, that there is so little awareness of this aspect of the Institute's work. Though it is listed in the front of our annual Directory, few seem to realize that we have an active Government Affairs Committee. It is one of our largest, and most active. It also is one of our most ambitious.

Its charge, as stated in the 1992 Directory, is "Maintain surveillance of State and Federal legislative and regulatory matters having geologic implications, either on its own initiative or at the request of the President, and identify and prepare position statements, for Executive Committee consideration, on issues of professional concern to geologists; increase AIPG's impact and visibility on legislation and regulation affecting the profession at all governmental levels; assist in presenting approved AIPG positions on issues before appropriate governmental agencies, or at Committee hearings, etc.; and organize Subcommittees to most effectively represent the full spectrum of AIPG membership. These Subcommittees should be organized to represent the fields of practice of Mining, Petroleum, Engineering Geology, and Hydrogeology, plus general Environmental Matters, and Professional Affairs (including Registration). Subcommittees should communicate with each other in kind, so that the positions do not represent parochial points of view." Under our current committee structure, it works in cooperation with the Committee on State Affairs and Registration.

One of the functions of the parent committee is to work with the Government Affairs Program of the American Geological Institute (AGI/GAP). Thus, we are represented on the AGI committee which guides this program, and we participate actively in the work of AGI in this arena. Through it, we have made key contacts in government at the Federal level, and have learned much about, and begun, working "inside the Beltway". Looking to the future, AIPG will be an exhibitor at the National Conference of State Legislatures next summer. As such, it will be breaking new ground for the geological profession. No geological organization was so represented at the 1992 Conference, and very few engineering societies were. But, the Architects, Chemists, Physicists, Biologists and several environmentally oriented groups were there in force. Their presence was apparently effective, judging by the nature of the legislation that is being passed in many of the states, and in Congress. You will be hearing more about this.

The most active subcommittees recently have been Mining, Environmental Geology and Professional Affairs.

The Mining Subcommittee, chaired by Steve Friberg (Nevada), has presented testimony to Congress on the "Rahall Bill" and related matters. It has lobbied individual Members of both houses of Congress, recommending and stating positions in support of, or opposition to, various aspects of these legislative matters. In so doing, AIPG has been the only significant national organization speaking specifically for the geologic profession and for its Members who happen to be in the mining industry.

The Environmental Subcommittee, chaired by Lyle Bruce (Oklahoma), has been an active participant in the Geoenvironmental Forum, a loose confederation of or-
orizations which represents most of the geologists and engineers who work in the field of Pre-Acquisition Site Assessments (PSAs). AIPG is one of the founding members of the Forum and currently holds the Chairmanship, which rotates annually. This Subcommittee, through its participation in the Forum, and in cooperation with both the Professional Affairs Subcommittee and the Committee on State Affairs and Registration, has led, or participated in, efforts in several states to defeat legislation which would register "environmental specialists" which would, in many cases, exclude geologists.

The Professional Affairs Subcommittee, chaired by Logan MacMillan (Colorado), has helped Sections to successfully lobby several state Legislatures to exempt mineral properties from the requirement that real estate appraisals be performed by certified real estate appraisers. This is a critical service to our Members who appraise both mining and petroleum properties for various investment purposes. The Subcommittee recognizes that this is a stop-gap measure and is working at the Federal level to develop a more permanent solution.

Unfortunately, a national committee cannot operate on the individual state level. It can only call attention to the issues and provide the individual State Sections with information and advice on what the Section can do. It is a sad commentary on the attitude of too many geologists that they tend to refuse to help "hold the barn door shut", but are among the loudest in complaining when that nebulous "they" let the horse out.

President Miller has emphasized in talks to Sections on several occasions that AIPG can do no more than the Members will let it do. AIPG is a tool for the geological profession to use. It is no stronger than the willingness of its individual Members to become involved in issues. Thus, it provides that unifying entity that enables a few to do together the things that many more could never do alone.

Putting this into action, some AIPG Sections have been very active at the state and local levels. This activity has taken several forms, including the following. (1) Provide testimony and lobbying support to beleaguered state geological surveys. (2) Analyze the structure of state and local governments to identify boards, commissions, etc., both appointive and elective, which should include geological representation; then, following this up with successful efforts to get geologists appointed or elected to these posts. Thus, we have Members serving on boards which write and/or administer regulations for environmental matters, oil and gas, water resources, mining, excavation and building codes, planning and zoning, professional practice (of engineers as well as geologists), to name but a few. Their presence and influence has generally been very effective, and has given geology a higher profile in these communities. It should, and increasingly does, lead to broader employment opportunities for geologists. (3) Form lobbying committees to actively interface with legislators and regulators on a regular, and ongoing, basis.

Some AIPG Sections are large enough to be able to afford a professional lobbyist, at least on a part-time basis. However, most are not. Therefore, we are investigating the advisability and feasibility of developing methods of funding these activities, both nationally and locally. Meanwhile, it is all up to the Members, organizing and working together to get things done.

All of this is within the charge of AIPG "to advance the geological sciences and the profession of geology..." That is the first of the four purposes stated in our Bylaws. AIPG is the only geological organization which places major emphasis on this aspect of professionalism. All of the others place their major emphasis on the technical aspect, and rightly so. They do a good job at this, so there seems to be no reason to duplicate their efforts. On the other hand, because AIPG does place great emphasis on the political aspect, it needs the support and participation of the entire profession.
Headquarters receives many requests from individual students and prospective students, as well as college departments and counselors, for advice on curriculum. As a result of the growing number of these requests, especially from the Geology Departments at some of our most prestigious universities, a committee was convened in 1991 to address the issue. The report of the Ad Hoc Committee on Curriculum was published as a booklet, "Education For Professional Practice", in July 1991. It is available from Headquarters for a small fee, which covers the cost of publication, handling and mailing. It is being reproduced on these pages in a three-part series as a service to young prospective geologists from whom we have received so many requests for guidance.

EDUCATION FOR PROFESSIONAL PRACTICE
Part 1 of 3

Report with Recommendations of the AIPG Ad Hoc Committee on Curriculum

The following report was accepted, approved and endorsed by the Executive Committee of the Institute on July 13, 1991.

Introduction
Minimum curricular expectations for membership in the American Institute of Professional Geologists and use of the title "Certified Professional Geologist" include a baccalaureate or higher degree and a minimum of 36 semester hours (54 quarter hours) in "...a geological science approved by the Executive Committee, from an accredited institution of higher learning..." (AIPG 1989 Bylaws, Article 2.3.1.1) It has come to our attention that some accredited colleges award bachelors degrees in geology or a related discipline through programs which fall short of this criteria and, in the Institute's opinion, do not sufficiently prepare students to practice as professional geologists. The assignment of this committee was to establish guidelines for curriculum development which would help to standardize the efforts of three groups: (1) Academia, (2) The AIPG Screening Committee, and (3) The AIPG Committee on Cooperative Evaluation of Geology Departments.

The Problem
Curriculum standards are not, and should not be, static. Just as subject matter in any given course must be constantly updated, so must the overall curriculum be responsive to changes in employment patterns and the nature of the practice of geology and other geosciences. Yet a review of curricula on several campuses has revealed that meeting the challenges of flexibility and increased technology has often created problems of inconsistency and inadequacy. Credit requirements may vary from year to year. Some courses may be offered only because they present the specialty field of a tenured professor. Other courses may be taught by individuals who are deficient in training and experience in the specialized subject matter they present. Competition for funds and space may produce decisions based on logistics or internal politics rather than the professional needs of the students.

As a result, some Geology Departments are not offering the courses required to provide the education and skills that students will need when they graduate and move into the workplace. A number of large companies are starting "geology bootcamps" in efforts to provide basic training to new staff members, but small and intermediate size companies may not employ new graduates because they lack these specialized training facilities.

Suggested Solutions
Today's students graduate into a world of geology in which most data describe subsurface conditions and employers expect them to be able to work with such data. Collecting and utilizing data from water wells, test borings, oil wells, mineral prospect cores, potential fields, and reflection seismic surveys are common today. Still, all students should be prepared to use modern interpretation methods, regardless of the type of data involved. They should be instructed towards synthesis of data and concepts, preferably through a "capstone" geology course containing elements of question definition, data acquisition, analysis, and conceptual integration. As much as possible, they should work with real questions and real applications.

To prepare students for these working conditions, colleges should develop curricula that stress the use of subsurface data while still training students to use surface data. Emphasis should be placed foremost on the development of rigor within subject matter, and only secondarily on the organization of courses. Faculty must be encouraged to transfer new technology to courses quickly, and to move technology from higher level courses to lower level courses as appropriate. For example, optical mineralogy is still regarded as an advanced technique by some, yet it is a common tool which can be taught in the sophomore mineralogy course. In addition, new concepts must be brought into the undergraduate curriculum at all levels as soon as possible. Blowpipes and wet-chemical mineralogy and wood blocks have been supplanted in large measure by polarizing microscope and X-ray methods. Basic sequence stratigraphy should be introduced in the beginning courses, not just in graduate stratigraphy courses. Computers must be included as working tools all through the curriculum.
To become properly prepared for professional practice, a student must complete a core of courses in both geology and other fields, as well as additional elective courses. A student entering a career in the geosciences must have gained experience in the field, the laboratory, and on the computer. An undergraduate who is well-prepared should be able to do the following:

- identify fossils, minerals and rocks;
- recognize and map bodies of rock exposed in the field and from imagery;
- correlate bodies of rock from surface and subsurface information and recognize spatial relationships;
- effectively use subsurface data and integrate it with surface data;
- interpret geologic structures, age sequences, geologic histories, and conditions of formation;
- recognize and map surficial material other than bedrock;
- evaluate sites for mineral extraction, suitability for land use, and susceptibility to environmental damage;
- apply current technology and theories;
- think critically, define problems, quantify parameters and provide solutions;
- communicate effectively to a variety of audiences;
- effectively use the major informational sources and know the organization of geology as a science and a profession;
- recognize career opportunities;
- appreciate obligations and responsibilities of a geologist to an employer and to society; and
- respect other disciplines and their professionals.

There is no single curriculum through which all these abilities can be best developed. While each institution will approach the task in its own way, the results must be comparable. But, there are describable courses that encompass the body of knowledge and experience considered essential. AIPG looks to these in its evaluation of the qualifications of both individuals and institutions.

Activities of the Kentucky Geologic Registration Board

The members of the Board of Registration for Professional Geologists have been selected by the Governor from a list of nominees supplied by a joint committee of the Kentucky Section and the GSK. The Board members are as follows:

David C. Scott, CPG-6383, Chairman, one year; John C. Philley, CPG-4322, Vice-Chairman, two years; Paul Howell, Secretary/Treasurer, public at large, three years; Donald C. Haney, CPG-4053, State Geologist

The Board first met on August 24 and has held four meetings to date. The Board has been busy in organizational and procedural duties and in preparing for the expected onslaught of applicants. The Board is temporarily housed in the KGS facilities, and the KGS is supplying personnel assistance. After one year the Board will be housed in independent quarters and with its own staff.

David Scott has stated that the Grandfathering period will commence January 10, 1993 and will end January 9, 1994. Examinations will commence January 10, 1994. The Board will be sending notification of the availability of application packets via the AIPG Kentucky Section general mailing list and via professional geologic organizations (such as the AIPG, GSA, AAPG, etc.) and the state geological surveys.

The application fee during the grandfathering period will be $200.00 and will be non-refundable. The fee will cover two years worth of annual fees.

The Board will be setting up two screening committees to review the applications. Dave Scott will be adding the details of the Board’s activities at the AIPG Kentucky Section Annual Meeting on November 13th, in Lexington.


1993


March 9-12, 1993. California Mining Association Annual Meeting, Monterey, CA.

March 14-17, 1993. AAPG/SVG International Congress and Exhibition, Caracas, Venezuela. AAPG Convention Dept., P.O. Box 979, Tulsa, OK 74101-0979.


March 30 - April 4, 1993. AusIMM Annual Conference celebrates the Centenary of The Institute, Adelaide, South Australia. Contact: R. K. John, C/O-Department of Mines and Energy, 191 Greenhill Road, Parkside, South Australia 5063, Ph.: (08) 274-7500.

April 17 - 20, 1993. SEG Conference '93, Integrated Methods In Exploration and Discovery, Denver, CO. Contact: SEG Conference '93, P.O. Box 571, Golden, CO 80402, USA. J. Alan Coope, Ph.: (303) 892-6534.


May 5-6, 1993. Protecting the Earth - Challenges to Science and Technology, Congress Center East of Köln Messe. Contact: Köln Messe, Measse- und Ausstellungs-Ges.m.b.H. Köln, Messeplatz 1, Postfach 21, Ph.: (0221) 21/821-0, Fax: (0221) 21/821-2574.

May 15-21, 1993. AHS Second USA/CIS Joint Conference on Environmental Hydrology and Hydrogeology, Arlington, VA. Contact: Helen Kloge, AHS, 9416 University Ave. S.E., Minneapolis, MN 55414-3328, Ph.: (612) 379-1030.


June 24-25, 1993. ASTM Symposium on Analysis of Soils Contaminated with Petroleum Constituents, Atlanta, GA. Contact: Symposium Chairman Tracey O'Shay, Gordon and Lawton, P.O. Box 80072, Austin, TX 78727-0072, Ph.: (512) 475-2302.


October 3-6, 1993. Society of Petroleum Engineers, Oil & Gas Strategies in the 21st Century, Houston, TX. Call for Papers. Contact: Programming Dept., SPE, P.O. Box 838386, Richardson, TX 75083.


1994


AIPG 1993 Annual Meeting Springfield, Massachusetts October 13-16, 1993

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Patricia Billingay, CPG-6654, was recently awarded the Chrysalis Scholarship by the Association for Women Geologists. She is a MS candidate in Geology at the University of Oklahoma and the mother of three daughters. She is a graduate of the University of Maine in geology. Active in AWG, AAPG, and AIPG, she has worked in both the petroleum and environmental industries before returning to school where she has maintained a 4.0 grade point average.

Kathleen C. Duchac, CPG-8236, was appointed to the position of Manager of Geraghty & Miller, Inc.'s, Milwaukee, Wisconsin office. Kathleen's areas of expertise include the management of environmental projects, evaluation of hydrogeological data, and negotiations with regulatory agencies. As project manager, she has worked on the design and implementation of remedial investigations and corrective actions for sites throughout the United States involving ground-water and soil contamination. She has been involved in projects at various industrial sites including manufacturing facilities and landfills. Since joining the firm in 1985, Ms. Duchac has worked as the Office Manager in Lawrence, Kansas; and as a hydrogeologist in the Redmond, Washington and Baton Rouge, Louisiana offices.

Hugh W. Hardy, CPG-3178, was recently elected to the position of President of the 1900-member Geophysical Society of Houston and to Vice-Chairman of the Society of Exploration Geophysicists' Foundation Trustee Association of Tulsa, OK. He is serving as the Chairman of the Houston Geological Foundation which awards scholarships to undergraduate students in college earth science programs and was just elected to a three-year term on the Board of Directors for the Houston Engineering & Scientific Society. In November 1991 he served as the General Chairman for the 1991 SEG International Meeting an Exposition which brought 10,766 delegates to Houston for the technical sessions and exposition exhibits. Hugh retired from Exxon Co., USA in March 1981 as Regulatory Affairs Manager and from the U.S. Marine Corps in December 1982 as a Major General.

William E. Harrison, CPG-0331, has been named Manager of Earth, Environmental, and Life Sciences in the Engineering Research and Applications Department. EG&G Idaho is the prime contractor for the U.S. Department of Energy Idaho Operations Office which operates the Idaho National Engineering Laboratory (INEL). William joined EG&G in 1989 as Unit Manager of Geoscience and was promoted to Group Manager in 1991. He was previously with Shell, Arco, and the University of Oklahoma.

Lawrence S. Graves, CPG-6182, was appointed to the position of Vice President with Geraghty & Miller, Inc. Lawrence is the area manger for offices in Columbus, Cleveland, and Cincinnati, Ohio. He has over twelve years of experience managing large environmental projects for Ohio industries. His primary expertise is in the implementation of investigations required under the Resource Conservation and Recovery Act and Ohio's "Superfund" program. As a manager of the Ohio operations, Mr. Graves assures that the company's technical resources are properly and effectively applied to the solution of the environmental problems of Ohio's industry.

Frank S. Turek, CPG-4788, of A-N West, Inc. has been appointed by Governor Symington of Arizona to a three year term as the geologist on the Arizona State Board of Technical Registration. The Arizona Board Registers Geologists, Engineers, Assayors, Architects, Surveyors, and Landscape Architects.
NEW MEMBERS (Call welcome as professionals and add them to your directory)

AISSNER, Jennifer A., CPG-8652 1731 Pizza Dr., Yuba City, CA 95991, (209) 941-0152.

ARNOLD, Mark A., CPG-8653 1442 B. Beech St., Lakeview, CA 95950, (209) 354-6809.


BONDURANT, Charles E., CPG-8657 5738 W. Green St., Homewood, IL 60430, (708) 353-1545.

BUTLER, Mark D., CPG-8610 403 Pepperwood Dr., Evanston, IL 60202, (312) 276-0312.

CHAMBERLAIN, John M., CPG-8631 1414 Markley St., Nantucket, MA 02554, (508) 577-1314.

CLAUS, David K., CPG-8629 4264 W. Sunnyslope Ave., Phoenix, AZ 85043, (602) 948-1500.

COLVIN, George H., CPG-8630 4803 Richard Dr., Elmhurst, IL 60126, (312) 746-3910.


FINNEY, David R., CPG-8633 13501 Hight St., Pittsburgh, PA 15241, (412) 553-1279.

GARNER, Evelyn A., CPG-8619 772 Radio Lane, Chicago, IL 60610, (312) 353-3400.

HENDON, William C., CPG-8615 1100 Hezro Lane, Lawrence, KS 66044.

HUMPHREYS, Curtis H., CPG-8618 142 S. Dairy Ave., Dallas, TX 75215, (214) 573-0302.

JAGUSKI, Philip E., CPG-8616 325 Electric Ave., Westerly, RI 02891, (401) 593-4885.

KEARNY, Thomas G., CPG-8624 6203 Union Park, Denver, CO 80223, (303) 747-8128.

KING, Robert W., CPG-8623 5217 Springfield Blvd., Hilliard, OH 43026, (614) 746-2950.


LAWRENCE, James G., CPG-8622 775 Pollock Tree Trail, Melbourne, FL 32901, (305) 353-0829.


MAYER, Thomas L., CPG-8612 4107 Middle Ln., Columbus, OH 43210, (614) 921-3065.

MOGER, Paul E., CPG-8613 2815 W. Ohio St., Leslie, MI 49758, (517) 656-4831.


MURPHY, David H., CPG-8621 2905 Shere Road, Oakton, VA 22124, (703) 276-3570.

PENDER, Jeffrey T., CPG-8614 1642 Beechwood Rd., Hamilton, WV 25415, (304) 236-3201.

PERRY, Christopher J., CPG-8617 840 Nell Ave., Columbus, OH 43215, (614) 424-6285.

RICKET, John E., CPG-8607 1980 Lily Ferry Rd., Irvine, CA 92614, (714) 762-3636.

ROGERS, Emily R., CPG-8636 1716 Isabella Ave., Mt. Vernon, IL 62864, (618) 539-8546.

ROUNDELL, David M., CPG-8632 3212 W. 6th St., Edina, MN 55435, (612) 325-3951.


THATTE, M. D., 5340 Wood Ave., Escondido, CA 92029, (619) 788-0321.

TINWELL, R., 1125 Pleasant Rd., Modesto, CA 95351.

WILLIAM, Andrew D., 38 South Jackson Avenue, Menomonee, WI 53058.

WHITE, Richard L., P.O. Box 529, Redlands, CA 92373, (909) 793-0223.

WHITE, Richard L., 4415 Valhalla Blvd., #9, San Jose, CA 95112, (408) 252-2000.

ZICKER, David F., 1721 Fulton St., Apt. 15, Chicago, IL 60614.

ZIMMERER, Kurt K., 5545 S. Oxford Ave., Chicago, IL 60632, (312) 672-6300.

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