WANTED - TPG ARTICLES
Instructions to Authors

The TPG accepts articles of modest length for publication. Submittals should be no more than approximately 1600 words, or six typed pages double spaced. Longer articles may be broken down into parts (e.g. part I and part II), but this is not encouraged. Articles may be technical or professional in nature. General topics are listed below. Articles containing news of importance to professional geologists will also be considered. Except for news articles, or articles containing dated material, submittals should be sent to AIG headquarters six months in advance of expected publication. Some technical topic issues are planned up to one year before printing, therefore early submittals will be preferred.

Manuscripts should have the following sections:

Title
Author(s) with CPG number and address
Text
Tables if included
Figures with captions if included
Appendix(es) if included
References Cited

One original and two copies of each manuscript should be submitted. Whenever possible, text should also be submitted on diskette (3.5 inch or 5.25 inch IBM/PC format). Headquarters uses DOS WordPerfect 5.1, which is preferred, but Word (for Windows or DOS), ASCII, or translatable files (such as MacWord) are acceptable. The program or format of the text should be clearly marked on the diskette.

Graphics should be clear, camera-ready, line drawings whenever possible. Photographs (color or black and white) are also encouraged. Whenever possible, drawings may be submitted on diskette in .dxf, .hgl, .pic, .pcx, .bmp, .eps, .GIF, or other standard formats.

TPG wants color photographs. Photographs alone may be submitted for the cover. They should have a geologic theme and an informational caption.

General Topics:

TECHNICAL
Mining Geology
Petroleum Geology
Hydrogeology
Environmental Geology
Geophysical/Engineering

PROFESSIONAL (any issue)
Government and the Geologist
Ethics and Standards of Practice
Public Perception of Geology and Geologists
Definition, Certification, and Licensing
Practicing Geology Internationally

Other suggestions: Forensic Geology, History of Practice in a given field, Book Reviews, Geology and the Military, Unusual Applications of Geology.

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Lyle G. Bruce, Editor
The Professional GEOLOGIST

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Assessing Ground Water Flow-Type Using Spring Flow Characteristics

Robert L. Werner, CPG-8985

Introduction

Wright State University, Center for Ground Water Management (CGWM) conducted research at a future limestone quarry in southwestern Ohio that focused on collecting a long-term baseline of hydrogeochemical and ground water flow data (Schmidt, et al., 1986-1991, ongoing). The absence of detailed aquifer pumping test and geophysical data made an assessment of the predominant ground water flow-type through local carbonate bedrock a complicated task. The goal of this investigation was to use flow characteristics of a local limestone spring to determine major physical bedrock features that control the vertical and horizontal flow of ground water. Spring flow was measured using a 60 degree, V-notch weir and methods described by Ackers et al., (1983).

The spring monitored during this investigation (S-3) is located in the west-central portion of CGWM's study area, which encompasses portions of Beavercreek and Xenia townships, Greene County, southwestern Ohio (Figure 1). The area is predominantly rural, with residents relying on ground water for drinking and domestic purposes. Most of the land is used for growing corn and soybean. Smaller portions of the area are either residential or wooded.

Geology

Bedrock of the study area consists of Silurian limestone underlain by Ordovician shale. The bedrock is overlain by a mantle of glacial till, which thickens toward the perimeter of the study area. The till directly overlies the shale in areas where the limestone has been removed by erosion.

Silurian limestone of the Brassfield Formation underlies portions of the study area at higher elevations (950 feet MSL and higher). The Brassfield ranges from 5 to 28 feet in thickness.
within the area shown on Figure 1. It is a massive to irregularly bedded, dark gray to pink, fossiliferous limestone. The base of the unit consists of roughly 2 to 6 feet of a very porous, irregularly bedded, sucrosic and coarse grained dolomitic limestone. This portion of the Brassfield is locally referred to as "sugar rock", due to its granular appearance. The upper part of the Brassfield is a high calcite, low magnesium limestone, and is extensively quarried within the region for the manufacture of Portland cement.

Ordovician rocks are represented by shales of the Elkhorn Formation. The total exposed thickness of the Elkhorn in Greene County is approximately 250 feet. This unit is characterized by soft, green to blue gray shales with interbeds of shaley limestone.

Bedrock is overlain by Wisconsinan-age glacial till. The till is a heterogeneous mix of clay through cobble-sized particles, and contains lenses of better sorted sands and gravels. The overburden thickens toward the south, east and western perimeters of the study area, varies from 3 to over 90 feet in thickness.

Ground Water Geology

Water within the consolidated formations is generally contained within small scale secondary openings and along bedding planes. Most of the ground water contained and transmitted through the Elkhorn Shale occurs near the top, where existing fractures and bedding planes have been enlarged by weathering (Frost, 1977). Ground water in the Brassfield Formation is stored and transmitted through bedding planes, fractures, and within vuggy porosity. The amount of water stored in and transmitted through the formation depends on the size, orientation, and interconnectedness of these secondary openings.

Larger amounts of water are stored and transmitted through the basal, more porous portion of the Brassfield. This zone, depending on its thickness, can act as a bedrock aquifer. The lower Brassfield is also a source of springs, such as S-3; ground water flows within this zone of the Brassfield along the contact with the underlying shale to points of discharge as springs, or into small tributaries.

Ground water elevation contours for the CGWM study area, shown on Figure 2, were constructed from water-table elevations measured in CGWM wells. Figure 2 shows a well-defined water table which roughly mimics the surface topography. Most of the ground water recharge to the system is occurring at areas of higher elevation, within the northeast quadrant of the study area.

Results And Discussion

The spring flows perennially, with flow ranging from 7 to 170 gallons per minute between June 1990 and June 1991. Flow increases dramatically following a significant storm event. Such response can be seen on the spring hydrograph, Figure 3. During the summer months, a significant storm event was usually one inch or more of precipitation. In winter months, liquid precipitation of about 0.5 inches was enough to cause an observable increase in spring flow. This difference is attributable to the evaporation of soil moisture, and transpiration by vegetation during the summer growing season. During the winter, more water is available after a storm event to recharge the lower Brassfield.

Two types of structure are visible on the spring hydrograph. One is a broad, seasonal fluctuation of the baseflow. This is shown by the dotted line on Figure 3. The second is a more "flashy" structure, caused by an increase in spring flow after transient recharge events.
This type of hydrograph has been referred to as a mixed response hydrograph (Gaither, 1977). Gaither explains:

The predominant seasonal fluctuations may be envisioned as being controlled by a sluggish, regional aquifer system, which has the tendency to restrict ground-water flow and thereby integrate all of the recharge events occurring in its catchment. The high frequency, fine structure present may be explained by the simple addition of a smaller, perhaps quite local, fast-response aquifer system to the larger, probably regional, slow response aquifer system.

The broad fluctuation in baseflow of Spring S-3 is a result of the dampening of seasonal variations in recharge by the bedrock. This suggests that the flow of ground water within the limestone is predominantly diffuse; water is flowing through an interconnected series of small scale fractures and bedding plane openings which have been enlarged by solution. The larger structure visible on the hydrograph is the result of individual, transient recharge events. The fast response is likely attributable to a rapid increase in fluid pressure within the lower Brassfield, as vertical fractures in the upper Brassfield rapidly fill with recharge water. This type of recharge may occur in a few isolated portions of the study area. In a geologic study of the Brassfield, Frost (1977) suggested that much of the recharge to the lower Brassfield is "localized in a few areas underlain by fractured or solutioned Brassfield." Figure 4 shows a conceptual model for this type of recharge. Most of the recharge to the lower Brassfield occurs at isolated, upgradient locations. Smaller amounts of recharge are provided by flow through bedrock openings along joints and bedding planes. The year-round contribution of ground water through these smaller scale openings is responsible for the base flow component of the spring flow.

Conclusions
Diffuse flow of ground water within the limestone is evident from the broad, seasonal fluctuation of baseflow visible on the spring-flow hydrograph. Most of this flow is likely occurring as horizontal flow within the porous, basal portion of the Brassfield Formation. Also visible is some component of larger-scale fracture flow, evident by the transient, dramatic increases in spring flow following a significant recharge event. This increase in spring flow represents vertical, fracture-flow of ground water, and results from increased fluid pressure within the lower Brassfield as vertical fractures in the upper Brassfield fill with water.

The presence of a well-defined water table also supports the conclusion that the Brassfield Formation is primarily a diffuse flow aquifer, with ground water flow occurring through a well-connected system of small-scale secondary openings and bedding planes which have been enlarged by solution (White, 1969).
The precise nature of ground water flow within the fractured carbonate rocks requires a more detailed analysis than was attempted by this study. While there is undoubtedly some degree of anisotropy within the carbonate flow system, results of this investigation indicate that on a larger scale, ground water flows under the influence of topography.

Acknowledgments

This paper presents a small portion of the research undertaken by Wright State University’s Center for Ground Water Management. The project scope also includes investigation and reporting of ground water chemistry, sources of dissolved radon (Gall et al., 1995), and a detailed statistical analysis of the temporal variability in hydrogeological data (Ritzi et al., 1993). Thanks to the CGWM for providing the funds, equipment, and expert oversight needed to perform this investigation. Thanks also to the staff of Wright State University’s Department of Geological Sciences, and the many research assistants whose hard work and new ideas have kept the project alive and a source of continued research potential.

REFERENCES CITED


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NAPL Identification and Vertical Distribution using the Rapid Optical Screening Tool (ROST™) and Cone Penetrometer Testing

**INTEGRATED ROST/CPT DATA LOG**

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**Figure 1**

**J.W. Jengo, CPG-8139**

**Introduction**

The Rapid Optical Screening Tool (ROST™) was used on selected cone penetrometer testing locations at a 500-acre petroleum refinery in the northeastern U.S. to characterize the type of hydrocarbons and their vertical and spatial distribution in the subsurface. The major objectives of the investigation were to (1) confirm Dense Non-Aqueous Phase Liquids (DNAPLs) were not present at the site, (2) determine which discrete occurrences of hydrocarbons were related to the same product plumes, and (3) determine the actual thickness of the Light Non-Aqueous Phase Liquid (LNAPL) in the subsurface. The collection of cone penetrometer testing lithologic data, performed simultaneously with the ROST™ system, was used to enhance the understanding of the stratigraphic framework of the aquifers and confining units underlying the refinery.

Under New Jersey's Technical Requirements for Site Remediation, both the vertical and horizontal extent of NAPL occurrences must be delineated. Despite being provided substantial evidence that DNAPLs were not produced, used, or disposed of at this petroleum refinery, the regulatory agency would not grant a variance from this requirement. The Technical Requirements dictate every...
location where a NAPL plume was present or suspected required the installation of a DNAPL investigatory well. Because of the excessive cost of properly constructed double- and triple-cased wells several hundred feet deep, and the absurdity of the requirement in this particular industrial setting, we were determined to identify a cost-effective, approvable alternative approach to this type of investigation. Ultimately, we developed a scope of work using the ROST™ system.

Secondary to the DNAPL issue, but still critical to the understanding of LNAPL plume distribution, the ROST™ was also used to determine which LNAPL occurrences throughout the refinery could be correlated to known subsurface product plumes or were indicative of new releases. The general type of petroleum product was also determined by comparing the ROST™ data to a set of product-type signatures provided by the vendor (site-specific petroleum signatures can also be developed, if needed). In addition, the actual thickness of the LNAPL component of the plumes was discernible from the ROST™ data.

Technology Description and Operating Principle

The ROST™ technology utilizes laser-induced fluorescence spectroscopy with an excitation wavelength optimized for the constituent of interest; in this case, hydrocarbons associated with refinery sites. In situ information regarding general hydrocarbon type, depth, and distribution is obtained as the cone penetrometer rods are advanced into the sediment underlying the site. The laser source and detection system are integrated with the cone penetrometer electronics in the cone truck. Light from the variable wavelength (tunable) pulsed laser source is delivered to the cone along a fiber optic cable that follows the same path as the electric cables for the cone penetrometer gauges. In the cone, the light is directed horizontally through a sapphire window onto the in situ soils/sediment. The addition of energy to the petroleum hydrocarbons causes them to emit (or fluoresce) light of a longer wavelength than the light provided by the laser. As this light passes back through the sapphire window into the cone, a portion is collected by a second fiber optic cable and returned to the detection system in the cone truck. The incoming data is continuously processed and displayed in a fluorescence intensity verses depth (FVD) plot for the entire cone push. The fluorescence signal from 50 successive laser pulses over a one second time interval is averaged for each data point recorded. Since cone penetrometer rods are typically pushed at a rate of two (2) centimeters per second, the spatial resolution of the data is two (2) centimeters.

Investigative Approach

A total of 58 cone penetrometer tests were completed across the refinery. These pushes were completed between 21 and 86 feet below ground surface (averaging 39 feet), for a total of 2,252 linear feet in 11 working days. Thirty of these cone penetrometer tests were completed with the ROST™ system (total of 1,066 linear feet) in the first seven days of the project. The remaining cone penetrometer tests were advanced to provide only stratigraphic information. After processing, the tip/sleeve resistance ratios from all the cone penetrometer data were integrated with previously acquired borehole geophysical logs and eight detailed stratigraphic cross-sections of the refinery were developed.

Results of the ROST™ DNAPL Investigation

One of the most significant pieces of data generated by the ROST™ system was the determination that every hydrocarbon plume profiled across the refinery was a LNAPL. Interpretation of the ROST™ FVD plots indicated the presence of a LNAPL at the air/water table interface at 20 of the 30 ROST™ locations. As indicated on the FVD plot on Figure 1, the presence of petroleum hydrocarbons is indicated by elevated fluorescence responses or peaks between 2.5 and 7 feet below ground surface. To determine if there were any DNAPL components to any of the plumes, we intentionally advanced every cone penetrometer ROST™ to a refusal depth below the hydrocarbon intervals. On every ROST™ profile, there were no hydrocarbon residues at depth that would have indicated a DNAPL had migrated downward. Figure 1 represents a typical ROST™ profile in which LNAPL is present in the near subsurface but no other hydrocarbons are present down to the refusal depth of 22.5 feet (as indicated by the lack of a response or peak above the zero fluorescence intensity baseline).

To further validate this approach, we performed ROST™ profiles within engineered hydrocarbon waste lagoons that could have potentially received DNAPL-type substances, to determine if there was any downward migration of hydrocarbons from the lagoons. We theorized if DNAPLs were going to migrate downward, it would most likely occur where there was a maximum loading and residence time of waste hydrocarbons. The ROST™ profiles indicated no hydrocarbons were present below the lagoons, supporting our contention that there was no...
evidence that DNAPL-type materials were produced or disposed of at this refinery.

**Plume Identification Results**

The ROST™ system was also positioned for acquisition of wavelength-time matrix (WTM) data, a three-dimensional graph of fluorescence wavelength, fluorescence lifetime, and fluorescence intensity. Recorded during short pauses in cone penetrometer advancement (on the order of a few minutes), WTM's are a series of averaged fluorescence intensity versus time profiles collected over a 300 to 500 nanometer (nm) range of fluorescence wavelengths, in 10 nm intervals. Lighter petroleum hydrocarbons, composed primarily of lower molecular weight compounds, reach peak fluorescence intensity (the wavelength at which the maximum fluorescence intensity occurs) at relatively short wavelengths. Fluorescence intensity shifts to longer wavelengths with increasing molecular weight. Because different hydrocarbons have characteristic WTM spectroscopic signatures, the WTM patterns can be used to identify the type of petroleum product and distinguish plumes from each other. The ROST™ vendor provided four general spectroscopic signatures of a gasoline, jet fuel, diesel, and coal tar (akin to tank bottoms in a refinery setting) for use in characterizing the site-specific WTM's.

A total of 78 WTM's were collected from the 30 ROST™ locations. Most of the WTM's collected throughout the refinery exhibited spectroscopic signatures and peak fluorescence intensities (peak signals) similar to gasoline and diesel range products. For example, the WTM's shown on Figure 1, particularly the one designated by a C, exhibited spectroscopic signatures and peak signals similar to a diesel range product. Not surprisingly, several WTM's collected within former hydrocarbon disposal areas indicated the presence of larger molecular weight petroleum hydrocarbons, probably derived from the disposal of tank bottoms. We then compared the wavelengths of the peak signals from WTM's from different ROST™ profiles to determine if the hydrocarbons from two different locations were related to the same plume.

**Thickness of LNAPL Plumes**

In regulatory situations where fines are assessed based on NAPL thickness, the ROST™ system could be used to quantify actual subsurface NAPL thickness, thereby saving refinery owners and operators substantial penalties. However, our experience indicates that the ROST™ also identifies the smear zone of hydrocarbons in tidally-influenced aquifers, thus, the thickness distribution of hydrocarbons will appear greater than the actual free phase occurrences of the NAPL. Therefore, care must be exercised in interpreting the ROST™ FVD plots that contain smear zones because an artificially thick zone of NAPL will be recognized. In addition, it is important to recognize that it has not been determined what threshold value of peak intensity indicates that a free-phase liquid exists, even though the intensity of the fluorescence is believed to be proportional to the degree of pore space saturation. The current guideline suggests those relative intensities greater than 100 percent of the reference standard could indicate free-phase LNAPL. In the case of the ROST™ FVD plot shown on Figure 1, free phase LNAPL would be interpreted to be present between approximately 4.5 and 6.5 feet below ground surface.

**Conclusions**

The ROST™ system, in conjunction with the conventional cone penetrometer testing, was successfully applied at a Northeastern refinery to characterize both the complex stratigraphy and the distribution and nature of petroleum hydrocarbon plumes. The investigation determined (1) no DNAPLs were present at the site, (2) most of the LNAPL occurrences were diesel and gasoline products with higher molecular weight hydrocarbons (tank bottoms) in the former disposal areas, (3) which occurrences of hydrocarbons were related to the same hydrocarbon plume, and (4) the thickness of the NAPL plumes (or their associated smear zones in tidally-influenced areas). Another significant benefit was the elimination of costly drilling and sampling in the deeper aquifers, which is normally required for DNAPL investigations, making the ROST™ system an efficient and cost-effective method for identifying and delineating subsurface hydrocarbons at this site.

John W. Jengo, CPG-8139, is Principal Scientist Senior Hydrogeologist at Remediation Technologies, Inc. (RETEC) in King of Prussia, Pennsylvania.

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Larry L. Dearborn, CPG-6264

I'm sure that some of you who work on groundwater cleanups at Superfund sites (and smaller projects) have noticed that "business as usual" is again changing. Where once the consultant was the hired gun expected to engage in battle with government regulators on the client's behalf, today's enviro-political scene (at least in New England) is tending toward more cooperation and less grandiose posturing. This is not to say that major disagreements do not still occur; but "show stoppers" that cause continued confrontations and excessive end product delays are becoming taboo. Below, I will offer my observations supporting this change in attitudes and why we should promote it.

My perspective comes from 30 years as a hydrogeologist, in which I performed basic data collection and analysis for the U.S. Geological Survey, directed a groundwater program in a state geological survey that prepared technical support for water-rights adjudication, and during the last ten years provided hydrogeologic assessments for a relatively large consulting firm in the northeastern U.S. For most of my consulting years I have been involved in working on USEPA Superfund sites. As lead hydrogeologist, I have frequently sat across the table from state and federal regulators, defending work plans and conclusions of remedial investigation reports.

Through these different employments, my work has evolved from collecting tremendous databases with no real deadlines to questioning why environmental consultants thought their interpretations were supported by their database (or at times why they even were plausible). Up until a few years ago, my consulting practice could be summed up as trying to convince regulators that this database is adequate. An analogy of my experience might be as follows: the mid-life (crisis) of abandoning a Cadillac, followed by a condemning of all automobiles, only to realize much later that the important thing is to arrive at certain destinations and that the vehicle need only be dependable.

As I see it, groundwater problems are quite similar to mapping bedrock overlain by thick sediments; the more detail you acquire, the more complex the picture gets. And sooner or later the question becomes: "at what point do I have enough data to adequately understand the hydrogeologic environment to provide a client-focused solution?" Realistically, we rarely will have the desired database to thoroughly understand a particular setting; but nevertheless, we should strive to provide the best solutions using the most appropriate and affordable techniques.

How does this philosophy relate to what I have called the new atmosphere? In today's changing culture, the consulting hydrogeologist now can generally get valuable upfront input, and often concurrence, as to what data types and volume constitute an adequate database, and as to what scope of investigation is needed. The key word is upront.

In the past several years, input of this nature was frequently offered by, or was available from state, and federal regulators who have jurisdiction and public responsibility for environmental remedial projects. In the past it was common practice to submit a work plan to the agencies, and hope that it would be accepted, without much upfront interaction with them on approach, technical feasibility, and their primary concerns. Amendment to the work plan were often

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poorly integrated into the program, and regarded as merely fulfilling a bureaucratic requirement. Often the result was a drawn-out comment-and-response paper shuffle that frustrated both consultant and regulator, while consuming more time and funds than the client had budgeted. Clearly, in these cases, all parties felt like losers.

But, it doesn’t have to be this way. As project hydrogeologist on two Superfund sites in the past several years, I have witnessed through participation, the joint ownership of remedial investigations by potentially responsible parties and government regulators. In one case, the regulator took the initiative to follow the investigations closely, and offered suggestions and expressed his concern in a timely manner. Whereas, in the earlier years his office was often viewed as being unreasonable, now the client and their consultants embrace his input as a knowledgeable team member.

My other example is one in which the above roles are reversed. In this case, the client and consultant worked hard at improving working relationships with state and federal regulators through frequent phone contacts and meeting invitations to jointly work through specific concerns that were not easy to resolve. While these meetings were sometimes rather tense with disagreement, continued sessions with the same consulting project personnel representing the client have gradually created a productive atmosphere. As the due date for the remedial investigation draft report was fast approaching, we asked to discuss the regulator’s comments face-to-face prior to their formal transmittal. A full day of give and take concessions resulted in all parties understanding how specific issues would be addressed and presented in the report. Because the 14-square mile site contained several dozen source areas that had contaminated bedrock groundwater, the desired density of data was unfeasible to obtain. (We abandoned the Cadillac.) The mutual recognition of this limitation, and agreement as to how best to proceed, formed the nucleus of joint ownership in assessing how remediation will address site contamination. (But we still arrived at our destination.)

As funding gets tighter and the number of sites needing remediation grows, the Environmental Protection Agency and state environmental departments appear to be reducing their expectations of site characterization and remediation for complex hydrogeologic sites, most likely in recognition of the inherent difficulties in acquiring databases to answer all their concerns. However, deadlines for reports are as tight as ever. In this respect, the new willingness of regulators to work upfront and hand-in-hand with environmental consultants on large remedial investigation projects is certainly a welcomed trend.

Larry L. Dearborn, CPG-6264, Portland, Maine

Revenue Growth Rate Rising for Environmental Consulting Firms

Natick, Massachusetts - After declining for three years, the annual revenue growth rate of U.S. environmental consulting firms appeared to rebound slightly last year, according to a new survey. However, revenue growth rates remain far below the double-digit growth of 1990.

The 1995 Financial Performance Survey of Environmental Consulting Firms was conducted by Zweig White & Associates, a specialized management consulting and publishing firm. This was the third time the annual survey was conducted. In all, 92 firms from across the U.S. participated. Of these, 23% have fewer than 25 employees, and 28% have 200 or more.

As part of the new study, the researchers calculated each firm’s one-year annual revenue growth or decline for each year from 1990 through 1994. The median firm’s revenues rose 7.6% from 1993 to 1994. That was an increase over the median firm’s revenue growth of just 3.8% from 1992 to 1993. However, 1990 was by far the highest growth year in the last five years -- the median firm's revenues rose by a third from 1989 to 1990.

The 294-page survey report covers virtually every financial statistic of concern to environmental consulting firms. Firms are compared by size, revenues, region, and specialties. Financial Performance Survey of Environmental Consulting Firms is available from the publisher $225 per copy. Contact Zweig White & Associates at (800) 466-6275.
Robert K. Merrill, CPG

While I was returning from Almaty, Kazakhstan, I was able to attend the biannual meeting of the European Federation of Geologists (EFG) in Haarlem, Netherlands June 16. The members of the EFG represent the geological societies of each country in the European Union and meet twice each year to review the issues facing geologists in the European Union and to find ways to address those issues. Like AIPG, the EFG is interested in certifying the professional credentials of geologists. What struck me about the discussions is that the issues facing our colleagues in Europe are the same as we face in the United States. The discussions centered around education, political advocacy and professional affairs. The experience strengthens my belief that AIPG’s efforts to develop and strengthen relationships with geologists outside the United States are extremely important. We can learn from each other the best way to promote the profession. Through mutual understanding we can widen the opportunities for all geologists.

There is a need to educate the public about how the services of a geologist can help them in their daily lives. Lay people do not understand the concept that everything they use that does not grow has to come from the Earth. Further, services of a geologist can help protect people and their investments from the ravages of what have come to be called natural disasters like the recent eruption of Rapahue Volcano in New Zealand or floods. What is the best way to improve the public’s understanding of how geology affects them every day? We discussed the need for beginning this education at the earliest levels and developing geological education programs in primary and secondary schools and outreach programs for the general public. How often have we heard these discussions in the United States? Can we learn from each other and perhaps develop common programs such as translating educational materials into each other’s languages? Geology does not stop at the Atlantic or Pacific!

Political advocacy is a common issue. The lament was heard that legislators or regulators make decisions that are potentially catastrophic when the earth’s processes are ignored. For example, flood potential, swelling soils, radon and landslide potential are usually ignored in land use planning. The Italians even suggested that each town should have a Municipal Geologist. I fear that we are a long way from such understanding by decision makers. As constituents we have some influence through our votes, but geological information is too often ignored. Through our shared experiences we can develop ways to communicate to our decision makers the importance of considering earth’s processes when making land use and resource management decisions.

A significant issue for the EFG regarding professional affairs is the potential competition between federal or state geological surveys and consultants or consulting firms. AIPG addressed the same issue recently when consulting services were confused with cooperative research programs of the U. S. Geological Survey. Tax-supported institutions should not be allowed to undercut consultants’ fees in the private sector. On the other hand, the leverage available from cooperative programs is beneficial to both the public and private sectors. It is a fine distinction between the two programs, especially when institutions like the British Geological Survey are being privatized. As governments follow the trend of outsourcing, we can probably expect more privatizations. Such privatizations are in progress in the United States, Europe and the Former Soviet Union as governments no longer have the funds to manage and develop their resources themselves.

What does such mutual understanding bring us? My travels around the world highlight opportunities for geologists throughout the world. I have recently seen the extent of the damage that years of neglect from inadequate investment has caused in the former Soviet Union. This damage is not only environmental but also affects ultimate resource recovery. Proper management of the abundant resources will finance the economies of these countries. Cleanup of the damage will follow as emphasis is given to the health of the population. Interchange between geologists in the United States, Europe and the rest of the world will bring common understanding, work opportunities and better resource management. The world’s economy is so interconnected today that we cannot afford to continue to isolate ourselves as we have isolated the general public from our understanding of the Earth and how the Earth and its resources affect all of us each day.
The temperature in Washington today is hot and getting hotter, the atmosphere is murky, the waters of the Poto-
mac are muddy, and the administration is busy trying to
repair flood and other damage.

The Secretary of Interior has put in his appearance out
west again. In April, he was forced to issue some mineral
patents to a gypsum property in Arizona and in May, to
Goldfield Mining Corp, in Nevada. He did take the time to
complain that he was forced to obey the law. Federal
Judges can be demanding at times. It’s a pity that some
of the others in the administration haven’t learned that
obeying the law is the right thing to do. That’s water under
the bridge now.

The good news is that Denver has a hockey team -- not
just any team, Stanley Cup quality and they proved it. The
Florida Panthers were no slouches either, just not good
enough.

So now, here are the monthly gleanings
from the Federal Register

Vol. 61, No. 89, 5-7-96, page 20560
Part III, Department of the Interior, Office of the Secretary,
43 CFR Part II. Natural Resource Damage Assessments:
Type A Procedures; Final Rule.
This rule amends the CERCLA regulations to obtain
compensation for natural resource damages resulting
from hazardous materials releases. It revises "type A"
procedures for assessing damages.

For further information contact: Mary Morton at (202)
208-3302, or Dave Rosenburger at (202) 208-3811 for
questions about the availability of the computer models.
(they are free until July 31, 1996.)

Vol. 61, No. 92, 5-10-96, page 21426
Department of Interior, Fish and Wildlife Service. 50 CFR
Part 17. Endangered Species; Proposed Special Rule for
the Conservation of the Northern Spotted Owl on Non-
Federal Lands.
For further Information contact: Mr. Curt Smith, Region
1, USFWS, 3704 Griffin Lane S.E. Suite 102, Olympia,
WA 98501. (206) 534-9930.

Read this to see how far the Fed will go to exercise their
domain over private lands.

Unified Agenda of Federal Regulatory and Deregulatory
Actions. EPA’s Section is at pages 23610 through 23738.
The index for all 4 volumes is found at pages 24141
through 24204. You can bet there are more regulatory
listings than there are Deregulatory listings.
Not much else of note this month. Don’t forget to sign up
for Columbus.

F. B. 'Ted' Mullin, CPG-1716, is currently a
Supervisory Geologist for the Rocky Mountain Region,
United States Forest Service. The Today in Washington
column is a monthly feature and has been written by

Executive Director’s Itinerary
(subject to change)

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

| Jul. 9-12: | Council of Engrg. & Sci. Soc. Excos., Providence, RI |
| Jul. 19: | Carolinas Section, Charlotte, NC |
| Jul 27 - Aug 1: | Nat’l. Conf. of State Legislators, St. Louis, MO |
| Sep. 21: | Texas Section Annual Meeting, San Antonio, TX |
| Sep. 28: | Colorado & Wyoming Sections, Student Day, Golden, CO |
| Oct. 9-12: | AIPG Annual Meeting, Columbus, OH |
| Oct. 12: | Geoenvironmental Forum, Columbus, OH |
| Oct. 15: | West Virginia Section and Eastern Section American Assn. of
Petroleum Geologists Convention, Charleston, WV |
| Oct. 15: | Pennsylvania Section, Pittsburgh, PA, area |
| Oct. 16: | Capitol & Virginia Sections, Washington, DC, area |
| Oct. 17: | Pennsylvania Section, Philadelphia, PA, area |
| Oct. 18: | Northeast Section, Staten Island, NYC, NY |
| Oct. 26: | Amer. Geol. Inst. Government Affairs Program Steering Committee, Denver, CO |
| Oct. 28-31: | Geological Society of America Convention, Denver, CO |
| Nov. 2: | New Mexico Section, Albuquerque, NM |
Acceptance and then Unacceptance of a Job Offer

A member described to me a situation regarding recruiting and the ethics involving job acceptance. A firm had incurred the usual expenses of recruiting for a new employee, which included flying the prospective employee in for an interview, etc. The total expenses involved were several thousand dollars for this particular prospective employee. The prospective employee accepted a job offer with a signed letter of acceptance and arrangements were made for the move to the new city and firm. However, a week before the new employee was to report, he backed out. Apparently he had received another, more attractive offer from someone else. The first firm was quite annoyed and troubled by the expenses incurred in recruiting this individual which went beyond those incurred for other applicants.

The ethical question asked involves the ethics of formally accepting and then rejecting a job offer. What do you think? Should your word be good?

I am certainly aware that in the reverse situation, that is where a company makes a written offer and then withdraws it, prospective employees have successfully sued for breach of contract and resulting financial damages. Should firms be able to do the same? Why or why not?

I can conceive of situations in which circumstances change unexpectedly in which the acceptance and then rejection present a less troubling situation. An accident resulting in significant life changes would be an example.

As a practical matter, two results of this situation are clear. First, the hiring firm has little respect for the honor of the prospective employee. This may or may not hurt the individual’s career much in the future, but it certainly won’t help it. And second, the hiring firm is probably better off even though it is out a significant amount of money in recruiting costs. The firm does not have more invested in an employee who might well have proven to be incompatible and/or ready to move on to another job before the investment any company expends on a new employee is recouped.

This is a time when few of us stay in any one job very long. Neither firms nor employees expect career-long employment for a variety of differing reasons. The result is a decline in loyalty on both sides. Nevertheless, loyalty and honor are concepts we all recognize and value. What is appropriate honor and loyalty? How long should one stay with an employer before departure appears premature? The answers are not easy and depend on a variety of circumstances. Contribute your thoughts on the subject.

Comparing Professional Enforcement Programs

Kurt Bogner, CPG-9489, sent me a copy of Robert Tepel’s article, What is the role of enforcement? Part 2, from the AEG News, 39/1. Winter 1996. Those of you interested in the topic should get a copy. Tepel describes various difficulties experienced by various licensing agencies along with some excellent admonitions to keep in mind when comparing one program with another. Tepel’s general finding was that most boards wished they could do more than they could but were hampered by lack of funding to investigate and, where a good case existed, lack of priority among prosecuting agencies. Tepel’s findings parallel my own experience in pursuing cases involving geological ethics.

Quite frankly, in my personal opinion, the lack of funding and willingness to prosecute render most licensing/registration programs frauds on the public such programs were passed to protect. I support and encourage any legitimate efforts to prosecute those whose actions warrant it. That is one reason I accepted the Ethics Committee Chair; I’m willing to devote time and energy to the issue. To me, the reality of licensing is not about protecting the public but is rather about protecting professional turf. I dislike pretending that is not the case.

As always, contributions and comments are welcomed.

Association for Women Geoscientists Announces 1996 Chrysalis Scholarships Winners

The Association for Women Geoscientists (AWG) has announced this year’s Chrysalis Scholarship winners. This financial aid is given to exemplary women graduate students in the geosciences who have experienced an interruption at some time in their formal education and are in the final stages of writing their theses. The winners are: Jean M. Hemzaczk Laukant, Ph.D candidate in the Department of Geological Sciences at Indiana University; Shaymara Silvestri, a Ph.D candidate in the Department of Geological Sciences at Rutgers University; Arlene Collins, an M.S. candidate at the University of Victoria, British Columbia; and Stephanie Mickle, an M.S. candidate at Wesleyan University.
Mineral Resources and Sustainability

Jonathan G. Price, CPG-7814, President-Elect and Roderick G. Eggert, Colorado School of Mines

The Committee on Earth Resources of the National Research Council recently released a report on "Mineral Resources and Sustainability - Challenges for Earth Scientists." A few salient points from the report are excerpted here.

"It is hard to disagree with the goal of sustainability - that economic activity today not come at the cost of such extensive environmental degradation and resource depletion that future generations are worse off than we are. As a concept, sustainability is so appealing intuitively that it has become a unifying theme of both academic and popular debates about environmental policy. It is a rallying cry of environmental activists and a stated goal of a number of governments. The concept was popularized in the 1987 report of the World Commission on Environment and Development, 'Our Common Future.' Known as the Brundtland report, this report defines sustainability as 'meeting the needs of today without compromising the ability of future generations to meet their needs.'

"Yet when applied to mineral resources, there is little agreement on what is to be sustained, and by what means. Without such agreement, sustainable development will remain little more than a slogan of little practical value to public-policy makers. Part of what is missing from most discussions is an understanding of the nature of mineral resources and the dynamics of their development."

"Although defined differently by different people, sustainability represents a growing concern about the adequacy of mineral resources to meet future demands and do so without unacceptable environmental degradation. Sustainable development challenges earth scientists to communicate more clearly the physical limitations and economic importance of mineral supply. It also challenges us to communicate more clearly how mining affects the environment and how environmental damage can be minimized. But better communication alone is not sufficient. Ultimately, sustainability challenges earth scientists to develop better data and to provide the scientific basis necessary for public policy and environmental management."

"The report, an outgrowth of a workshop sponsored by the committee, presents several challenges for earth scientists."

"Challenges Concerning Depletion
#1: To develop a better scientific basis for discussions of the adequacy of mineral resources.
#2: To develop better data on factors involved in mineral supply, that should be used in public-policy analysis and decision making.
#3: To better communicate to policymakers and the public the dynamic nature of mineral supply, thus putting the prospect of "running out" in the proper context.
#4: To incorporate recycling and reuse into the concept of sustainability."

The report contains one table showing the steady increase in world reserves of aluminum, copper, and zinc at the ends of the last five decades and a second table showing the importance of recycling of metals in the United States. "Challenges Concerning the Environment

#5: To develop better data on the environmental consequences of mining, on the costs of environmental compliance, and on the best practices in environmental management in mining.

#6: To use basic science to improve environmental management and restoration ecology associated with mining and mineral processing.

#7: To communicate to policymakers and the public how mining affects the environment and how environmental degradation can be minimized."


The committee was chaired by Carol Otte, Jr. Other members included Philip H. Abelson, Samuel S. Adams, Joel Darmstadter, Roderick G. Eggert, Marco T. Elnaedi, Norman H. Foster, Charles G. Groo, Perry R. Hagenstein, Donald C. Haney (CPG-4053), Philip E. LaMoreaux (CPG-880), Susan M. Landon (CPG-4591), Jill D. Pasteris, Jonathan G. Price (CPG-7814), Noel Tyler, and W. Frank West.

AGI Urges Legislators to Fund USGS, DOE Programs, and Authorize Minerals Management Service


Speaking on behalf of AGI's 29 member societies and the 80,000 earth scientists they represent, Milling told the House Subcommittee on Interior and Related Agencies that the national need for a federal role in the geosciences is increasing and will continue to require an integrated national effort. The hearing was an opportunity for outside witnesses to testify in support of fiscal year 1997 funding for agencies within the subcommittee's jurisdiction.

"The central mission of the U.S. Geological Survey is to provide reliable, objective earth-science data and analysis of hazards, resources, and the environment from a national perspective," Milling told Chairman Ralph Regula (R-Ohio) and subcommittee members. "Virtually every American citizen and every federal, state, and local agency benefits either directly or indirectly from USGS products and services."

Milling urged the subcommittee to fund the National Cooperative Geologic Mapping Act, particularly the external StateMap and EdMap components that are matched by state and university dollars. At a time when the U.S. Geological Survey is adapting to changing national priorities and assuming programs once managed by the National Biological Service and U.S. Bureau of Mines, fiscal support from Capitol Hill is essential to enable the agency to meet these new challenges, he said.

Milling also expressed the Institute's support for the Department of Energy's Fossil Energy R&D program, which is making significant contributions to finding new technologies required for cost-effective, efficient development of U.S. oil and gas resources. "We particularly urge that funding be maintained for the Computational Technology Forum, National Geoscience Data Repository System, technology transfer programs, and functions moved to DOE from the U.S. Bureau of Mines," said Milling.

At a separate hearing before the Energy and Mineral Resources Subcommittee of the House Committee on Resources, Jordan expressed support for H.R. 1813, legislation that would provide permanent authorization for the Minerals Management Service (MMS). The MMS was created by the Secretary of the Interior in 1982, but it was never formally authorized by Congress, which has nonetheless provided annual appropriations for the agency. By finally providing statutory authority, H.R. 1813 would provide stronger guarantees that the agency could continue to function effectively.

Speaking on behalf of the American Geological Institute, the Association of American State Geologists (an AGI member society), and the Outer Continental Shelf Policy Committee of the Department of the Interior (where he represents the state of Delaware), Jordan praised the 13-year record of the Minerals Management Service. "Exploration and development of resources from the Outer Continental Shelf requires many years for each project," Jordan told the legislators. "Environmental Impact Statements, Five-Year Plans, and leasing procedures involve years of effort and commitment. Vast sums of money and major resources and risks are involved. Stability of structure and procedure are essential."

The complete statements of Milling and Jordan are available from Dr. David Applegate, director of AGI's Government Affairs Program, or by accessing the Institute's World Wide Web site: http://agl.umd.edu/agl/agl.html or gopher site: gopher://agl.umd.edu:71.
Avoid Doing it Over Again

Hugh Hay-Roe, CPG

Any written document that will have to be approved deserves planning, even if it’s only a 3-minute phone conversation with your immediate supervisor. For a big, complex report requiring multiple approvals, a full-scale pre-writing conference is the ounce of prevention that avoids the pound of cure.

If you stop to think about how often the people you want to talk to (in person or by telephone) are stuck in a meeting, you may quit wondering why work productivity is reported diminishing in the U.S. It’s depressing how many professional hours a year are wasted in this way.

Still, there is one type of meeting that represents a time investment with a multiple payoff: the pre-writing conference. We define such a conference — for a major document like a long technical report that will have to be approved by several departments — as a meeting attended by all the individuals who will have to approve the report. They have already studied an expanded outline, together with any illustrations the report will contain.

From the outline and illustrations they have a good idea what the author proposes to include in the report. They come to the meeting prepared to give their blessing, or suggest improvements.

Certainly it can be a problem to round up all the "moving targets" needed for the conference and get them together at the same time. But consider the benefits:

- Rewriting/recycling of drafts is avoided. The bigger the document, the more likely there will be interdepartmental disputes. If you circulate a completed draft of a document without having had a pre-writing conference, that draft (and subsequent ones) can become a battleground in which the combatants modify each other’s modifications, getting more and more frustrated as time passes. You, the author, are caught in the middle and begin to feel like a ping-pong ball. Everyone’s morale suffers. Deadlines may be missed. But if departmental rivals face each other directly in a pre-writing conference, differences are more likely to be worked out and compromise achieved at the planning stage. The author is an interested bystander during disputes, rather than a victim. Time and morale are saved.
- Special problems can be worked out with the help of the experienced people who will approve the document; the author doesn’t have to solve them alone. The handling of bad news for management is a great example — sometimes, the pre-writing conference itself can be used as a means of breaking the news gently, before it goes out in official form.
- The pre-writing conference assists vertical communication (the bigger the organization, the more beneficial this can be). At a meeting about a major document, "the troops" will hear about aspects of company policy that are not written down anywhere, while management will get some fresh input from the people on the firing line.
- Finally, the successful conference prepares you for dictation. At the conclusion of the conference you feel good because your outline is approved, at least in principle; you can start writing. And the expanded outline plus illustrations is an ideal starting point for dictating — those summarizing topic sentences get you off on the right foot for every section of the document, while the illustrations help you remember what the text needs to say.

So avoid that old complaint, "Around this place there’s never time to do it right the first time, but there’s always time to do it over." Get your major documents pre-approved before you spend days or weeks on a complete draft.

ATTENTION MEMBERS

- AIGP 1996 Officer Election Ballots have been mailed out.
  PLEASE VOTE!
- AIGP Annual Meeting in Columbus, Ohio - October 7-12, 1996. Registration and Hotel forms are on pages 24 and 26 of this issue.
  REGISTER TODAY!
Secretary Babbitt Names Members to Geologic Mapping Advisory Committee

Secretary of the Interior Bruce Babbitt today (April 19, 1996) named 12 members to the National Cooperative Geologic Mapping Program Advisory Committee, completing the slate of committee members that includes four members appointed by President Clinton.

"I am extremely pleased with the caliber of the members who will serve the interests of geologic mapping for this country," Babbitt said. "Because geologic mapping represents the backbone for virtually all applied and basic earth-science investigations, these proven leaders in the geologic and earth sciences will help to define priorities and ensure that federal and state geologic mapping efforts continue to serve the public good."

The 16-member National Cooperative Geologic Mapping Program Advisory Committee is mandated by the National Geologic Mapping Act of 1992 (Public Law 102-285), which is slated for reauthorization this year. The committee scheduled its first meeting April 25-26, 1996, in Washington, D.C.

Committee members are charged with reviewing and critiquing the implementation plan prepared by DOI, reviewing scientific progress of the program and submitting an annual report to the Secretary of the Interior that evaluates the progress of federal and state geologic mapping activities. Under the committee's charter, two appointments include the Chief Geologist of the U.S. Geological Survey, who serves as chair of the committee, and a Vice Chair and Executive Secretary.

In addition to the four Presidential appointees, committee members appointed by Secretary Babbitt represent a broad cross-section of the public, private and academic communities involved in geologic mapping activities. The appointments include four members who represent State Geological Surveys, three from the private sector, three from academia and two from the U.S. Geological Survey. They include AIPG Members:

- Thomas M. Berg, CPG, State Geologist and Chief of the Division of Geological Survey in the Ohio Department of Natural Resources, was awarded undergraduate and graduate degrees in geology from the University of Colorado. Berg has spent much of his professional career with the Pennsylvania Geological Survey where he was in charge of the state’s geologic mapping program. He is a fellow of the Geological Society of America and a member of the Association of American State Geologists.

- Donald C. Haney, CPG, State Geologist and Director, Kentucky Geological Survey, is a graduate of the University of Kentucky and holds a doctorate from the University of Tennessee. He is a past president of the Association of American State Geologists.

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the Kentucky Geological Society. Dr. Haney is a member of the Board on Earth Sciences and Resources of the National Academy of Sciences, and is chair of the Kentucky River Authority.

- **Charles J. Mankin**, CPG, State Geologist and Director, Oklahoma Geological Survey, holds a doctorate from the University of Texas and is an honorary professor of geology at Oklahoma State University. He has served on nearly 100 commissions, boards and committees at state and national levels and has chaired dozens of these efforts. Dr. Mankin is the holder of several prestigious awards including the Ian Campbell Medal from the American Geological Institute and the Mar-
Section Holds Candidates’ Forum

Jonathan G. Price, CPG-7814, AIPG President-Elect and
Vic Ridgley, CPG-5138, AIPG Nevada Section President

The Nevada Section of AIPG hosted a successful forum for the candidates who had filed for the Second Congressional District’s open seat. Other sections that are considering similar meetings are welcome to choose from what they view as the better parts of our approach.

About three months before the forum, after the five leading contenders had filed for office, and about six months before the primary, we telephoned the candidates to invite them to participate. After some adjustments for dates, all agreed.

As background information for the forum, we sent the candidates a letter explaining that Nevada geologists work in the mining, petroleum, and geothermal industries, both in Nevada and internationally; for state, local, and federal government agencies; for consulting geotechnical, geologic, and engineering firms; as individual consultants; as teachers in our primary and secondary schools; and as researchers and teachers at our universities. We further noted that geologists are addressing such problems as resource supply (metals, construction raw materials, oil and gas, geothermal, and ground water), hazards (earthquakes, landslides, floods, expansive soils, land subsidence), and the environment (mitigation, remediation, ground-water protection). We enclosed a copy of AIPG’s publication, The Citizens’ Guide to Geologic Hazards, and a copy of the Nevada Bureau of Mines and Geology Special Publication on the Nevada Mineral Industry.

In the background letter, we also noted some specific federal issues that have impacts on the profession of geology, including Mining Law reform, Wilderness designations, Wetlands designations, the National Geologic Mapping Act, the Clean Air Act, the Clean Water Act, the Endangered Species Act, and the National Earthquake Hazard Reduction Program.

About two weeks before the forum, the leading Democrat called to apologize that he could not make it, as he needed to be in Washington, D.C. to meet with his party’s leadership. He nonetheless wrote a letter of apology and included some of his positions regarding the mining industry. Three hours before the meeting, one of the three Republicans backed out with the flu. He faxed a letter of apology. We read both letters at the beginning of the forum.

Three days before the forum, we faxed each candidate a list of possible questions that might be asked. Some of these included:

- Do you favor strong domestic mining and energy resource industries?
- What are your views on the General Mining Law of 1872?
- To whom will you turn for advice and input on environmental and mining issues?

Alsobrook and Eyde Named SME Directors

A. F. "Frank" Alsobrook, CPG-7547, and Daniel T. Eyde, CPG-7647, have been named to serve on the 1996 Board of Directors of the Society for Mining, Metallurgy, and Exploration, Inc.

Alsobrook, of Alsobrook & Company, lives in New Jersey and is a Member of AIPG’s Northeast Section. He represents Mining & Exploration for SME.

Short-Term Registration in Delaware

The Delaware State Board of Registration of Geologists has announced implementation of regulations permitting out-of-state geologists to practice in Delaware provided they are properly registered elsewhere. Practice in Delaware for up to 30 days per year is permitted under this process. Longer periods require compliance with Delaware's normal registration provisions. Professional geologists wishing to use the short-term recognition procedures must apply for permission and serve notice when their work is completed. The Delaware Registration Board expressed hopes that this will provide easy access for qualified professionals to do geologic work within the state and that the process will be considered for mutual recognition by other states. For details and applications, contact The Board of Registration of Geologists, Division of Professional Regulation, Cannon Building, Suite 203, P.O. Box 1401, Dover, Delaware 19903; telephone (302) 739-4522.
• How would you propose to resolve conflicting approaches for land use?
• What are your views on the proper role of the federal government in research?
• What are your views about the roles of science and economics in pollution control and environmental legislation?
• What are your views on Yucca Mountain and disposal or storage of nuclear waste in Nevada?

During the forum itself, few of the questions were asked in these exact words, but the candidates touched on each. We drew lots (actually numbers out of the cowboy hat that belonged to the husband of one of the candidates) for the order of presentations. We asked each candidate to speak for 5 to 10 minutes, preferably emphasizing views on national issues relating to the profession of geology, mining, and the environment. We then opened the forum for questions from the audience. The moderator tried to keep the focus for questions on issues related to the profession of geology. We cut off questions after about one hour, and the candidates stayed with us informally for another 20 minutes. We presented each candidate with a Nevada-shaped lapel pin made from an air-fall tuff with colorful bands of iron oxides, compliments of AIPG. Before the candidates spoke we took the opportunity to say a few words about AIPG and its political advocacy for the profession.

We held the meeting in the banquet room of a convenient and relatively inexpensive restaurant in Reno. A no-host cocktail half hour was followed by dinner. The meeting was on a Tuesday in the middle of May, and attendance was 50, significantly less than anticipated. Most were geologists, but over half were non-AIPG members. The attendance was about half what we seriously expected, and it is difficult to attribute all the absences to geologists working in the field. Although the major news outlets in Reno were invited to cover the forum, we were disappointed that we received no advance publicity from the media, and, except for the local National Public Radio affiliate, no media representatives attended.

It took about five people to arrange the candidates’ forum and make it a success. Duties included calling and writing the candidates, contacting the membership, advertising the forum with other geological and professional organizations in the area, taking reservations, calling local members two days beforehand to remind them about the meeting, arranging the dinner, posing key questions, moderating the meeting, and writing thank-you letters to the candidates. This approach seemed to work well for an open seat, one for which the incumbent has chosen not to run, but other approaches might have been better for meetings after the primary or when there is a clear favorite for the office. It is evident, however, that more advance work is advisable to assure that the word gets out, and that news reporters actually attend. Three of the five invitees are well-known public figures and officeholders in Nevada, and the primary contest is contested by several viable candidates. Although the meeting was a success, we were somewhat disappointed that our attendance figures reflected many geologists’ apathy and the media’s general lack of interest in substantive issues.

We encourage other sections to let the AIPG membership know what works well on their political fronts.

$20K in Data Grants Announced

Hydrosphere offers data grants to environmental researchers

Boulder, Colorado - Hydrosphere Data Products Inc. announced that it will award $20,000 in data grants during 1996 to support environmental research worldwide. Researchers may immediately contact the company for grant applications. Applications for 1996 grant awards should be submitted to Hydrosphere before October 31, 1996. Applications will be evaluated on a first-in-first-out basis.

Grant recipients will receive free use of titles from Hydrosphere’s commercial library of ready-to-use environmental databases on CD-ROM Its Hydrodata(R) and ClimatedataTM CD-ROMs feature USGS hydrologic, NOAA climatologic, EPA water quality, and other environmental databases. A complete listing of topics is available from the company.

The criteria for grant awards will be the potential of proposed or ongoing research to yield theoretical advances or technological innovations that encourage the establishment of sustainable development public policies or professional practices. Applicants must also demonstrate the inability to obtain necessary data with existing research resources.

The company’s discs and its custom environmental database software will allow researchers to more rapidly locate, examine, and export data relevant to their work. The $20,000 grant allowance is approximately equivalent to the use of 80 separate titles for one year.

Sample research areas previously supported by Hydrosphere include the fate and transport of contaminants, endangered species protection, watershed ecosystems, hydrologic decision support systems, distributed hydrologic models, riparian habitat rehabilitation, and wetlands restoration. This data grant program expands and formalizes the company’s commitment to support environmental research worldwide.
MEMBERS IN THE NEWS

Robert J. Chapprel, CPG-8351, is pleased to announce that he has recently joined Pennoni Associates, Inc. (PAI) as Senior Geologist in their Haddon Heights, New Jersey regional office.

James Luker, Jr., CPG-8046, continues his position as Senior Project Manager at the Environmental Division at Gale Associates in Weymouth. Jim recently received his full LSP license by passing the first LSP examination in November 1995.

Don Bruehl, CPG-2272, has left his previous employer and is undertaking independent consulting assignments in hydrogeology. His specialties include water resources investigation, ground-water and soil remediation, and aquifer protection studies. Don is also a Licensed Site Professional (LSP) in Massachusetts, a designation in that state that deals with waste site cleanup for locations that are regulated by the Massachusetts Contingency Plan (MCP). The MCP is the state’s code of regulations for the handling, storage, and disposal of oil and hazardous materials.

Thomas M. Johnson, CPG-7422, of Alpha Geoscience continues to conduct the investigation of the geology and hydrogeology of a 16-mile portion of the Genesee River Valley on behalf of AKSO Salt. Tom is also working on several sites cleaning up petroleum and hazardous waste. Sam Gowan, CPG-7284, has been assisting Tom with the Genesee Valley investigation, but has been focusing most of his time to providing geologic and hydrogeologic support to AKSO for the planning and permitting of their proposed new salt mine near Genesee, New York.

Kurtis W. Stokes, CPG-7934, has recently passed Law Engineering and Environmental Services, Inc.’s internal principal review board and has been designated a Principal Geologist with Law.

Gerald Friedman, CPG-1531, received the Distinguished Educator Award from the American Association of Petroleum Geologists.

James E. Slosson, CPG-1109, nominated Honorary Member of the Association of Engineering Geologists (AEG) by Robert A. Larson, CPG-8113. AEG previously honored Dr. Slosson in 1989 when he was named the first Richard H. Jahns Distinguished Lecturer in Engineering Geology.

Frank J. Getchell, CPG-7311, promoted to Vice President and Director of Legetteme, Breachers & Graham, Inc.’s Ramsey, New Jersey office.

Timothy Stone, CPG-7282, received full licensure as a Massachusetts Licensed Site Professional (LSP) by the Massachusetts Board of Registration of Waste Site Cleanup Professionals.

Richard D. Lev, CPG-8947, named an Associate to Melick-Tully and Associates, P.C. (MTA) Geotechnical Engineers and Environmental Consultants. Previously an engineering geologist and environmental project manager with MTA, Richard has more than 13 years of professional experience. His expertise includes remedial investigations and remediation of soil and groundwater contamination, and rock slope evaluation. Richard is a member of AIPG, AEG, and is a registered geologist in Pennsylvania. He earned a B.A. in Geologic Science from Rutgers College.

Phyllis M. Garman, CPG-3228, is serving her first year of a 2-year, elected term as Chair of the Association of Ground Water Scientists & Engineers, a division of the National Ground Water Association. She recently moved to the Kansas City area to be closer to family and continues her independent geologic consulting work there.

Douglas A. Smolensky, CPG-7954, an Associate in Geraghty & Miller’s Fairview, NY office, has been named Coordinator of the Geraghty & Miller Modeling Group by the firm’s National Technical Resources Team.

William C. Penttila Receives Mongolia’s Highest Award

Houston, Texas - April 8, 1996. The President of Mongolia, P. Ochirbat, awarded “The Polar Star,” the highest award of the Mongolian Government, to William C. Penttila, CPG-1124, President of Exploration Associates International of Texas, Inc. The award to Mr. Penttila was for his personal contribution to the formation of legislation on oil exploration, the conducting of oil exploration surveys, assistance to Mongolia in this field and for the enhancement of Mongol-American cooperation.

The award ceremony was held on March 30, 1996, in the Parliament Building’s Emblem Room in the capital city of Ulaanbaatar. Mr. Penttila is the first U.S. citizen and first geologist to receive Mongolia’s highest commendation, which follows his six-year effort and services to the formulation of Mongolia’s petroleum industry. At the ceremony, Mr. Penttila offered his sincerest gratitude to President Ochirbat and offered his continuing dedication to Mongolia’s oil exploration effort and on-going international relations.

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**PRE-REGISTRATION FORM**

**33RD ANNUAL AIPG MEETING**

**COLUMBUS, OHIO - October 7 - 12, 1996**

**THE FUTURE OF GEOLOGY: POLITICS, ECONOMICS AND TECHNOLOGY**

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| **REGISTRATION:** (Includes Technical Sessions, Business Luncheon and Annual Awards Banquet). |
|---|---|
| **AIPG MEMBERS** | |
| Registration | $195.00 |
| Registration for Spouse/Guest | $50.00 |
| **STUDENTS** (Technical Sessions Only) | |
| Registration | $25.00 |
| **NON-MEMBERS** | |
| Registration | $250.00 |
| **DAILY** Registration (Thursday, Friday) | $100.00 |

| **EVENTS:** |
|---|---|
| 1. Business Luncheon (Friday, 12-2 PM) * | INCLUDED WITH REGISTRATION |
| 2. Annual Awards Banquet (Friday, 7-9 PM) * | INCLUDED WITH REGISTRATION |
| 3. Graystone Winery Dinner (Wednesday, 7-9 PM) | $35.00 |
| 4. Cafe Dinner Theater (Thursday, 7-9 PM) | $40.00 |
| 5. Spouse/Guest Tour #1 (Wednesday, 9 AM-1 PM) German Village (lunch included) | $35.00 |
| 6. Spouse/Guest Tour #2 (Thursday, 8 AM-5 PM) Roscoe Village, Longsberger Basket Co. (lunch included) | $50.00 |
| 7. Spouse/Guest Tour #3 (Friday, 9:30AM-12:30PM) Franklin Park Conservatory | $15.00 |
| 8. Geologic Field Trip #1 (Wednesday, 8 AM-5 PM) Fossil Collecting & Glacial Features of Southwestern Ohio (lunch included) | $50.00 |
| 9. Geologic Field Trip #2 (Saturday, 8 AM-5 PM) Industrial Mineral Mining & Hocking Hills (lunch included) | $50.00 |

| **SHORT COURSES:** [Meeting Registration not Required] |
|---|---|
| 1 - Business Management (Mon & Tues, 8AM-5PM) Non-Members | $300.00 |
| 2 - Geostatistics (Tuesday, 8 AM-5 PM) | $125.00 |
| 3 - Leadership/Educator Training - Project Wet (Tuesday, 8 AM-5 PM - 0.6 CEUs) | $5.00 |
| 4 - Ground-Water Remediation(Wednesday, 8 AM-5 PM) | $125.00 |

**TOTAL AMOUNT PAID** $__

**RETURN FORM WITH PAYMENT TO:** MARY A. CROWL, 26390 COOK ROAD, OLMSTEAD FALLS, OH 44138.

**VISA / MASTER CARD / AMERICAN EXPRESS / DISCOVER CARDS ACCEPTED**

**CARD TYPE:** ___________ **CARD NO.:** ___________ **EXP. DATE:** ___________

Please Charge My Credit Card: ___________ Signature: ___________

MAKE CHECKS OR MONEY ORDERS PAYABLE TO OHIO SECTION AIPG

*Unregistered Guests Welcome at Additional Cost

Fax: (216) 425-7266, Tel: (216) 425-2393

**REFUND POLICY**

Refunds of 100% of registration fees will be given upon written request if received by 5:00 PM, Friday, September 20, 1996. Notification and full refund for field trips or social activity fees will be given in cases of cancellations due to insufficient registration by this date also. 50% refunds will be given up to October 4, 1996.
A.I.P.G. National Meeting 1996

GEOLOGY
the heart of it all

The OHIO Section of the American Institute of Professional Geologists is pleased to announce that the 33rd ANNUAL MEETING will be held at the GREAT SOUTHERN HOTEL in Columbus, Ohio

October 7 - 12, 1996

Theme of the meeting will be:

"The Future of Geology: Politics, Economics and Technology"

General Chairman: Curtis J. Coe
c/o Certified Oil Company
949 King Avenue
Columbus, Ohio 43212
614-421-7500
614-421-6525 Fax

Co-Chairman: Tom Jenkins
c/o Burgess & Niple, Limited
5085 Reed Road
Columbus, Ohio 43220
614-459-2050
614-451-1385 Fax

American Institute of Professional Geologists Ohio Section
The Great Southern (Westin) Hotel has a block of rooms at a rate of $85.00 per night single occupancy and $95.00 per night for double occupancy + tax. The Great Southern (Westin) Hotel has a variety of room types. In fact, no two rooms are alike. To ensure your choice of room, make your reservation early and specify your preferences. If making reservations by telephone, please inform the hotel of your AIPG affiliation.

Reservations should be placed by September 1, 1996. Reservations after September 1, 1996 will be based on availability. Once our block of rooms is filled, rooms will be available at the Hyatt Regency at a cost of $175/night + tax. The Hyatt Regency is within walking distance from The Great Southern (Westin) Hotel.

The Great Southern (Westin) Hotel is located approximately 10 miles from Columbus International Airport. Airport shuttle service is available for $6.00 each direction. The shuttle leaves every 1/2 hour. Airport shuttle service can be reached at 1-800-476-3004. Please note late arrival at The Great Southern is 4:00 p.m., not 6:00 p.m.
American Institute of Professional Geologists

The Professional GEOLOGIST

RATES & ADVERTISING SPECIFICATIONS FOR MONTHLY MAGAZINE

Published monthly, *The Professional Geologist* (TPG) contains reports by the President, Executive Director, Committee Chairman, news from the 36 local sections, and the profession in general, columns, letters, announcements, and brief articles of interest. Issues include a theme and a full color cover (see editorial calendar for themes).

Circulation: approximately 7,000

Demographics:
- Professional Geologists
- Businesses
- Government Agencies
- Technical Libraries
- Related Industry
- Universities/Colleges

[The Editor of AIPG is authorized to accept or reject any advertising copy submitted for publication.]

GENERAL ADVERTISING RATES

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Double Page Spread 1,295 1,100 1,035 970

Camera-ready copy (positive or negative) in actual size of the desired ad. or in proportion to final dimensions, is required. All ads will be processed in black and white.

COLOR & SPECIAL RATES

Additional colors are available.
In addition to black and white space rates, add:

| Standard Color (per color) | $200.00 | Inside Front Cover | $50.00 |
| PMS Screen Tint | $50.00 | Inside Back Cover | $50.00 |
| Four-color process | $600.00 | Back Cover | $100.00 |
ADVERTISING SPACE CONTRACT

Date:__________________________

American Institute of Professional Geologists (AIPG)
THE PROFESSIONAL GEOLOGIST
7828 Vance Drive, Suite 103
Arvada, CO 80003-2124
(303) 431-0831 • (303) 431-1332 FAX

Contact Person:_____________________

Adviser:__________________________

Address:__________________________

City/State:__________________________ Zip:_________ Phone:_____________________

DEADLINE: The 1st of the month preceding publication.

You are hereby requested and authorized to insert the advertising of the Adviser by the undersigned authorized representative, as follows:

ADVERTISING SPACE:

FREQUENCY IN MAGAZINE: 1x____ 3x____ 6x____ 12x____ RATE:_________ SIZE:______________

CHECK MONTHS OF INSERTION:

Jan.____ Feb.____ Mar.____ Apr.____ May.____ Jun.____ DIRECTORY ISSUE:____________

Jul.____ Aug.____ Sep.____ Oct.____ Nov.____ Dec.____ RATE:_________ SIZE:______________

(Directory published in April as a separate, thirteenth, issue.)

START: Month_________________________ 19____ END: Month_________________________ 19____

TOTAL AMOUNT DUE:_____________________

Adviser is responsible for notifying advertising representative of any changes regarding this advertising contract as soon as possible. Advertisers must give 60 days notice to cancel cover contracts.

For Office Use Only:____________________

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TERMS AND CONDITIONS:

1. Adviser agrees to protect and save harmless the American Institute of Professional Geologists and its advertising representative ("Publisher") from any suits for libel, violation of right of privacy, plagiarism, copyright infringement, and any and all other claims in connection with the advertising referred to in this contract and assumes liability for all content of advertisements printed and for any claim arising therefrom made against Publisher.

2. Publisher reserves the right at any time to decline any advertising which it feels to be inappropriate.

3. Advertising is accepted in accordance with the rates, terms and conditions set forth in the current rate card and Adviser acknowledges receipt of such rate card. Insertions cannot be cancelled after closing date listed in current rate card.

4. Prepayment required to accompany ad for first-time advertisers or at the discretion of the publisher. A fifteen percent discount on space is given to recognized agencies if account is paid within 30 days from date of invoice. No space discounts will be given on ads one-sixth page and smaller. No cash discounts. Publisher reserves the right to hold Adviser liable for payment due to the Publisher.

5. Only authorized personnel for the Adviser may execute this contract.

6. Publisher makes every attempt to print and mail by the end of the first week that the magazine is published. However, Publisher does not guarantee date of printing, date of mailing or date of receipt of any issue of The Professional Geologist. Publisher makes every attempt to accommodate position requests but does not guarantee position.

Adviser:__________________________ Title____________________

Accepted by:__________________________ for Publisher.

07/93
AIPG MEMBERSHIP BENEFITS

Certification

AIPG certifies the qualifications of professional geologists prior to admitting them into membership. By means of a rigorous and thorough peer review process, the Institute investigates applicants who voluntarily apply for self-regulation through the Institute. This screening carefully evaluates their education, experience, technical competence, and ethical conduct. If they meet AIPG’s high standards, applicants are granted Certification and the title of “Certified Professional Geologist” (CPG). When the letters CPG follow an individual’s name, they proclaim to the public that this person has met the standards and subscribes to the Institute’s Code of Ethics and By-laws.

Representation

Members are represented by qualified geological professionals. Congress, Legislatures, and Federal and State agencies are lobbied on specific mining, petroleum, water, environmental, and other issues of special interest to geologists.

A portion of AIPG’s monthly magazine The Professional Geologist (TPG) is devoted to reporting developments at all government levels. Thirty-six sections of AIPG provide group representation on a state or regional level and offer opportunities to meet, work and exchange ideas and information with colleagues.

Education

At the national and section level, AIPG provides materials designed to enhance the professional knowledge and skills of its members. Educational opportunities range from seminars and short courses to sectional and national meetings. To encourage high standards of educational programs, the Institute recently established a program of Accreditation of Continuing Education opportunities offered by other organizations.

The Institute prepares and distributes comprehensive publications giving background and scientific explanations on geologically-related matters of public concern. Topics include: ground water, radioactive waste, and hazardous waste.


Insurance

Professional liability, health, and life insurance are available to members.

Information

AIPG disseminates information to its members and to the public in a number of ways on a wide variety of topics. The Institute publishes a monthly magazine The Professional Geologist (TPG). It is mailed to members and interested individuals, businesses, and political leaders. Subscriptions are available to non-members.

A comprehensive Membership Directory is published annually. Copies are sent to federal, state, regional and local governments, libraries, consulting firms, corporations, and other potential users of geologic services throughout the United States and abroad. The Directory may also be purchased by non-members.

REQUEST FOR APPLICATION AND ADDITIONAL INFORMATION

NAME__________________________________________

EMPLOYER_____________________________________

STREET________________________________________

CITY_________STATE____ZIP_____________________

DAYTIME PHONE_______________________________

Mail, fax, e-mail, or call:
AIPG
7828 Vance Drive, Suite 103
Arvada, CO 80003-2124
(303) 431-0831 - FAX (303) 431-1332
E-mail address: aipg@ix.netcom.com

Please send me information on:
☐ Certification - (degree and 36 semester hours in a geological science, plus five years of experience).
☐ Candidate for Certification - (degree and 36 semester hours, but less than five years of experience).
☐ Student (declared a major in a geological science).
☐ Continuing Education  ☐ Advertising Rates
☐ Insurance  ☐ TPG Subscription
☐ Publications  ☐ Insignia Items

JULY 1996 • The Professional Geologist 29
APPLICATIONS RECEIVED  
(June 5, 1996 - July 16, 1996)

Applicants for certification must meet ABG's standards as set forth in its Bylaws and education, experience, competence, and personal integrity. For example or board 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. Negative information regarding an applicant's qualifications must be specific and supportive, persons who provide information that leads to an applicant's rejection may be called as a witness in any resulting appeal action.

Full Membership

AK - CROTTY, Bob
    HE 52 Box 8803, Indian, AK 99643
    Sponsors: Lawrence Acomto, Mike McCrum, Tony Wagner

PA - DIAMADI, Joseph
    522 Osk Drive, Harleysville, PA 19438
    Sponsors: Gilbert J. Marzoni, Sonya Ward, Mary Jane Shell

MN - FASHBAUGH, Earl F.
    4329 Oaklavy St., Duluth, MN 55804
    Sponsors: Lou Zachos, Joel Degenermert, Riff Samuelson

MI - FOERG, Andrew J.
    20200 Uihlhe, Detroit, MI 48221
    Sponsors: Richard M. Winer, Fred Rose, David H. Stephens

MI - GALLOWAY, Ronald R.
    P.O. Box 337, 3429 School Rd., Temperance MI 48182
    Sponsors: William Klamer, Ron Lipton, Mike Huttich

MS - GLOVER, William D.
    414 Evans Street, Victoriah, MS 36180
    Sponsors: Daniel W. Schmitz, Dr. Lawson M. Smith, Richard J. Uftron

OH - KOVACH, Libeth A.
    9504 Pinngrove Ave., Parma OH 44129-2040
    Sponsors: Hoyan Murray, Patrick Miler, Almee Pergolski

TX - KUHARI, Conrad A.
    1254 Fremont Drive, Cedar Park, TX 78613
    Sponsors: Johnathan Price, R. Stephen Fisher, John Robert

OH - LAWTON, David L.
    3548 Paris Blvd., Westerville, OH 43081
    Sponsors: Samuel Stowe, Brad Gamblin, Brian Sieren

CO - LEAFGREEN, Douglas Michael
    410 West 20 St., Greeley, CO 80634
    Sponsors: Neil Sherrod, J. Dale Jackson, Jim McClurg

AZ - LIVEMORE, Robert S.
    11028 E. Villa Park Street, Chandler, AZ 85248
    Sponsors: Clifford R. Pollock, Andy Wallace, Richard Borse

OH - MARTIN, Jeffery William
    165 Hubbard Drive East, Gahanna, OH 43230
    Sponsors: Samuel M. Stowe, Steven S. Edgerton, Victor V. Covedac

WI - MC CUING, Kurt D.
    P.O. Box 2271, Waukesha, WI 53187
    Sponsors: Ron Filipack, Gerald Johnson, Ben Vanburen

MI - MC MONEGLE, A. Unette
    32926 Pith Lane, Owosso, MI 48864
    Sponsors: Craig A. Savage, Mark E. Vincent, Thomas M. Brunelle

AZ - MEGLIOLI, Andreo
    10441 S. 6th Street, Phoenix, AZ 85044
    Sponsors: David Serano, Randa Madhi, John Minchak

NY - RODES, James P.
    350 Hanstead Road, Bayport, NY 11705
    Sponsors: Kurtis Stokes, Frank Castellano, Les Sirkun

CO - TRUMP, Derrick E.
    2722 West 100th St., Denver, CO 80228
    Sponsors: Jansell Bergman, Rick Farnond, Paul Lipinski

PA - YOST, David A.
    6288 Springhouse Place, Bridgeville, PA 15017
    Sponsors: Jeff Gient, Roger Clark, Rick Bethel

Candidate for Certification

NH - DOBBINS, Krista L.
    58 Anhevelt Street #5, Milford, NH 03055
    Sponsors: James Penndlethorn, Michael Buke

MD - HAYDEN, Paul H.
    839 New Cut Road, Severn, MD 21144
    Sponsors: Tim Lowenskin, Janine Mauersberg

NEW MEMBERS (Call and welcome as professionals and add them to your directory)

WV - EMRLICK, Brad L., CPG-9841
    Route 6, Box 175-41, Elizabeth, WV 26034
    (304) 456-8561

WI - GRAHAM, Richard C., CPG-9847
    715 South Dickinson Street,
    Madison, WI 53703
    (608) 831-4404

MN - JOHNSON, Terry R., CPG-9855
    543 Park Lane, Owston, MN 55506
    (612) 559-1423

IL - MUTFCHER, Jack W., CPG-9856
    311 W. Fairground Street, Hillsboro, IL 62949
    (618) 624-4690

TX - NADAM, Emmanuel C., CPG-9842
    8022 Gessner Drive, #2306, Austin, TX 78753-6851
    (512) 239-2949

TX - PANNELL, Leland R., CPG-9848
    Route 2, Box 182, Bastrop, TX 78602
    (512) 803-0756

IL - PAULSON, Steven E., CPG-9857
    Nilo Chemical Co., Inc., Nilo, IL 60553
    (708) 305-1072

KY - RAY, R. Craig, CPG-9849
    331 West Lexington Avenue,
    Winchester, KY 40391-1004
    (606) 299-7775

TX - ROBERTSON, Charles R., CPG-9858
    82 N. Woodlawn Road, Dallas, TX 75205
    (214) 454-6680

WA - SCHEMS, Keith S., CPG-9850
    2313 33rd Place West, Bothell, WA 98021
    (206) 820-6659

TN - SCHULZ, Stuart P., CPG-9851
    485 Saddle Drive, Nashville, TN 37221
    (615) 373-0104

WA - SCOTT, Douglas F., CPG-9852
    19222 Glenridge Street, Spokane, WA 99208
    (509) 484-1610

TX - SLEDGE, Kevin M., CPG-9853
    6002 Cinnamon Creek #713, San Antonio, TX 78213
    (512) 541-2501

MN - SIMNET, James F., CPG-9859
    4704 Western Hills Drive, Iagress, MN 55123
    (612) 854-6513

AK - SPIELMAN, John F., CPG-9840
    P.O. Box 81483, Fairbanks, AK
    (907) 479-6600

MN - TELEY, David A., CPG-9845
    10549 Victor Avenue South,
    Bloomington, MN 55438
    (612) 559-1400

NM - THOMASON, Ethel C., CPG-9861
    7458 Swan Road, Albuquerque, NM
    (505) 479-6600

AK - WAGNER, Anthony B., CPG-9844
    6221 Corner Tree Drive, Anchorage, AK 99501
    (907) 278-2551

NJ - WEAVER, Michael D., CPG-9854
    21 Pine Street, Silverth NJ 07860
    (201) 559-1000

WEISLOW, Scott H., CPG-9845
    1730 West Hill Drive, Iagress, MN 55123
    (612) 854-6513

AK - WILC-EJ FAIN, Joan L., CPG-9846
    P.O. Box 84285, Fairbanks, AK
    (907) 479-6600

MN - WITT, David A., CPG-962
    9476 Walsley Road, Coos, MN
    (503) 474-4290

NEW CANDIDATES FOR CERTIFICATION

IA - KNOLENBERG, Camille A., CFC-0119
    205 Grant Street, Bettendorf, IA 52722
    (309) 794-5677

NEW STUDENT AFFILIATES

CA - STONE, Stephen J., SA-0063
    2911 S. Vista Avenue, Corona, CA 92671
    (951) 787-3434

NEW AFFILIATED PROFESSIONALS

GA - SMITH, William Harvey, AP-0003
    1325 Jordan Mill Road, Sandersville, VA 51825
    (912) 552-4955

IN MEMORIAM

Graham S. Campbell, CPG-0832, May 19, 1996, Park City, Utah

Lloyd E. Hatfield, CPG-1004, May 22, 1996, Willis, Texas

Henning F. Koch, CPG-3711, April 8, 1996, Raleigh, North Carolina

Louis R. Porsetto, CPG-0918, February 3, 1996, Lexington, Kentucky
Show Your PRIDE With AIPG Logo Items!

A. AIPG TEE SHIRT
Russell, 50% cotton, white with royal blue silk screen of AIPG logo. Sizes M, L, XL, add $2 for XXL.
Price: $12.50

B. AIPG SWEAT SHIRT
Russell, 50% cotton, royal blue with white silk screen of AIPG logo. Sizes M, L, XL, add $2 for XXL.
Price: $21.50

C. GOLF SHIRT
Outerbanks, 100% cotton, white with royal blue embroidery of AIPG initials on upper left chest. Sizes L, XL, add $2 for XXL.
Price: $30.00

D. CAPS
Caps come in royal blue, navy, and navy with yellow bill with AIPG logo. Please specify color.
Price: 15.50

E. COFFEE MUG
Ironstone, 12oz., microwaveable, shatterproof, cobalt blue, gold band and AIPG logo in gold.
Price: $10.50

F. SPORTS BOTTLE
Plastic, 32 oz., white with blue AIPG logo.
Price: $2.50

To Order Call 303-431-0831 - Please have your MasterCard or Visa ready