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IN THIS ISSUE

Precedent Established In West Virginia Condemnation Case

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In condemnation, most venues adhere to the *undivided fee rule*, with property appraised as if all interests were in one entity. Value is then apportioned between the leased fee and the leasehold estates. No value is imputed to the leasehold estate if contract rent is less than economic rent. This approach fails to recognize the uniqueness of mineral deposits and the true loss to the lessee. A number of venues recognize that the *right to mine* has value. One method in valuing this right is the residual technique of reserve valuation.

It is a fact that property can be divided into more than one estate, with different entities owning different estates. In condemnation proceedings involving real property interests, it has been customary for the condemning authority to invoke the *undivided fee rule* (also known as the *unit rule*), which requires the appraiser to value the property as if title is held by a single entity. Depending on the assignment, the appraiser my or may not be required to then allocate among the various estates.

In real estate theory, property is composed of a bundle of rights to which the owner is entitled. One of the owner's rights is the right to transfer the beneficial use of the property to another, as through a lease. This act divides the property into two estates-the *leased fee estate* which is held by the lessor, and the *leasehold estate*, which is held by the lessee.

The owner of the leased fee estate retains title to the property and has two rights- the right to receive rents and the right to take the property back upon termination of the lease. The owner of the leasehold estate has the right to occupy and use the property for the term of and subject to the conditions of the lease, including payment of rent.

In valuing these estates, both *contract rent* and *economic rent* are taken into account. The term *economic rent* is synonymous with the term *market rent*. As an example, if the property being condemned contains an office building, the appraiser will develop an estimate of value through the capitalization of the income stream forecast to be derived from rents received under the terms of the lease (that is, the contract rent).

In allocating value between the leased fee estate and the leasehold estate, the appraiser would first determine what economic rent is and then compare this with the contract rent for the subject building. If the economic rent is the same as or less than the contract rent, no value is attributed to the leasehold estate and all value is attributed to the leased fee estate.

However, if the contract rent is less than the economic rent, the value derived from the incremental difference is attributed to the leasehold estate, thus diminishing the value of the leased fee estate by a like amount. In this fashion, the lessee of space from which his or her business is conducted would receive no value in condemnation if the rental being paid was equivalent

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to the current market rental. It should be noted that it has been established that *businessman's profits* are not compensable in condemnation proceedings.

The application of the undivided fee rule to mining properties is common practice in condemnation proceedings, although changes are occurring. In many venues, however, the leasehold estate is valued solely on the basis of the relationship between contract rent and economic rent, with no consideration given to the losses incurred upon closure or diminution of the mining operation/ The condemning authority's logic frequently is that the mining operation can be moved somewhere else, much as a business can if the building in which it operates is lost through condemnation. This logic, of course, fails to recognize the uniqueness of mineral deposits and the dissimilarity between mining and other types of commercial business enterprises.

A major hurdle to overcome in attempting to value the leasehold estate in a way other than the extremely restrictive fashion used with commercial real estate leases is the implication that *businessman's profits* are being included. The first step in overcoming this hurdle is to establish the difference between commercial rent estate leases and mining leases.

With the former, the lessee is obtaining the right to occupy and use the surface, or the space, involved, upon which, or within which, he or she may chose to develop a business. With the latter, the lessee is obtaining the right to extract (that is, mine) a mineral or energy commodity, which is the heart of the enterprise to be established. In effect, a portion of the property is being extracted and sold, and those owning interests n this portion of the property have the right to be compensated for their loss.

In early 2002, the writer testified in a trial involving the condemnation by the West Virginia Division of Highways ("DOH") of a limestone-bearing property associated with a quarry that was active at the condemnation date. The writer's clients were the owners of both the leased fee estate and the leasehold estate, and valuations of the interests of each were prepared for presentation in the trial.

In valuing the leased fee estate, the writer's estimate of market value was actually lower than that of the DOH appraiser, primarily because it was prepare on an after-tax basis and the DOH appraisal on a pre-tax basis. Both based value on the present value of a discounted future royalty stream.

In valuing the leasehold estate, an operating model was prepared by the writer and a forecast of future cash flows developed on an after-tax basis. The forecast cash flows were then discounted to a present value, representing the value of the business enterprise. In order to derive a value of the right to mine that had been taken form the quarry operator, the Residual Technique of Reserve Valuation was used. This approach was rejected out of hand by the DOH, which took the classic real estate appraisal position that any value residing in the leasehold estate would be based solely on the difference between contract rent and economic rent.

Although the DOH filed a motion in *liminie*, the court allowed the writer's testimony. The DOH then filed a motion to prevent the jury from considering the writer's testimony, which the court also overruled. The jury's award was substantially higher than the DOH offer, and the DOH appealed the decision to the trial court, which did not change the original decision. The DOH then appealed to the West Virginia Supreme Court, which in early 2004, refused to hear the case and thus did not disturb the trial judge's decision or the jury's award. To the writer's knowledge, this is the first time a lessee in West Virginia has received compensation in a condemnation proceeding for the loss of the right to mine on other than the classic real estate approach based on the difference between contract and market rent.

Editor's note: Congratulations Alan! That is quite an achievement.

Average Replacement Costs Per BOE and Your Appraisal Assignment

By Wesley W. Lilley, Ph.D., AIMA Member, CMA No. 1996-1
Lilley & Company

Have you ever wondered what oil and gas companies were paying to add reserves through acquisitions? It looks like it is approximately 15% of the current cost for a barrel of oil at today's prices.

Base upon information presented by the "PLS Quick Deals" (April 29, 2004), "average acquisition costs for 46 independent exploration and production companies averaged $5.81 per BOE over a five-year period ending December 31, 2003." They obtained their information from a study that was conducted by investment banker Howard Weil. The study did not look at any multinational companies, but did include some independents that had a mixed portfolio of domestic and international properties. "Those managements spend money on things like acquisitions and those expenditures can be used as benchmarks when compared to the volume of purchased reserves." They did caution that "the study was done before the financial community developed concern over the reliability of stated reserves, so should be taken with a grain of salt."

Reserve Acquisition Costs normalizes on a $'s per BOE

A. Top Five Companies:
    1.) Murphy Oil Corporation ($0.54)
    2.) Prima Energy Corporation ($1.48)
    3.) Berry petroleum Company ($1.89)
    4.) Range Resources ($3.49)
    5.) Nuevo Energy Company ($3.61)

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Average Replacement Cost, *Cont from page 2*

B. Bottom Five Companies:

1) Noble Energy, Inc. ($12.73)
2) Cimarex Energy ($11.36)
3) Pogo Producing Company ($9.68)
4) Houston Exploration Company ($8.99)
5) Newfield Exploration Company ($8.01)

The average cost per BOE was $5.81.

Based upon the information provided, the "all sources finding and development costs for the 46 companies averaged $7.65 per BOE." The top five included:

1.) Ultra Petroleum Corporation ($1.49)
2.) Western Gas Resources, Inc. ($3.22)
3.) Evergreen Resources Inc. ($3.83)
4.) Patina Oil and Gas Corporation ($3.84)
5.) Occidental Petroleum Corporation ($4.05)

According to the reported findings, "companies who spent the most on oil and gas activities in 2003, included:"

1.) Devon ($7.92 billion)
2.) Apache Corporation ($3.05 billion)
3.) Anadarko Petroleum Corporation ($2.71 billion)
4.) Chesapeake Energy Corporation ($1.98 billion)
5.) Unocal Corporation ($1.77 billion)

On average, the 46 companies spent $745 million.

One thing we all should take away from these findings with the observed wide range of values that the different companies are paying in their acquisition of reserves is that we need to be very cautious in or selection of the comparable sales we use in our appraisal assignments; they need to be very tightly defined and limited to the area, basin, formations, etc. that are in close proximity to the property under evaluation. It becomes readily apparent that if we rely upon "rules of thumb" values developed for a region too distant from the subject, we will, in all likelihood, make very inaccurate statements regarding the market value of the appraised property.

Editors note: BOE is "barrels of equivalent oil." Generally, natural gas is converted on the basis of 1000 cubic feet of gas per barrel oil.

Copper

By Daniel Edelstein, USGS

Editor's note: Member Dr. Wes Lilley, has furnished the following article. It is a reprint from Geotimes, June 2004, Copyright 2004, the American Geological Institute. Their web site is www.geotimes.org

Daniel Edelstein, the copper commodity specialists for the U.S. Geological Survey, has compiled the following information about copper, a metal closely tied to the development of ancient and modern civilization.

Copper, which was first used more than 0,000 years ago, was the first metal used by humans. The alloying of copper with tin to form bronze---a harder, stronger and more readily cast metal—gave rise to an era bearing its name. Copper (pure metal and its alloys) became a major industrial metal due to its properties of high ductility, malleability, thermal and electrical conductivity, and corrosion resistance. It now ranks third after iron and aluminum in terms of quantities consumed. The United States was the world's largest user of refined copper until 2002 (about 2.4 million tons, 16 percent of world total), when it was surpassed by China, whose apparent consumption nearly doubled over a four-year period.

At least 160 copper minerals have been identified in nature, of which chalcopyrite is the most abundant and economically significant. Geologists have grouped economic copper deposits according to their mode of origin into broad generic classes. The most important of these—porphyry copper deposits and their associated deposits—account for about two-thirds of the world's resources including most of those found in he Western United States. Approximately one-fourth of the world's identified resources are in strata-bound sedimentary rocks, such as in the African copper belt and the Nonesuch Shale of Michigan. About 5 percent of global copper resources are in volcanic rocks as massive sulfide deposits, such as those that were mined in the Ducktown Basin in Tennessee.

Current U.S. mine production of copper is mostly from processing of the low-grade porphyry copper deposits in Western states. Historically, however, native copper, sedimentary and massive sulfide deposits have contributed significantly to U.S. copper production. The earliest large-scale domestic production came from the native copper deposits in Upper Michigan, where modern production began in 1844. By the beginning of the 20th century, the United States was by far the world's largest copper producer.

By the start of the 21at century, however, the United States relinquished its role as the world's largest copper producer to Chile. U.S. mine production in 2002 was only 1.14 million tons (down from its peak in 1997 of 1.94 million tons), while Chile's production rose to 4.58 million tons. Large investments in foreign production and global recession led to surplus production, a sustained period of low prices and a series of U.S. mine production curtailments. Consequently, the United States is dependent on imports to meet more than one-third of its refined copper consumption.

The United States, however, has substantial copper reserves (35 million tons), and an estimated 260 and 290 million tons, respectively, of identified and undiscovered copper resources, base on a 1998 mineral-resource assessment by U.S. Geological Survey. At yearend 2003, world copper prices began to rise as production restraint, recovery in global

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demand outside of China and continued growth in China led to copper production deficit. Consequently, annual U.S. mine output is poised to expand by about 200,000 metric tons per year.

In 2003, 13 mines in three states (Arizona, Utah and New Mexico, id descending order) accounted for 99 percent of U.S. domestic copper production. Because of its infinite capability for recycling and the economic advantage of processing secondary materials over mined ore, copper scrap has always been a significant component of domestic copper supply. Brass mills, rod mills, foundries, ingot makers and chemical plants were consumers of refined copper and directly melted scrap.

Uses for copper and copper alloy products included building construction (46 percent), electric and electronic products (23 percent), consumer and general products (11 percent), transportation equipment (10 percent), and industrial machinery and equipment (10 percent). More than 75 percent of copper within these end uses was used in electrical applications.

For more information on copper, visit the USGS Minerals Division online.

Rare Earths

By James B. Hedrick, USGS

Editor's note: Member Dr. Wes Lilley, has furnished the following article. It is a reprint from Geotimes, May 2004, Copyright 2004, the American Geological Institute. Their web site is www.geotimes.org

James B. Hedrick, rare-earth commodity specialists for the U.S. Geological Survey, has prepared the following information on the rare earths, which have been used commercially since the 1880's.

As if classified as a top-secret project, the rare earths have been shrouded in secrecy. The principal ore mineral of the group, bastnäsite, rarely appears in the leading mineralogy texts. The long names of he rare-earth elements and some unusual arrangements of letters, many Scandinavian in origin, may have intimidated even those skilled in phonics. Somewhat obscurely labeled, the rare earths are neither rare nor earths (the historical term for oxides). They are a relatively abundant group of metallic elements that occur in nature as nonmetallic compounds and have hundreds of commercial applications.

The rare earths are defined as a group of 17 elements, comprised of scandium, yttrium and lanthanides. The similar radii and oxidation states of the rare earths allows liberal substitution of the rare earths for one another into the crystal lattice sites of minerals. This substation accounts for their wide dispersion in Earth's crust and the characteristic occurrence as a group of elements within more than 100 minerals. The principal ores of the rare earths are bastnäsite, ion-adsorption lateritic clays, loparite, monazite and xenotime.

Commercial development of the rare earths started with the invention of the incandescent lamp mantle by Auer von Welsbach around 1884. Rare-earth production in Scandinavia was prompted by this invention, which initially was made with oxides of lanthanum, yttrium and zirconium.

World production of rare earths was estimated at 98,200 metric tons of equivalent rare-earth oxides in 2002,. China was by far the largest producer, with .90 percent of the world's total. Lesser amounts came from India, Kazakhstan, Kyrgyzstan, Malaysia, Russia, Ukraine and the United States.

In 2003, there was no rare-earth mine production (lanthanides, yttrium and scandium) in the United State. However, the United States has remained a supplier of bastnäsite concentrates and rare-earth compounds that were previously processed by Molycorp, Inc., a subsidiary of Unocal Corp. Molycorp last mined and processed bastnäsite in 2002 at its Mountain Pass, Calif., mine and was maintaining the operation on standby. Industrial rare-earth products and concentrates are available from Molycorp's stocks.

In 2002, the approximate distribution of rare earths by use was as follows: glass polishing and ceramics, 30 percent; petroleum refining catalysts, 28 percent; metallurgical additives and alloys, 19 percent; automotive catalytic converters, 14 percent; permanent magnets, 3 percent; rare-earth phosphors for lighting televisions, computer monitors, radar and x-ray intensifying film, 3 percent; and miscellaneous, 3 percent. In 2002, yttrium consumption was estimated to have decreased to 334 metric tons from 473 metric tons in 2001.

The estimated use of yttrium, based on imports, was primarily in lamp and cathode-ray tube phosphors, followed by lasers and electronics, and ceramics and oxygen sensors. Scandium was used primarily in lightweight, high-strength, aluminum alloys for sports and camping equipment, including baseball and softball bats, bicycle frames, lacrosse stick handles and tent poles. Small amounts of scandium metal or compounds were used in specialty lighting, analytical standards and as target materials in X-ray analysis.

Rare earth principal ores

The principal ores of the rare earths are bastnäsite, ion-adsorption lateritic clays, loparite, monazite and xenotime. Several of the ores occur in unique geologic settings whereas others are found in similar occurrences worldwide.

Monazite was the principal ore of the rare-earth elements and thorium. Since the 1880s and the 1890s it has been the source of elements to make incandescent lamp mantels and lighter flint alloys, the earliest commercial applications. Monazite ore *Continued on page* 5

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is recovered mostly from heavy-mineral sand sedimentary deposits. Early high-cost production in the 1880s was from Sweden and Norway; with lower cost alluvial placer sand production from North Carolina beginning in 1893. Brazilian littoral deposits having higher grades began production in 1895 and India started production in 1911. Monazite's high thorium content has limited its use since the 1990s.

Bastnäsite is the principal ore produced in the world and is enriched in the cerium, lanthanum, praseodymium, neodymium and europium. Bastnäsite was first commercially recovered from the igneous carbonatite at Mountain Pass, Calif., in 1952, primarily for cerium to be used in glass polishing. European abundance in the ore allowed for a true red-color phosphor for color television in the 1960s. Since 1985, bastnäsite production in China increased dramatically and continued to increase and dominate the market from the 1990s to the present.

The mineral xenotime, was the principal ore of yttrium and other heavy rare-earth elements. Yttrium was used in phosphors, and combined with ziroconium to m
ake high-strength structural ceramics. It also was used in synthesized crystals for lasers. Xenotime is produced from alluvial heavy-mineral sands deposits mined for tin, titanium, and zirconium minerals.

Ion-adsorption lateritic clays from southern China replaced xenotime as the principal source of yttrium and the other heavy rare-earth elements in the 1990s. These intensely weathered clays have rare-earth ions adsorbed into the clay mineral structure.

Loparite is a complex oxide mineral mined in Russia from an alkaline massif. Commercially produced since 1951, loparite occurs in association with alkaline rocks of magmatic origin. It is also known to occur in carbonatites. Loparite has a perovskite structure with couples substitutions, polymorphism, defect chemistry and a tendency to become metamict.

Visit the USGS Minerals Division online for more on rare earths.

Ellis To Speak On Standards At United Nations Conference, Geneva

By Trevor Ellis, AIMA Member

Trevor Ellis, AIMA President 2000-2002, will represent the International Valuation Standards Committee (IVSC) at a conference in the United Nations' European headquarters, Palais des Nations, Geneva, Switzerland, on 10-11 November 2004. Trevor is the founder and leader of the IVSC's Extractive Industries Task Force, whose standards for appraising the value of mineral and petroleum assets will be published January 2005 in the *International Standards* (see article, this issue). The conference is the first Meeting of the Sd Hoc Group of Experts on Supply of Fossil Fuels convened by the United Nations Economic for Europe (UNECE).

The purpose of the meeting is to discuss the long-term sustainability of fossil fuels supplies, including how to improve the current methods of their management, assessment and valuation, and reporting. Resource and reserve classification principals used in the meeting will mainly be the United Nations Framework Classification for Energy and Mineral Resources (UNFC). This was adopted by the United Nations Economic and Social Council (ECOSOC) at its annual session in July 2004 and recommended to countries for worldwide application. The UNFC is included by reference by reference in the *International Valuation Standards 2005 Edition.*

The meeting will also examine several country and deposit-based case studies with a view to assessing the suitability and flexibility of UNFC as well as whether it can be used successfully for other than evaluating purposes, e.g. financial reporting and resource management. A number of deposit case studies are expected by OPEC and non-OPEC member states, on hydrocarbon, coal and minerals. OPEC representatives are expected to be important participants in the meeting.

In inviting Trevor to attend, the UNECE has requested that he make a presentation on the theme, "Securing Investments through appropriate Financial Reporting." In this he will focus on the future relationship of investment to application of the International Valuation Standards for determining the *fair* value of fossil fuel resources reported under the International Financial Reporting Standards that are being implemented worldwide. He will also participate in "round table discussions" on this and other issues.

Editor's note: Hurrah for Trevor. He will truly be an asset at the meeting in promoting the importance of the International Valuation Standards for the valuation of minerals worldwide.

Lease Bonus Method

By Donald Warnken, AIMA Member

The Lease Bonus Method is an income approach to estimating fair market value (FMV) of non-producing mineral rights. It is a very reliable and simple method that works well in areas where petroleum is the dominant mineral right. To apply this Method, lease bonus data, annual rental and lease terms are extracted from market data. An income stream is then estimated from lease bonuses and annual rentals that would accumulate over a ten –year period, assuming consecutive leasing. Each year of income is discounted to present worth and summed for the Fair Market Value estimate. Some appraisers use a fifteen-year period but they include time lapses in their postulated leasing. After discounting to present worth, the value estimates made compare favorably with either time frame.

This Method is superior to any **Rule of Thumb.** Although, it is a known fact that some investors, generally landmen or

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Lease Bonus Method, *Continued from page 5*

Royalty Companies will buy or sell non-producing mineral rights based on a rule of thumb value estimate. Further, a value derived from an established Rule of Thumb will compare favorably to a value derived by the Lease Bonus Method and visa visa. The Author never uses a Rule of Thumb in his appraisals. The reason being, that should the appraised subject goes to Court, such as a condemnation, one can be assured the opposition will have an entirely different (generally much larger) Rule of Thumb. Also, the Court easily understands the Lease Bonus Method as this Author has noted in numerous condemnation trials that he has been involved in. It simply makes good business sense.

Non-producing mineral rights can be classified as rank wildcat, semi-wildcat and proven. The least valuable would be the rank wildcat while the most valuable would those offset to a producing oil or gas well. It is most important for the appraiser to correctly classify the mineral rights being appraised. The Lease Bonus Method works best for non-producing mineral rights that are classified as rank wildcat. It also works well for those classified as semi-wildcat but much greater care is required in the selection of lease bonus data. The Lease Bonus Method is simply not valid for FMV estimation of "proven" non-producing mineral rights.

Experience has shown that generally there will be a spread in the amount paid for a lease bonus. There are various reasons for a spread to exist. Mineral rights owners who own only a very small fractional interest tend to receive more, presumably to make it worth their while. Also, surface owners will often receive a larger bonus for leasing their fractional interest. It is up to the appraiser to sort out the bonuses paid. The Author has found that selection of the lease bonus mode is best for application in the Lease Bonus Method. This selection has the appearance of being contrary to the FMV definition regarding "highest paid." Actually there is no contradiction. The Lease Bonus Method is a convention/empirical formula that is based on "the going lease bonus rate."

The tricky part is in the selection of an appropriate discount rate. A speculative rate of 10 percent is generally appropriate. However, changes in economy may cause a change in the discount rate selection.

In the beginning of this article, the Author stated that the Lease Bonus Method works well where petroleum is the dominant mineral right. That statement was not meant to imply that the Method values only "petroleum rights". Actually, the entire suite of mineral rights is included in the value estimate.

Continuing Education

Continuing education is a must for all of us but where do we go? For those involved in oil and gas, there is an organization named ***Petroleum Institute for Continuing Education*** that regularly present training courses in Calgary, Canada; Denver, Colorado; and Houston, Texas. For those interested, their web site is www.piece.com.

John Gustavson, Member, and Letha Lencioni will be presenting a Piece sponsored course December 13 & 14th in Denver, Colorado. Subject course is titled "Fundamentals of Coalbed Methane Development and Production."

Minerals Appraisal Papers, SME, Salt Lake City, March 2005

The 2005 Annual meeting of the Society for Mining, Metallurgy, and Exploration (SME) will be held in Salt Lake City, Utah, February 28th through March 2nd. The Annual Meeting of the AIMA will also be held in Salt Lake City during this period, for which we keenly seek member participation. The SME Annual Meeting provides an excellent opportunity for AIMA members to attend a wide variety of minerals industry technical session and meet their voluntary continuing education requirements.

The Valuation Session is titled, *Valuation Standards and Case Studies*. The session will be Chaired by AIMA Members, Trevoor Ellis and John Bowers, and will take place on the morning of March 1st. Important topics that will be addressed in papers are implementation of new standards internationally for mineral appraisal, financial reporting, and how to meet the resultant sever shortage of quality mineral appraisal education.

1. Author: Trevor R. Ellis
   Title: Implementation of the International Valuation Standards (IVS)
   Abstract:
   The extractive industries addition to the International Valuation Standards (IVS) is scheduled for publication in the next addition of the IVS book in January 2005. This will provide guidance for valuation of minerals and petroleum industry assets of all uses. It will provide asset valuation support to the International Financial Reporting Standards for the stock markets of the world, and a global umbrella standard which can be supplemented for local needs by institutes and regulators. This paper discusses implementation of the IVS within the minerals industry and important issues that the industry should confront.

2. Author: Rex C. Bryan, PhD and Trevor Ellis
   Title: New Dawn for Minerals Appraisers?
   Abstract:
   Rapidly evolving standards for valuation of minerals and petroleum assets may cause a shortage of appraisers who meet a new of qualifications. The qualifications may include an understanding of geology, economics and valuation theory. Along with a new skill set, a modern appraiser may require a certification or license. What implementations does this have for professionals already involved with mineral valuation? How can a current

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minerals appraiser efficiently get from A to B? What role can SME and AIMA play? Can academic institutions design a curriculum to efficiently train a new generation of minerals appraisers?

3. Author: Edwin C. Moritz
   Title: Implementation of Standards and Continuing Education within the American Institute of Minerals Appraisers
   Abstract:
   The American Institute of Minerals Appraisers (AIMA) was formed in 1991. During its history, the AIMA has sought to promulgate the highest standards for the appraisal of mineral properties. This includes membership requirements, recognition of USPAP standards and professional ethics. After much consideration, AIMA recently adopted voluntary continuing education requirements for its membership. In order to facilitate this requirement, the AIMA is in the process of developing customized courses targeted towards the appraisal mineral properties. This paper discusses the standards developed and implemented within AIMA.

4. Author: John B. Gustavson
   Title: Appraisal of a Geothermal Mineral Property under the Unit Rule
   Abstract:
   Geothermal rights were owned by Government and leased. Surface rights were severed to subdivision developer. An agreement between developer and lessee left a small strip for exploration drilling. A freeway right-of-way then bisected that strip. Compensation to the lessee must be appraised, namely value BEFORE minus value AFTER. Income to the property is rental payments, only, since development potential is low. Appraiser found transactions involving geothermal right, including leases and sales.

   A DCF model was constructed by projecting income from hypothetical rental payments. This established the fee mineral owner's geothermal rights (Before Value). The leasehold was estimated based on ratios in comparable oil industry exploratory stages. In the After case, the value was impaired proportionately to the remaining percentage of original access. Any geothermal resources were still accessible, but only 65 percent of an already narrow strip in moderately difficult terrain. Thus,

5. Author: Donald E. Warnken
   Title: A Case Study in Valuation of Non-producing Mineral Rights
   Abstract:
   The Study demonstrates that visible geologic evidence of structural/faulting or lack thereof affects fair market value of non-producing mineral rights. Also, the study demonstrates that nearness t established production or prospect drilling not only impacts value but the approach to valuation as well. Two approaches to value estimation are compared and discussed in the Case Study.

6. Author: Gilles Arseneau, PhD
   Title: Mineral Property Valuation Requirements for TSX Venture Exchange
   Abstract:
   Venture Exchange. In the 12-month period ending June 30, There are 850 mining companies listed on TXS 2004, these companies filed over 350 review able transactions involving property ssets. Approximately 10% of the transactions involved related parties, which require that the company demonstrates evidence of value for the consideration paid for the asset.

   The most common method of assigning value to mineral properties is by a formal valuation report. Valuation reports prepared for TSX Venture Exchange must follow Canadian Institute of Mining, Metallurgy and Petroleum Standards and Guidelines for Valuation of Mineral Properties ("CIMVal") and the guidelines of Appendix 3G of the Corporate Finance Manual of the Exchange.

   This presentation will summarize the general requirements and guidelines for valuation reports to be submitted to the Exchange and discuss some examples of acceptable and unacceptable valuation methodologies for different type of exploration properties. Emphasis will be placed on the differences between CIMVal and Appendix 3G.

7. Author: Trevor R. Ellis
   Title: Violations of Market Value Standards with Income Approach
   Abstract:
   Misuse and abuse of valuation methods based on future earnings projections, such as the much loved net present value/discounted cash flow method, is prevalent within the minerals industry. Estimates of market value of mineral properties by such methods, often by respected consultants, sometimes reach astronomical levels. Such estimates have resulted in large losses to investors and other inappropriate outcomes. This paper discusses some examples and solutions.

New Standards for Appraisal and Financial Reporting of Minerals and Petroleum Industry Assets Coming Into Effect Immediately

By Trevor R. Ellis, AIMA President 2000-2002, CMA No. 1994-1
Ellis International Services, Inc.

The Standards Board of the International Valuation Standards Committee (IVSC), at its meeting in The Hague on October 2, 2004, approved finalized standards for appraisal of minerals and petroleum industry assets. The standards will be published *Continued on page* 8

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in January in the *International Valuation Standards 2005 Edition* as a comprehensive Guidance Note titled, "Valuation of Properties in the Extractive Industries." The Guidance Note provides supplementary instructions for application of the existing standards and principles of the International Valuation Standards to the unique assets of the minerals and petroleum industries.

The International Valuation Standards Committee (IVSC) is a United Nations non-governmental organization (NGO), with membership representing 39 States (nations and international regions). The IVSC formulates and publishes the *International Valuations Standards (IVS)*, providing internationally accepted standards for all types of Valuations of all classes of assets for all uses. In particular, the IVS includes comprehensive procedural guidance for Valuations for use in financial reports. The IVS represents the consensus of input from 50 nations.

At the IVSC's request, Trevor Ellis established the IVSC Extractive Industries Task Force in early 2001, and remains its leader. Donald Warnken, AIMA VP, is its petroleum industry representative. Other members are William Roscoe of Canada, Alastair Macfarlane of South Africa, and Raymond Westwood of Australia.

An important role of the Task Force has been to liaise with the International Accounting Standards Board (IASB) and the IASB's Extractive Activities Project Team on development of the primary International Financial Reporting Standard (IFRS) covering the minerals and petroleum industries, providing industry input pertaining to valuation related issues. The Task Force developed the Extractive Industries Guidance Note within a compressed time-frame necessary to support initial implementation of the IFRS in much of the world in January 2005.

The IVSC Standards Board members on approving the Guidance Note, expressed their appreciation and gratitude for the Task Force. Board members are citing this standards development project as a model of how an expert group should work.

The Task Force is now developing a supplemental IVSC Extractive Industries Technical Paper. This is also on a fast tracked development schedule. It will provide IVS users with additional guidance on appraisal of assets within the minerals and petroleum industries.

The IASB in September 2004 finalized IFRS 6, "Exploration for and Evaluation of Mineral Resources," for publication in November 2004. This financial reporting standard covers the reporting of assets within the minerals and petroleum industries from exploration through to the production decision. The standard comes into force in Europe and many other parts of the world in January 2005, and much of the remainder of the world in January 2007.
Our understanding of the content of the unpublished IFRS 6 is that measurement of the exploration and evaluation assets at initial recognition only must be at cost. That is, assets are to be put on the books for their first year at cost. Application of either the cost or revaluation models for subsequent measurement of the exploration and evaluation assets is being retained. That is, reporting at fair (current) value can be chosen for subsequent years, just as in all other industries reporting under the IFRSs. Though the cost and revaluation models presently are a choice, the IASB's announced long term push for all industries is for fair value reporting to be the standard.

The Stage 2 development project of the IASB's Extractive Activities Project Team is now under way at a fast pace. It is expected to substantially enhance IFRS 6 and add coverage of minerals and petroleum production activities. A key component of the IASB's Extractive Activities Project is to investigate the possibility of recognizing minerals and petroleum reserves and resources as assets on the balance sheet, with them being measured at fair value.

These IVSC and IASB developments, though immediately important to most of the world outside North America, have little immediate impact within the USA and Canada. However, this can be expected to rapidly change. As indications, the convergence projects for the accounting standards of the USA and Canada with the IFRSs are rapidly progressing. The USA's Appraisal Standards Board is under pressure to convert the *Uniform Standards of Professional Appraisal Practice* to be similar to the IVS. The major appraisal institutes of North America made a major submission for the development of the Extractive Industries Guidance Note through the Toronto Valuation Accord group. The IVSC Standards Board's lead reviewer of the various drafts of the Guidance Note was Mr. Danny Wiley, the Chairman of the USA's Appraisal Standards Board. These indicators point to exciting times ahead in North America for AIMA and its members.

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