

# ***US Views on Valuation Methodology***

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## **BACKGROUND ON SPEAKER**

Trevor Ellis was raised in a small coal mining town of Yallourn, Victoria, where he worked many school summer breaks at the mine. He completed his BSc Degree in Geology at The University of Melbourne in 1970, and his MSc Degree in Mineral Economics at The Colorado School of Mines in 1978. In the early portion of his career, he worked on minerals exploration and mine development throughout Australia, Papua New Guinea and Indonesia in the employ of a number of major mining companies and as a contract geologist.

After completing his MSc, he concentrated on economic evaluations and market studies for mining projects as an employee of a number of US corporations. In 1983, during a mining industry downturn, Trevor set out on his own as an independent consultant, working through, Ellis International Services, Inc, based in Denver, Colorado (USA). He has performed geological and economic evaluations of a wide variety of mining and energy projects, and has worked on numerous environmental remediation projects.

During the past decade, Trevor has specialised in the Market Valuation of mineral properties as a Certified Minerals Appraiser, and on a number of occasions has provided expert witness testimony. He has completed a program of Rural Real Estate valuation courses through a major US valuation society, and in 2001 received a Colorado State License as a Certified General Appraiser (Real Estate valuer).

Trevor is the 2000-2002 President of the American Institute of Minerals Appraisers, for which he has held other officer posts and drafted its Code of Ethics. He has organised and chaired valuation sessions as part of the Annual meeting of the Society of Mining, Metallurgy & Exploration (in 2000 and 2001). He is working with international bodies on the possible development of international valuation standards for the extractive industries. In 2001, he was the US representative and leader of the International Valuation Standards Committee's Task Force which developed the IVSC submission to the International Accounting Standards Board regarding the proposed Extractive Industries International Accounting Standard (Issues Paper, November 2000).

Trevor has presented and published numerous professional papers on valuation and other mining related topics. He is a frequent speaker at universities, professional society meetings, and national and international conferences. In July 2000, Trevor received an Excellence Award from the three major US general valuation societies, for third best professional paper at "Valuation 2000," an international convention in Las Vegas attended by almost 3,000 general valuation professionals.

## **ABSTRACT**

This paper mainly addresses mineral asset Valuation from a US perspective. The structure and operation of the primary US Valuation ('Appraisal' in USA) Standards and regulations are described from the practitioner perspective of the mineral asset valuer ('Appraiser' in USA) working with them. Attention is also directed to areas of difference between the US Standards and their jurisdictional setting and the VALMIN Code and the Australian regulatory setting, both positive and negative.

This paper outlines why the author believes it is now the right time to review and enhance The Australasian Institute of Mining and Metallurgy's (AusIMM's) VALMIN Code (1998) for its use globally. For this to occur, he contends that the Code would need to undergo dramatic restructuring to abide by the Generally Accepted Valuation Principles expressed in the *International Valuation Standards* (IVS) of the International Valuation Standards Committee (IVSC) and the US *Uniform Standards of Professional Appraisal Practice* (USPAP), especially since the US is the world's biggest market economy. To achieve this aim, the author recommends that an international team of mineral valuation experts be assembled by the IVSC, using the existing cooperative framework, to work on developing a comprehensive addition to the IVS for the Minerals (including petroleum) Industry, that recognises the special characteristics of mineral assets.

USPAP was introduced in 1987 as the US national set of Standards for Valuation of all types of properties and businesses, and is updated annually. Mineral property valuations for use by banks and the Federal Government must comply with USPAP, despite it containing no instructions specific to the minerals industry. Valuations of mineral properties for use by companies in litigation must now generally comply with USPAP to be considered credible evidence. USPAP's main principles closely match those expressed in IVS. It has separate Standards for the Valuation of Real Property (such as a mineral property), Business and Intangibles (such as a mining company and its financing), and Personal Property (such as mining equipment). Its Real Property valuation Standards require that for a *Complete Appraisal* all three valuation Approaches (Sales Comparison, Income and Cost) be used wherever reasonably possible, then be reconciled. Market Value must be based on the Highest and Best Use of the property. A set of rules provides a framework for the process of the Valuation development, while a second set of rules provides the framework for the content of the Valuation Report.

When the Federal Government is acquiring or exchanging land, the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) provides additional Real Property valuation guidelines to those of USPAP. Significant coverage of mineral properties is included. Lessons from Court rulings are the basis of much of the document, and they are used to instruct the valuer on preparation of the report for Court and how to present expert opinions. Primary reliance on the Sales Comparison Approach is emphasised for use in Court. Nevertheless, Minerals Industry valuation practitioners often view the application of UASFLA guidelines as being unfair to the holders of minerals assets and interests in them. Federal agencies that manage public land containing significant mineral and petroleum property specify the qualifications of the responsible Real Estate Appraiser (valuer).

The Securities and Exchange Commission (SEC) has valuation restrictions embedded in its mining industry reporting rules, *Industry Guide 7*. It generally limits the reporting of mineral deposit value to the value of Reserves only. Much of the document is now out-of-step, in the author's view, with internationally accepted Reserve-Resource reporting Standards and valuation best practice.

It is difficult to discuss valuation methodology without discussing regulation of qualifications. States in the US continue to increase the barriers to professionals attempting to work across state boundaries. This is in the guise of regulating professionals for the welfare of the public. All US States regulate engineers and Real Property valuers, and most regulate Geologists by State testing and licensing. Many US States have exemptions in their statutes for minerals or mining work. However, strict legal interpretation can make those exemptions much narrower than they first appear. A significant percentage of minerals industry professionals frequently ignore some of these restrictive rules, whether due to ignorance or perceived necessity. From the author's observations, strict interpretation of regulations often leaves the contract bidding to those who are merely qualified by licensing (and often of questionable competence), rather than to those with appropriate qualifications and demonstrable experience in mineral asset valuation.

Conflicting state and international pressures are now at play in the US. Licensing of professionals in general at the State level is fundamentally incompatible with the internationalisation of standards of professional practice and international agreements on trade in professional services. States rights advocates and professionals who benefit from state level guild-like protection, continue to promote the restrictive practice of State licensing. Any rationalisation of the patchwork of standards and regulations confronting the US minerals valuation practitioner will only occur as part of larger, national change, hopefully aimed at compliance with International standards and protocols.

## INTRODUCTION

The US does not have a valuation Standard specifically designed for mineral properties or mineral businesses.<sup>1</sup> The American Institute of Minerals Appraisers (AIMA) set aside a 1999 initiative to modify The Australasian<sup>2</sup> Institute of Mining and Metallurgy's (AusIMM's) VALMIN Code (VALMIN Code, 1998) to its needs, whilst the author researched the content, application and interface of it with US and international valuation standards. This research stimulated the author to write this and many other papers to document his findings and valuation philosophy, (Ellis, 2000a-e, 2001a; Ellis and Abbott, 2000).

Through his interest in international valuation standards and qualifications, the author developed a relationship with the International Valuation Standards Committee (IVSC). This relationship resulted in him leading the IVSC's Extractive Industries Task Force which developed a submission to the International Accounting Standards Board (IASB) in 2001 addressing valuation issues involved in the proposed development of an International Accounting Standard for the Extractive Industries of mining and petroleum industries (IVSC, 2001; IASC, 2000).

An important conclusion of the author's research was that although the VALMIN Code is a very good place to start if considering development of an internationally acceptable Minerals Industry Valuation Standard, some significant restructuring is necessary if it is to be ready for the international arena and particularly the US (Ellis, 2000a, 2000c-d, 2000f, 2001a). This is because of the need for mineral assets valuation to function smoothly within the larger universe of general Property and Business valuation. Mineral asset valuation is a tiny niche within the universe of Real Property and Business

valuation.<sup>3</sup> One needs to learn how things are done elsewhere in that universe and then to mesh mineral asset valuation methods and reporting procedures into those that are generally accepted within the international general valuation community. The mining industry cannot expect the universe of Real Property and Business valuation to change its ways to accommodate ours.

The VALMIN Code was developed within the Australian mining title holding concept of Crown ownership of the minerals estate. This concept generally prevails throughout much of the area of other British Commonwealth countries (eg, South Africa and Canada). The absence of the need to provide for a significant extent private ownership of the minerals estate, such as is common in the US, caused the Code to focus much more on valuation of mineral holdings from a mining Business perspective. Thus, the Code does not segregate the Property types for valuation, as is done in the US.

For the VALMIN Code to successfully migrate to the international stage, it will be necessary that it be restructured to abide by the Generally Accepted Valuation Principles adopted by the IVSC. These principles form the basis of the IVSC's *International Valuation Standards (IVS)* and the national US standards, the *Uniform Standards of Professional Appraisal Practice (USPAP)* of the Appraisal Standards Board (IVSC, 2000, p. 16; USPAP, 2001). In conducting such restructuring, the author recommends redesigning the VALMIN Code to work with IVS. This would also inherently allow it to work with USPAP for US use, despite USPAP being more stringent than IVS. Most of the valuation framework could be left to IVS, if so desired, and incorporated by reference.

This paper mainly provides an overview of the structure and operation of the various US valuation standards and regulations from the perspective of the author as a practicing minerals asset valuer, and sets them within the present international context. Mineral valuation methods and rules specific to the Internal Revenue Service (the collector of US Federal taxes) and various State rating and taxation authorities, are beyond the scope of this paper. While attempting to address a wide range of

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<sup>1</sup>In the US, the term *appraisal* is used for a *valuation* assignment and a formal *Valuation* report. A *valuation* under US usage is typically a less stringent undertaking than an *appraisal*, especially when Real Property is involved. Similarly, a professional *valuer* or *valuator* is called an *appraiser* in the US. For the Australasian audience, valuation and valuer are generally substituted for the US equivalent terms throughout this paper.

<sup>2</sup>Australasia in an economic and political context, effectively encompasses Australia, New Zealand, Papua New Guinea and nearby islands of the South Pacific Ocean.

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<sup>3</sup>The concept of *Real Property* encompasses the interests, benefits and rights inherent in *Real Estate* ownership and holdings, including interests in the minerals. *Real Estate* is the physical land and appurtenances attached to the land. (Appraisal Institute, 1993).

important items, the author focuses attention on those aspects of the US Standards and regulations he feels those who are responsible for enhancing the VALMIN Code should consider.

## **NATIONAL VALUATION STANDARDS AND STATE LICENSING**

### **DEVELOPMENT HISTORY**

In the late 1970s, the US Savings and Loan residential and commercial building loan industry, and some banks, began to collapse under the weight of real estate loans in default. Primarily it was high interest rate loans made during the prevailing period of high inflation rates that had become delinquent. The crisis reached its peak in the mid-1980s after inflation was wrung out of the US economy. The economy went into recession and residential and commercial Real Estate values fell throughout much of the US. The resulting workouts of the failed and failing financial institutions required more than US\$100 billion in Federal bailout funds. The Resolution Trust Corporation was formed by the Federal government with a primary function of liquidating enormous quantities of foreclosed Real Estate.

Some of the blame for this stunning collapse of a large portion of the US lending industry was placed on over-valued Real Estate and Business valuations. This led to the Federal government seeking more control of valuation and valuation standards in place of self-regulation by appraisers. Congress authorised The Appraisal Foundation as "*The Source of Appraisal Standards and Appraiser Qualifications.*" In 1986-87, The Appraisal Foundation developed its first edition of USPAP.

The Appraisal Foundation in 1989 formed its Appraisal Standards Board to continue the development and amendment of USPAP. Since then, each year the Board has amended the document. The 2001 edition is 230 pages, containing Standards for Appraisal of Real Property, Personal Property, Business and Intangible assets, and Standards for valuers providing consulting services about Real Property and Real Estate (USPAP 2001).

The major national valuation institutes of the US require their members to abide by USPAP. As yet, the American Institute of Minerals Appraisers (AIMA), which Certifies minerals valuers, has not made USPAP a requirement for its members, although it does recommend its use. All Federally Chartered Financial

Institutions (eg, interstate banks) and Federal agencies use USPAP as their minimum valuation standard. In 1989, the Federal *Financial Institutions Reform, Recovery and Enforcement Act (FIRREA)* was signed into law as a critical element for the Federal bailout. This required the 50 US States to set Real Estate Appraisal (valuation) standards, and to set standards for Licensing of Real Estate Appraisers (valuers). By 1995, all 50 States had complied, and had adopted USPAP for their valuation standards and had set generally uniform licensure rules and procedures.

The new State Licensure statutes in all 50 States effectively removed the self-regulation by Certification for Real Estate valuers from their national societies. In contrast, at the same time the Australian States were abolishing much of their State level professional licensing, in favor of national Chartering and self-regulation of the professions through national institutes.

### **MINERAL PROPERTY VALUATION**

Minerals are an integral part of Real Estate, and Mineral Rights are Real Property under US law (Footnote 3). Therefore, the valuation of mineral deposits falls under Standards 1 and 2 of USPAP, the Real Property valuation Standards. However, if one is valuing a mine as a Business, the Standards for valuation of a Business, Standards 9 and 10, may be more appropriate. Business valuations do not fall under the jurisdiction of State Real Estate Appraisal Boards. However, valuation of the Real Property holdings as a component of the Business value could fall under their jurisdiction. Also, Business valuations can fall under other State regulations.

The small percentage of minerals valuers who abide by USPAP generally find that it forms a beneficial framework for their reports. However, many minerals valuers will argue that they do not need to apply the USPAP Standards to their work, and to a large extent they will be correct. Only occasionally are minerals valuers contracted for valuations for use in loan applications to Federally or State Chartered lending institutions. However, their valuations are often for submission to Federal agencies, such as the National Park Service, Forest Service, Bureau of Land Management, and the Internal Revenue Service, in which case they should abide by USPAP. Valuations for submission to State agencies should also abide by USPAP, and is increasingly specified.

FIRREA, in amendments since approximately 1992, has exempted the valuation of Mineral

Rights from its Real Estate valuation rules in some circumstances for transactions of Federal and State Chartered Financial Institutions, these being banks and Savings and Loans. The exemption is where the Mineral Rights are “... severable from the land when the transaction does not involve the associated parcel or tract of land.”<sup>4</sup>

As at any time with law, there are issues with definitions which would be best interpreted by a lawyer, such as what the meaning of “land” encompasses. The exemption of the valuation of Mineral Rights may not necessarily exempt the valuation of a mineral deposit, even if the minerals estate is clearly severed (by separate ownership) from the surface estate. For example, the Supreme Court of Colorado, has a long history of awarding *ownership* of ‘Minerals’ a higher status than *ownership* of ‘Mineral Rights.’ The Union Pacific Railroad Company in the early part of the twentieth century, often sold land while retaining the Mineral Rights (the exclusive right to prospect for and to mine the Minerals). In the 1959 case, *Radke v. Union Pacific Railroad Company*, the Court ruled that reservation of the Mineral Rights was not equivalent to severance of the Ownership of the Minerals estate from the Surface Estate. It nullified the reservation of the Mineral Rights, awarding the Ownership of the Minerals and the Mineral Rights to the landowner.<sup>5</sup>

## REAL PROPERTY VALUER LICENSURE

Few minerals valuers are State Licensed. Most find it necessary to work across a large number of States, making State licensing an impractical concept. In Colorado, the valuation of Mineral Rights (not minerals) is specifically excluded from the jurisdiction of the State’s Board of Real Estate Appraisers. However, such exclusions of jurisdiction are a State-by-State matter. To the author’s knowledge, most States do not have such exclusions, thereby overriding the abovementioned FIRREA exemption. The American Institute of Professional Geologists deserves a good portion of the credit for lobbying for those exclusions that do exist. Despite this help, it is often necessary to include the value of the surface estate as part of a mineral property valuation, even if its value is relatively insignificant. Some States mandate State licensing for all Real Estate valuations, inherently including mineral property valuations, although they might exempt property below

\$250,000 in value. Others only mandate it for the Federally related transactions specified by FIRREA (Appraisal Institute, 1996, p 713). Valuation reports on mineral properties developed under Federal government contracts generally must be signed by a State Licensed (Certified General) Real Estate valuer as the responsible valuer, even if the surface estate is excluded.

## MINERALS IN REAL ESTATE VALUATION

To understand how this arrangement arose, one only needs to briefly compare the general land ownership structure of the US with Australia. In Australia, the minerals (including petroleum), have been reserved to the Crown since the late 1800s, when reversion to the Crown also began. So the surface and subsurface are separate estates when private ownership is involved. Even when mining or petroleum production is undertaken, the Crown does not relinquish ownership, since the extraction right is through a lease from the Crown.

Similar concepts are now applied for the development of natural resources on the vast Federal land tracts in the western US, with the Federal Government retaining the underlying ownership. But, such concepts have only been applied during the past few decades.

Throughout most of US history, land grants, whether they were for agriculture, timber, or mining, were made *in fee*. That is, the ownership of the land was granted without limitation of the rights, so there was no differentiation between surface and subsurface estates. The result is that, except in the western states, the surface and minerals (including petroleum) are generally privately owned. In areas with mineral deposits of economic interest, the ownership of the subsurface or the minerals estate, or of a defined mineral such as coal or petroleum, has often been severed from the land ownership by a sale. In areas of historic minerals or petroleum production, the ownership records and maps for the subsurface can be very complicated.

Therefore, valuers of rural Real Estate are on a day-to-day basis valuing land that includes the minerals estate or from which a portion of the minerals estate has been severed. Generally the minerals estate will have negligible value in the context of the property being valued. When the minerals estate has conspicuous value, the valuer must obtain and verify the specifics and arrangement of ownership interests, possibly in three dimensions, to assure that the correct

<sup>4</sup>Code of Federal Regulations, 12CFR225.62 para. (h).

<sup>5</sup>Colorado Supreme Court decision citation: 334 P.2d 1077.

property interests are included in the basis of the Valuation. This is a task generally overlooked by geologists and mining engineers who attempt mineral property valuation without Real Estate valuation training.

From this historical perspective of minerals as an inherent part of land ownership, regulators would obviously need to take proactive action to remove minerals valuation from the purview of Real Estate valuers. Where this has been attempted at the State and Federal levels, it has only been partially successful.

### **CERTIFIED GENERAL REAL PROPERTY APPRAISER STATE LICENSE**

Under the provisions of Title XI of the abovementioned FIRREA (1989), the Appraiser Qualifications Board (AQB), as a subsidiary of The Appraisal Foundation, establishes the minimum education, experience and examination requirements for a Real Property valuer to become *Certified*. The 50 States retain the authority to License valuers and to set the qualifications for licensing. A Certified License is required for valuations for Federally related transactions. However, the States find it beneficial to adopt the AQB guidelines for the four levels it has designated.

The AQB guidelines designate two Certified levels of license. The Certified Residential Real Property Appraiser License is restricted to the valuation of Residential Real Estate of up to four Residential (family) units. The Certified General Real Property Appraiser license applies to the valuation of all types of Real Property (Appraiser Qualifications Board, 1999).

To become State licensed at a level that will legally allow one to value a mineral property under the jurisdiction of a State Board of Real Estate Appraisal, is a very difficult task for a minerals valuer coming from a minerals industry background. It requires licensing as a Certified General Real Property Appraiser, which most States call Certified General Appraiser (CGA). This is the highest of the four levels of State licenses for Real Estate valuers. A handful of geologists and mining engineers (probably less than ten throughout the US) became licensed as CGAs when the licensing laws were first introduced, at which time the requirements were less onerous and some indicate were applied more generously. Since then, maybe half that number of minerals industry practitioners, including the author, have received the CGA license.

To become a CGA requires passing 180 hours of Board approved Real Estate valuation courses, having 3,000 hours of demonstrated Real Property valuation experience gained over at least 2.5 years, and passing the national Certified General Appraiser exam. The 3,000 hours of experience must abide by USPAP, and at least 1,500 hours must be on non-residential valuation.

The necessary courses for residential and commercial land and building valuation are taught by a number of private and public educational bodies in each major city. The State Board provides the names of educational bodies in that State with pre-approved courses based on AQB specifications. To assure course acceptance nationwide and a high level of relevance to mineral property Appraisal, the author selected a program of nine courses (300+ hours) focused on Rural Real Estate valuation from the highly regarded national Rural Real Estate valuation society, The American Society of Farm Managers and Rural Appraisers (ASFMRA). Although, in 1998 when he made the decision to undertake this learning adventure, just three years after the full implementation of State Certified licensing, the need to obtain a CGA license in order to legally continue the valuation work the author had been doing for many years, had not become clear. The main driving force for the author was the desire to learn the valuable course content of the ASFMRA program, for conducting valuations in complex rural conditions, under the Standards of USPAP and the Uniform Standards for Federal Land Acquisitions (UASFLA). No equivalent education for mineral or petroleum valuation was available (nor is it now). He and a colleague of similar mining industry background took most of the courses together at locations across the nation over a two-year period. The author documented his experiences in taking these courses, in a series of articles on continuing education published at the time by the AIMA (Ellis, 1999a-b, 2000g). Some comments made to the author by minerals and petroleum industry valuation practitioners expressed a sense of betrayal by his believing it to be beneficial to learn valuation practice from the Real Estate valuer community.

The Certified General Appraiser exam is a four-hour exam covering a comprehensive range of Real Property valuation theory and principles. However, no questions in the exam taken by the author were directed specifically at minerals or petroleum.

To verify the 3,000 hours of experience, and to assure that it was gained on USPAP valuations legally, the rules specify that the valuer should gain his experience under the supervision of appropriately licensed valuers who (co-)sign the valuation reports and signs a detailed experience log. The Board reviews a selection of reports listed in the experience log. To gain the necessary validated experience, a few minerals industry practitioners are working as assistant valuers with Real Estate valuation companies on the valuation of residential and commercial Real Estate.

The author and his abovementioned colleague were fortunate to gain CGA licenses in 2001 through the Colorado Board taking a favourable view of their applications due to their demonstration of experience, quality of reports and reputation. The author doubts that such favourable treatment would be forthcoming in many other States.

The AQB is presently conducting an in-depth review towards strengthening licensing requirements. It has proposed substantially raising the education requirements for each level of licensing.

Even if one obtains a CGA License in one State, the reality is that each minerals valuer generally conducts his valuation work in a large number of States. The niche of minerals valuation is so small that the number of mineral property valuation projects that a minerals valuer can obtain in his home State is generally too low to provide a living. Since licensing is by State, the CGA should go through the time consuming exercise of applying for a temporary CGA permit for each assignment in each State in which he works (or become licensed in those). Many valuation report deadlines for a mineral property sale or financing will occur before the permit is issued. Although this interstate system now works much better for valuers than any other State licensed profession, many States are slow in implementing it and many are hesitant to recognise qualifications from all States.

## **GEOLOGIST LICENSURE**

To practice legally in some States, the minerals valuer also needs to Register temporarily, if allowed, with the State Board of Professional Geologists or the State Board of Professional Engineers, or may otherwise need to become fully licensed in the State as a Geologist or Engineer. The jurisdictional boundary between these Boards and the Board of Real Estate Appraisers varies by State, and is open to

interpretation. All 50 States have Engineer licensure and at the time of writing, 29 have Geologist licensure, with more considering it. Such State regulation of professions continues to be instituted based on the concept that it is "for the welfare of the public."

Being a geologist, and not an engineer, the author's experience is in the functioning of the licensure of Geologists. Most State Geologist Licensure statutes exempt employees of mining companies, and many such statutes exempt consultants working on minerals exploration. However, from the author's experience in receiving interpretations from various State Boards of Geologists, essentially all State Boards could interpret their statutes such that minerals valuers fall under their jurisdiction. At least one State Board interprets its statute so strictly that its Executive Officer told the author that even if he did not set foot in the State, if he conducted any form of geological evaluation of the mineral property in question, he would be breaching the statute.

At the time of writing, 17 of the 29 States with Geologist licensure had some provision for temporary licensing for out-of-State licensed Geologists. However, the author's experience with the temporary system for Geologist licensing is that it is essentially unworkable for the minerals valuer working on assignments across many States. The author has been licensed as a Professional Geologist in two US States for almost a decade. He has found little available temporary reciprocity, because his licenses were obtained without sitting a State licensing exam.

In recent years, the large majority of States with Geologist licensure have instituted the requirement of passing the two levels of licensing exams of the National Association of State Boards of Geology (ASBOG) for new applicants. Demonstration that one has passed the ASBOG exams is now generally required for temporary licensing applications. However, even so, many States with a temporary license provision have recognized only a short list of licensing States.

Six or seven States now have licensing by specialty. A review of the Washington State statute passed in 2000, indicates that mineral valuation work would be considered Engineering Geology. This impression was tentatively confirmed by one of the founding Geology Board members most knowledgeable of the wording of the statute. Such classification of specialties adds a substantial barrier to developing workable

reciprocity between States. In fact, the Washington State statute does not have a Temporary License provision, increasing the appearance and functioning to be that of State-sponsored guild protection.

In 2000 the author applied to Wyoming for licensing as a Professional Geologist in order to take the ASBOG exams. Despite the fact that a number of State Boards of Professional Geologists have told the author that his evaluation and valuation of mineral properties falls under their jurisdiction as practice of Geology, his eleven mineral economics courses from the Colorado School of Mines were rejected by the Wyoming Board as not being Geology.

The author sat the two ASBOG exams in Wyoming in September 2001 during the period of writing this paper. These exams are best sat within a few years of graduation from a geology degree program, rather than three decades later as in the author's case, by which time most geologists who are still practicing, have become highly specialised. By his estimate, less than 10% of the 190 questions (no optional questions) were targeted at economic geology for the minerals and petroleum industry, and there were few hardrock questions. The large majority of questions were mainly relevant to geologists with career paths in hydrogeology, environmental geology and engineering geology, these being the areas of practice in which geologists seek licensing and issues of public safety exist.

#### **PRACTICE WITHOUT APPROPRIATE LICENSES**

It is a moderately rare case in reality that a minerals valuer is taken to task for violating a State's regulations, for being viewed as doing Real Property valuation without the pertinent State Real Estate valuer's license. However, it does happen, and penalties can be imposed. Our time line of experience is still short, given that the States only instituted their Real Estate valuer licensing laws between 1989 and 1995.

In such cases, the argument will centre on whether conducting a valuation of the minerals estate or mineral rights is considered to be conducting Real Estate valuation. Technically, the settlement of the specific case may depend on whether the minerals estate has been severed from the surface estate, or whether one is appraising Mineral Rights rather than the physical minerals estate. The author and his colleagues do not know of any case where a State Board of Geologists has accused a Real Estate valuer of unlicensed practice of Geology

by conducting a mineral or petroleum property valuation.

For the minerals valuer who does not hold the appropriate State licenses, the cautious strategy would appear to be to always take the costly approach of contracting a Real Estate valuer with the appropriate State Certification to sign the minerals valuation report, and always abide by USPAP, particularly if the surface estate is part of the package being appraised. In signing the report, the Real Estate valuer legally takes full responsibility and liability for the report, so most are unwilling to take the risk for just a modest fee. Similarly, it may be necessary to hire a geologist or engineer with the relevant State license. This is the way one minerals valuation firm conducts much of its work.

However, fundamental legal problems are becoming apparent with this mode of operation. The author has also found that all of his clients object to having another individual take responsibility for his work and object to the additional cost. In fact, none of his clients have ever agreed to this suggestion.

#### **BARRIERS TO TRADE IN PROFESSIONAL SERVICES**

From the above discussion it is apparent that State licensing in the US creates substantial barriers to free trade of professional services across State boundaries. It is because of the economic inefficiencies incurred by such restrictions to free trade in services that the Australian States abolished most of their State licensing of professionals during the 1990s (Ellis, 2000f). However, the US States claim the right to enforce educational requirements for professions. They also claim that effective enforcement of professional standards and qualifications must be through the force of law at the State level.

These State level barriers to entry are such that it is essentially impossible for a foreign valuer to come to the U.S. and legally develop a Valuation of a Real Property holding for his client. However, US Real Property valuers and other professionals expect to be able to work relatively freely around the world wherever their client or company sends them, and until recent years have had little problem doing so. US geologists, Real Estate valuers, and other professionals cannot expect to continue to practice on temporary assignments in other countries if US States won't allow reasonable access for similarly qualified, competent professionals to

practice temporarily in and throughout the US (Lawrence, M, 1999).

The author in September 2001 provided a written submission to the Appraiser Qualifications Board on this topic for its consideration in developing new qualification standards for Real Property Appraisers (valuers) (Ellis, 2001b). His input though cannot be expected to have any significant influence on a process that sets licensure standards for hundreds of thousands of practitioners.

State licensure for professionals in general is beginning to come under pressures internal and external to the US. During the past three years, rulings by the Supreme Courts of three States have determined that the traditional mode in which lawyers practice across State boundaries, through a lawyer licensed in the relevant State, is illegal. This has thrown much of the legal profession into turmoil. State politicians, bureaucrats and national societies of lawyers, are arguing between themselves over tightening the enforcement of State licensing to benefit from the decisions, versus providing a mechanism for licensed lawyers to practice freely nationwide. State licensure requirements are creating a variety of restrictive problems for medical professionals. A team of medical specialists recently refused to give a diagnosis through video conferencing for a critically ill person in a remote part of Alaska, because they were not licensed in Alaska. It is now almost routine practice for people with difficult ailments to use the Internet to seek out a specialist in another State and pay for his second opinion. However, it is illegal for the specialist to give his opinion if he is not licensed where the person with the ailment is located.

The author considers the US system of State level licensing barriers to be in violation, at least in spirit, of the 1992 North American Free Trade Agreement (NAFTA) Article 1210 and Annex 1210 which deal with trade in professional services (NAFTA, 1992). He also considers it to be in violation of the spirit of the 1994 World Trade Organisation's General Agreement on Trade in Services (GATS) (Ellis, 2000f; WTO, 1994). For many professions, such as Real Property valuation, State licensure forms an essentially insurmountable barrier to the entry of foreign professional services into the US.

Negotiations are taking place internationally to develop and implement systems for mutual recognition of professional qualifications by the GATS signatory countries. It is difficult to perceive how the US can be a viable participant

in these negotiations. Its system of State licensure would require that each agreement be adopted and implemented uniformly into law and regulations by 50 State Governments, which take pride in their level of independence.

## **MINERALS INDUSTRY ACCEPTANCE OF USPAP**

Acceptance and expectation of the use of USPAP in minerals property valuations has been growing rapidly. Clients like it and many demand it be followed. USPAP's emphasis is on full disclosure, of everything. This includes all information that has been considered, actions that may have influenced, and any ground rules used in the conduct of the valuation. Ethics and competency provisions are included up front. The valuation of mineral property, being Real Property, falls under the Real Property valuation Standards, 1 and 2., which specify that for a "Complete Appraisal" the three categories of valuation methods, called Approaches, be considered. These are the *Sales Comparison Approach*, the *Cost Approach*, and the *Income Approach*. USPAP's structure and requirements are discussed below.

As a professional group, minerals valuers have largely ignored USPAP, saying that it is not applicable or appropriate for mineral property valuations. This attitude, together with State licensing, has allowed great inroads by Real Estate valuers into the field of mineral property valuation. If these people have any minerals industry training, it is usually (at best) a weeklong course in natural resource valuation from a valuation institute. Generally, they limit themselves to valuation of construction material quarries and small industrial mineral properties. However, some undertake much more substantial projects, particularly for government agencies. From the author's contact with many Real Estate valuers who have conducted minerals valuations, most appear to be acting outside their area of competence (even if conducting sand and gravel property valuations).

## **LESSONS FROM THE US IMPLEMENTATION OF NATIONAL STANDARDS AND STATE LICENSURE**

The experience of the US national valuation Standards (USPAP) and State Licensure discussed above, provide us with a number of important lessons. These are summarized here.

USPAP, although not designed to provide any instructions specific to mineral asset valuation, is generally liked by mineral valuation practitioners

who are experienced with its use, and by clients who work on a regular basis with valuation reports.

The Standards within USPAP are laid out in pairs by asset (Property) type – Real Property; Personal Property; Business and Intangible (financial) Property. The first Standard of the pair provides a useful framework to follow for conducting of the valuation research and analysis, then the second provides a useful framework for writing the valuation report. Those responsible for developing the next generation of the VALMIN Code should also consider separating the instructions into those relevant to the valuation process, and those providing guidance for the content of the valuation report. To enhance the VALMIN Code, particularly if it is to be used internationally, instructions should be considered for classification of assets into the four asset (Property) types recognised by USPAP and the International Valuation Standards.

Poorly designed regulation can prevent competent practitioners from practicing their profession, replacing them with people who are technically qualified but not necessarily competent. The Australasian minerals industry must stay vigilant and proactive to prevent this.

Licensing or Certification requirements instituted on a State/Provincial basis can be a barrier to freedom of trade in professional services, preventing minerals industry and other professionals from working across borders. The minerals valuer must have the freedom to go to the deposit, since the deposit cannot move. Technically, most US minerals valuers, even with all of their credentials, have more legal right to work in many foreign countries than to work in the adjoining States to their home State. This experience should be brought to the attention of any Australian professionals and politicians who advocate the reintroduction to Australia of State licensing of professions.

Until recent decades, land grants in the US provided private ownership of the surface and subsurface, including minerals. In parallel with this, Real Estate valuers have traditionally valued minerals as part of the land. Regulators and government agencies have formalised this tradition, often requiring that mineral property valuations be conducted by Real Property valuers.

The author considers the system of State level licensing as implemented in the US, to be in violation of the spirit of important international

agreements on Trade in Services, to which the US is a signatory. Any attempt by international minerals industry institutes to negotiate agreements on mutual recognition for professional qualifications with US bodies for professions subject to State Licensure in the US, with a view to allowing qualified foreign professionals access to practice temporarily in the US, is highly likely to fail, since US implementation will likely require regulatory change in up to 50 States.

## **CONTENT AND APPLICATION OF THE US NATIONAL VALUATION STANDARDS**

### **THE STRUCTURE OF USPAP**

The Uniform Standards of Professional Appraisal Practice (USPAP) document is designed to provide standards for valuations of all feasible kinds. As previously stated, the Standards governing valuations are provided within four divisions or types of assets (Property). Essentially the same divisions are used in the International Valuation Standards (IVS) (IVSC, 2000a, p 61-80). The four asset types are:

Real Property, such as residential and commercial buildings and land.

Personal Property, such as moveable equipment, jewellery and antiques.

Businesses and their component parts, such as factories and distribution systems.

Intangible assets, such as company shares, contracts and patents. IVS uses the label, Financial Interests (IVSC, 2000a, p 74).

All four of these asset types can be relevant to the minerals valuer. The following are the primary USPAP Standards for the four asset types, and examples of their respective application to minerals industry asset valuation:

Standards 1 and 2, the Real Property valuation Standards, are the applicable Standards for valuation of a mineral property, the ownership and partial interests in it, and the land surface and buildings on the property (the surface estate).

Standards 7 and 8, the Personal Property valuation Standards, are those applicable to the mining equipment such as trucks and shovels.

Standards 9 and 10 are for both Business valuation and Intangible Asset valuation. These provide the instructions for valuation of the

mining corporation and the mining operation as a Business, valuation of a long-term product sales contract and valuation of shares of the mining company.

As previously mentioned, the Standards for each of these categories of valuations are in pairs. Within each pair of Standards, the first Standard covers the development of the valuation, providing instructions on what must be considered and analysed in conducting the valuation. The second Standard provides instructions on the contents of the valuation report.

## **ETHICS, COMPETENCY, TRANSPARENCY AND OTHER PROVISIONS**

USPAP also includes ethics, competency and record keeping rules, and Standards for consulting assignments by Real Property valuers. State Licensed valuers, and valuers who are members of the major national general valuation institutes, must abide by all USPAP Standards and rules.

USPAP focuses on conducting the valuation independently, impartially, ethically, objectively and competently. It also focuses on reporting the valuation clearly, accurately, meaningfully, understandably and with full disclosure.

## **REAL PROPERTY VALUATION, STANDARDS 1 AND 2**

The following discussion is limited to the major features of Standards 1 and 2 for Real Property valuation as they apply to Mineral Property valuation, and in particular to valuations based on Market value. Standard 1 provides rules for the development process of a valuation. Standard 2 gives instructions on the content of the valuation report. There are many important features that are additional to those contained in the Australasian VALMIN Code.

### **Purpose, Intended Use, Scope and Type**

The Interest in the Property that is being valued must be determined and specified in the report. The *Purpose* of the valuation must be provided, including specifying and defining the type of value to be estimated, such as Market Value, Use Value, Insurance Value or Taxation Value. The *Intended Use* of the Valuation Report must be stated, thereby warning the reader that the valuation may not be suitable for a different use.

The *Scope of Work* performed must be reported, including the level of inspection and identification

of the property, the degree of research of physical and economic characteristics, the extent of data research, and the type and extent of analysis applied. A reasonable level of verification of information relied upon is required. Disclosure of Assumptions and Limiting Conditions is required.

## **Types of Valuations and Levels of Reports**

USPAP provides for two types of Real Property valuations and three levels of valuation reporting. A *Complete Appraisal* requires abiding by all the Rules and considerations in the two Standards. Departure from some rules is allowed, which if invoked, results in a *Limited Appraisal*.

For both of these types of valuations, the level of reporting being applied must be identified. A *Self-Contained Appraisal Report* will contain **everything** that is relevant to the valuation in comprehensive detail. A *Summary Appraisal Report* will cover everything relevant to the valuation, but at a written, summary level. A *Restricted Use Appraisal Report* is designed for use only by the client, is written at a level appropriate for the client's use, and may make extensive reference to materials retained in the valuer's work-file. From the author's experience, minerals valuers are almost always requested to conduct a *Complete Appraisal* and to provide a *Self-Contained* or *Summary Appraisal Report*.

## **Effective Date and Exposure Time**

Market Value is determined as at a specific *Effective Date* of the Valuation. USPAP requires that the *Effective Date* and the *Date of the Report* be reported together to avoid confusing the reader. Typical practice is to state both dates on the report cover sheet.

The value determination is generally based on the assumption that the property will have had adequate exposure to the market prior to the specified *Effective Date*, for Market Value to be attained. An opinion of reasonable Exposure Time must be expressed.

## **Highest and Best Use**

The Market Value of a property is determined on its *Highest and Best Use*. In determining Market Value, the first, and also possibly the last consideration, should be Highest and Best Use. Lack of adequate Highest and Best Use analysis is the source of the greatest number of complaints filed against the work of Real Property valuers in the US. For Real Property valuation, USPAP provides the following

definition of Highest and Best Use for Real Property valuation:

*The reasonably probable and legal use of property that is physically possible, appropriately supported, and financially feasible, and that results in the highest value. (USPAP, 2001, p 198).*

For an example of a common type of situation in the US that is addressed by determination of the Highest and Best Use, assume the subject property includes a mineral deposit under an orchard. To determine the Market Value of the property, the valuer needs to determine whether the value of the property as an orchard exceeds its value as a mineral property, or whether some combination of the two uses is feasible to maximise value. There may also be other uses to consider, such as subdivision into housing lots, if the property adjoins an expanding urban area. For some mineral properties, in order to maximise value, it might be relevant to consider leasing or selling excess water rights, and leasing or selling surface which would not be impacted by underground mining. Whether or not the current owner or a known buyer would undertake these actions is irrelevant.

If the subject property is held as US Federal unpatented mining claims or a Federal mineral lease, then an alternative use to mineral development is not legally possible. The Real Estate ownership (which includes the minerals) has remained with the Federal Government, and the agreement allowing a private party to occupy the property only allows a mineral use. This is a similar arrangement to the typical minerals tenement in Australia. Even in these situations, the use which provides the maximum value should be selected. That may be through sublease, with an advanced royalty followed by annual payments.

### **The Three Approaches to Estimation of Market Value**

The *Methods* for determining the Market Value of a property fall into three Approaches specified in USPAP and the International Valuation Standards (IVSC, 2000, p 44-45). The *Sales Comparison Approach* is often also called the Market Approach or Market Method by Business valuers and non-US valuers. It is based primarily on the Principle of Substitution. The *Cost Approach* is based mainly on the Principle of Contribution to Value. The *Income Approach* is based on the Principle of Anticipation of Benefits. IVS has labelled this third Approach the *Income Capitalisation Approach*.

Note that USPAP and IVS specify the same three Approaches throughout their Standards, for the four Property (asset) types and for all forms of value to be estimated, though the methods of analysis applied within the Approaches will alter, and not all three Approaches are always applicable. However, the discussion here is limited to Market Value determination for Real Property as applicable to minerals industry asset.

The three Approaches should not be viewed as being independent of each other. Generally, they overlap in their sources of data, but the data are analysed using different methods. The underlying philosophy is that the three Approaches should substantiate the findings of each other.

USPAP requires that all three Approaches be considered in conducting a *Complete Appraisal*. If an Approach is then excluded, the reasoning for its exclusion must be explained. This is an important area where IVS is not quite as strict as USPAP in its wording, apparently due to jurisdictional issues.

The author strongly recommends that a minerals valuer should attempt to base his determination of value on as many indicators of Market Value as can be reasonably obtained. This is especially true if the Valuation is to be used in litigation. All the available Methods of value estimation are subject to a high level of uncertainty and are open to criticism. The more Methods that can be applied, the more support that can be developed for the concluding opinion of Market Value of the valuation report.

### **Sales Analysis**

Within the Real Estate valuer community, there is little dispute that Market Value should be estimated by drawing as much as possible on analysis of transactions for related properties. This philosophy applies in the application of each of the three Approaches. Since the results from analysing sales and other transactions can be used in all three Approaches, the gathering, verification and analysis of transaction data is often considered to be separate to the Sales Comparison Approach.

However, within the minerals industry, in some cases, even acquiring a modest amount of sales data may require casting one's net more broadly than is generally considered. It may require including sales from a number of different mineral commodities to that of the subject, but

with similar economic characteristics. For example, for a crushed stone quarry, one may need to consider analysis of other construction material property sales, such as sand and gravel. For a particular industrial mineral, one may need to consider other industrial minerals with somewhat similar market characteristics. In doing so, though, the valuer must ensure that only appropriate methods of value estimation are used.

For exploration stage properties, the advanced royalty payment terms on a lease, or the farm-in terms on a joint venture (JV; JV Terms Method), may also be analysed to develop indications of value which can help support one's conclusions, since these are generally arms-length transactions (Appleyard, 1994).

Despite these options, it is well recognised that finding, data gathering and verification for even two or three somewhat useful sales or transactions can often be very time consuming and even expensive.

### **Sales Comparison Approach**

The author promotes the view that one should always attempt to use the Sales Comparison Approach in a valuation. The value estimate(s) derived from it generally provides the best indication of the Market Value of the property. That is the view that carries sway among authorities that count in the US, particularly the Courts. Of the three Approaches, the Sales Comparison Approach draws most directly on sales data, which are by definition, from the Market. At the least, a value estimate derived by the Sales Comparison Approach should be used as a validity or "sanity check" against an estimate derived by the Net Present Value Method (Grant, 1994).

The Sales Comparison Approach has to some extent received unjustified bad press within the community of minerals valuers, in the author's view. This is due to the extensive use of the term "comparable sales" as commonly used in the valuation of residential Real Estate (eg, Cartwright, 2001). "Comparable sales" in that meaning are generally not available for mineral property valuations, at least in the author's experience.

The Sales Comparison Approach can use analysis methods that do not rely on "comparable sales" in any strict sense of the term. Valuers of difficult to value Real Property, such as farms, timber tracts and water rights, face somewhat similar problems to minerals

valuers, with scarce and non-comparable sales. They have long ago pushed the Sales Comparison Approach down to working with common units of measure. That is, the adjustment grid to bring the sales data to the subject property can be worked through at the level of \$/unit, such as \$/hectare, \$/m<sup>3</sup>, or \$/kg (ASFMRA, 1995a, ch 6). Ratio analysis is used extensively in this process.

### **Cost Approach**

For a *Complete Appraisal*, USPAP requires that the Cost Approach be considered. However, use of the Cost Approach for determining Market Value is generally rejected outright by minerals valuers in the US as not being applicable to mineral deposits. Some US Real Property valuation experts claim that the Cost Approach can only be applied to Improvements (eg buildings and infrastructure) and cannot be applied to Land, of which a mineral deposit is a component by definition (Appraisal Institute, 1993, p 197). The author disputes both of these contentions.

Some minerals valuers, such as Paschall, use the Cost Approach only for valuing the plant and equipment on the property (Paschall, 1998, p 4). The concept of estimating the "*replacement cost less accrued depreciation*" for a unique mineral deposit, or for improvements, such as a mill built at the site of such a deposit, is generally ridiculed by US valuers. Evans of the Bureau of Land Management wrote, "*A final, and almost always inappropriate approach, is the cost approach to value.*" (Evans, 1998, p 16).

The writings of minerals valuers and others in the US about the valuation of mineral properties show that they believe that the Cost Approach can be based only on *depreciated replacement cost analysis* and/or *historic cost analysis* for surface improvements and exploration expenditures (Gentry and O'Neil, 1984, pp 12-13; Loucks, 1991, ch 11, pp 8, 17-18). The Depreciated Replacement Cost Method is designed for valuation of buildings and plant, not for Land and its components, such as a mineral deposit.

The Historic Cost Method is based on Historic Cost accounting principles, this being the accounting regime employed for public reporting in the US. Historic cost accounting is well recognised for causing a significant percentage of US public companies to report book values for assets that have little or no relationship to Market Value. Adjustments for time and obsolescence that are typically employed by Real Estate

valuers, do little to rectify this problem when applied to Market Value estimation of a mineral deposit. The positive or negative contribution by geological knowledge to the value of the deposit is often manyfold greater than cost of obtaining it.

However, in Canada and Australia, Cost Approach methods are commonly used for exploration properties. The methods are designed to provide adjustments to exploration expenditures that reflect the operation of the market for the properties in developing Market Value.<sup>6</sup> These methods reflect flexible thinking, not bound to traditional Cost Approach methods.

As indicated, the author believes that the denigration of the Cost Approach by US minerals valuers described here, is unfairly harsh, particularly in light of advances of the past two decades. The Cost Approach is based primarily on the Principle of Contribution to Value, and only secondarily on the Principle of Substitution that constrains some writers. For difficult to appraise Real Estate properties, a broader interpretation is now being applied, based on the estimation of the contributory value of each component of the subject property.

Valuers of rural Real Estate in the US face similar issues to minerals valuers when valuing farm and other land, water, and timber. Since about 1990, the ASFMRA has been teaching in its Real Property valuation courses, a method for deriving from sales analysis the contributory value to the subject property of various land classes and the Improvements (ASFMRA, 1995a, ch 12). The method is based on sales analysis, but does not require the use of so-called 'comparable sales.' The contribution of each component of the land mix of the property is determined using ratio analysis of land classes within sales.

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<sup>6</sup>The *Multiple of Exploration Expenditure* (MEE) Method promoted in Australia by M Lawrence (1994), is a method in the Cost Approach. This Method, as also described by Onley (1994), "... is applicable to exploration properties from the earliest stage of exploration to a moderately advanced stage, but, for which no resources have been delineated." For this Method, a Prospective Enhancement Multiplier (based upon a valuer's assessment of the property's prospectivity to date) is applied to the relevant and effective past exploration expenditure on the property. A related method in the Cost Approach is described by Roscoe (2000). This Method, which he terms the *Appraised Value Method*, applies an addition adjustment, instead of a multiplication adjustment to a similarly derived basis of exploration expenditures.

Application of a similar contribution method to the analysis of mineral property sales data should provide similar contributory values for categories of mineralisation or other property attributes. In the US, the SEC's restriction limiting the reporting of quantitative data to only Reserves has made it difficult for the independent valuer to obtain adequate data on the categories of mineralisation at the subject property, let alone at other properties that have been sold (SEC, 1992). However, diligent research, aided by some recent liberalisation of the reporting restriction, could provide a very useful additional Approach for determining the value of a mineral property, particularly if the valuation report is to be used in a litigation situation.

If enough sales data are available to develop the Sales Comparison Approach adjustment grid, there will likely be enough sales data to develop a Cost Approach, since the same sales can be used in both analyses. Generally it is necessary to utilise at least as many sales as there are components being estimated from those sales.

What may be the most important difference between the Sales Comparison Approach and the Cost Approach is the presentation of the results of the analyses. Presentation of the Sales Comparison Approach results focuses on the adjustments necessary to get the average dollar per unit bases of the selected sales to that of the subject property. That is, a grid showing the adjustments for each sale is presented, with the resultant value estimate for the subject property calculated from that sale.

The presentation of the results of the Cost Approach focuses on the contributory value of each component of the subject property. No sales are shown in this table. The contributory value for each component is calculated from sales or other sources prior to entry in the table. The contributory values are then summed to provide the property value. Example components will be Reserves, Resources, other mineralisation and exploration potential, land surface, roads, buildings, and water rights.

### **Income Approach**

The Income Approach includes all methods of value estimation that are based on the income generation potential of the property. US Real Estate valuers commonly call methods of estimating a property's value based on its income generation capability Income Capitalisation Methods.

Minerals industry practitioners tend to rely very heavily on the Net Present Value (NPV) Method, also commonly called the Discounted Cash Flow (DCF) Method, for estimating Market Value. This is particularly true for properties under development and in production. In such situations, their reliance on the NPV method is generally to the exclusion of all other methods of estimating value. Often the result of their valuation is an *Investment Value* or *Use Value* rather than the desired estimate of *Market Value* (Ellis, 2000c). This method is also subject to abuse as M Lawrence (2000) outlined.

Many users of minerals valuation reports outside of the minerals industry have difficulty understanding NPV-based valuations, and look on them with great suspicion. They feel much more comfortable with a Valuation which includes an estimate from the Sales Comparison Approach. This is particularly true of many Courts within the US, with a considerable percentage apparently rejecting NPV-based minerals valuations (Paschall, 1999). Many other Courts are only allowing the NPV Method into testimony with reluctance. These problems have contributed to the inroads made by Real Estate valuers into the field of mineral property valuation. Eaton of the US Department of Justice writes that, the NPV Method is so complex compared to other methods of analysis, that neither the attorneys nor the Courts understand it (Eaton, 1995, p 192). He goes on to state, "*The courts have historically favored the sales comparison approach to value, often to the exclusion of the cost and income capitalization approaches, and preferred valuation opinions that can be supported by solid market data*" (p 193).

The UASFLA provides the following extract from a 1982 Court decision involving a sand and gravel deposit. The comment pertains to NPV-based valuation.

*Great care must be taken, or such valuations can reach wonderland proportions. It is necessary to take into consideration manifold and varied factors like future supply and demand, economic conditions, estimates of mineral recoverability, the value of currency, changes in the marketplace, and technological advances. Many of these factors are impossible to predict with reasonable accuracy.*<sup>7</sup> (UASFLA, 2000, p 97).

Within the Income Approach, variants of NPV analysis can be applied, including that discussed below. There are also a few other income based

valuation methods available that are commonly used by Real Property valuers. These include ratio analysis of selling price to gross income and net operating incomes. All methods within the Income Approach have their individual pros and cons, and all are subject to a high level of criticism. Despite their well recognised individual problems, this author recommends that when possible, a number of methods should be applied. Doing so will aid the valuer in developing an understanding of the subject property within the context of the market.

The NPV Method is in the category of value estimation methods called *yield capitalisation* by the US Real Estate valuer and financial analyst communities. In applying the NPV Method to estimate mineral property value, most Minerals Industry practitioners use projected annual after tax cash flows as the basis of their analysis.

On the other hand, US Real Estate valuers generally use annual net operating income as the amount to be discounted to present value. Some minerals valuers, such as Paschall (1998, p. 6) do the same, especially those who have done work for government agencies, or are State Licensed. Net operating income (NOI) for this purpose is generally applied as: *net sales - operating costs - capital costs*. NOI is used because of the need to analyse sales on the same basis as the subject property. Less information needs to be obtained (or assumed) to calculate an NOI than to calculate after tax cash flows. It is also argued that assumptions about the financing and income tax arrangements that the potential buyer brings to the subject property should not be made. Some argue that income taxes are levied against the owner and/or operator of the property, not against the property itself.

Most buyers of mineral properties, however, do their analyses of potential acquisitions on an after tax cash flow basis, in the author's experience. In evaluating the market for the subject property, it is important to attempt to analyse the subject property and sales from the buyer's perspective. Therefore, the author often uses both the NOI and after tax cash flows as the basis for discounting, in order to get a better understanding of the property's value.

Valuation theory holds that the discount rate applied must reflect the market for the property, and if at all possible, be determined from the market. There is considerable controversy over how this should best be done. This controversy occurs among Real Property valuers in general, and valuers of mineral properties in particular. A

<sup>7</sup>US v. 47.14 Acres of Land, 8<sup>th</sup> Circuit Court, 1982, p. 726.

strong sector of Real Property valuers in the US holds that the discount rate should be derived from analysis of sales within the same general category of property as the subject, by use of Internal Rate of Return analysis.

The discount rate selected should reflect the market for the property on the Effective Date of the valuation, rather than be an *investment* rate. The rate should also be appropriate for the NOI or cash flow being discounted, such as being a before or after tax discount rate, with (nominal terms) or without inflation incorporated (real terms).

**Reconciliation**

In drawing a conclusion of value, USPAP requires the valuer to reconcile the results of the Approaches used, discussing the quality and quantity of data available, and the applicability or suitability of the Approaches. Leading Real Property valuers in the US recommend that the results of the Approaches be weighed, instead of selecting the result of one Approach to be the opinion of Market Value presented (JASFLA, 2000, p 23).

**Certification**

The report must contain a Certification signed by the responsible valuer. The Certification addresses nine items, primarily verifying the independence and impartiality of the valuer.

**LESSONS FROM EXPERIENCE WITH USPAP**

USPAP provides separate Standards for conducting Real Property valuation, Personal Property valuation, and Business and Intangible asset valuation. The VALMIN Code does not separate these out. Separation helps the valuer to develop a conclusion of value which correctly matches with the purpose of the valuation assignment.

USPAP has been developed based on internationally accepted principles of valuation developed by the valuation community as a whole. IVS provides a similar implementation of the same principles. When objectively and fully carried out, the valuation process follows the scientific method, resulting in an objective conclusion of value:

Scientific Method	Valuation Process
Hypothesis	Define the problem
Gather information	Plan the valuation
Record the data	Collect the data
Analyse the data	Apply value approaches
State a conclusion	Arrive at a value conclusion

(American Society of Appraisers, 1997, Module V).

For Market valuation of mineral properties, all three Approaches suffer from limitations in their application and are subject to severe criticism. More than one Approach should be used if possible, to provide validation. The conclusion as to Market Value should be derived by weighting the results from the Approaches used.

A Market Value conclusion should be based on the Highest and Best Use of the mineral property or asset being appraised. This need not match with its use, or the use of some of its components, at the time of the valuation. In the US, the Highest and Best Use of a mineral property is often not even a mineral use.

Developers of standards should be extremely cautious of barring any specific method of value estimation. The minerals valuator needs all the methods available that can be mustered to develop indications of value, given the inherent difficulty of his task in an environment suffering from a severe shortage of good data. In any event, method selection must be the prerogative of the expert valuer.

For example, some minerals industry professionals promote that the NPV method should never be applied to the valuation of a mineral prospect at the exploration stage. This is strictly true if one considers the paucity of data available about any likely mine on the property, but the author believes that it is quite appropriate to use the NPV method in particular circumstances. For example, to calculate the NPV of the income stream which might be generated from leasing the prospect, or from grazing cattle on the surface, or from considering a non-mineral Highest and Best Use of the property.

International rule makers should assure that the standards are not so high or inflexible that they become relatively prohibitively costly or too time consuming for the minerals valuer to carry out market valuations of low value mineral assets. The author's experience is that the application of USPAP or VALMIN to small minerals valuation assignments can be too onerous. For example, consider the common request to appraise a farmer's interest in a small sand and gravel quarrying operation on his property.

At least in Australia for such a situation, one can usually choose to forgo the cachet of providing a VALMIN-compliant Valuation Report if it appears too costly in the circumstances. In the US, State licensed valuers and members of the major valuation societies are bound to abide by USPAP. However, USPAP does provide some flexibility in allowing the development of a Scope of Work that is appropriate, relative to the scale of the assignment. This flexibility is largely based on assuring that one conducts a level of research and analysis which at least matches the level that competitors and peers would do for the same or a similar assignment. USPAP's allowance of the exercise of *Departure Provisions*, with the client's approval, resulting in a *Limited Appraisal*, could also prove beneficial under certain circumstances, dependent on the Intended Use of the valuation. The main point here is that the client cannot expect to enjoy the benefit of a quality qualifier, without the work that is usually entailed to be entitled to it. See Ellis (2000a) and (2000c).

## FEDERAL LAND ACQUISITIONS

When a US Federal agency is buying or condemning (acquiring through forced sale) land, another document takes precedence. The Uniform Appraisal Standards for Federal Land Acquisitions (UASFLA) was first released in 1971, and has since been updated four times, with the 2000 edition being 129 pages (UASFLA, 2000).

UASFLA reads rather like a Court's legal decision. A significant percentage of government acquisitions of land in the US are conducted by Condemnation action, and for many of these the amount of compensation the government must pay is settled by Courts. Therefore, case law forms an important basis for this document. In effect, UASFLA is a set of strongly recommended guidelines rather than being a set of rules. These are directed to employee and contract valuers working for Federal agencies, and to reviewers of their valuation reports. UASFLA instructs them on how to best develop the Valuation so the valuer will be able to defend it in Court if necessary.

The UASFLA guidelines are effectively supplemental guidelines to USPAP's Standards 1 and 2 for conducting and writing Real Property Valuations. UASFLA very strongly recommends relying primarily on the Sales Comparison Approach over the Income and Cost Approaches.

In Eminent Domain (Condemnation and Takings) situations in the US, the Federal agencies are only required to compensate for the Taking of Real Property, not for the loss of any Business value of profit. The history of Court decisions behind this is based on constitutional property rights. So, UASFLA cautions that it is particularly important to exclude Business Value, which is often captured in Income Approach methods. For application of the NPV Method to mineral properties and mines, it restricts the forecast income stream used to only the royalty income that a private owner of the property could obtain from leasing the mineral property or mine to a mining company.

Because of this restriction to royalty income, many minerals valuers view the UASFLA as unfair to the minerals industry. However, a business that operates within a commercial buildings that it owns will receive similar treatment to exclude Business Value from the Valuation of the Real Estate being Taken. Other requirements for the valuer to follow often also result in compensation to the minerals holder that is less than expectations. However, these finer points of protocol are beyond the scope of this paper.

The important lesson to be learned here is that UASFLA and the Courts in the US make the clear distinction between the Market Value of Real Property and its Business Value. The AusIMM's VALMIN Code instructions appear to result in the inclusion of Business Value in mining property valuations. In the author's opinion, this results in the value obtained being a *Use Value* of the Real Property under its current specific use, rather than Market Value; or results in a *Going Concern Value* of the mining operation as a Business valuation, instead of a Real Property valuation (Ellis, 2000a; Ellis, 2000c; USPAP 2001; IVSC, 2000), Appraisal Institute, 1993).

Such a value conclusion is probably desirable result for use in securities filings. It will also be desirable for the proposed sale of a mining operation as a Going Concern Business (Stagg, 2001). However, the valuation assignments that the author receives generally require determination of the Market Value of the Real Property, such as for income tax filings, litigation, and Business decision-making. Therefore, one must always be sure what type of value one is to determine, and the Property basis from which that value is derived. The author's recommendation from this is that it is preferable that any valuation Code or Standard designed

for the valuation of minerals industry assets be consistent with IVS.

## US STATE AND FEDERAL COURTS

Court records provide an important framework to guide minerals valuers. The Courts are where work of minerals valuers is put to the test.

The expert testimony of a minerals industry practitioner regarding the value of a mineral property is often opposed in Court by the testimony of a State Licensed Certified General Real Property valuer who has no minerals industry education or qualifications. The author has discussed such situations with colleagues who study Court cases involving the value of mineral properties. These discussions and his review of the literature indicate that in those situations the testimony of the Real Property valuer generally prevails.

This poor to abysmal track record for minerals industry practitioners appears to be largely due to them not following the ground rules of Generally Accepted Valuation Principles for Real Property valuation, and not following the specific valuation ground rules applicable in the particular jurisdiction. Many minerals Valuations are essentially thrown out of Court in Eminent Domain (Condemnation or Takings) hearings because the minerals valuer has not applied the appropriate ground rules (Paschall, 1999).

Any expert's mineral property valuation that relies solely on the Income Approach will have a high probability of losing to the opposing expert's valuation when that includes simple Sales Comparisons. The Courts in the US have ruled that Market Value valuations should be based as much as possible on data derived from the market. Sales are market data. Therefore, when developing a Market Value valuation, all methods of value estimation should draw as much as possible from sales. As explained earlier in this paper, the author does **not** believe that this means that sales need to be *comparable*, such as we are familiar with seeing applied in residential Real Estate valuation. As UASFLA indicates, the Courts have a strong preference to rely on the results of the Sales Comparison Approach to the exclusion of the Cost and Income Approaches. JD Eaton, a leader of the Appraisal Unit, US Department of Justice, authored the 2000 UASFLA revisions. In his 1995 book, *Real Estate Valuation in Litigation*, he states:

*Most courts do not seem to understand that each of the three approaches to value is an*

*integral part of the valuation process. Many court rulings appear to be based on the assumption that the three approaches to value are totally independent of one another and that only the most applicable approach is used in the appraisal of a specific property. (Eaton, 1995, p. 158).*

In the context of the Cost Approach, Eaton goes on to explain that in the US *"the appraiser has an ethical and professional obligation"* to develop each of the three Approaches to value *"whenever the results of the approach will assist in estimating the value of the property."* He encourages the valuer to then educate the Court as to the role of each Approach in developing his value conclusion.

The dismal lack of success of minerals industry professionals testifying as valuation experts in the Courts provides important lessons. One should not expect to learn how to develop a strongly defensible valuation through only on the job experience. There is a lot one can learn from how other Real Property valuers (such as valuers of agricultural lands, timber tracts and unique office buildings) develop their valuations. They are confronted with the same issue of a lack of directly comparable sales data. There are good reasons why a Certified General Real Property valuer has to pass 180 hours of valuation courses, and has to maintain a regimen of continuing education. Few if any minerals valuers give serious consideration to the three Approaches to value that Eaton emphasises as being *"an integral part of the valuation process."* Minerals valuation is a niche speciality within the universe of Real Property valuation and Business valuation. Reviewing example valuation reports available from major valuation institutes can prove instructive (eg, ASFMRA, 1995b).

## US SECURITIES & EXCHANGE COMMISSION

The SEC rules which most directly impact minerals valuers were first issued in March 1981 when the SEC introduced Form S-18 for reporting by mining companies. In 1992, the SEC transferred the definitions and disclosure requirements of Form S-18 to *Industry Guide 7*, which is still in force (SEC, 1992).

*Industry Guide 7* is focused on investor protection, as are SEC rules in general. It defines *proven* and *probable* Reserves using its own definitions, not the internationally accepted definitions of the Council of Mining and Metallurgical Institutions (CMMI). It then

prohibits the disclosure of quantitative estimates, such as tonnage and grade, for all mineralisation other than those two Reserve categories, except in rare circumstances. Similarly, it restricts disclosure of value estimates to Reserves only (SEC, 1992; Abbott, 1985; Ellis and Abbott, 2000).

The policy is designed to prevent private investors from confusing Resources and other mineralisation, with Reserves that can be mined economically and legally (Abbott, 1997; Ellis, Abbott and Sandri, 1999). It is also intended to reduce the speculation associated with initial, in situ estimates of Resources, which are invariably greater than the Reserves, if any are delineated (Noble, 1993). In only rare cases have other disclosure pressures allowed these rules to be overridden. The dissatisfaction with these *Industry Guide 7* rules is quite widespread.

In March 1999, the US-based Society of Mining, Metallurgy and Exploration (SME) released an update of its 1991 guidelines for definitions to be used in reporting of Mineral Resources, Reserves and Exploration Information (SME, 1999, 1991). These closely follow the 1997 CMMI recommendations, which were in turn derived from the Australasian JORC initiatives. To date, the SEC has stuck by its antiquated 1981 Reserve definitions and prohibitions. This has effectively barred public reporting in the US under the SME and CMMI definitions (Ellis and Abbott, 2000).

Despite this regulation, in recent years an occasional company listed on a US exchange, such as Newmont, has begun publishing estimates of tonnage and grade of non-Reserve mineralisation, using terms such as “*Measured and Indicated Mineralization*.” The SEC has not acted to stop this apparent violation. In February 2001, R Baer, an SEC Mining Engineer, gave a presentation explaining the SEC position on mining industry public reporting, in the Valuation Sessions of the SME 2001 Annual Meeting. He explained that the SEC is allowing an “Administrative Exception” to *Industry Guide 7*. Quantity and grade estimates for the sum of Measured and Indicated Resources meeting SME and CMMI definitions, can be reported as “Mineralized Material,” but no allowance for disclosure of Inferred Resources (Baer, 2001).

Prior to this, US-listed mining companies frequently refused to provide Resource estimates to the author and other minerals valuers for valuation work involving their mine and mineral property. Signing of a confidentiality agreement often did not mitigate the concerns.

This was apparently due to worries about Resource estimate information from the valuer’s report getting into the public domain in breach of *Industry Guide 7*. Mineral Resources often carry a significant portion of the value of a mineral property, even for a mine. The restriction also resulted in Mineral Resource information not being available for sold properties for use in Sales Comparison analysis (Ellis, 2000a, 2000e). In these situations, the author found himself having to make his own quantitative estimates from what information and impressions he could glean.

The author does not expect to see much increase in the amount of information available to the minerals valuer due to this Administrative Exception. He does not expect a large percentage of reporting companies to take advantage of it, especially given that not many industry professional will understand the specific meaning of the information. Not allowing Inferred Resources to be reported cuts out much of the information about the long term potential of a property.

*Industry Guide 7* contains the harsh statement that value should only be assigned to Reserves. It is rare that a minerals industry company files a market valuation report for Reserves with the SEC, and few of those that are filed are found acceptable (Baer, 2001). Most of the US-based minerals industry companies are listed on a Canadian exchange. Accounting for public reporting of US companies is on an Historic Cost basis, which includes accounting for the value of Reserves. Therefore, the Market Value of Reserves could only be relevant in a SEC filing regarding a merger or acquisition involving a US listed company.

Unfortunately a considerable number of US minerals valuers sincerely believe the SEC’s notion, expressed in its *Industry Guide 7*, that only Reserves should be assigned value. This belief does not match the realities of transactions taking place on a regular basis in the market place. Those show that the value of Resources and exploration potential often reach many tens of millions of dollars (Lawrence, R, 2001).

These unintended consequences of the SEC’s actions show that rules designed to control reporting for securities purposes will also impact on mineral valuations performed for a wide variety of purposes unrelated to securities reporting, unless great care is taken in their drafting and keeping them up-to-date.

## THE BIG PICTURE AND THE FUTURE — FROM A US PERSPECTIVE

The following discussion provides the author's perspective on the current status and future direction of valuation standards development with relevance to the minerals industry.

### WITHIN THE US

The author considers that the US national set of valuation Standards, USPAP, provides a clear, well structured set of Standards appropriate to valuation of all types of assets, including mineral deposits, mines and mining companies. It provides strict, difficult to achieve criteria for a valuation report to bear the labels of USPAP's highest classifications for scope of the valuation process undertaken and the level of detail provided in the valuation report. Yet it also provides considerable flexibility for departing from some of the strict rules for the conduct of the valuation process, and allows the report to be abbreviated, when the Intended Use of the valuation report does not justify the level of cost and effort involved in producing a premium quality product, and a less assuring label on the valuation report will be satisfactory.

USPAP provides concise, strongly worded instructions. The level of explanation provided is minimal. The document assumes that the valuer as user already has education and experience in the application of USPAP to his field of work. This contrasts with the IVS document, which provides extensive explanation and advice throughout. Soon after the publication of the IVS 2000 Edition, the Appraisal Institute, one of two leading general US valuation societies, asked the Appraisal Foundation to migrate USPAP to more closely mirror IVS (IVSC, 2000b, p 0).

The US has no comprehensive valuation Standards or guidelines specifically designed for valuation of mineral property or mineral business assets. The SEC's *Industry Guide 7* and the UASFLA provide only a few rules for specific uses, and are therefore not relevant in the context of this discussion. A valuation standard development initiative begun in the U.S. in 1999 by the American Institute of Minerals Appraisers was set aside in favour of striving for a coordinated international effort. The formation of the IVSC's Extractive Industries Task Force in 2000 was to some extent a result of this international effort.

In this paper, the author has raised serious professional qualification problems regarding the (technical) legality of minerals valuers

undertaking mineral property valuation assignments in most States of the US. These condense down to:

Jurisdictional issues evolving from minerals being part of the Land and therefore part of the Real Estate in the US;

State licensing of Real Property valuers, Geologists and Engineers and the qualifying criteria for such licenses;

State barriers to free trade in professional services, deriving from the above two points.

However, these problems do not detract from the author's positive review of the USPAP document, since they do not derive from it. These problems are derived from badly implemented regulation of professional qualifications and professional services.

### The Future

The US, Australia, and other leading countries of the world, are working on *harmonising* (merging) their accounting standards for public companies and government agencies, with the International Accounting Standards (IAS). The goal is to allow companies to report their financial statements to stock exchanges around the world without adjustment to individual country rules. Many other countries have bypassed the harmonisation process and adopted IAS directly. The harmonisation process, since earlier this year, appears to have evolved into an expanded task of selecting the best parts of the participating countries' accounting standards for incorporation into IAS, prior to merger of IAS Standards with those of the individual countries. The process can be expected to take a number of years.

Around 2005, the author expects that substantial introduction of IAS into the US will effectively occur. One or two small Standards were incorporated already in recent years.

IAS is largely a *Current Cost* (also called *Current Value* or *Fair Value*) accounting system, allowing the reporting of the appreciated Fair Value of assets; while the existing GAAP accounting systems in the US and Canada are Historic Cost based, not allowing any upward adjustment for appreciation (Ellis, 2001b; Lawrence, M, 2001). The SEC has expressed reservations about allowing Current Value reporting, and has this topic under review. The author is hopeful that by about 2005, the US and Canada will decide to

join most other countries in allowing Current Value reporting in financial statements.

IASB has yet to decide to what extent, if any, its proposed Extractive Industries Standard for global use by the minerals and petroleum industries will provide for Current Cost accounting. This is a major subject of discussion in the *Issues Paper* released in November 2000, by its predecessor, the International Accounting Standards Committee (IASC, 2000). The SEC is actively assisting IASB with the development of this Standard (Baer, 2001). Feedback from various sources, and the contents of the *Issues Paper*, demonstrate that the SEC has lobbied heavily for only Historic Cost reporting under the proposed new Standard, and for reporting restrictions on Reserves and Resources similar to those contained in *Industry Guide 7* (SEC, 1992). Such restrictions could have a devastating global impact on the ability of mining industry companies to compete for financing (Ellis, 2001b; Lawrence, M, 2001). The Extractive Industries Task Force of the IVSC conducted considerable research in developing a comprehensive submission to the IASB, responding to the *Issues Paper* (IVSC, 2001). This submission strongly supports the use of Current Value reporting and maximum disclosure. Even if IASB allows Current Cost accounting and open disclosure of Resources and other mineral deposit information in the new Standard, Baer of the SEC indicates that the current reporting restrictions in the US will likely be maintained (Baer, 2001).

IAS references IVS in a number of places, including for referencing the basis for *Fair Value*, and for establishing the value of assets in the accounts. The two leading US valuation societies have been important sponsors of IVSC for many years. The author predicts that IVS will eventually replace USPAP, or essentially change to being essentially IVS within a USPAP cover.

## **INTERNATIONAL**

IVS has been evolving since it was first published in 1985. In recent years its pace of development has accelerated. The 2000 Edition, being 376 pages, represented a major advancement over the preceding 1997 Edition of a third that size. This advance resulted in a significant increase in acceptance of IVS around the world (IVSC, 2000a-b). Rapid evolution of the Standards is planned by IVSC for at least two more years.

IVS is designed to play essentially the same role internationally as USPAP does as a national

Standard within the US. Many countries reference IVS in their regulatory systems as their national valuation Standards. Like USPAP, IVS is based on Generally Accepted Valuation Principles. The conclusion of value developed from conducting a market valuation of an asset under IVS should vary little from that developed under USPAP. IVS provides comprehensive sets of well-explained instructions for valuations of the four property (asset) types. It also provides a variety of other instruction, such as a Standard titled *Market Value Basis of Valuation* and another titled *Valuation Bases Other Than Market Value*. IVS is crafted so that it provides workable instructions in a wide range of countries and legal settings. Due to the flexibility this requires in the operation of instructions, some instructions may have more flexible wording than the USPAP equivalent. Generally though, requirements clearly use the term *must*.

The 2000 Edition mainly contains instructions pertaining to the valuation process, together with a Code of Conduct and supporting valuation concepts and principles. It contains only a few pages of critical instructions regarding the content of the valuation report. This is because the IVS is a document still under development. Future editions, beginning with the 2001 Edition (not received by the author at this time of writing), will introduce comprehensive guidance on valuation report content.

IVS contains no instructions specific to the valuation of properties or other assets of the extractive industries. However, IVSC's intention is to add sections with instructions for such specialised areas of valuation, including the extractive industries, as funds allow those to be developed.

Presently, The AusIMM's VALMIN Code is the only comprehensive valuation standard in the world designed specifically for minerals or petroleum assets. VALMIN has achieved a significant level of recognition and respect from the major mining institutes of the world.

The Canadian Institute of Mining, Metallurgy and Petroleum (CIM) formed a Special Committee on Valuation of Mineral Properties (CIMVal Committee) in response to the January 1999 final recommendations of the Mining Standards Task Force of the Toronto Stock Exchange and the Ontario Securities Commission. The CIMVal Committee actively sought out input from interested parties, then sought responses to concepts in an April 2001 Discussion Paper. CIMVal's next step is to circulate for comment a Draft Report on Standards and Guidelines for

Valuation of Mineral Properties. The objective of CIMVal is to develop a working document containing a Canadian Code and Guidelines, which will be recommended as a national standard that Canadian mineral valuation practitioners will be required to follow in the process of valuing a mineral property. A significant portion of this Canadian standard will likely reflect an origin of the VALMIN Code.

The Assets Valuation Committee of The Royal Institution of Chartered Surveyors (RICS), England, publishes *The Appraisal and Valuation Manual*, generally called *The Red Book*. This practice manual contains compulsory instructions for RICS members. It contains a Practice Statement relating to Wasting Assets, which covers the valuation of interests in mineral bearing land and waste management sites. The author found that this 20-page section provides a wide scope of instruction to the valuer, but is written at a level appropriate for someone without a geology or mining industry background.

### **The Future**

There appears to be a slowly growing recognition of a need for enforceable minerals asset valuation standards by the mining industry institutes of the world and by securities industry regulators. If the IASB's proposed Extractive Industries Accounting Standard is implemented with a provision for Current Value reporting for Reserves and Resources, the need recognition will suddenly jump.

However, the International mining institutes have been very slow to take on developing their own minerals valuation standard, even if by directly copying much of the VALMIN Code. No matter how an Institute attempts to go about installing a minerals valuation standard, it is a lot of work by a few members. The resultant standard adopted by the Institute will also regulate only a handful of members (say 10), who work as minerals valuers full-time, and a few times that many who attempt such work occasionally.

Worldwide, the author estimates that there are only about 100 full-time, independent minerals valuers (excluding petroleum). Including minerals industry professionals who work part-time or occasionally as minerals valuers, the number may increase 10-fold to 1,000 people. That is still a very small number of people to regulate worldwide through a network of institutes. To make things worse, half of those people will not be members of any of those institutes. Even if the number of professionals doing minerals valuation work triples due to a

Current Value reporting for the mining industry being introduced, 3,000 people to regulate worldwide is a small number, particularly if only a tenth (300) work full-time in mineral valuation, and half of those are members of the institutes (150). No matter what way one cuts this, implementing and managing these standards will be a lot of work for a small number of members of each institute, to mainly regulate themselves.

The author has also previously pointed out that the VALMIN Code needs considerable restructuring for it to be ready for implementation in the international arena and particularly the US (Ellis, 2000a, 2000c-d, 2000f, 2001a). This is because of the need for mineral assets valuation to function smoothly within the larger universe of general Property and Business valuation.

The author recommends that mineral valuation standards development initiatives of the mining institutes should be refocused on supporting IVSC and our existing relationship established through the IVSC Extractive Industries Task Force. An international team of mineral and petroleum valuation experts should be assembled by IVSC to develop an extractive industries standard for inclusion in IVS. That way the standard will attain fast global coverage, within the existing valuation framework of the internationally respected IVS. Mining institutes would then be able to specify that their members must abide by IVS in conducting mineral valuation work, and enforce that requirement through their Code of Ethics.

The IVSC Extractive Industries Task Force that drafted the IVSC's June 2001 submission to the IASB regarding the proposed development of an Extractive Industries Accounting Standard, consisted of the following minerals industry valuation experts:

- Trevor Ellis, Leader (President, American Institute of Minerals Appraisers) – USA
- Michael Lawrence (Chairman, AusIMM's VALMIN Committee) - Australasia
- William Roscoe/Ross Lawrence (Co-Chair, CIM's CIMVal Committee) - Canada
- Roger Sawyers (Chartered Member, Royal Institute of Chartered Surveyors) - UK

The author sees a need for wider international participation, and some petroleum industry participation. IVSC has expressed its readiness to support the Extractive Industries Task Force in undertaking this work. A fast development initiative for the extractive industries standard is encouraged by IVSC, to provide a valuation standard for the proposed Extractive Industries

Accounting Standard to reference. The IVSC submission includes the statement:

*Development by IVSC of the Extractive Industries guidance section of the International Valuation Standards using VALMIN and CIMVal as a base will allow a truly international extractive industries standard suitable for all jurisdictions to be referenced by the IASB Standard. (IVSC, 2001, p 34).*

The existence of the relevant IVS standard will remove many of the arguments opposing Current Value reporting for the extractive industries, and in that regard could prove to be extremely important to the long term financial health of the mining industry (Ellis, 2001c; Lawrence, M, 2001). The IVSC however, in turn needs support from the mining industry in the way of substantial financial contributions. In addition to covering operating and travel expenses, enough funding is sought to provide two or three members of the Task Force supplementary income to allow them to work half-time on the project.

## CONCLUSIONS

The lessons drawn from the US experience and points made from the US perspective are too numerous to list in the conclusions. Many important lessons are listed at the end of major sections. The following are some of the more important conclusions drawn.

The US experience with licensing of Geologists and Real Property valuers, demonstrates that poorly designed regulation can prevent those who are competent from practicing their profession, replacing them with people who are technically qualified but not necessarily competent. The Australasian minerals industry must stay vigilant and proactive to prevent anything equivalent.

Licensing requirements at a State level are a barrier to freedom of trade in professional services, preventing some minerals industry professionals from working across borders.

USPAP and IVS have been developed based on Generally Accepted Valuation Principles developed by the international valuation community. When objectively and fully carried out, the valuation process follows the scientific method, resulting in an objective conclusion of value.

USPAP and IVS provide separate instructions for conducting Real Property valuation, Personal Property valuation, and Business and Intangible asset valuation. Separating these Property types assists the valuer in developing a conclusion of value that correctly matches the purpose of the valuation.

Separating the instructions for the valuation process from the instructions for writing the valuation report, and providing these in a sequence that matches approximately their order of use, aids the valuer in assuring that he addresses all necessary items.

Some of the denigration that the Cost Approach and Sales Comparison Approach have received from US minerals valuers is due to their misunderstanding the broader meaning and application opportunities of the two Approaches.

Developers of standards should be extremely cautious of barring any specific method of value estimation. The minerals value needs all the methods available that can be mustered to develop indications of value, given the inherent difficulty of his task in an environment suffering from a severe shortage of good data. Method selection must remain the prerogative of the expert valuer.

Minerals valuers should not expect to learn how to develop a strongly defensible valuation through only on-the-job experience. There is a lot learn from how other Real Property and Business valuers develop their valuations.

The unintended consequences of the US SEC's *Industry Guide 7* in severely inhibiting mineral property valuations in the US, indicates that unless great care is taken, rules designed to control reporting for securities purposes will probably impact mineral valuations performed for the wide variety of purposes unrelated to securities reporting.

The internationalisation of valuation standards for the minerals industry is best achieved by supporting IVSC and a reassembled Extractive Industries Task Force, with their plan to develop an Extractive Industries valuation section for IVS. A delay has occurred in the IASB schedule for drafting the proposed IAS Extractive Industries accounting standard. This delay may allow the IVSC to advance the development of the Extractive Industry's valuation standard on time for it to be referenced by the Extractive Industries Accounting Standard.

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