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Foreword: The Geothermal Resources Development Institute

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Mr. Root, a co-chairman of the Geothermal Resources Development Institute, outlines the organization of the Institute. He then introduces the authors and the subject matter of their papers.

FOREWORD: THE GEOTHERMAL RESOURCES DEVELOPMENT INSTITUTE†

*Thomas E. Root**

GENESIS OF THIS INSTITUTE

In May of 1975, I was having lunch with Bill Dolan, Geothermal Exploration Manager of AMAX Exploration, Inc., and the then President of the Geothermal Resources Council. We were discussing some of the legal problems which were then facing the geothermal industry and, in particular, the peculiar absence of a body of legal literature for so dynamic an area of natural resource development. We decided it would be a worthwhile effort to attempt to organize a meeting which would provide a lasting record of the legal analysis which was so sorely needed.

Discussions were had with the United States Energy Research and Development Administration through Randall C. Stephens, a speaker at this Institute. Simultaneously, the Rocky Mountain Mineral Law Foundation was contacted.

In July of 1976, the Executive Committee of the Mineral Law Foundation agreed to sponsor this Special Institute. In

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addition, we received the wholehearted support of the Natural Resources Section of the American Bar Association through Ed Renwick, Chairman of the Committee on Geothermal Energy.

Thereafter, Owen Olpin, Esq., of the Los Angeles law firm of O'Melveny & Meyers, and E. Dale Trower, Esq., of AMAX Exploration, Inc. in Denver, graciously agreed to be Co-Chairmen of the Institute.

As initially conceived, the Institute would bring together those lawyers involved with the problems of this industry. As planning progressed, however, it was decided that geologists and engineers be invited to speak because related issues of technology and resource occurrence, to name a few, begged for discussion in the program.

To meet this need, the Co-Chairmen, together with Professor Thomas Brightwell, then President of the Foundation, and David Phillips, Executive Director of the Foundation, met in Denver. The result of this meeting is a program which we believe addresses many of the major issues facing the industry today.

OVERVIEW OF THE GEOTHERMAL RESOURCES DEVELOPMENT INSTITUTE

The real purpose for the inclusion of this paper in the proceedings of this Institute is to give the attendees, and later readers of these materials, a road map of the subjects to be discussed.

In designing the program, we felt that the subject fell logically into the following categories:

- A. Exploration Issues
- B. Development Issues
- C. Business Issues
- D. Environmental Issues

A. *Exploration Issues*

A discussion of exploration for geothermal resources logically commences with a technical look at the resource itself. This task was assigned to Dr. Carl Austin.

Dr. Austin's paper is entitled *Technical Overview of Geothermal Resources*. He discusses the occurrence and accumulation of geothermal resources, always keeping an eye on the central fact that the key factor in identifying a geothermal resource is heat. Dr. Austin also points out that this energy is economically significant "only where it is concentrated into restricted volumes in a manner analogous to the concentration of valuable metals into ore deposits or of oil into commercial petroleum reservoirs." This reality is driven home when Dr. Austin makes the statement: "The only reasonably certain exploration method is to drill a hole and see what comes out."

With this in mind, the lawyer's mind jumps to the next question: What must be done to obtain the right to drill that hole?

The issues raised by this question are ably dealt with by Gerald Kitchen in his paper, *Geothermal Leasing Practices*, a paper Mr. Kitchen previously presented at the 22nd Annual Rocky Mountain Mineral Law Institute in July of 1976. In his paper, Mr. Kitchen provides, *inter alia*, a useful working analysis of the similarities of geothermal resource development to oil and gas and mining development. More valuable yet is his discussion of the leasing provisions of the Geothermal Steam Act and the case study which follows that discussion.

John Donne once wrote that no man is an island unto himself. In a business as perilous as geothermal exploration, the same can be said for business entities. Mr. Paul Schlauch's paper follows Mr. Kitchen's and deals with joint venturing for geothermal resource exploration. Mr. Schlauch uses the heading "The Unique and The Commonplace" early on in his discussion of joint ventures. Thereafter, he does the practicing

bar a great service by pointing out how the geothermal joint venture is similar to other ventures in the resources industry (commonplace) and how it is not (unique). In addition, Paul has done all of us a considerable service by being "excessively fussy or academic" in raising the issues of the antitrust laws as they relate to natural resource development.

Paul's paper also pinpoints what may be the most important development in the past ten years in resource development, *i.e.*, the entry into the arena of entities previously unfamiliar with resource development. He points out that the parties interested in geothermal development are no longer limited to mining and oil companies, but now include municipalities, utilities and agencies of the federal government.

In an attempt to address this new development, Messrs. Kramer and Hammer prepared a paper entitled *The Role of Municipalities in Geothermal Resource Development*. In this paper, these gentlemen discuss the unique constraints under which such entities may participate in geothermal development. They focus on how municipalities may finance such activities given the limitations under which they operate through constitutional, statutory, and charter limitations. If the entry of municipalities for geothermal development is a breakthrough of sorts, the paper of Messrs. Kramer and Hammer will be must reading for a municipal lawyer who may be advising his client on entry into oil, gas, coal, or uranium exploration as well.

B. Development Issues

The distinction between issues related to exploration and those of development are arbitrary at best. One suspects that these distinctions have crept into common parlance due to tax treatment, on the one hand, and company organization (exploration/operations) on the other. Nevertheless, such a distinction does segregate this second phase of our program.

George Vranesh's paper is modestly entitled *Water Conflicts Encountered By The Geothermal Developer* although his paper is considerably more broad than the title would

suggest. In it, he discusses, *inter alia*, the nature of the resource, relevant state and federal legislation, and case law. Of great value is his discussion of the Colorado treatment of the resource, the first in-depth discussion of *state* regulation of the resource.

As State Engineer of the State of Utah, Dee C. Hansen is uniquely qualified to discuss the issues of *Water Conflicts From the Viewpoint Of A Regulator*. Mr. Hansen's paper involves a discussion of consumptive use of geothermal waters, water rights, and availability.

One problem of operations is the difficulty of development when there is multiple ownership in an area of interest. Dennis Goldstein visits much of the oil and gas learning on this problem in his paper, *Unitization for Geothermal Resources: United We Save*. In doing so, legal, economic, and technical issues are discussed. Dennis closes his paper with the conclusion that timely enactment of compulsory unitization statutes tailored to the geothermal industry are necessary.

C. *Business Issues*

The heretofore "clear" distinction between exploration for and development of geothermal resources is abandoned in the next three papers for they deal with the posture of the federal government in geothermal resource development.

Randy Stephens entitled his paper, *The Federal Role in Geothermal Resource Development*. In it, he discusses the practical aspects of the Geothermal Energy, Research, Development Act of 1974. He also includes a discussion of federal land management, taxation, loan guarantees, and general regulation. Given the large presence of the federal government in the affairs of the industry, this paper will be quite useful to those involved in exploration and development.

Jack McNamara's paper, *Constraints on Geothermal Development: Tax and Beyond*, contributes a policy analysis of the industry which cuts across not just exploration, development, access, and taxation issues but places geothermal

development in the larger context of the energy situation and the responses one can expect to that situation. His discussion of the lack of a coordinated energy policy for the United States should, perhaps, have been considered as the keynote speech of this conference.

Following Mr. McNamara's paper is that of Professor Peter C. Maxfield, *Income Taxation of Geothermal Resources*. Pete characterizes the state of the federal tax laws, in relation to geothermal exploitation, as embryonic. He then discusses requirements for depletion and the types of depletion available to the producer, including an outline of the necessary computations for percentage and cost depletion. His paper also provides a separate treatment of exploration and development expenses.

Thus far, the papers referred to have been concerned with exploration, development, and the role of the federal government. Sam Snyder's paper, *Geothermal Sales Contracts*, leads us into the area of disposition of production. In what I find a delightful literary style (seldom found in the works of lawyers), Mr. Snyder outlines the contents of a sales contract for geothermal products and problems of which the draftsman must be aware.

D. Environmental Issues

The final two papers deal with environmental aspects of geothermal development. The first of these was authored by Professor Dan Tarlock and is entitled *An Environmental Overview of Geothermal Resources Development*. This overview concerns itself with the problems of land use conflicts, air pollution, water pollution, and noise, as they bear on the geothermal industry.

Taking a different approach, Dale Trower's paper, *An Overview of the California Permitting Process*, focuses on the nuts and bolts of environmental law practice, *i.e.*, compliance with environmental regulatory schemes.

Finally, the Institute's proceedings include a geothermal bibliography.

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FOREWORD

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SUMMARY

As noted previously, the initial purpose of this Special Institute was to expand the body of legal literature in this growing industry. A glance at the bibliography shows that prior literature (exclusive of statutes, regulations, rules, orders, and the like) consisted of thirteen law review articles. The proceedings herein contain thirteen additional papers, doubling the available material.

Quantity, however, cannot be the sole standard of success. Early articles dealt with broad issues of ownership and policy. While many of the papers herein contained revisit these issues, some break new ground. Joint venturing, municipality participation, water conflicts, sales, environmental matters, the federal role, taxation, and unitization all are given a greater in-depth treatment than previously accorded them in the literature.

I believe an innovative industry has received a noteworthy contribution from the legal profession. If quantity and quality are measures of success, this is a successful Special Institute and one of which sponsors, participants, attendees, and the bar can be justifiably proud.