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Geothermal Exploration and Development in the United States: A Tax Analysis Under the Internal Revenue Code

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ABSTRACT

Hundreds of millions of dollars are invested annually by the private sector to explore and develop oil and gas properties in the U.S. The risk of such investments is reduced by the tax benefits of such activities. A significant portion of the cost of drilling and completing the well is deductible from the ordinary income of the investor; and if production is established, it is subject to depletion (that is, part of the income is tax free).

Geothermal exploration and development should receive comparable treatment. The *Reich* and *Rowan* cases, the only two reported cases relating to geothermal exploration, found that the same favorable tax consequences which result from oil and gas exploration applied to geothermal exploration.

The U.S. Internal Revenue Service is still challenging the tax treatment of geothermal exploration. Congress has proposed certain changes in the Internal Revenue Code to benefit the geothermal industry, but additional legislation is necessary to clarify the tax treatment.

Once the tax treatment of geothermal exploration and development has been conclusively determined, substantial funds could be deployed to develop geothermal properties. The tax benefits would reduce the risk of the exploration and would also significantly improve the economics of such an investment.

INTRODUCTION

The tax laws of the U.S. as set forth in the Internal Revenue Code have traditionally provided certain incentives for oil and gas exploration and production. These incentives reduce the risk in exploring for the resource and increase the economic potential of the venture.

In the U.S., private capital has traditionally funded the cost of exploration and development, although there is presently an attempt to have the government actually engage in exploration activities. Proposed legislation was introduced by Senator Stevenson (Democrat-Illinois) in the Senate in March 1975 (S-701) which provides for the creation of the National Energy Supply Corporation which will engage in exploration and development of oil and gas properties. The bill calls for initial funding of \$50 000 000 and in addition would authorize this corporation to raise additional funds from the private sector.

During 1974, 85.2% of the exploratory wells were drilled

by independents, and 78% of the new wildcat discoveries were made by independent producers as opposed to the integrated oil companies (Oil and Gas Jour., 1975). The source of a significant portion of the capital of the independent producers is public and private drilling funds which amass money from investors and engage in exploration.

During 1974, \$329 000 000 was raised by the public drilling funds as compared with \$348 000 000 in 1973. Approximately two-thirds of these funds raised in 1974 were by funds which were predominately exploratory in emphasis (Resource Programs Institute, 1975). It is impossible to ascertain the amount of money invested through private drilling funds, but it could very well be comparable to the amount raised by the public drilling funds.

The tax incentives available to the investor in such drilling funds are an integral and decisive factor in the making of the investment. In fact, most of the investments are limited to individuals whose taxable income puts them in an income tax bracket which would permit them to avail themselves of the tax benefits from investing in a drilling fund. A good example of this may be found in the McCulloch Geothermal Energy Program, which restricts the investment to individuals with either a net worth greater than \$200 000 or a net worth of \$50 000 with income, some part of which will be subject to federal income tax of at least 40%.

The geothermal industry, which is in its infancy in the U.S., must be able to tap private capital if it is to grow. In order to obtain such funding, the same tax incentives which are available to oil and gas exploration and production must be available to geothermal exploration and production.

TAX INCENTIVES

The two primary tax incentives involved in oil, gas, and geothermal exploration and production are (1) the intangible drilling deduction, which permits part of the cost of drilling a well to be expensed as opposed to being capitalized; and (2) the percentage depletion which excludes a portion of the production income from taxable income.

Intangible Drilling Deduction

Under Section 263 (c) of the Internal Revenue Code and accompanying regulations (Treasury Regulation 1.612-4), certain amounts expended in the drilling and completing of a well can, at the option of the payor, be expensed or deducted. The expenses are for items which do not have

a salvage value and include the following: wages, fuel, repairs, hauling, and supplies incident to and necessary for the drilling of wells and in the preparation of wells for the production of oil and gas (Treasury Regulation 1.612-4a). These items are deductible whether or not the well is productive or dry. An example of the deduction follows.

Example 1: A has income from salary of \$27 000. He invests \$7000 in the drilling and completing of a well which is a commercial well and which costs in the aggregate \$10 000. B invests \$3000 in the well and is the operator. Income is shared 70% to A and 30% to B. Of the \$7000 invested by A, 70% consists of intangibles and 30% tangibles. His taxable income, assuming he elects to expense the intangibles, is as follows:

Taxable income, salary	\$27 000
Intangible drilling deduction (limited to 70% of the intangibles)	4 900
Taxable income	\$22 100

The unique feature of the intangible deduction is that it permits the expensing of items which if found in other assets would have to be capitalized and depreciated.

Percentage Depletion

Under Section 613 of the Internal Revenue Code, 22% of the gross income (but in no event more than 50% of net income) from oil, gas, and geothermal production income may be excluded from taxable income. Under the Tax Reduction Act of 1975, depletion on oil and gas has been eliminated to a great extent with certain enumerated exceptions including domestic production up to 2000 barrels per day. See Section 613A of the Internal Revenue Code.

Because percentage depletion is based on gross income with a 22% factor, the effective exclusion of net income received by the taxpayer is significantly higher. An example of the exclusion follows.

Example 2. A has gross income from production of \$100 000. Royalties, operating expenses, and so on, total \$25 000. Net income from production is therefore \$75 000. Depletion at 22% would be \$22 000. A has taxable income as follows:

Net income from production	\$75 000
Percentage depletion	22 000
Taxable income	\$53 000

The unique feature of percentage depletion is that, unlike depreciation which is limited to the investment less salvage value, there is no limitation on the amount of percentage depletion. It is based on income and not on capital investment. Thus, 100%, 200%, or even 1000% of the investment can be "recouped" through percentage depletion. The Internal Revenue Code also provides for cost depletion in Section 612. This form of depletion resembles more traditional cost amortization. However, since most oil and gas investment have a low cost as a result of the intangible deduction, cost depletion is usually not used.

Clearly, these favored provisions of the tax laws have historically been enacted to encourage oil and gas explora-

tion. The aim of these provisions has been achieved and has fostered oil and gas exploration and development. These provisions should also apply to geothermal exploration and production, but that conclusion is not clear (Eisenstat, 1973).

GEOHERMAL TAX CONSEQUENCES

Logically, the same tax consequences which flow from exploring and developing oil and gas properties should also result from exploring and developing geothermal properties. Whatever rationale lies behind the intangible drilling deduction for oil and gas must apply as well to geothermal exploration. Likewise, although possibly not as clearly, the geothermal wells are depletable and percentage depletion should apply.

Until the enactment of the Tax Reduction Act of 1975 (Public Law 94-12) on 29 March 1975, the term "geothermal" never appeared in the Internal Revenue Code. In order for the provisions of the Internal Revenue Code to apply to geothermal resources, the resource would have to be determined to fit within the existing terminology and be deemed a "gas."

There are only two reported cases involving the tax treatment of geothermal exploration and development, and both cases found comparable tax treatment for geothermal as exists for oil and gas. The leading case is *Arthur E. Reich* (Tax Court, 1969a) which was argued before the U.S. Tax Court and, after a favorable decision for the taxpayers, was appealed by the Internal Revenue Service to the Court of Appeals for the Ninth Circuit which agreed with the tax court and affirmed the decision.

In *Reich*, the taxpayers drilled numerous geothermal wells at The Geysers in California and also in other areas. The two issues before the court were (1) whether the intangible drilling and development costs incurred in the drilling of the wells could be expensed by the taxpayers, and (2) whether production income from The Geysers was subject to percentage depletion.

Both issues were decided by both courts in the affirmative. The analysis of the tax court decision turned out the following points:

1. The geothermal resource at The Geysers is not merely the inexhaustible heat of the earth, but rather it is heat and water combined in such a way so as to create steam under pressure. It is the steam which is the source of the power, not merely the heat.
2. Steam is gas for purposes of the percentage depletion provisions of the code. The court looked to the normal use of the word gas and concluded that it would include steam. Nor would the court accept the argument of the government that steam is really water, and therefore not depletable under the provision of the Internal Revenue Code. The term water was used in its ordinary sense said the court, and refers to water in its liquified state, not its gaseous state.
3. Having determined that the steam was a gas, the court next concluded that it was exhaustible and was depleting. The court looked to the fact that the steam was enclosed in a reservoir which was not being recharged. The drawing off of the steam to produce energy depleted the reservoir.

Therefore, since the steam was a "gas" which was

depleting, it was subject to the percentage depletion provisions of the code, and likewise the election to expense intangibles drilled and development costs was also applicable.

The only other reported case, *George D. Rowan* (Tax Court, 1969b), involved the intangible drilling and development deduction. This was a companion case to *Reich*, above, and the tax court concluded that the deduction was valid and in so doing, it relied on *Reich*.

Although the only two reported cases have been decided against the government, the Internal Revenue Service has not acquiesced in the decisions and is continuing to challenge the tax treatment of geothermal exploration and production. In *Charles Thornton* (Docket No. 181-66), a case docketed in the tax court, the Internal Revenue Service was challenging the intangible drilling deduction taken by the taxpayer on geothermal drilling. The case was settled, and therefore no decision was rendered. Another case, *Dunnigan Enterprises, Inc.* (Docket No. 657-74) is presently pending in which the Internal Revenue Service is challenging the intangible drilling deduction taken by the taxpayer on certain drilling activities in New Mexico.

What is needed is to have the Internal Revenue Code amended to specifically provide that the intangible drilling deduction applies to geothermal drilling and that percentage depletion applies to geothermal production.

In the Tax Reduction Act of 1975 the word "geothermal" became part of the Internal Revenue Code for the first time. A new section 613A of the Internal Revenue Code was enacted which provides in part that any geothermal deposit in the U.S. which is determined to be a gas (as defined in the percentage depletion sections) will be depletable at a rate of 22% and not at a lower rate.

The immediate effect of this provision is very limited, for it begs the issue. It does not say that geothermal production will receive a percentage depletion rate of 22%, but merely says that if geothermal is a gas, it will be depletable at a rate of 22%. The underlying problem is still present and will become more pronounced when the resource which is produced and depleted is not steam but rather hot water. It does, however, show a clear intention on the part of Congress and the Executive to encourage geothermal development; for at a time when percentage depletion on hydrocarbon gas is being reduced from 22% and in fact eliminated in many cases, if percentage depletion applies to geothermal production it remains at 22%. A sympathetic position has been manifested but it falls far short.

Nothing concrete has been proposed regarding the intangible drilling deduction. However, in a document published by the Democratic members of the Ways and Means Committee of the House of Representatives, a suggestion is made to expand the definition of the intangible drilling deduction to include intangible costs associated with geothermal wells (U.S. Congress, House Committee on Ways and Means, 1975).

It would appear that sound judgment will prevail and the necessary legislation will be enacted in the near future. The intangible drilling deduction will apply and may very well be expanded to include all geological and geophysical expenditures and not just those necessary for well site selection as is the present case. Furthermore, it is assumed that percentage depletion will also apply to all geothermal production although the rate of depletion may be less than the present 22%.

TAX PLANNING

On the assumption that the tax incentives in the Internal Revenue Code which exist for oil and gas apply to geothermal resources, the effect of tax planning on a geothermal investment should be examined.

As was heretofore noted, the intangible portion of the investment could be deducted from the taxpayer's other income; however, only part of the investment in a geothermal project relates to the intangible items, and thus less than 100% of the investment can be expensed. This is so even if another party pays part of the costs, if income were divided between both parties from the time production commenced [Treasury Regulation 1.612-4(a)(3)]. If, however, a partnership were formed by the operator and the investor, where the investor paid those costs related to the intangible items and the operator paid the tangible or capital items, then the partnership, if the agreement so provided, could elect to allocate the intangible items to the investor and the tangible items to the operator. The investor would then be able to expense his entire investment. This would be proper even though the investor and operator share the production income from inception (Internal Revenue Code). An example of this allocation follows.

Example 3. A has income from salary of \$27 000. He invests \$7000 in the drilling and completing of a well which is commercial. B, the operator, pays the tangible costs of the well amounting to \$3000 and A's \$7000 goes to pay the intangible costs. The agreement between A and B allocates the intangibles to A. Income is shared 70% to A and 30% to B. A's taxable income, if the partnership elects to expense the intangibles, is as follows:

Taxable income, salary	\$27 000
Intangible drilling deduction	7 000
Taxable income	\$20 000

Thus, as appeared in Example 1 when the taxpayer could only expense \$4900, here for the same investment and interest in the well, he can expense \$7000.

Under the law as it exists today, the results are even more interesting if the investor is able to borrow a portion of his investment on a nonrecourse basis. The investment and related deduction is thereby increased through the use of leveraged funds. The following example illustrates the results.

Example 4. The facts are the same as in Example 3 except that instead of putting up the entire \$7000 from his own assets, A invests \$3000 and borrows \$4000 from a third party, on a nonrecourse basis, which is used for the drilling of the well. The results are as follows:

Taxable income, salary	\$27 000
Intangible drilling deduction	7 000
Taxable income	\$20 000

Thus on an out-of-pocket investment of \$3000, the taxpayer has reduced his income by \$7000. Assuming that A is married and filing a joint return, the amount of taxes saved would make his actual and out-of-pocket cash investment in the well a little more than 1/4 of what he invested. (If the well were dry and the loan ultimately foreclosed,

the taxpayer would then have to recognize income.) Needless to say, the higher the tax bracket of the investor, the greater the saving.

The purpose of these examples is not to show how taxes can be saved as such, but how the tax incentives can be used to reduce the risk of the investor. If an investor can effectively reduce his investment, he will be more inclined to make the investment—for his risk has been reduced and the potential return, therefore, increased.

CONCLUSION

The significant geothermal potential of the U.S. is available for development. It can and will be developed with private capital so long as operators act in a responsible fashion and utilize all that is available to them—including the tax laws—to increase the return to investors.

REFERENCES CITED

- Eisenstat, S. M.**, 1973, Tax treatment of exploring and developing geothermal resources: *Oil and Gas Tax Quarterly*, v. 22, p. 76.
- Internal Revenue Code**, Section 704(b)(2); Revenue Ruling 63-139, 1968-1 Cumulative Bulletin, p. 311.
- Oil and Gas Jour.**, 1975, 21 April, p. 56.
- Resource Programs Institute**, 1975, Newsletter, February.
- Tax Court**, 1969a, v. 52, p. 700; affirmed, *Federal Reporter* (2nd), v. 454, p. 1157 (9th Circuit, 1972).
- Tax Court**, 1969b, M v. 28, p. 797.
- U.S. Congress, House Committee on Ways and Means**, 1975, Alternatives for consideration in an energy program: 3 March.