A PROPOSED FRAMEWORK FOR LEASING MINERALS ON STATE AND COUNTY OWNED LANDS IN WISCONSIN

Prepared for the
Board of Commissioners of Public Lands and
Wisconsin County Mineral Resource Association

by the
Ad Hoc Public Lands Mineral Leasing Group

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Presented by the Public Lands Mineral Leasing Group:

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OVERVIEW: PROPOSED MINERAL LEASING SYSTEM AND MODEL LEASE FOR WISCONSIN STATE LANDS

MANDATE

In 1976 the Economic Development Coordinating Committee, a cabinet level group, established a sub-committee on mining to study the many questions raised by the current minerals exploration and recommend appropriate action by the State agencies and the legislature. The mining sub-committee evolved into ten working groups for the various aspects of the situation; one of these was the public lands working group. An earlier report of the Public Lands working group, "Mining On Public Lands In Wisconsin: Policy Issues," September, 1977, identified the need for a mineral leasing system for the public lands. The public lands working group appointed a smaller group of its members in October, 1978, to formulate a mineral leasing system and model mineral lease for the State lands. In addition, at a meeting on October 30, 1978, representatives of the Wisconsin County Mineral Resource Association requested assistance of the group in developing a model mineral lease for use by the counties in leasing county lands. This overview of a competitive leasing system and accompanying model lease is the recommendation of the Public Lands Mineral Leasing group to the Public Lands sub-committee for forwarding to State policy makers.

The Public Lands Mineral Leasing Group is comprised of:

James Altman, Office of the Attorney General
Thomas Evans, Wisconsin Geological and Natural History Survey
Steven Gauger, Executive Secretary, Board of Commissioners of Public Lands
Rick Henneger, Wisconsin Department of Natural Resources
Duncan Harkin, University of Wisconsin-Extension, Department of Agricultural Economics

METHODS AND PRINCIPLES OF THE WORKING GROUP

The working group set as its objective to propose a system for leasing of minerals on State lands which would best serve the public interest as we perceived it. This required us to rank the various objectives of such leasing. The maximization of income to the public as landowner over the long run was taken as the dominant objective, with the generation of geological information to facilitate resource management, and the generation of employment in mining being important but subsidiary objectives. The members of the working group come from the disciplines of law, geology and economics.

Before the group began discussion of the specific issues involved in mineral leasing we adopted some general procedural working rules. It was agreed that we would seek consensus so far as would be reasonably possible, but assured each member of the group that his dissenting views on any issue would be set forth in the documentation so that policy-makers would have the benefit of their points of view. Then we made a list of topics that would need to be considered as elements of the leasing system. After early agreement upon use of a competitive system it was agreed that we would deal with the most difficult issues first. These were what form of payment would be the bid "variable" in the competitive bidding, whether acreage rentals, lump sum bonuses, or royalty rates; and secondly the basis for the royalty payment, whether net mine value (net smelter return) or net proceeds as defined in Wisconsin's mine tax law.

Sources of our ideas, in addition to our disciplinary backgrounds, were published literature on minerals and mining, and contacts within the minerals industry. State public interests and agency points of view were represented in the membership of the working group. In seeking consensus on the various issues, when oral discussions failed, we would table the issue and sometimes

take time to make our view more explicit in the form of written position papers. Position papers were developed on acreage rentals and royalty rates as alternative bid variables. On the issue of the adverse incentive of gross value and net smelter return royalties which encourage leaving otherwise merchantable ore in the ground, we developed arithmetic examples to estimate the magnitude of the problem. In this process the working group met about twenty times, beginning in March, 1979. A grant from the State Office of Planning and Energy was used to employ a consultant to review the first draft of our work. Dr. Terry E. Maley, of Boise, Idaho, commented on the draft and most of his ideas have been incorporated into the proposal.

SCOPE

This overview and attached model mineral lease set forth a competitive leasing system for exploration and development of metallic minerals for whatever State lands shall be eligible for leasing. Currently there is legal authority for mineral leasing on certain State lands, but not on others. The Public Lands Mineral Leasing Group takes no position as to whether the authority to lease should be extended or restricted. However, the larger Public Lands working group and other bodies may wish to make a recommendation on this.

Similarly, the mineral leasing group takes no position as to whether the counties should adopt the leasing system proposed here for the State lands. However, we believe that counties faced with the prospect of leasing on county lands would find the ideas and procedures useful for adoption in whole or in part. A section on "County Alternatives in Mineral Leasing" discusses some points on which counties might depart from the system proposed here. The Public Lands Mineral Leasing Group also felt that it was beyond the proper scope of its work to recommend the disposition of any income generated from mineral leasing. This seems largely a political question. As the law now

stands any mineral income generated from DNR lands would probably go to the State's general fund. Disposition of income from lands administered by the Board of Commissioners of Public Lands depends upon whether it is annual income or represents a depletion of capital. Capital income goes to the various trust funds which are used as a source of low interest loans to school districts and municipalities for public purposes. Annual income from these loans are dedicated to the support of the common schools and the university. Mineral income would probably be interpreted as capital depletion and thus go to the trust funds.

CONTEXT

For over ten years there has been active exploration for metallic minerals in northern Wisconsin. This exploration has led to discovery of a small but high-grade copper deposit by Kennecott Corporation south of Ladysmith, and a smaller copper deposit north of Ladysmith; a small zinc-copper deposit near Pelican River by Noranda; and a large zinc-copper deposit by Exxon near Crandon. Although some mining companies have opened negotiations for leasing on State lands, no mineral leases have been executed. Numerous lease offers have been made to counties for exploration on the much more extensive county lands, and some counties have signed such leases. Thus far there have been no reported discoveries on county lands.

Until recently the exploration has been primarily for base metals. Many recent leases indicate a prime interest in uranium.

Some indication of the potential importance of public lands in mineral leasing in Wisconsin is seen in the surface acreages under the various classifications, although mineral rights do not coincide with surface rights in many cases. Public lands comprise 25 percent of the area of the twenty-nine northern counties of the Precambrian zone. County forests are the largest public ownership with 12 percent of the total area; State lands comprise 3.9 percent

of the area; and national forests comprise 8.4 percent.

Currently the trust lands, administered by the Board of Commissioners of Public Lands, are eligible for mineral leasing. The mandate to this administration is generally to maximize the income to the trusts. The trust lands comprise about 96,000 acres of surface and mineral ownership in the Precambrian zone, and an additional 130,000 acres of mineral rights which were retained when the surface rights were sold. Sec. 24.39 Stats, gives the Board of Commissioners of Public Lands authority to lease for exploration and mining. There has been an interpretation to the effect that this also extends to the 189,000 acres of State game lands in the Precambrian zone which are administered by the Department of Natural Resources. It is highly unlikely that the commissioners would lease such game lands without the approval of the DNR as the manager of the surface estate.

The Department of Natural Resources also administers resources of the navigable waters, State forests and State parks. The Department has authority under Sec. 30.20 (2)(b) Stats, to enter into contracts of terms up to seventy-five years for the removal of ores and materials beneath the beds of navigable lakes, and issues permits for the removal of materials from streams. To determine ownership of minerals of any specific parcel under the waters the Department and the Board of Commissioners of Public Lands should be contacted. The areas of the waters are large, but the probability of development is quite low, at least for the Great Lakes beds.

The authority of the Department of Natural Resources to lease minerals in the State forests and parks is less clear. Sec. 26.09(1) Stats, gives the Department authority to issue exploration leases in the State forest and parks, but an unpublished opinion of the Attorney General (OAG 58-76) has interpreted the statutes not to include the authority to issue mining leases on these lands.

Thus the authority to explore is not operational. The Department has also promulgated administrative rules that preclude State parks from mineral exploration. The area of State parks (30,850 acres) in the Precambrian zone is negligible from the standpoint of mining, but the area of State forests (332,000 acres) is significant.

OBJECTIVES

The foremost objective which has guided the construction of this proposed mineral leasing system has been the maximization of income over the long run to the public as landowner. Subsidiary objectives are to facilitate the production of minerals in order to promote employment and income, and to facilitate the accumulation of geological information because of its value for many land management purposes. The structure of the proposed system shows that little, if any, tradeoff of the income objective has been permitted in the pursuit of subsidiary objectives.

PRIMARY ISSUES

Sharing of Risk and Promotion of Competition

In recommending a competitive leasing system we accomplish two purposes: (1) it provides an objective means to determine which firm shall be awarded exclusive rights to explore and mine, and (2) the question of the distribution of revenues to be split between landowner and miner is submitted to the decision of the market. Obviously such a decision would be a poor one and the income objective would not be achieved if there were not effective competition.

Because of the high risk nature of the metallic minerals industry one means for maximizing income to the landowner over the long run is for the landowner to share the risks to the greatest possible degree. In general the risks are those of failure to discover valuable mineral (investment in exploration is lost), and adverse fluctuations in prices and costs.

The risk of failure to recover investment in exploration through failure to discover valuable mineral is reduced in this proposed leasing system by minimizing the front-end costs to the mining firm and depending primarily upon royalty payments to provide income to the landowner. Thus, if exploration fails to discover ore and there is no production, then there would be no royalty payments. The only income to the landowner would be acreage rentals, and the only costs to the firm would be the acreage rentals and the costs of exploration. Further reduction in the firm's risk of failure to discover ore would be possible by having the State share directly in the costs of exploration, but we believe that the already substantial investments of the State in geological studies constitute a significant contribution to exploration and that further investment in the form of direct sharing of exploration costs is not warranted.

The risk of fluctuations in mineral price which would be adverse to the mining firm are shared by making the main payment a percentage of the value of the mineral, as contrasted to acreage rentals. This also has the effect of giving the landowner the benefit of a share of any price rise.

In this proposed leasing system the risk of adverse changes in costs are shared to a major degree (but not entirely) through the use of a combination royalty, part of which is based upon net proceeds of the operation in which most costs are shared, and part is based upon net mine value (also called net smelter return) in which the landowner shares costs of smelting, but not the costs of mining. The rationale of this combination royalty will be described in more detail in a later section. The possible use of a royalty based upon gross metal value was also considered but was rejected because of its lesser sharing of risk and its greater incentive to leave otherwise merchantable ore in the ground.

The Bid Variable

The bid variable, that is, the basis for deciding which firm shall be awarded the lease, is to be a production royalty which is a percentage of net proceeds as defined in Wisconsin Statutes, Chapter 31, Laws of 1977, the net proceeds tax on metallic mineral production. This percentage of net proceeds which will be set by competitive bidding is to be in addition to a basic minimum royalty of 3% of net smelter return plus 4% of net proceeds, to be explained below.

The Working Group also considered the possible use of bonus bids (such as used in federal oil and gas leasing) and acreage rentals as the bid variable, but rejected them primarily because of the heavier "front end" cost loading with their increase in risk to the mining firm and reduction in number of competitors. These factors would be adverse to the objective of maximizing income over the long run.

Minimum Royalty

The minimum royalty payment is to be 3% of net smelter return plus 4% of net proceeds as defined in Chapter 31, Laws of 1977. The 3% of net smelter return would assure the State income from mineral production even in years when the miner is operating with no net proceeds (as has happened recently at the Jackson County Iron Company mine at Black River Falls). However, if the minimum were only 3% of net smelter return it would be substantially less than the minimum royalty set by the State of Minnesota which is 4% of gross metal value. In order to make the Wisconsin minimum royalty commensurate with Minnesota's minimum, 4% of net proceeds is added. Thus, the production royalty proposed is 3% of net smelter returns plus 4% of net proceeds, plus x% of net proceeds, the "x" representing the highest bid.

The Working Group considered a simpler system which would use only the net smelter return type of royalty. The minimum would be set at 6% of net

smelter return, and the bid variable would be an additional percentage of net smelter return. However, because of some industry opinion in favor of the greater risk sharing of a net proceeds or net profits royalty, and because of concern that net smelter return royalties could be bid up to a level where the impact on the marginal grade of ore would be serious,* we propose combining the net proceeds royalty basis with a low 3% of net smelter return royalty.

SUBSIDIARY ISSUES

Duration of the Lease

The exploration lease is for a primary term of ten years, and a secondary term of an additional ten years. Wisconsin Statutes limit the total term for exploration, prospecting, and mining to fifty years. Thus, if the exploration, evaluation and construction occupy the full twenty years of the primary and secondary terms, there would remain only thirty years for mining.

In order to extend the exploration lease into the second ten year period there must be either an application for a prospecting permit or an application for a mining permit presented to the Department of Natural Resources.

In order to extend the lease beyond the second ten year period the proposed mine must have received a mining permit.

*Under a net smelter return type of royalty, royalty payments would be made to the landowner even if the mine were only breaking even or operating at a loss. Since royalty payments would be made on all ore produced it would require a higher grade of ore for the mine to break even than in the case of a royalty, such as the net proceeds royalty, which drops to zero for the marginal grade of ore. Because the net smelter return type of royalty raises the marginal grade of ore, some ore is left in the ground which would otherwise be produced. The higher the royalty rate, the more serious is the effect of the net smelter return royalty on the marginal grade of ore. The 3% net smelter return royalty level is low enough to render this effect on the marginal grade of ore essentially insignificant. If the royalty structure causes merchantable ore to be left in the ground the life of the mine is shorter, employment is reduced, and income to both miner and landowner is reduced.

Acreage Rentals

During exploration the recommended rentals are: $3 per acre per year for each of years one and two; $5 per acre for the third year; $7 per acre for the fourth year; $9 per acre for the fifth year; $12 per acre for the sixth year; $15 per acre for the seventh year; $18 per acre for the eighth year; $21 per acre for the ninth year; $25 per acre for the tenth year. The rentals are graduated to create an incentive for diligent exploration and release of unpromising lands. The level of the rentals is a compromise between the need to create the incentive and the need to minimize the front-end costs to the mining firm. Minimizing rental costs, consistent with creating incentives for diligent exploration, results in making the royalty payment the principal mode payment to the landowner, thereby maximizing the sharing of risk, encouraging competition by making it possible for small firms to bid, and enhancing long term income to the State as landowner.

The acreage rental payments are to be indexed to the wholesale price index to account for inflation. For future lease offerings (those not in force) the administering agency should periodically re-evaluate the levels of the rentals prescribed here for both the primary and secondary terms.

The acreage rental during the secondary exploration term is $35 per acre per year (indexed for inflation), and will begin no later than the eleventh year. If the mining company makes application for a prospecting permit (or mining permit) before the end of the primary ten year term, the $35 per acre rental will begin at that time. This option would shorten the total time available for exploration and evaluation and would seem to work against the interests of the mining company. However, the statutory fifty year limit on exploration and mining leases creates some incentive for the mining firm to move ahead rapidly on mine evaluation and construction.

The prospecting acreage rental is not to be treated as an advance payment of royalties but, instead, is a payment in compensation for the public values of the land which are foregone because it is under lease. It is also intended to be high enough to discourage preclusive holdings by mining companies. We recognize that this rate may not be high enough to eliminate preclusive holdings in some cases. However, the Working Group decided against advanced royalties (which logically could be set much higher) in order to keep separate the concepts of royalty payments as payments on ore produced, and acreage rentals which reflect the use values foregone because of the minerals activity.

Transferability of Leases

The Working Group recommends that the leasing rules not limit the present rights of land management agencies to permit or prohibit the transfer of a lease according to their current practice. Further it is recommended that the announcement of an offer to lease provide that a fee would be levied in the event of any subsequent transfer, and at a minimum, notice of a transfer should be required to be sent to the lessor agency. In approving or disapproving a transfer of a mineral lease, the leasing agency should consider the competence and reliability of the transferee, and also consider whether the transfer includes additional royalties (overriding royalties). If overriding royalties are included, and if they are based upon gross metal value, net smelter return, or any other basis that can affect the marginal grade of ore, approval of such transfer could be adverse to the landowner. If the marginal grade of ore is increased, less ore would be mined, and as a result there would be less income to the landowner. On the other hand, if these negative aspects of a transfer are not present, permitting the transfer could facilitate the establishment of the mine. For example, the

initial exploration company might not have sufficient expertise or capital to establish a mine for the kinds of ore discovered. But, by creating a partnership with another company (or other form of transfer) the project could proceed to the benefit of all.

Discretion to Reject Bids

It is recommended that the lessor agency retain the discretion to reject any bids only on the grounds of competency to perform and not to include rejection because of lack of adequate competition. In case of tie bids all bids would be rejected and the leasing unit (tract) would be put up for bidding again. The majority of the group felt that the minimum acceptable bid, 3% of net smelter return plus 4% of net proceeds, constitutes a fair price for the State's minerals and, therefore, no bids should be rejected because of inadequate competition. (Member Harkin disagrees with this position, and favors the right to reject bids if the number of bidders indicates a low level of competition.

Negotiated Leases

The State mineral leasing agency (agencies) should be authorized an exception to the competitive leasing so that it can bilaterally negotiate leases under two situations: (1) where the State holds an undivided fractional interest in mineral rights, and (2) where the State holds full mineral rights to a portion of an ore deposit of which the remainder is held by a mining company and it is in the State's interest to lease to that particular company rather than to another company which could adopt a "holdout" negotiating position. In the first case the terms of lease of the State's fractional interest should be the same as the terms of lease of the other fractional interest. In the second case the royalty rate negotiated could be guided by the royalty rates which had been bid under the competitive bidding system

and thus constitute a reasonable approximation of a "fair price".

Size of Leasing Units

The leasing units should be as large as contiguous State ownership permits, up to a maximum of 640 acres.

Release of Acreage

Release of unpromising acreage after exploration is to be limited to forty acre units or government lots. This is intended to avoid release of smaller areas, and retention of areas in a pattern that would complicate land management for other purposes.

Advertisement of Lease Bidding

Chapter 985, Wisconsin Statutes, requires that a class three notice of lease biddings be given and prescribes the newspapers for notice. In addition announcements should be placed in suitable trade journals, such as Skillings Mine Review, and direct notice given to companies which may be interested.

Uranium Royalty

The net smelter return concept is not applicable to the production of uranium. In place of the minimum royalty of 3% of net smelter return the model lease uses the concept of "mine value" which is common in uranium leases. The recommended uranium royalty uses the same ratio of the value of uranium oxide (U_3O_8) in concentrate (also called yellowcake) to the mine value of the U_3O_8 content of uranium ore found in these leases. This ratio is 0.437; i.e. the mine value of the U_3O_8 contained in the ore is 0.437 times the value of U_3O_8 in the concentrate. In the model lease the value of U_3O_8 in the concentrate is defined as the Transaction Value for U_3O_8 reported monthly by the National Uranium Exchange Commission of Menlo Park, California.

The total uranium royalty in the model lease is 3% of mine value as

defined above, plus 4% of net proceeds as defined in section 70.375 Stats, plus x% of net proceeds which is set by competitive bidding.

The use of the same ratio of value of uranium in ore to uranium in concentrate which has been widely used in the industry has the advantage of industry's familiarity. If a different factor were used this would add uncertainty and industry's bidding would probably discount that additional uncertainty and result in lower bids.

MINERAL LEASING PROCEDURES

The previous pages have discussed the main issues of a competitive mineral leasing system for whatever State lands may be opened for mineral development. The question of which lands should be opened has not been addressed. Neither have the sequential steps in leasing been described. However, the public lands mineral leasing group contemplates a leasing process such as that shown in the following outline.

1. Identify mineral leasing units (tracts).
   - -Identify mineral ownership.
   - -Utilize public geological information to identify areas favorable for exploration.
   - -Accept nominations from the minerals industry for areas to be leased.
   - -Review any land management plans to ascertain compatibility of mineral leasing with other land uses.
2. Establish a sequential schedule for offering units for leasing. (The schedule should be subject to revision and rescheduling based upon new information on geology and market demand.)
3. Announce and advertise competitive leasing periodically as scheduled.
   - -Include map and tract number of each leasing unit.
   - -Describe terms of the lease, particularly the bid variable.
   - -Set date for submission of sealed bids.
   - -Set date and location for opening of bids and announcement of winners.
4. Receive bids.
5. Evaluate royalty bids and competency of bidders.
   - -Eliminate bids of firms judged not competent.
6. Announce winners of leases of each unit; execute contracts.

DISCRETION OF THE MINERAL LEASING AGENCY TO REJECT BIDS

(A different view, by Duncan A. Harkin)

The majority of the Working Group preferred to limit the discretion of the leasing agency to reject bids to grounds of competence to perform the exploration, mining and reclamation and not to permit rejection of bids in cases where the bidding results show inadequate competition. The reasoning seems to be that our establishment of a minimum royalty of 3% of net smelter returns plus 4% of net proceeds constitutes setting of a "fair price" for the State's mineral. This reasoning may seem to be supported somewhat by the fact that almost all of the contracts now being consummated between mining companies and private landowners provide for a 5 percent net smelter return royalty and the combined royalty scheme proposed approximates this royalty level. I would note, however, that a number of lease offers to counties for rights on county lands have been at royalty rates substantially above the 5 or 6 percent rate. Several of such offers were executed.

I argue that there is no basis to think that our minimum royalty constitutes a "fair price." It is only a minimum, set to be commensurate with Minnesota's competitive leasing system so as not to put Wisconsin in the position of underselling its neighbor. The commonplace 5 percent net smelter return royalty found in contracts with private landowners is set in a market largely devoid of competition, and a market in which the landowner is extremely vulnerable because of lack of knowledge. The purpose of establishing a competitive leasing system is to let the competitive market determine what constitutes a fair price for the State's minerals. If there is not adequate competition there is no answer from the market to the question: What is a "fair price?"

The evidence from Minnesota's competitive leasing in three periods (1968, 1971, 1973) shows the problems of leasing under conditions of inadequate competition. On 349 leasing units there was more than one bidder on only 21 of those tracts. No tract had more than three bidders. The average royalty bid above the minimum 4 percent of gross metal value on tracts with two or three bidders was 3.58 percent above the basic 4 percent, for a total of 7.58 percent of gross metal value. This should be compared to the average bids on the 328 tracts where there was only one bidder. The average bid on these was 2.06 percent above the basic 4 percent, for a total of 6.06 percent of gross metal value.

Further evidence of the advantages of being able to reject any or all bids for any reason (to include reasons of inadequate competition) can be seen in the federal leasing experience in the Santa Barbara channel. In the early 1960's after the first competitive leasing for oil and gas the Bureau of Land Management rejected all bids because the bids seemed too low. It put the same areas up for lease two years later and the bonus bids were more than twice what they had been previously.

Any mineral leasing agency will have much to learn as it develops its program in an unfamiliar subject area. It should move deliberately and not flood the market and thereby reduce bidding demand below effective levels. If it does not have the flexibility to reject bids because of inadequate competition it will no doubt be criticized for selling the public's resource too cheaply. This seems an unfair disadvantage to impose on an agency that is new and just learning the business.

COUNTY ALTERNATIVES IN MINERAL LEASING

The foregoing Overview of the Proposed Mineral Leasing System has discussed the issues of leasing with the State lands in mind. The purpose of this section is to discuss several issues on which we believe that some Wisconsin counties may take a position different from that which we believe is the most appropriate for the State. For some of these issues alternative ways of handling it are suggested, and the important advantages and disadvantages are explained.

In approaching the question of mineral leasing, most counties will probably establish a committee of the County Board and provide it with counsel to study the issues and recommend a course of action. If the county wishes to adopt the State's recommended leasing system only two kinds of changes would be required in the lease. First, all references to STATE would be changed to COUNTY. More substantively, the maximum term of the exploration agreement would have to be changed to five years because of the requirements of the County Forest statute, Sec. 28.11 Stats., which sets the five year limit for county forest lands.

The County Forest law also requires withdrawal of land from the program when use of the land is changed from multiple use forestry. The statute establishes the criterion for withdrawal (higher use) and the procedure required. Counties which may be leasing County Forest land for minerals should modify the proposed State lease to require that application for withdrawal from the County Forest program be made whenever the lessee exercises the option for prospecting or mining (Exploration Agreement, Sect. VI B, and VII B). Such counties may also find it advantageous to combine any hearings required for issuance of the prospecting permit with hearings on the county forest withdrawal.

ISSUES

1. Should the leasing method be competitive or bilateral negotiation? In the past several counties have rejected the suggestion that all potentially interested mining companies should be invited to submit bids for the exclusive rights to explore and to produce if there is a discovery. Instead they have chosen to negotiate bilaterally on offers submitted by individual mining firms. The reason given for this view has been that they considered it unethical to invite competition after the company which has made an offer has invested money in preliminary geological investigations. To invite competing bids would be to give a free ride to those firms which had not invested in such preliminary exploration. We recognize some validity in this position, but point out that those mining firms which are investing in preliminary exploration know very well that the process of leasing of State and county lands is in a state of change and cannot reasonably expect the rules of the game to remain static. No one has guaranteed them that they will not be subject to competition. Beyond this, there is the larger question of how the best deal can be struck for the public as landowner. Surely public officials would be criticized if they did not attempt to get the best deal possible. Although consultants could advise as to whether a particular offer were commensurate with or below the "going rate," the best way to protect the public interest is to submit the decision as to what is a fair price for the minerals to the test of the competitive market. We see no appropriate alternative to this approach.

2. Acreage rentals as the bid variable

How might acreage rentals operate as the bid variable? There are several possibilities. One could be to adopt as a fixed royalty rate the minimum royalty rate that is recommended for state leasing (3% of net smelter return plus 4% of net proceeds). The competitive bidding would then be on the amount

of acre rentals to be paid, on a per acre per year basis. The acre rental rate would be constant throughout the life of the contract.

A second possibility would be to retain the graduation of the proposed acre rentals and to bid on a factor (multiplier) that would be applied to that graduated rental scale. Probably the fixed royalty payment would be retained, just as in the case above. How would the bid factor work? Suppose that the highest factor bid were 2.5 (This is an arbitrary number; it could be 0.1 or 5.0, or any other number). If the winning bid were 2.5, the acre rental for the first and second years would be (2.5 times $3/ac.); for the third year it would be (2.5 times $5/ac.), and so forth, using the graduated rental schedule recommended for State leasing.

3. Early income vs. larger, later income

If a county desires early income from its mineral rights it could charge higher acreage rentals during the exploration period and up until mining begins, and/or it could require a lump sum "bonus" payment for the mineral rights. The federal government uses competitive bidding on the lump sum "bonus" payment as the means for determining which company shall be awarded rights for oil and gas on the outer continental shelf. However, this system has been severely criticized for selling U.S. resources too cheaply (Gaffney 1977; Leland, Norgaard, Pearson 1974). This is due to both the reduction of risk sharing and the reduction in competition. Some evidence of the reduction in competition is found in an experimental test of bonus bidding versus royalty bidding in the Gulf of Mexico. The Bureau of Land Management established a leasing area in which alternate leasing units were bid on the basis of bonuses and royalty. Those units which were bid on royalty had more than three times the number of bidders.

If a county decides that early income from leasing of mineral rights

is important it should evaluate what it would give up in order to obtain that early income. It is impossible to measure the tradeoff before the fact, but we can describe the mechanisms which would operate. Early income would increase the risk to the mining firm and, therefore, would reduce the amount that it would be willing to bid for the mineral rights. Early income would require larger amounts of working capital and would reduce the number of companies that would be interested in bidding on the leasing units. By reducing the number of companies active in exploration it might also reduce the chances of a discovery thereby losing the royalty income and the jobs that might have been created.

One means by which a county might gain more early income before mining would be to charge high acreage rentals, but also make them deductible from any royalty payment due in the event of discovery and production. Mining companies frequently write contracts in this form. Since the higher rental can be subtracted from royalty payments the additional burden on them is not great. The recommended state leasing system does not treat acreage rentals as advanced royalty payments, but to do so would probably result in only a modest loss of long term income.

4. Degree of Risk-Sharing

A dominant rationale for many of the provisons of the mineral leasing system which is being recommended for adoption for the eligible State lands is to share the risk of the operation with the mining company. Exploration and mining are very risky ventures and the companies should be willing to pay a larger portion of the net profits to the State as landowner if its leasing system is structured to maximize the sharing of the risks. From the State's point of view, any revenues from mining are likely to be a very small portion of the State's budget. Whether it receives mineral income in any particular year is not important. It can afford to share the risks and thereby obtain a larger income over the long run at the sacrifice of more stable

income at a lower level. There is a tradeoff between risk and the total amount of income. In a risky venture, the entrepreneur will require a higher rate of return than he would in a less risky venture as a compensation for taking the risks. To the extent that the State is willing to share those risks it can expect to be compensated because this sharing of risk is valuable to the mining company.

Some counties could reasonably take a somewhat different view on the sharing of risks. They may prefer an assured amount of income even if it is substantially lower than they might achieve in the long run by greater risk sharing. They may also prefer a more stable annual income to an income that fluctuates from year to year because of changes in prices and costs. Again there is a tradeoff; the more stable income would be achieved at the sacrifice of a larger amount of variable income and possibly stability of employment.

If the objective is to earn the greatest income over the long term by sharing the risks to the greatest extent, then the leasing system should minimize front-end costs and depend largely upon production royalty payments as the source of income. Thus, any acreage rentals or "bonus" payments would be minimized. Of course this would mean that income would be minimal if there were no discovery and production. But, if there were production, the total amount of income earned would be greater than under a system which shared risks to a lesser extent and which had heavier front-end costs to the mining firm.

Imposition of heavy front-end costs has two effects. It increases the risk to the mining company (while reducing the risk to the landowner), but it also has the effect of reducing the level of competition because it reduces the number of competitors to those larger, well-funded companies which can afford to carry those front-end costs. Since a competitive leasing system

depends critically upon the level of competition to set a fair price for the mineral rights, this reduction of competition is a serious disadvantage.

The maximization of risk sharing also has implications for the form of production royalty used. Payments on production which are based upon net profits or net proceeds have the effect of greater sharing of risk by the landowner than net smelter returns and gross value royalties because variations in the costs of mining and processing enter into the calculation of the payment. In the case of a royalty based upon gross metal value in the ore, such as is used in Minnesota's leasing system for state lands, the landowner shares the risk of fluctuations in the value of the metal but not fluctuations in the costs of production and processing. If royalty is based upon net smelter return the degree of risk sharing lies between that of the net proceeds and the gross value royalties. Under net smelter return royalty, the landowner share the risks of fluctuations in the costs of smelting and transportation to the smelter, but does not share the risks of fluctuations in the mining and concentrator costs.

5. Basis for Royalty

The section above on risk-sharing referred to three different kinds of royalties - gross value, net smelter return, and net proceeds royalties. The net proceeds royalty results in the greatest sharing of risks by the landowner, and gross value royalty the least. The net smelter return royalty is intermediate in risk sharing. The total amount of income generated by the royalties depends in part on the degree of risk sharing, but there is another effect that operates. This is the influence of the several kinds of royalties on the marginally profitable grade of ore and on the question of whether a marginal mine will stay open during adverse price and cost conditions, or whether it will close, losing both royalty income and jobs. The net proceeds or net profits based royalty is the most favorable in these respects. They have no effect on the marginal grade of ore. And under adverse price

and cost conditions, because royalty payments decline, the mine is more likely to stay in production. Conversely, under favorable price and cost conditions, the royalty payment rises and the landowner shares in the good fortunes of the miner.

The gross value royalty, and to a lesser extent the net smelter return royalty, both increase the grade of ore at which the miner just breaks even. This is because a royalty must be paid even if there is no profit, so the royalty becomes one of the variable costs of production. As a result, some ore which would be produced under a net proceeds royalty would be left in the ground under a net smelter return royalty, and the more so under a gross value royalty. Royalty income would be lost and the jobs in producing that ore would be lost.

6. Questionable Title to Minerals

Most county land was acquired through tax forfeiture. If before that tax forfeiture the mineral rights had been separated from the surface rights, who then owns the mineral rights after tax forfeiture? There are opinions of the Attorney General which state that the mineral and surface rights are reunited by the tax forfeiture (49 OAG p. 77 [1960] and 49 OAG p. 130 [1960]). However, some question whether these would be upheld in a court case. If a county were to lease mineral rights, assuming from the Attorney General opinions that it is the full owner, and if subsequently another claimant to the mineral rights were to successfully prove his case to the court, what would be the position of the county? Would it be required to rebate all rental and royalty payments made? Would it be subject to punitive damages for false claims of ownership? Might some lawyers seek out heirs of past owners of those severed mineral rights on tax forfeited lands and seek compensation from the county or the mining company, either in a court settlement or an out-of-court settlement?

Because of the existence of the Attorney General's opinions, it seems reasonably certain that a county would not be liable for punitive damages. However, the other questions remain. How shall a county handle this uncertainty?

Florence County has recently been advised to put into its lease a clause that would split the royalty payments equally between surface owner and mineral owner in the event that it were determined that the county were not the mineral owner as asserted by the AG opinions.

Another possibility would be to use the language which shifts the entire burden of proof of ownership to the mining firm and requires the miner to compensate anyone who subsequently proved ownership, leaving the county to retain any income it had earned; for example,

> "Lessor makes no representation or warranty whatsoever with respect to its title to said leased premises and lessee shall be solely responsible for satisfying itself with respect to the ownership of such lands; and if subsequently divested of said title, no liability shall be incurred by virtue of this lease for any loss or damage to the lessee; nor shall any claim for refund of rents or royalties previously paid be made by said lessee, its successors or assignees."

LITERATURE CITED

1. Gaffney, Mason, "Oil and Gas Leasing Policy: Alternatives for Alaska in 1977," a report to the State of Alaska, February, 1977.

2. Leland, H.E., Norgaard, R.B., Pearson, S.R., "An Economic Analysis of Alternative Outer Continental Shelf Petroleum Leasing Policies," for Office of Energy R & D Policy, National Science Foundation, July, 1974.

EXPLORATION AGREEMENT

THIS EXPLORATION AGREEMENT including Exhibits I and II are entered into by and between the State of Wisconsin, _____ (AGENCY) hereinafter referred to as STATE, and _____ (COMPANY), licensed to do business in Wisconsin, hereinafter referred to as COMPANY.

In consideration of covenants hereinafter set forth, the STATE and the COMPANY agree as follows:

I. Definitions. For the purpose of this Exploration Agreement certain words and terms shall be interpreted as follows:

A. "Abandonment" means abandoning a drill hole in accordance with the procedures specified in section NR 130.06, Wis. Adm. Code.

B. "Current annual stumpage rates" means the current annual stumpage rates computed for the STATE by the department as contained in Chapter NR 46, Wis. Adm. Code.

C. "Department" means the Wisconsin Department of Natural Resources.

D. "Drilling site" means the area disturbed by exploration including the drill hole.

E. "Environmental emergency" means any situation on the premises which has arisen, or appears imminent, such as but not limited to forest fires and floods whether due to the action or inaction of COMPANY or the STATE, or any third party, or due to natural

EXPLANATORY NOTES

Introduction: Preliminary statement identifies the parties involved. The leasing agency (for example, Board of Commissioners of Public Lands or Department of Natural Resources) is designated STATE throughout the remainder of the lease and the individual(s) or group who are signing this Exploration Agreement is designated COMPANY. Note that the COMPANY must be licensed in accordance with any applicable rules and regulations governing its business transactions in Wisconsin.

causes, and which appears to exist in the judgment of the STATE or the department and which appears to warrant immediate prevention or curative action to protect the natural resource from serious damage or destruction.

F. "Exploration" means the onsite geologic examination from the surface of an area by core, rotary, percussion, or other drilling; where the diameter of the hole does not exceed 18 inches for the purpose of searching for metallic minerals or establishing the nature of a known metallic mineral deposit and includes activities such as clearing and preparing sites or constructing roads for drilling.

G. "Minerals" shall include but not be limited to ores of aluminum, beryllium, cadmium, chromium, cobalt, copper, gold, iron, lead, manganese, mercury, molybdenum, nickel, platinum, silver, sulphur, taconite, thorium, tin, tungsten, uranium, vanadium, zinc and zirconium, excluding specifically sand and gravel, oil, gas, casinghead gas and other thick or liquifiable hydrocarbons.

H. "Mineral interest" means the rights of the STATE to minerals located in, on, or under the Premises.

I. "Premises" means that land described in the Appendix A attached hereto and hereby made a part hereof. For the purpose of calculating any payments by the acre hereunder, the Premises are estimated to contain _____ acres more or less.

II. Term. This Exploration Agreement shall not exceed a period of 10 years from the date of recording in the Register of Deeds Office for _____ County, as provided by ch. 107, Stats.

II. Term: The effective life of the Exploration Agreement is in accordance with the maximum term of an "exploration mining lease" as defined in s. 107.25, Stats. Note that the Agreement must be recorded in the Register of Deeds Office in all affected counties.

III. Rental. The COMPANY shall pay the STATE according to the following schedule. Payments are due the STATE during the first month of the calendar year, with the first payment due in full upon execution of this Agreement for the first calendar year or any part thereof. Terminal payment shall be for the entire calendar year.

(Schedule)

First & Second years	$3/acre
Third year	$5/acre
Fourth year	$7/acre
Fifth year	$9/acre
Sixth year	$12/acre
Seventh year	$15/acre
Eighth year	$18/acre
Ninth year	$21/acre
Tenth year	$25/acre

Per acre prices listed above may be adjusted annually by the STATE by indexing to the U.S. Wholesale Price Index.

IV. Exploration Drilling and Abandonment.

A. Prior to commencement of exploration, the COMPANY shall notify the STATE where the drilling sites will be located. The drill site(s) shall be constructed, maintained and abandoned in accordance with all applicable federal, state and local laws and regulations.

B. Upon the abandonment of a drill hole, the COMPANY shall furnish to the STATE the following information:

III. Rental: The COMPANY must compensate the STATE for foregoing other uses of this public land during the term of the Exploration Agreement. This compensation is known as "rental". The payment schedule is graduated to encourage diligent exploration. Rentals may be adjusted annually by the STATE to reflect the effects of inflation.

This schedule of acreage rentals is based upon 1979 dollars. Different acre rentals may be announced in invitations to bid in the future because the STATE may also revise the base level of acre rentals to reflect the effects of inflation. The base rental schedule remains fixed for leases which are in force, but may be revised for offerings of future leases.

IV. Exploration Drilling and Abandonment.

A. Prior notification to the STATE of drilling site locations is in addition to the requirement of the Department of Natural Resources to file notices of intent to drill as required by NR 130.10, Wis. Adm. Code.

1. Hole identification number
2. Exact location of drill hole
3. Total depth of drill hole
4. Collar elevation, inclination and azimuth of drill hole
5. Percent core recovery log (if core is taken)
6. General description of samples (core and cuttings)

C. Upon termination of the Exploration Agreement or the exercise of the option to prospect or mine as provided herein whichever occurs first, the COMPANY shall submit all geological, geochemical, and geophysical information to the State Geologist including representative samples of all cuttings and cores for each drill hole. All information submitted to the State Geologist pursuant to this section shall be considered a public record.

V. General.

A. Fencing. COMPANY shall promptly and properly post and fence any and all pits, shafts, fixed machinery or other hazards which it may dig or may construct on the Premises.

B. Damages to STATE property. If any real or personal property of the STATE is damaged or destroyed by virtue of COMPANY's operations hereunder on or off the Premises, COMPANY shall restore, or pay for the restoration of the same to an acceptable condition and value or may, in the case of personal property, pay fair market value of the damage as compensation therefore.

C. Timber. Notwithstanding the foregoing provision, COMPANY agrees to reimburse the STATE at double the current annual stumpage rates for any loss or damage to its timber, sawlogs, cordwood, or other

C. Geologic information from exploration activity on public lands becomes a public record once the COMPANY permits the lease to lapse or applies for a prospecting or mining permit prior to the 10-year time limit.

V. General: Various provisions are included in this section of the Exploration Agreement. Several are self-explanatory, but others are further explained below.

forest products on or off the Premises which may result from COMPANY's operations on or off the Premises.

D. Compatibility. COMPANY agrees that in the course of its exploration, it shall do nothing, so far as reasonably practical, to interfere with the use of the Premises for other STATE purposes.

D. Compatibility: The STATE retains the right to use public lands for purposes not in conflict with COMPANY's operations.

E. Road Construction. COMPANY shall consult with and obtain the permission of the STATE or its designated representative as to the placement or construction of any road. In no event will COMPANY be denied reasonable access to any proposed drill site. State Geologist and the department shall have reasonable access to COMPANY's workings on the Premises for the purpose of inspection of same so long as such access or inspection shall not unreasonably interrupt COMPANY's operations. However, in the event of an environmental emergency, access shall not be so limited.

F. Environmental Emergency. In the event of an environmental emergency on the Premises, COMPANY will render reasonable aid and assistance to the STATE upon request. Failure to render such aid shall be ground for termination of this Agreement.

G. Tort Liability of the Other Party. The COMPANY shall protect, indemnify and hold the STATE, its employes, agents and officers harmless from and against any and all claims made by third parties for injury to, or death of, persons or for damage to property arising from or on account of the operations of COMPANY under or pursuant to this Agreement.

G. The STATE is not liable for any claims made by third party resulting from the negligence of the COMPANY.

H. Workman's Compensation Liability. COMPANY agrees not to request any of the STATE's employes to perform work for COMPANY, but should, in

violation of this Agreement, this request be made by COMPANY, and should the STATE's employes be injured or killed while performing said work (whether gratuitously or for consideration) COMPANY agrees to save the STATE harmless from any and all claims including Workmen's Compensation.

I. Termination by Release of Lands. 1. During the terms of this Agreement COMPANY may execute and deliver to the STATE a release or partial release, releasing to the STATE all or any part of the Premises and immediately upon such delivery this Agreement shall terminate with respect to such part or all, as the case may be, for the Premises, and COMPANY shall be relieved, except as noted below, of all obligations, liability or responsibility of every character whatsoever thereafter to accrue with respect to that part or all, as the case may be, of the premises so released; however, said termination will not relieve COMPANY of any obligations, liability, or responsibility that have not been met including but not limited to provisions for restoration, rehabilitation and reclamation as determined by the STATE and the department.

2. Any release by the COMPANY shall be effective for the succeeding payment period.

3. The release unit shall not be less than a quarter-quarter section, fractional lot or government lot as shown by the U.S. government survey plat.

4. Upon release of land from this Agreement, COMPANY shall have the obligation to remove within ninety (90) days thereafter from any of the lands as to which such Agreement is terminated, all of its machinery, equipment, tools, structures, or other property. Any property left on Premises after the ninety (90) day period without the written permission of the STATE shall become the property of the STATE.

I. A COMPANY may seek to release to STATE portions of the Premises covered by this Exploration Agreement. COMPANY may do so at any time subject to (1) existing reclamation requirements, (2) acreage rental payment provisions, (3) amount of acreage released, (4) removal of COMPANY property, and (5) satisfactory disposition of access roads built by the COMPANY.

5. If COMPANY has built access roads on the Premises, the STATE shall have the option of requiring COMPANY to barricade the entrance to said roadway(s) or to obliterate said roads and reasonably restore the roadway to its natural condition by seeding, planting, etc., or may require that COMPANY leave the roadway(s) as constructed. Within thirty (30) days following the termination of this Agreement, the STATE shall inform the COMPANY of its decision.

J. Service of Notice - Making Regular Reports. 1. Any notice, required or permitted to be given or served upon any party pursuant hereto, purporting to alter the status of the parties or the Premises, shall be sufficiently given, served or made if sent to such party by certified or registered mail addressed to such party as such party shall designate by written notice to the other party as follows:

(Names, addresses, and agents listed)

Notice given in such fashion shall be deemed received by the party to whom addressed at the time indicated on the return receipt.

2. Routine or regular periodical reports and statements and documents or any payments hereunder may, however, be made or sent by regular mail. If any of the same shall not be received when due, the addressee will notify the addressor in accordance with the provisions for notice hereinabove of such failure of receipt and give the addressor a reasonable time to secure the delivery of the statement and report or a duplicate thereof or any payment, before claiming any default on account thereof.

K. Payments. All payments made by the COMPANY shall be made payable to the State of Wisconsin,
(Agency & Address) _____.

J. The procedures and manner for noticing routine matters (including addresses and agents) and matters which alter the status of the parties or the Premises.

L. STATE's Right to Terminate; COMPANY's Right to Cure Default. The STATE may not terminate this Agreement unless (a) COMPANY shall fail to make payment of any amount of money due and payable by COMPANY to the STATE pursuant to this Agreement, or (b) COMPANY shall fail to substantially perform its obligations hereunder; provided, however, that in the event of such a default under (a) and (b) of this section or defaults by COMPANY, and at the election of the STATE to terminate this Agreement, the STATE shall give COMPANY written notice of its intention to terminate in which notice the STATE must specify the particular default of defaults relied upon and COMPANY shall have thirty (30) days after mailing of such notice by the STATE to make good such default or defaults or to contest them by arbitration. In the event COMPANY makes good any such default or defaults or commences to cure and pursues with diligence to cure such default within the thirty (30) days, there shall be no termination.

L. The STATE may terminate this Agreement for the reasons noted, but must give the COMPANY the opportunity to correct the problem.

M. Litigation - Injunction. No disagreement or controversy or court proceeding shall interrupt the operations contemplated hereunder; provided, however, that nothing contained in this Agreement shall prevent the STATE from obtaining a restraining order or injunction against COMPANY committing any breach of this Agreement which would cause any irreparable damage to the premises, nor shall anything contained herein prevent termination pursuant to Article V. L. of this Agreement. Such operations may be continued and settlement and payments shall be made hereunder in the same manner as prior to the arising of such disagreement or controversy until the matters in dispute shall be finally determined as aforesaid, thereupon, payments of restitution shall be made in accordance with the decision.

M. This provision allows the COMPANY to proceed with its work even if a disagreement arises with the STATE. However, STATE can seek an injunction against further operations if irreparable damage to the Premises would result from continuing operations.

N. Covenants. 1. This Agreement shall run with the land and shall be binding on and inure to the benefit of the respective successors and assigns of the parties hereto.

2. The STATE does not warrant and will not defend the mineral ownership of the Premises.

O. Hiring. In connection with the performance of work under this Agreement, the COMPANY agrees not to discriminate against any employe or applicant for employment because of age, race, religion, color, handicap, sex, physical condition, developmental disability as defined in s. 51.01(5), Stats., or national origin. This provision shall include but not be limited to the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The COMPANY further agrees to take affirmative action to ensure equal employment opportunities. The COMPANY agrees to post in conspicuous places, available for employes and applicants for employment, notices to be provided by the STATE setting forth the provisions of the nondiscrimination clause.

P. Assignment. This Agreement or any part thereof shall not be assigned without the prior written approval of the STATE. Any written approval by the STATE shall be conditioned upon the NEW COMPANY providing the STATE with the names and addresses of its registered agents for the giving of notice and service of process, together with a certified statement of the president of the NEW COMPANY accepting all the terms and provisions of this Agreement. The STATE shall receive all documents pertaining to the assignment of this Agreement to the NEW COMPANY.

N. The right and obligations of this Agreement survive the transfer of this Agreement to any successor in interest. The STATE does not guarantee to the COMPANY ownership of the mineral rights. The COMPANY must defend against challenges to the mineral rights while this lease is in effect.

P. This Agreement cannot be transferred to another party, in whole or in part, without the written consent of the STATE. All financial considerations between the COMPANY and any NEW COMPANY must be included in any request for approval of assignment.

Q. Arbitration. 1. Right to Arbitration. Any and all matters of dispute or difference that may arise between COMPANY and the State with respect to any act or thing done or to be done pursuant to the provisions of this Agreement shall be subject to arbitration.

2. Procedure. If and whenever COMPANY desires, it shall serve a written notice upon the STATE, stating in substance the matter or question in dispute and which it desires to submit to arbitration, naming a competent person to act as an arbitrator. If and whenever the STATE desires an arbitration, it shall serve upon COMPANY written notice stating in substance the matter or question in dispute and which they desire to submit to arbitration, naming a competent person to act as an arbitrator. Within twenty (20) days after the mailing of such notice, the party to whom such notice is mailed shall appoint a competent person to act as an arbitrator, and the two so appointed jointly shall appoint a third arbitrator. In case either COMPANY or the STATE fails to appoint an arbitrator and to serve written notice thereof upon the other party within said twenty (20) day period, or in case the arbitrators appointed by the parties fail to agree upon a third arbitrator within an additional period of ten (10) days, such arbitrator or arbitrators may be appointed by any person holding the office of federal judge for the county in which the majority of the Premises are situated, upon application made by COMPANY or the STATE after ten (10) days' written notice to the STATE or COMPANY as the case may be. Each of the persons appointed to act as an arbitrator shall be a person qualified by experience to hear and determine the questions to be arbitrated. Said arbitrators, within 30 days after their appointment, shall meet at a time and place convenient for the parties, after giving to each of the parties not less than ten (10) days' written

Q. The method of settling disputes shall be by the process outlined in the Agreement.

notice thereof. After hearing the parties hereto, or such of them as desire to be heard, in regard to the matter in dispute, taking such evidence and making such other investigations as justice requires and the arbitrators may deem necessary, they shall decide the question or questions submitted to them, make their decision in writing, and serve a copy thereof upon each party. The decisions of the arbitrators, or a majority of them shall be final and binding upon the parties hereto, and they shall immediately conform to and in all respects render full and prompt compliance with such decision. The expenses and charges of the arbitrators shall be paid by such party, or apportioned between the parties, as the arbitrators shall determine. Any and all proceedings hereunder will be conducted in the State of Wisconsin and will be governed by Wisconsin law.

VI. A. Option to Prospect. The STATE hereby grants to the COMPANY the exclusive option, exercisable during the lifetime of this Agreement, to lease the mining and mineral rights in, under and to the Premises specified in Appendix A, which have not been released as provided in Article V. I. of this Agreement for the purpose of prospecting as specified in the terms and conditions set forth in Exhibit I, entitled Prospecting Agreement which is attached hereto and made a part hereof.

B. If the COMPANY elects to exercise its Prospecting Lease Option it shall do so by notifying the STATE in the manner prescribed in Article V. J. of the Exploration Agreement. Such notice shall specify the portion or portions of the Premises and mineral interests that the COMPANY elects to lease. Concurrently, the COMPANY shall formally apply for a prospecting permit.

VI. Option to Prospect: The COMPANY is granted exclusive right to prospect on any premises covered in the Exploration Agreement. To exercise their option, the COMPANY must notify the STATE and formally apply for a prospecting permit from the Department of Natural Resources. If the DNR grants the permit, then Exhibit I (Prospecting Agreement) comes into effect. Acreage rentals for unreleased acreage shall be adjusted in accordance with Article III of Exhibit I as soon as the option to prospect is exercised.

C. Upon receipt of a prospecting permit from the department and upon notification that the COMPANY has obtained all state, federal and local licenses, permits and approvals, the STATE will forthwith execute and deliver to the COMPANY a Prospecting Lease in the form of said Exhibit I by which all or any portions of unreleased lands as specified by the COMPANY shall be leased to the COMPANY.

D. Upon exercising the Prospecting Lease option, the COMPANY shall pay the STATE acreage rentals as provided in said Exhibit I on all unreleased lands.

VII. Option to Mine. A. The STATE hereby grants the COMPANY the exclusive option to mine exercisable during the lifetime of the Exploration Agreement to lease the mining and mineral rights in, under and to the above-described property which has not been released as provided in Article V. I. of this Exploration Agreement for the purpose of mining and concentrating upon the terms and conditions set forth in Exhibit II, entitled Mining Lease which is attached hereto and made a part hereof.

B. If the COMPANY elects to exercise its Mining Lease Option, it shall do so by notifying the STATE in the manner prescribed in Article V. J. of the Exploration Agreement. Such notice shall specify the portion or portions of the above-described properties the COMPANY elects to lease. Concurrently, the COMPANY shall apply for a mining permit.

C. Upon receipt of a mining permit from the department and upon notifications that the COMPANY has obtained all state, federal and local licenses, permits and approvals, the STATE will forthwith execute and deliver to the COMPANY a Mining Lease in the form of said Exhibit II by which all or any portion of unreleased lands as specified by the COMPANY shall be leased to the COMPANY.

VII. Option to Mine: A COMPANY may choose to proceed with mining without the prospecting phase and the exclusive right to do so is granted by this Exploration Agreement. The COMPANY must notify the STATE and apply for a mining permit from the Department of Natural Resources. When COMPANY exercises its option, it begins payment of $35 per acres of unreleased acreage. If a mining permit is granted, Exhibit II (Mining Lease) comes into effect.

D. Upon exercising the Mining Lease Opinion, the COMPANY shall pay an acreage rental of $35.00 an acre on all unreleased lands until the Mining Lease has been executed by the STATE and the COMPANY. Per acre prices may be adjusted annually by the STATE by indexing with the U.S. Wholesale Price Index.

IN WITNESS WHEREOF, the STATE and COMPANY have executed the agreement this _____ day of _____, 19____.

STATE OF WISCONSIN

By: _____

STATE OF WISCONSIN)
) ss.
COUNTY OF _____)

Personally came before me this _____ day of _____, 19____, the above-named _____, to me known to be the person(s) who executed the foregoing agreement and to me known to be _____ _____ and acknowledged that _____ _____ executed the foregoing agreement as such _____ of said _____, by its authority.

_____
Notary Public, State of Wisconsin
My commission (is)(expires) _____.

The concluding signatures and statements of notary are required to bind the STATE and COMPANY to the Exploration Agreement including Exhibits I and II.

CORPORATION:

By: _____

ATTEST: _____

STATE OF _____)
) ss.
COUNTY OF _____)

Personally came before me this _____ day of _____, 19____, the above-named _____ to me known to be the person(s) who executed the foregoing agreement and to me known to be the (Vice) President and _____ and acknowledged that they executed the foregoing agreement as such officers of the _____.

_____
Notary Public, State of _____
My commission (is)(expires) _____.

This agreement was drafted by the State of Wisconsin.

Exhibit I

PROSPECTING AGREEMENT

For and in consideration of the terms and conditions hereinafter set forth, the STATE hereby leases to the COMPANY all unreleased lands shown in Appendix A as of the date of the exercise of the option to prospect by the COMPANY.

(Legal Description)

I. Definitions. The definitions set forth in the Exploration Agreement attached hereto and made a part hereof constitute the definitions for this Prospecting Agreement with the following additions:

"Prospecting" means engaging in the examination of an area for the purpose of determining the quality and quantity of minerals, other than for exploration, of an ore sample, by such physical means as excavating, trenching, construction of shafts, ramps, tunnels, pits and the production of refuse and other associated activities.

"Prospecting site" means the lands on which prospecting is actually conducted as well as those lands on which physical disturbance will occur as a result of such activity.

II. Term. The term of this agreement shall not exceed ten (10) years from the date of formal application for a prospecting permit from the department.

EXPLANATORY NOTES: PROSPECTING AGREEMENT

The lands subject to this Agreement are fully described in the introduction. These lands will be all of or a part of the lands described in Appendix A of the Exploration Agreement.

I. Definitions: Terms used specifically in the Prospecting Agreement are here defined. Other terms defined in the Exploration Agreement are used in the same manner in Exhibit I.

II. Term: Following s. 107.25, Stats., the Prospecting Agreement is good for 10 years from the date of applying for a permit or until a mining permit is granted, whichever comes first. The COMPANY may elect to release all lands identified in Exhibit I and terminate this Agreement at any time.

III. Payment. The COMPANY shall pay the STATE $35 per acre for those lands described above, hereinafter referred to as Premises, for each calendar year or for any part thereof. The STATE may index the per acre rental in accordance with the U.S. Wholesale Price Index.

IV. Prospecting Rights. A. The rights under the lease herein granted the COMPANY shall include without limitation, drilling, geological, geochemical, and geophysical surveys, sinking exploration shafts, taking samples, and using on the premises all machinery and equipment as reasonably may be required for the purposes of this Agreement, but shall not include mining operations for the purpose of extracting and selling minerals present in commercial quantities.

B. COMPANY shall have rights of ingress and egress to and from the Premises to the extent the STATE has and may lawfully grant such rights, for the purpose of examining, investigating, and exploring the mineral interests and shall also have the right to remove reasonable amounts of ore or other materials for testing purposes.

V. General. The terms and conditions contained in the "General" category in the Exploration Agreement shall constitute the terms and conditions of "General" category for this Prospecting Agreement with the following additions:

A. The COMPANY shall prospect in accordance with the prospecting plan approved and permit granted by the department.

III. Payment: The acreage rental is higher for prospecting than exploration because the public's use of lands is more restricted. The annual payment may be adjusted for inflation.

IV. Prospecting Rights

V. General: Terms and conditions listed under the Exploration Agreement are applicable to the Prospecting Agreement with the additional provision that the COMPANY must prospect according to their approved plan and permit as granted by the Department of Natural Resources.

VI. Option to Mine. A. The STATE hereby grants the COMPANY the exclusive option to mine exercisable during the lifetime of the Prospecting Agreement to lease the mining and mineral rights in, under and to the above-described property which has not been released as provided in Article V. I. of the attached Exploration Agreement for the purpose of mining upon the terms and conditions set forth in Exhibit II, entitled Mining Lease which is attached hereto and made a part hereof.

B. If the COMPANY elects to exercise its Mining Lease Option, it shall do so by notifying the STATE in the manner prescribed in Article V. J. of the Exploration Agreement. Such notice shall specify the portion or portions of the above-described properties the COMPANY elects to lease. Concurrently, the COMPANY shall apply for a mining permit.

C. Upon receipt of a mining permit from the department and upon notifications that the COMPANY has obtained all state, federal and local licenses, permits and approvals, the STATE will forthwith execute and deliver to the COMPANY a Mining Lease in the form of said Exhibit II by which all or any portion of unreleased lands as specified by the COMPANY shall be leased to the COMPANY.

D. Upon exercising the Mining Lease option, the COMPANY shall continue to pay the acreage rentals as provided by the Prospecting Agreement on all unreleased lands until the Mining Lease has been executed by the STATE and the COMPANY.

VI. Option to Mine: Exclusive right to mine is granted in this section subject to notification of the STATE and formal application for a mining permit. The Mining Lease becomes effective upon receipt of a mining permit from the Wisconsin Department of Natural Resources.

Exhibit II

MINING LEASE

For and in consideration of the covenants and agreements set forth herein and for other good and valuable consideration received by STATE from COMPANY, STATE does hereby Lease, exclusively to COMPANY, for the term and for the purposes stated herein, the following described property all of which lands and properties are hereafter referred to as the "Premises."

(Legal Description)

I. Definitions. All definitions contained in the Exploration and Prospecting Agreements shall constitute the definitions for this Mining Lease with the following additions.

"Mining" means all or part of the process in the mining of metallic minerals other than for exploration or prospecting, including commercial extraction, agglomeration, beneficiation, construction of roads, removal of overburden and the production of refuse.

"Mining plan" means the proposal for the mining of the mining site which shall be approved by the department under s. 144.85, Stats., prior to issuance of mining permit.

"Mining permit" means the permit which is required of all operators as a condition precedent to commencing mining at a mining site.

EXPLANATORY NOTES: MINING LEASE

Land parcels subject to this Lease are identified as "Premises" and must be a part of all of the lands denoted in Appendix A of the Exploration Agreement.

I. Definitions: Terms specific to the Mining Lease are defined. Other terms previously defined are used here in the same manner as before.

"Mining site" means the surface area disturbed by a mining operation, including the surface area from which the minerals or refuse or both have been removed, the surface area covered by refuse, all lands disturbed by the construction or improvement of haulageways, and any surface areas in which structures, equipment, materials and any other things used in the mining operation are situated.

II. Term. The term of the Agreement shall not exceed 50 years from the date of recording of the Exploration Agreement by the COMPANY which is attached hereto and made a part hereof.

III. Payment. A. COMPANY shall annually pay to the STATE $35 per acre as rental on all unreleased lands. Per acre rental may be adjusted annually by the STATE by indexing with the U.S. Wholesale Price Index.

B. COMPANY shall pay to STATE the following production royalty for all ore, except uranium or other fissionable minerals, which is mined or extracted by COMPANY from the premises during the term hereof and sold or used by COMPANY, or from which any product (defined in Section 3) is recovered and sold or used by COMPANY. All such royalty is called "production royalty" in this Lease, and shall be determined and calculated as expressly provided in this Section, subject to all credits and deductions provided in this Lease, and to the COMPANY interest provisions in this Lease:

The production royalty shall be three percent of net smelter return, plus _____ percent of net proceeds as defined in s. 70.375, Stats., the percentage of net proceeds to be set by the STATE.

II. Terms: In accordance with s. 107.20, Stats., the maximum term of this lease is 50 years. The Mining Lease is most likely to be in effect less than 50 years as a result of time spent in exploration and prospecting prior to obtaining a mining permit.

III. Payment: A. All lands subject to this mining lease must be leased from the STATE for $35 per acre, paid annually.

B. Royalty. A production royalty shall consist of a net smelter return, as defined in the Lease, of 3% and (4 + x)% of COMPANY's net proceeds as determined annually for metallic mine occupation tax. The "x" represents the COMPANY's bid over the minimum 4% of net proceeds that was the basis for granting to the COMPANY this Lease. Provisions are included here for transactions that are not "arm's-length" and for tranactions involving raw ore, for which the concept of net smelter return cannot directly be applied.

The term "net smelter return" shall mean the proceeds received by COMPANY from the smelter, mill or other purchaser for product sold by COMPANY, after deducting costs of transportation of product to purchaser.

Whenever product is sold or delivered for further processing thereof, to a smelter or other processing facility owned or controlled by COMPANY or by COMPANY's subsidiary corporation, it shall be deemed sold when so delivered, and the net smelter return from such sale shall be an amount equal to the fair market value of the product when so delivered, which amount shall be no less favorable to STATE than the amount which would have been realized by COMPANY if the sale had been to an independent smelter or other purchaser, which processes such product on a toll basis, reasonably available to COMPANY at the time of delivery; in such case COMPANY may deduct transportation costs permitted to be deducted under the preceding paragraph. In the absence of such measures of fair market value, net smelter return shall be computed from the metallic content of all saleable metals in the ore and the published wholesale prices of such metals, less the customary toll charges for smelting and refining ore concentrate of the composition and quality sold or delivered, and less the costs of transporting such ore concentrate to the smelter or other processing facility.

In the event that COMPANY produces and sells raw ore, net smelter return shall be computed from the gross metal value of the ore as described in the preceding paragraph, less the customary toll charges for processing, smelting and refining ore concentrate of that composition and quality, and

and less the costs of transporting ore concentrate of customary grade from the Premises to the nearest available smelter or other processing facility.

C. COMPANY shall pay to STATE the following production royalty on ores or by-products of uranium or other fissionable materials which are mined or extracted from the Premises and sold or used by COMPANY. The production royalty shall be three percent of mine value, plus _____ percent of net proceeds as defined in s. 70.375, Stats., the percentage of net proceeds to be set by the STATE. Mine value is defined as the transaction value for U_3O_8 reported by the National Uranium Exchange Commission during the three month period of production for which royalties are paid, multiplied by the factor 0.437.

D. If the COMPANY recovered metal values in a manner not provided for or contemplated by this Lease, the payment of royalty(s) shall be negotiated.

E. The production royalties shall be payable also on minerals extracted by COMPANY from waste material and tailings, if such minerals are sold by COMPANY. Royalty from such waste material and tailings shall be paid at the aforementioned royalty rate schedule. Nothing contained herein shall obligate COMPANY to extract minerals from the host rock, waste material or tailings when in its opinion the extraction of such minerals is uneconomical or undesireable.

C. Uranium royalty. Uranium and other fissionable materials are not appropriately considered under the "net smelter return" concept, so another concept, "mine value", is inserted and defined. The use of NUEXCO Transaction Value for U_3O_8 or uranium concentrate reflects a 3-month averaging of prices actually obtained on the spot market. This value is adjusted by a standard factor (.437) representing the ratio between the value of crude uranium ore and the value of uranium concentrate. This standard factor was determined from a review of typical uranium Leases. The total production royalty is therefore 3% of "mine value" plus (4 + x)% of the COMPANY's net proceeds. The x percent shall be the same percentage as applied to royalty bids on other minerals.

E. Waste materials and tailings are subject to the royalty provisions outlined above if minerals are recovered therefrom. The COMPANY is not required to extract minerals from such wastes under the terms of the Mining Lease, if it so chooses.

F. Production royalty shall be paid within thirty (30) days after the end of the calendar quarter in which the product is sold or is delivered to a smelter, mill or to the processing facility. At the time of each payment of production royalty, COMPANY shall deliver to STATE a certified statement or settlement sheet showing the product sold during the preceding calendar quarter, and all factors relevant to calculation of the payment. STATE shall have the right, at STATE's expense, to examine COMPANY's accounting records used in computing any payment hereunder. The examination shall be made during normal working hours and within thirty-six (36) months from the end of the calendar month in which payment is made.

G. Reports. After operations are begun, it is agreed that within thirty days after the end of the calendar quarter of each and every calendar quarter during the term of this Lease, COMPANY will make a sworn report to STATE, in which report shall be entered and set down the exact amount in weights of all ore and the assay thereof mined and removed from said Premises during the preceding calendar quarter which report shall show the amount of work performed during the preceding calendar quarter, and shall include copies of any and all smelter statements or settlement sheets pertinent to the premises. Further, company shall furnish a map annually showing all workings, depths, thicknesses of ore, with location of same tied to a corner established by United States survey, certified by a licensed surveyor.

H. Inspection. During all proper hours and at all times during the continuance of this Lease, STATE or STATE's duly authorized agent, shall be and is hereby authorized to check assays and scales as to their accuracy, to go through any of the workings on said Premises, and to examine, inspect, survey and take measurements of the same and make extracts

F. Production royalties are payable at the end of each calendar quarter. Although net proceeds under s. 70.375, Stats., are determined annually, the COMPANY will be expected to estimate net proceeds on a quarterly basis. An adjustment of net proceeds royalty payments paid during the previous 12 months shall be made once a year. The STATE shall have the right to examine COMPANY records with respect to royalty payments any time up to 3 years after the payment has been made.

G. Reports. Detailed reports are required from the COMPANY on a quarterly basis. The right of inspection of assays, scales, and related workings and equipment is expressly reserved to the STATE.

from or copies of all books and weight sheets and records which show in any way the ore output, ore values, payments and royalties from and of the leased Premises, and that all conveniences necessary for said inspection, survey, or examination shall be furnished to STATE.

IV. Mining Rights. A. The COMPANY shall have the right to commingle ore from the mining site with other ore, either in the mine, in stock-piles or in the mill provided however they shall be kept entirely separate and distinct until their quantities and metal and mineral contents have been separately measured and determined.

B. The COMPANY is granted the right to mine and remove any ores from the mining site through any shafts, openings or pits that may be made upon adjoining lands and nearby property controlled by the COMPANY and the COMPANY may use the mining site and any shafts, openings, pits made thereon for the mining and removal of any ores from such adjoining or nearby property; not however, preventing or intervening with the mining or removal of ore from said mining site; provided that the ores taken from said mining site shall at all times be kept separate and distinct from any other ores until measured and sampled as herein provided so that the rights of the lessor shall be preserved and protected; and the STATE agrees to recognize the rights and liens of any nearby or adjoining premises in any ores mixed therefrom and transported through said mining site.

IV. Mining Rights: The Mining Lease grants certain rights to the COMPANY including the right to commingle ore (mix ore from different owners' property) and to cross-mine (remove ore from one property through openings and shafts situated on another property) subject to prior sampling and measurement of STATE-owned ore. COMPANY is allowed to mine, process, and sell any and all ores covered by the Lease on the Premises. In addition, the COMPANY is permitted to construct appropriate facilities on STATE land, so long as the mine itself is at least partially on STATE property.

C. The Premises are leased as above together with the exclusive rights hereby granted to COMPANY, for and during the entire term of this Lease, to explore for and develop any and all ore and minerals in and under the Premises; to mine or otherwise extract, to mill, concentrate, and to store, stockpile, remove, market, own, sell or otherwise dispose of, any and all ores, minerals and materials (unless otherwise specifically and expressly excluded in this Lease) in or under the Premises, and to exercise any and all other rights and privileges granted in this Lease, all of which are incident to or which may be useful or convenient in the exercise of any of the rights granted in this Lease.

D. 1. Provided a mine is to be developed on STATE land, the rights herein granted shall include without limitation, the right to construct, use, maintain, repair, replace and relocate in or under the Premises, buildings, shops, plants, machinery, mills, facilities, ore bins and structures of all kinds, shafts, inclines, tunnels, adits, drifts, open pits, pipelines, telephone lines, electric transmission lines and transportation facilities; and to dispose of or deposit waste material and tailings in or under the Premises, all subject to applicable county and township ordinances, state and federal laws and regulations governing the use of any surface and subterranean lands and waters or the use of underground water developed or hereafter discovered in or upon the Premises, or utilize any portion of the Premises as a residence for its employes, agents or contractors. COMPANY may exercise any of the rights granted hereunder by any methods now or heretofore known or hereafter developed, including, without limitation, underground and solution mining methods all subject to applicable ordinances and laws.

2. If a mine will not be partially or wholly developed on STATE land the COMPANY has no surface rights to the STATE's property.

V. General. The terms and conditions contained in the "General" category of the attached Exploration Agreement constitute the terms and conditions of this Mining Lease.

A. STATE shall have the right to terminate this Lease if (a) COMPANY shall fail to make payment of any amount of money due and payable by COMPANY to STATE pursuant to this Lease; or (b) COMPANY shall fail to substantially perform its obligations hereunder; provided, however, that in the event of such a default or defaults by COMPANY, and the election of STATE to terminate this Lease, STATE shall give COMPANY written notice of its intention to terminate, in which notice STATE must specify the particular default or defaults relied upon; and COMPANY shall have sixty (60) days after mailing of such notice by STATE to make good such default or defaults or to contest them by arbitration as set forth in Article V. Q. of the Exploration Agreement. In the event COMPANY makes good any such default or defaults or commences to cure and pursues with diligence to cure such default within the sixty (60) days, there shall be no termination. In the event COMPANY contests the alleged defaults by arbitration, there may be no termination until the case is finally adjudicated. Nothing contained in this paragraph shall prevent Lessor from obtaining a restraining order in injunction against COMPANY's committing any breach of the Lease which would cause irreparable damage to natural resources. Nothing contained in this Lease shall limit STATE's rights as to damages or for an injunction.

2. Mining is defined as commercial production of minerals according to section 2, if there is no production of minerals from state land and royalties paid on that production, any use of state land for facilities of a mine on adjacent private property would be by contract separate from this Mining Lease.

V. General: In addition to all other terms and conditions previously stipulated to in the Exploration and Prospecting Agreements, the COMPANY agrees to operate and reclaim the site in accordance with the Department of Natural Resources rules and shall pay all taxes levied on real or personal property on these lands while the Lease is in effect. These taxes cannot be deducted from royalty payments to the STATE.

B. COMPANY shall operate and reclaim the mining site in accordance with the mining and reclamation plan approved by the department.

C. COMPANY shall pay all property taxes levied or assessed, while this Lease is in effect, on any improvements placed in the Premises by COMPANY. COMPANY shall also pay personal property tax levied. No real or personal property taxes shall be deducted from royalties paid to the STATE. COMPANY shall pay all severance taxes and taxes levied or computed on the amount or value of ore or product mined or extracted from the Premises by or for COMPANY.