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# MINE FENCING

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## A STUDY OF THE ADEQUACY OF EXISTING LAWS RELATING TO THE PROTECTION OF THE PUBLIC FROM THE HAZARDS ASSOCIATED WITH MINE OPENINGS.

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## ACT DIRECTING THE REPORT

### Laws of Minnesota 1985, First Special Session, Chapter 13, Section 23, Subdivision 6 (b)

*The commissioner of natural resources, with the assistance of the commissioner of the iron range resources and rehabilitation board and county mine inspectors, shall study the adequacy of existing laws relating to the protection of the public from hazards arising from the existence of excavations, open pits, shafts, or caves created by mining other than mining of sand, crushed rock, or gravel, and shall report findings, conclusions, and recommendations to the 1987 session of the legislature. The commissioner shall consult with private owners and operators of active and inactive mines in the study.*



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## I. INTRODUCTION

### A. Legislative History of the Mine Inspectors Law

Minnesota established the position of county mine inspector in a 1905 law known as the Mine Inspectors Law (presently Minnesota Statutes Chapter 180). According to Chapter 180, each county with five or more active mines was required to appoint an inspector. The counties which have met this criterion and appointed county mine inspectors are Crow Wing, Itasca, and St. Louis. Although St. Louis County is the only county presently having five active mines, all three counties continue to have mine inspector programs, with degrees of activity dictated by the status of mining operations in the counties.

The emphasis of the Mine Inspectors Law, at time of passage, appeared to be the occupational safety of the mine workers. The majority of mining conducted in 1905 was by underground methods. The references in the law to safety practices at shafts, chutes, hoists, ladder ways, caves, and carriages for ascending and descending shafts, as well as the requirement that sufficient timber and logging be kept available, emphasize the concerns for safety of the underground workers. Although underground mines were replaced by the relatively safer open pits of today, the major duty of the St. Louis County mine inspector (the county in which the majority of mining activity occurs today) remains the safety of the mine premises for the workers. Inspections at active operations are conducted every sixty days to ensure worker safety.

Safety of the public was also addressed in the original law through the requirement that fences or railings suitable to prevent accidental falls be erected around idle or abandoned shafts, caves, or open pits. Whereas there were relatively few abandoned or idle pits and shafts in 1905, there are hundreds of areas today which must comply with these safety requirements. Today, regular inspections are conducted by the county mine inspector along hundreds of miles of fences adjacent to inactive pit walls and mine shafts.

For over seventy years the Mine Inspectors Law underwent only minor changes, such as providing for the hiring of assistant inspectors and increasing travel expenses and salaries (see Appendix A). In 1978 however, the law was amended in an attempt to increase protection afforded the public by establishing a standard for mine fencing. Prior to 1978, the type of fence or railing required was left to the discretion of the mine inspector who, for the most part, required the use of barbed wire in remote areas and more substantial fencing such as chain link or mesh near town sites. Non-climbable mesh fencing, which had been the preferred choice near residential areas, was specified in the 1978 amendments as the fencing standard for all locations. The mesh fencing standard, as specified in the 1978

amendment is two-inch by four-inch mesh with the top and bottom wire not less than nine gauge and the filler wire not less than 11 gauge. The fencing cannot be less than five feet in height with two strands of barbed wire six inches apart affixed to the top of the fence, and the fence posts cannot be more than ten feet apart.

The 1978 amendments also made a change in the party responsible for construction and maintenance of fencing. Prior to 1978, the law required the owner of the land on which mining had occurred to erect and maintain any fence or railing required by the inspector. After 1978 however, all persons, firms, or corporations (hereafter called mining companies) which had conducted operations on the property became responsible for installing the non-climbable mesh fence. This responsibility extended to all sites the mining company had operated, without regard to when operations ceased. Only where the operators were no longer in existence was the landowner required to bear the responsibility of implementing the new fencing standard.

These legislative changes placed an increased cost on companies which had severed interests in various lands and on those companies and individuals who had become accustomed to the occasional and relatively inexpensive repair of barbed wire fencing. In spite of this, most of those who were defined by the 1978 amendment as the responsible party for fencing complied with the non-climbable mesh standard. An exception was on state-owned lands where the previous mine operator no longer existed. On these lands fencing was maintained by the state in its pre-1978 condition (barbed wire where that had been acceptable, and mesh where that had been deemed necessary). This occurred because the legislature did not appropriate sufficient funds to replace barbed wire with mesh fence and, as a necessary consequence, regularly extended the compliance deadline.

The non-climbable mesh fencing standard has presented numerous problems. Unlike barbed wire which could be installed by a small crew and repaired by a single individual, mesh fencing required road construction along the fence line for delivery and installation purposes. In addition, the fence fabric is attractive to theft because of uses such as garden fencing and the reinforcement of concrete floors and slabs. Other uses likely exist. The ease of access to the standing fence coupled with the utility of the fence fabric has led to a substantial theft of fencing and increased maintenance costs. Because of the high cost of maintenance, it is possible that some landowners of marginal lands may allow their property to go tax forfeit thereby placing the burden of fencing on the public. Finally, because mesh fences are often missing, protection afforded the public has been reduced.

These and other issues led to a meeting with the Iron Range delegation of legislators during the 1985 legislative session. The meeting on mine pit fencing, held on March 20, 1985, was chaired by Representative Joseph Begich. Present at

the meeting were representatives from the mining industry, the Iron Range Resources and Rehabilitation Board (IRRRB), the Department of Natural Resources (DNR), the Attorney General's office, and county officials including attorneys, land administrators, and mine inspectors. Based on discussions at this meeting, it was concluded that Minnesota Statutes Chapter 180, the Mine Inspectors Law, as amended in 1978, was not completely satisfactory. To further examine this conclusion, a thorough study of mine fencing issues was proposed with results to be presented at the 1987 legislature. In the interim, it appeared that some major deficiencies in the law could be addressed by the 1985 session. A request was therefore made of the Attorney General to prepare a bill that included provisions which: allowed alternatives to mesh fencing in areas remote from residential sites and highways; extended the deadline for compliance with the mesh fencing standard; allowed pit water access sites developed by the IRRRB to be exempt from the fencing requirements; exempted from tort liability any claims based on construction, operation, or maintenance of pit water access sites created by the IRRRB, including those operated by a municipality; and strengthened penalties for fencing theft.

The bill drafted by the Attorney General accomplished the goals listed above through the amendment of several sections of Minnesota Statutes. These changes were subsequently enacted as part of the omnibus appropriation bill, 1985 Laws, First Special Session, Chapter 13. The authorization by the legislature for the study and report, also contained in Chapter 13, is as follows:

*The commissioner of natural resources, with the assistance of the commissioner of the iron range resources and rehabilitation board and county mine inspectors, shall study the adequacy of existing laws relating to the protection of the public from hazards arising from the existence of excavations, open pits, shafts, or caves created by mining other than mining of sand, crushed rock, or gravel, and shall report findings, conclusions, and recommendations to the 1987 session of the legislature. The commissioner shall consult with private owners and operators of active and inactive mines in the study.*



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## **B. Report Preparation**

The subject of this report is the review and evaluation of the fencing portion of the Mine Inspectors Law (see Appendix B) as it relates to the protection of the public from hazards arising from excavations, open pits, shafts, or caves created by metallic mining operations. The collection of data to serve as a basis for this report was initiated by a number of preliminary meetings held in November 1985 through January 1986 with parties that were affected by the Mine Inspectors Law. Pursuant to legislative mandate, these affected or interested parties included the DNR, county mine inspectors, IRRRB, Lake Superior Industrial Bureau, scam operators, fee owners, legislators, county land commissioners, and county attorneys. The purpose of the preliminary meetings was to gain a general understanding of the problems associated with the Mine Inspectors Law. A list of participants in the preliminary meetings is contained in Appendix C.

From these meetings, a list of fencing issues was compiled. DNR subsequently contacted all mining interests including operators, fee owners, and trusts as listed in the 1985 Minnesota Mining Directory to schedule a meeting to discuss these issues. State and local governmental agencies were also contacted. A copy of the fencing mailing list appears in Appendix C.

The meeting was held on March 25, 1986 in Eveleth with approximately forty people in attendance. This group is hereafter referred to as the Fencing Committee. The fencing issues identified through the preliminary meeting procedure were discussed and modified. Due to the size of the group and the complexity of the issues, it was decided that a subcommittee should be appointed to conduct further discussions on the issues and develop solutions for them. The Fencing Subcommittee met twice in April and refined the issues associated with the Mine Inspectors Law. Solutions were also proposed for these issues. Participants at all Fencing Committee and Subcommittee meetings are listed in Appendix C.

In the summer of 1986, a draft fencing report was prepared. The draft report represents a cooperative effort by all the interested parties. It incorporates thoughts from the preliminary meetings, the March 25th meeting, and from subcommittee meetings. The report therefore reflects the opinions and views of the constituents of the Fencing Committee. DNR as secretariat of the committee does not necessarily endorse all of these opinions and views.

The draft report was sent out for review in September. A meeting of the full Fencing Committee was held on October 22, 1986 to discuss the draft report with special emphasis on recommendations. The Fencing Subcommittee met on November 10, 1986 to conclude work on final recommendations. Based on

comments from these meetings, a subsequent draft of the report including recommendations was prepared in November. Another meeting of the Fencing Committee was held on December 17, 1986 to review this draft. Discussions at the meeting focused on the recommendation's section which was expanded to include some issues and solutions contained elsewhere in the report. A final draft of those sections requiring changes was made and one last meeting of the fencing committee was held on February 11, 1987 to review the changes. By the conclusion of the meeting it was determined the report was complete and should be sent to the legislature.

To help implement recommendations of the report a request has been made of the Attorney General's office by the Commissioner of Natural Resources to prepare draft legislation. Such legislation will not be part of the report but is expected to be completed at about the same time as the report is presented to the legislature.

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## II. BACKGROUND INFORMATION

The following data were developed to provide the reader with background information. The data are organized into seven categories: A) fencing legislation in other states; B) fencing for other hazards; C) existing and projected mine fencing mileage; D) fencing types and costs; E) accidents on abandoned mine pits; F) recreational use of abandoned pits; and G) alternatives to fencing. The background information was collected from the county mine inspectors (St. Louis, Itasca, and Crow Wing), DNR Minerals Division, Lake Superior Industrial Bureau (representing the taconite industry), Lamphere Excavating, Inc. (fencing contractor), fee owners, IRRRB, DNR Waters Division, DNR Fisheries Division, Minnesota Department of Transportation (MN/DOT), and numerous states.

### A. Fencing Legislation in Other States

To determine the experience other states have had with regard to mine fencing problems, a questionnaire was sent to the mineland reclamation regulation unit in each of the 50 states. The questionnaire consisted of the following three questions:

Yes    No

\_\_\_\_\_ Does your state have any specific legislation or rules requiring the installation and maintenance of fencing around abandoned mine pits, shafts, or other potentially dangerous mining areas?

If yes, please provide a copy.

\_\_\_\_\_ Has your state experienced any problems with people accidentally or willfully entering abandoned mining areas?

If yes, please explain.

\_\_\_\_\_ If no specific statutory requirements exist on a state level, is this type of safety issue addressed at other levels (such as local zoning requirements, mining reclamation programs, county mine inspectors)?

If yes, please explain.

Thirty of the states responded to the questionnaire. The remaining states, most of which contained few mining operations, were contacted by telephone. Where such telephone contacts proved unsatisfactory, that state's laws were researched by DNR staff at the Minnesota State Law Library and the questionnaire was completed based on that information.

The first topic on the questionnaire considered specific requirements for fencing. Twenty of the 50 states have specific statutory language requiring the signing, fencing, or blocking access to abandoned mining areas. Twelve of these 20 states have mine inspectors whose primary function is related to mine worker safety. In addition, the inspectors are required to ensure that safety measures are taken upon mine abandonment.

Only two of the 20 states, Wisconsin and Minnesota, have specific fencing requirements established by law. Minnesota's Mine Inspectors Law, as amended in 1978, required the use of non-climbable mesh fencing around the outside perimeter of any inactive excavation, pit, or mine shaft. Wisconsin law, however, mandates fencing only around the openings to abandoned underground mines. The fence must be a strong, woven wire fence, not less than 46 inches high, topped by one strand of barbed wire. At Wisconsin's abandoned surface mines, non-specific measures are to be utilized by the owner or operator to effectively close or fence off all surface openings down which persons could fall or through which persons could enter.

The remaining states require non-specific measures to secure inactive or abandoned shafts and pits. Many, however, require signs containing specific warnings and other information to be placed at barricaded mine shafts or on fences surrounding mine pits or other excavations. The degree to which fencing or other measures is required is apparently based on the site specific nature of each situation as determined by an inspector, or by the operator/owner of the mine in those states with no inspector.

Minnesota, through the 1978 amendment to the Mine Inspectors Law, places responsibility for fencing on the person, firm, or corporation that is or has been engaged in the business of mining. The law further states that when the person, firm, or corporation no longer exists, the fee owner becomes the responsible party for fence construction and maintenance. In contrast, other states only require that fencing be conducted upon abandonment or use the general language "owner or operator" to establish responsibility.

Only three states--Washington, Wisconsin, and Minnesota--acknowledge the fact that maintenance may be necessary. Washington's law, passed in 1890, requires anyone digging a shaft or pit to fence and maintain such fence. On exploration and mining shafts (but apparently not open pits) Wisconsin law requires the surface owner to be responsible for fence maintenance after initial construction by an operator or explorer. Minnesota places maintenance responsibility on the operator first then on the landowner if the operator no longer exists. Oklahoma recently contemplated establishing specific fencing standards but abandoned its plans to do so when no conclusion could be made on who would maintain such fences. Colorado, which has a law very similar to Minnesota's original law (Colorado's was adopted in 1903, Minnesota's in 1905), clearly admits that maintenance is a big



concern and, with over 3000 small mines within the state, maintenance remains a problem which has not been resolved.

The second topic addressed by the questionnaire involved problems experienced by each state with people entering abandoned mine areas. Of the 30 states which responded to this question, 24 indicated problems with people trespassing on mine lands. The remaining 6 states had little or no mining activities. Followup telephone inquiries were inconclusive regarding this issue as many of those contacted had no personal knowledge in this area. Case law research indicated judicial decisions in some of the states involving injuries and deaths occurring as a result of non-compliance with required safety measures.

Only Colorado's statute contains language relating to trespassers. It says:

*It is unlawful for any person to trespass into any mine shaft, portal, pit, or other excavation, or mine workings. Any person so trespassing is guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than fifty dollars nor more than five hundred dollars, or by imprisonment in the county jail for not more than ten days, or by both such fine and imprisonment.*

It is unclear how effective this language has been.

The final topic addressed by the questionnaire related to other statutory requirements which, though not specifically requiring installation of fences, might be utilized to address safety issues. Of the 30 states with no specific fencing requirements, 23 reported other laws were effective in regulating mine safety hazards. These laws included: 1) the Federal Coal Reclamation Regulations of the Office of Surface Mining (OSM) directed by Public Law 95-87, identified by 15 states as impacting both new and orphaned minelands; 2) individual non-coal reclamation programs in 5 states impacting only future mining activities; 3) land use and development laws regulating mining activities; and 4) local zoning ordinances. Only seven states--Hawaii, Nebraska, Mississippi, Missouri, Maine, New Hampshire, and Rhode Island--reported no regulations that could be used to require fencing or other measures at mining operations.



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## **B. Fencing for Other Hazards**

There are at least three other situations in Minnesota where fencing may be used to protect the public from potential harm: highways, gravel pits, and quarries.

Highways. According to the current road design manual of the Minnesota Department of Transportation, the primary purpose of fencing along highways is to control access and safety. The manual states that "fences prevent the hazardous and unauthorized intrusion of vehicles, machinery, people, and animals onto the highway. Likewise, they prevent vehicles from leaving the highway at unauthorized locations."

The need for fencing is based on several criteria: 1) the type of highway; 2) the nature of abutting land; and 3) federal and state policies. Fully access controlled highways usually require fencing. On Interstate highways, federal regulations mandate fencing on both urban and rural routes. For non-Interstate freeways, fencing is based on the likelihood of unsafe or unauthorized encroachments onto the highway. For example, high-speed, partially controlled or uncontrolled access arterials in urban and suburban areas usually need fencing. Similarly, fencing may be warranted in the vicinity of schools, playgrounds, parks, etc., where the potential for accidents exists. Fencing between the border area of main roadways and frontage roads may be necessary to clearly delineate the areas for safe pedestrian usage. A fence may be used in conjunction with a barrier.

Three types of standard fences are designated for use on Trunk Highway projects: barbed wire, woven wire and chain link. Barbed wire is used primarily in rural areas for controlling large livestock. Woven wire is used in rural or semi-rural areas for controlling small livestock, pets and pedestrians. Chain link is most often designated in urban and suburban areas for controlling access. Other types of fencing may be used for special purposes but these must be approved.

Gravel pits. In general, fencing of gravel pits is not required due to the nature of the industry. Gravel pits are rarely abandoned but rather available on demand for temporary use. Some gravel pits are fenced in accordance with county or municipal ordinances. These are usually gravel pits located in proximity to the Twin Cities area. In addition to safety concerns, gravel pits are sometimes fenced to prohibit theft of the resource. In some cases, backsloping of steep slopes may be performed when the pit will be inoperative for a long time. MN/DOT operates many gravel pits in the state through leasing agreements with private landowners. At the conclusion of a project, MN/DOT will backslope to the wishes of the landowner.

Quarries. Four kinds of quarries exist in Minnesota; granite, limestone, quartzite, and basalt. Most quarry operations result in excavations with nearly vertical

walls. The quarries are deep and often fill with water. Generally, quarry operators are required through county or municipal ordinances to fence the perimeter of the quarry throughout active operations. Maintenance of fencing is often required after operations cease. However, the requirements of municipal ordinances with respect to quarry operators is highly variable. Townships within the same county may have ordinances with dramatically different requirements in order to meet the special needs of the area.

The type of fence required by various ordinances ranges from chain link to wooden split rail. The split rail fence was designed so as to allow access to deer. Warning signs and/or no trespassing signs usually accompany the fencing. In some cases, the company and the county or town board have jointly developed fencing specifications. Vandalism, maintenance and trespass are also serious problems for quarry operators.

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### C. Existing and Projected Mine Fencing Mileage

Minnesota currently contains over 135 separate and distinct open pit mines and perhaps two dozen shafts located across the three mining districts of the Mesabi, Vermilion, and Cuyuna Ranges. It is anticipated that nearly 300 miles of fencing will be required around the perimeters of existing inactive mines and the ultimate pit limits of active operations.

Table 1 shows the length of fences and barriers currently existing around mine pits in Crow Wing, Itasca, and St. Louis Counties. "Mesh" fence is that which meets the standards established by the 1978 amendment to the Mine Inspectors Law. "Barbed" is 3 or 4 strands of barbed wire which was the generally accepted practice prior to the 1978 amendment at all areas except near towns, where mesh was deemed more appropriate. "Other" includes a variety of natural and manmade features ranging from heavily wooded or swampy areas that limit access to rock barriers placed across old mine roads and stockpiles located adjacent to pit walls. A concise breakdown of fencing mileage in St. Louis County is provided in Appendix D.

The designation "Private Lands" includes those owned or controlled by mining companies or held by private fee owners. "Public Lands" are generally trust fund lands and state acquired lands managed by the DNR, or tax forfeited lands for which the surface is managed by the county. Under the public category, counties are presently responsible for lands upon which approximately three miles of fencing is located (2 miles in Crow Wing County and 1 mile in St. Louis County). The remaining 24 miles of fence is located on public lands under DNR jurisdiction.

When the mesh fencing standard was established in 1978, the law contained a provision that allowed the county mine inspector to waive the mesh requirement when an abandoned excavation, open pit, or shaft was fenced in a manner reasonably similar to the mesh standards, or when, in the inspector's judgment, there was no safety hazard. Most of the mines on the Cuyuna Range became inactive well before the 1978 fencing amendment. By 1978 many of the pits had filled with water to the point where they appeared more like lakes than pits. The high water levels diminished some of the hazards normally associated with inactive mines. This situation has led to a general acceptance of barbed wire fencing in Crow Wing County. Similarly, the Itasca County Mine Inspector determined that existing barbed wire fencing was adequate in remote locations where there was no apparent safety hazard. Therefore, as Table 1 indicates, several miles of barbed wire fencing continue to be allowed in lieu of the mesh. St. Louis County has taken the lead in permitting alternatives to fencing such as natural barriers or stockpiles. Where fencing is the only option however, the inspector has generally

required the use of mesh. The notable exception to this is on public lands where, although mesh has been required by the inspector, barbed wire fencing continues to be maintained since no funds have been made available to upgrade the fence.

At present, there are ten active mines (7 taconite and 3 natural ore) across the Iron Range including nine in St. Louis County, two in Itasca and none in Crow Wing (St. Louis and Itasca share one operation). The active taconite mining operators have in place about 25 miles of mesh fence. This amount is included in the figures shown on Table 1. According to the Lake Superior Industrial Bureau, if taconite mining continues as planned, 105 additional miles of fencing will be necessary upon deactivation.

Table 1. Miles and type of mine fencing.

County	Mesh		Barbed		Other		Total
	Private Lands	Public Lands	Private Lands	Public Lands	Private Lands	Public Lands	
St. Louis	106	2	1	17	4	1	131
Itasca	39	0	15	4	1	0	59
Crow Wing	1	0	22	4	0	0	27
Total	146	2	38	25	5	1	217

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#### D. Fencing Types and Costs

Table 2 lists five types of fences which either have been utilized around abandoned mine pits or which have been offered as possible fencing alternatives: chain link, two-inch by four-inch mesh (11 and 12-1/2 gauge), farm stock mesh, and barbed wire. Of these five, chain link is the most permanent and highest quality fence that can be constructed. Chain link was contemplated as the standard in 1978 when the bill was first considered, however, the availability of cheaper alternatives offering similar protection eliminated it from further consideration.

Two types of two-inch by four-inch mesh fences are described in Table 2. The 11 gauge mesh is the type specified by the 1978 amendment. The other type is 12-1/2 gauge dog kennel mesh. These fences differ only in the size or gauge of wire used. Costs of installation are very similar however the heavier 11 gauge wire should offer a longer life and is probably the better value.

Farm stock mesh (sometimes referred to as hog mesh) has been suggested as a less costly alternative to two-inch by four-inch mesh because the cost of the fabric is less than half that of mesh. As Table 2 indicates, installation costs are about the same for all types of chain link and mesh fencing. The most costly aspect of fencing relates to installing posts and clearing access along the fence line for delivery of the fence. As all mesh fences require the same number of posts and same degree of access, there is not much savings by using farm stock mesh. Furthermore, farm stock mesh is only 47 inches high (others are 60 inches) and is climbable because it has a wider spacing between vertical wires. Because it has fewer wires, it is weaker than the other meshes and therefore more susceptible to damage by snow, ice, weed growth, and tree falls.

Three strand barbed or smooth wire fences had been the accepted practice around abandoned mine pits for many years. Installation of either type is easier than mesh since access roads to deliver heavy rolls of fence fabric are unnecessary. In addition barbed wire adapts easily to changes in terrain whereas chain link or mesh fences requires splicing and additional posts and bracing. Because the fence consists of three independent lines of wire, it is not as strong as the other fences already mentioned. Since its effective life is highly weather dependent, it would require more inspection and maintenance than the mesh or chain link fences.

Nearly 150 miles of the two-inch by four-inch mesh fence as required in the 1978 amendment exist around abandoned mines in Minnesota. Where it remains standing, it provides warning and protection; however, it is extremely susceptible to vandalism and theft, which diminishes its overall effectiveness. This type of fencing has such a short history on the iron ranges that there is little data relating

to its longevity. Maintenance costs have been extremely high, but this is because of the amounts of fence and posts requiring replacement due to theft and vandalism.

An example of high maintenance costs is Hanna Mining Company's experience at the LaRue-Galbraith pit located northeast of Nashwauk. In order to comply with the mesh fence standard of the 1978 amendments to the Mine Inspectors Law, Hanna Mining Company replaced the barbed wire fence around the LaRue-Galbraith pit with mesh in October 1981. The length of fence installed was 26,670 feet at a cost of \$51,000. After an inspection four years later, the Itasca County Mine Inspector sent notice to Hanna that 6,900 feet of the fence around LaRue-Galbraith pit was damaged and 3,500 feet were missing. In June 1986, Hanna repaired and replaced the fencing at a cost of \$20,000. New materials necessary included: 3,500 feet of mesh fencing fabric, 530 eight foot steel posts and 10,500 feet of barbed wire.

This much maintenance over a period of only four years is considerably more than one would expect from normal aging and deterioration of such a fence and is attributable to theft and vandalism. However, this is not an isolated incident. At many locations along the iron range theft and vandalism of mesh fence has become a common occurrence.

The life expectancy for fences is difficult to determine. The values reported in Table 2 are the lengths of time when, according to vendors and MN/DOT, deterioration will start to become noticeable. The fences would be expected to stand much longer. However, eventually the deterioration will be great enough so that the fence will have to be replaced. This may result in another liability question. For purposes of comparison it will be assumed that each type of fence will require complete replacement when it reaches twice its stated life expectancy. Table 3 shows the replacement period for each fence type and the yearly depreciation of that fence during the assumed life expectancy period. The table assumes no replacement due to theft. If the theft factor is considered, the mesh and chain link would be significantly higher, while the smooth or barbed wire would probably not change a great deal.



Table 2. Fencing costs.

Types	Material Costs (catalog prices) \$/mile	Estimated Installed Cost (labor & material) \$/mile	Estimated Life Expectancy Years	Comments
Chain Link				-Most permanent but highest cost -Galvanized for long life -The heavier the gauge, the longer the life expectancy -5 feet with 2 strands of barbed wire
Industrial (9 ga.)	19,400	32,600 *	40 *	
Residential (11 ga.)	17,300	30,500 *		
Dog Kennel (11 1/2 ga.)	16,500	29,700 *		
2 x 4 non-climb mesh				-Non-galvanized -Susceptible to damage by the combination of weeds and heavy snow and ice loads -5 feet with 2 strands of barbed wire
Mine Inspectors Law 1978 (11 ga.)	7,100	25,000	20	
2 x 4 non-climb mesh				-Non-galvanized -Lighter gauge than mesh above -More susceptible to damage -5 feet with 2 strands of barbed wire
Dog Kennel (12 1/2 ga.)	5,400	23,300	15	
Farm Stock mesh (11 ga.)	3,200	21,200	15	-Wider spacing than meshes above -Is climbable since vertical wires are 6 inches apart -About 4 feet with 2 strands of barbed wire -More susceptible to damage than other meshes
3 Strand Wire				-Extremely susceptible to ice and snow damage and tree falls -Easy to repair by one person
Barbed or smooth	1,550	8,000	15	

\* Based on MN/DOT costs for highways, installation around mine pits is expected to be much higher.

Table 3. Estimated depreciation over expected replacement life for several fence types.

Types	Installed Cost (Labor & Material) \$/mile	Estimated Replacement Period Years	Estimated Annual Depreciation \$/mile
Chain Link			
Industrial (9 ga.)	32,600 *	80	410
Residential (11 ga.)	30,500 *		380
Dog Kennel (11 1/2 ga.)	29,700 *		370
2 x 4 non-climb mesh			
Mine Inspectors Law 1978 (11 ga.)	25,000	40	630
2 x 4 non-climb mesh			
Dog Kennel (12 1/2 ga.)	23,300	30	780
Farm Stock mesh (11 ga.)	21,200	30	710
3 Strand Wire			
Barbed or smooth	8,000	30	270

\* Based on MN/DOT costs for highways, installation costs around mine pits is expected to be much higher.

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### **E. Abandoned Mine Pit Accidents**

There are two sections of the Mine Inspectors Law dealing with mine accidents. The first, section 180.08, requires mining officials to immediately report any accident to the mine inspector. The second, section 180.11, requires the inspector to annually report the number and cause of accidents. Over the years these two sections have been interpreted to mean that only those accidents suffered by mine workers needed to be investigated and reported. Therefore there is no permanent record of fatalities or injuries suffered by the public at inactive mines. Table 4 has been compiled based on the best recollection of the mine inspectors over the past 30 or so years.

Of the 13 incidents listed on Table 4, eight appear to involve deliberate attempts to gain access to a pit for playing, fishing, or swimming. One incident was the result of a jogger running into a fence which was in disrepair. One involved an auto accident caused by an apparent heart attack. The remaining four were accidents where it is unknown whether the victim intentionally or unintentionally entered the pit. The two 6 year olds were reported to have gained access via holes cut through the fence by others. In both these cases the fences were reportedly the mesh type.

The data in Table 4 suggests that accidents occur even when fencing is in place. However, there is no way of knowing the number of accidents that may have been prevented by fencing in these locations.

Table 4. Some accidents in abandoned mine pits.

CIRCUMSTANCE SURROUNDING ACCIDENT	AGE	DATE OF ACCIDENT	NATURE OF INJURY OR CAUSE OF DEATH	TYPE OF ACCESS USED TO ENTER PIT	PIT NAME LOCATION	RESULTING LIABILITY CLAIMS
Group of boys on a raft	12 Male	Unknown	Drown	Through fence	Gilbert- Gilbert	Unknown
Path through fence hole to berry patch	6 Male	1973	Drown	On foot through fence hole	Spruce- Eveleth	Yes, but Unknown
Playing at mine pit	7 & 9 Males	1958	Drown	On foot through fence	Wisstar- McKinley	Unknown
Swimming & scuba diving at pit access	21 Male	1983	Drown	Fence removed from access road	Embarrass- Aurora	Unknown
Swimming & fishing	19 Male	1985	Drown	Fence removed from access road	Embarrass- Aurora	Unknown
Drove auto through fence into pit	41 Male	1985	Drown	Drove auto through fence	Miller-Mohawk- Aurora	Unknown
Fell down embankment into water	6 Male	1965	Drown	Through hole in fence	Rouchleau- Virginia	Unknown
Went through fence on foot in winter	30 Male	1985	Death due to exposure	Went through fence	Rouchleau- Virginia	Unknown
Drove down access	20 Male	1975	Drown	Drove Jeep into pit	Tioga- Grand Rapids	Unknown
Fell down bank	7 Male	1976	Broken wrist & bruises	Went through hole in fence	Rouchleau- Virginia	Co. 70% Boy 30%
Walked through fence & over embankment	25 Female	1975	Bruises & fractures	Went through fence & fell down pit bank	Rouchleau- Virginia	Unknown
Mesh gone, barbed wire remained	45 Male	1985	Cuts on face, scalp	Hit barbed wire at head level	Rouchleau- Virginia	Yes, but Unknown
Swimming	21 Male	1970	Broken neck	Walked down access road	Tioga- Grand Rapids	Unknown

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## **F. Recreational Use of Abandoned Mine Pits**

Over the past 20 years, some water-filled abandoned natural ore pits have been enhanced for recreational use by the DNR and IRRRB management activities as described below.

Pit reclamation projects. The IRRRB has completed or initiated reclamation projects on 23 abandoned water-filled mine pits. There are plans to improve accesses on 2 additional pits. These reclamation projects include pit slope stabilization, construction or improvement of accesses, trout stocking, and development of picnic and campgrounds. Table 5 identifies the location of IRRRB pit reclamation projects.

Trout lakes. Access construction and trout stocking completed by the IRRRB has resulted in the subsequent DNR designation of 13 pits as trout lakes (see figure 1). There are plans to designate four more pits as trout lakes in the future. The designation of waters as trout lakes restricts fishing season, bait types, and gear that can be used for the taking of trout. In addition revenue is collected by way of a trout stamp. These restrictions allow designated trout lakes to be managed for successful trout fishing. As there is not an abundance of trout waters in the state, the DNR tries to enhance the trout fishing experience through the designation procedure wherever reasonable.

Protected waters. There are 21 abandoned water-filled mine pits which are classified as public or "protected" waters under Minnesota Statute 105.391. Table 6 identifies these protected waters. DNR's criteria for designation of pits on the Mesabi Ranges as protected waters was whether there had been a body of water present at the pit location prior to mining. If such a body of water existed (stream, wetland, or lake), the resulting pitwaters were designated protected waters of the state. On the Cuyuna Range, the pits were designated as protected waters if surface waters were equal or greater than 10 acres in area.

A permit is required before any work altering the protected waters including further mining, can be performed. Classification of a body of water, such as a pit lake, as a protected water does not alter any statute with respect to landowner liability (see Minnesota Statute 105.391, subd. 12).

Table 5. IRRRB reclamation projects on abandoned mine pits.

Pit Name	Location	Use
Miners	Ely	Ft, Ab
St. James	Aurora	Ft, A, W, S
Miller/Mohawk	Aurora	S
Embarrass	Biwabik	Ft, Ab
Gilbert	Gilbert	Ft, Ab, C
Mott	Mt. Iron	F, A
Kinney	Kinney	F, Ab, P
Forsyth	Kinney	Ft, Ab
Judson	Buhl	F, A, S
Stubler	Buhl	F, A
Glen	Chisholm	T, S
Carlz	Keewatin	S
Hill Annex	Calumet	T, S
Tioga	Grand Rapids	Ft, Ab, S
Yawkey	Crosby	Ft, A, C, S
Manuel	Crosby	Ft, A, S
Portsmouth	Crosby	Ft
Pennington	Ironton	Ft, Ab
Feigh	Ironton	Ft, A, P
Section Six	Trommald	Ft, Ab
Mallen	Riverton	A, S
Snowshoe	Riverton	A, S
Rowe	Riverton	Ab
Canton	Biwabik	proposed
Sagamore	Riverton	proposed

Key
Ft - Fishing designated trout lake
F - Fishing (non-designated)
Ab - Access, boat landing
A - Access, walk-in
C - Camping
P - Picnic
T - Mine tours
W - City water supply
S - Slope stabilization

Figure 1. Mine pits stocked with trout.

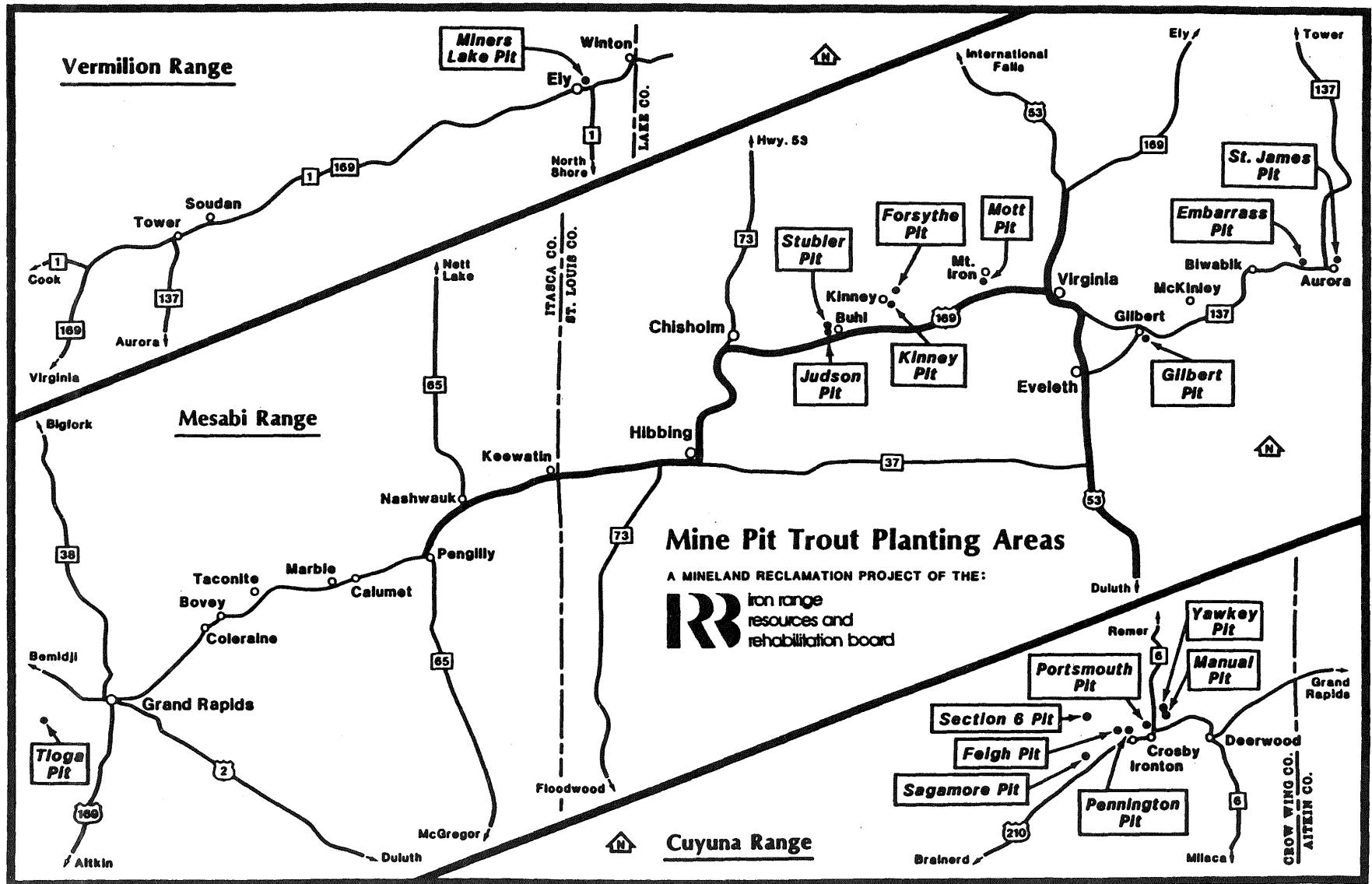


Table 6. Mine pits classified as protected waters including locations and size (acres).

Pit	Location	Size
Embarrass*	Biwabik	180
Forsyth*	Kinney	7
Kinney	Kinney	42
Dean	Kinney	37
Yates	Kinney	15
Tioga*	Grand Rapids	51
Rabbit Lake (East)	Cuyuna	150
Manuel*	Crosby	30
Yawkey*	Crosby	15
Portsmouth*	Crosby	102
Armour	Crosby	22
Mahnomen	Ironton	78
Pennington*	Ironton	237
Huntington	Ironton	47
Feigh*	Ironton	32
Maroco	Trommald	38
Virginia	Trommald	17
Section Six*	Trommald	15
Rowe	Riverton	20
Snowshoe	Riverton	10
Sagamore*	Riverton	117

\*Also designated as trout lake



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## G. Alternatives to Fencing

The mine inspector currently has the authority to allow other barriers in lieu of fencing. In the past, alternative barriers have been used only in unique circumstances. Impenetrable landforms such as steep mine dumps, swamps, and heavily vegetated lands have at times been accepted in place of fencing if they effectively prevent access to an abandoned mine. Unfortunately such features do not exist around many inactive mine pits; therefore, the opportunity to utilize these alternatives has been limited.

Rock or earthen berms and trenches have been effectively used to limit vehicular traffic from entering mine pit areas. Generally, berms are placed across a road leading to the pit. A five to six foot high berm with steep slopes is effective in stopping most traffic into a pit. A narrow two to three foot deep trench, dug parallel and adjacent to the berm has also been used to further discourage traffic. Because fencing is easily cut and removed at the pit access road, berms and trenches can be a more effective method of prohibiting vehicle entry, since heavy equipment is necessary to remove or flatten a berm to again allow entry.

The use of these types of barriers is currently being expanded beyond access points to mine pits. Use of a seven or eight foot high earth or rock berm entirely encircling a mine pit might provide a permanent alternative to fences. The cost of building such structures is highly dependent on site conditions and availability of appropriate material. Estimates range from \$7.00 to \$9.00 per running foot for a seven foot high rock berm. The cost for pushing up a similar berm of earth would be about half that price. Of the two, rock would be less susceptible to erosion and would maintain its appearance as a barrier for a longer period, thereby providing a more visible warning. In addition, rock would be less penetrable by off the road vehicles which are common around mines.

Sloping steep pit wall banks according to reclamation standards followed by planting these slopes to thorny shrubs offers another alternative. Reclamation of pit slopes in this manner has only been required since 1980. Operators who have not expanded pit boundaries since 1980 are not required to slope pit walls and vegetate. Consequently, sloping and vegetating is generally limited to portions of active operations, whose pit boundaries have expanded since 1980.

Promising vegetation such as black locust (Robinia pseudoacacia) and thornapple (Cratageus) have been planted at various locations by Hanna Mining Company, IRRRB and DNR with variable results. Vegetative barriers, however, have limitations since they can be destroyed by fire, insects, disease, and winter kill. In addition, they may not convey the warning that fences do since they are not generally used for such purposes. However, vegetation may be more effective in

conjunction with slope shaping activities. Notwithstanding these limitations, research on thorny shrubs will continue in the hopes that some day alternative vegetative barriers may be successfully planted and maintained.

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### III. FENCING ISSUES AND SOLUTIONS

Approximately 50 separate fencing issues were identified throughout the report preparation process. Many of the same issues were brought up by a variety of interest groups. After lengthy discussions the Fencing Committee concluded that most of the issues are closely related and fall within one or more of several larger categories: public safety, liability, perpetual maintenance, responsible party, cost, and conflicting resource management objectives. This section of the report will analyze these issues as they are dealt with in Chapter 180, Mine Inspectors Law. Part A of this section of the report will address fencing issues in the order they arise within the existing law. Because liability is of concern to all interested parties and its resolution extends beyond Chapter 180, it is discussed separately in Part B of this report.

#### A. Fencing Issues within the Mine Inspectors Law - Chapter 180

The principle intent of the 1905 Mine Inspectors Law appears to have been to ensure worker safety. The law also addressed public safety through the requirement that measures be taken at mines to prevent accidental falls. Since 1905, the law has been amended many times in an attempt to keep pace with the needs of an expanding and changing mining industry. Through amendment, fencing standards have been incorporated into Chapter 180 in addition to other worker and public safety standards. The question that has been raised is whether one law can adequately fulfill all of these charges. The answer is unclear. What is certain is that Chapter 180 has been difficult to enforce in a practical sense. The amendments have created unforeseen problems while other parts of the law have remained virtually unchanged since 1905. A possible solution is to identify and repeal the portions of Chapter 180 that are now outdated and replace them with new and more appropriate language.

The following portion of the report will focus on specific sections of Chapter 180. For each section, the law will be cited followed by a list of issues associated with that particular section. For each issue, the corresponding portion of the law will be underlined. Solutions recommended by the Fencing Subcommittee will be offered for each issue. The law, issues, and solutions are labeled. Please note that there will be some duplication and referrals to other portions of Chapter 180. This is because the law itself is often repetitive.

#### LAW: 180.01 *Appointment*

*The board of commissioners of any county in this state, where there are at least five mines situate and in operation is hereby authorized and directed, on or before the first day of July, 1905, to appoint an inspector of mines, who shall hold office for the term of three years or until his*

*successor is appointed and qualified, and in addition thereto may appoint one assistant inspector for every 20 mines as the board may determine for the purpose of discharging the duties hereinafter prescribed; to fix the compensation and traveling expenses of such inspector or any assistant inspector and appoint another in his place when in the judgment of the board the best interests of the owners and employees of such mines may so require.*

**ISSUE:** "Five mines situate and in operation" establishes the need for a mine inspector. According to the phrase in section 180.01, "for the purpose of discharging the duties hereinafter prescribed", the county mine inspector enforces the statute. Currently, Crow Wing and Itasca Counties do not legally need mine inspectors because there are no longer five active mines in either county (1 taconite and 1 natural ore in Itasca and none in Crow Wing). St. Louis County has nine active mines and is the only county in the state that needs to comply with the requirements of the law. At present if there is no mine inspector there is no vehicle with which to enforce the statute.

**SOLUTION:** With the law's specificity concerning the fencing of abandoned pits, it seems reasonable that the criteria establishing the necessity for a mine inspector should reflect the existence of inactive as well as active mines within a county. A possible change in the law would be to require that all counties where mining has occurred evaluate mining properties. This evaluation should determine whether a county mine inspector need be appointed to enforce the public safety aspects of the law.

Chapter 180 could be changed so that in counties with less than five active mines, the county board shall direct a designee to enforce the provisions of Chapter 180 as they apply to the fencing of shafts, caves, or open pits.

**LAW:** 180.02 *Qualifications, Salary, Oath, Bond.*

*Each inspector of mines and assistant shall be at least 25 years of age, a citizen of the state, and a resident of the county wherein he is appointed, of good moral character and temperate habits. Previous to his appointment he shall have had practical experience as a miner or otherwise engaged as an employee in mines of the state at least six years, or a mining engineer having had previous to his appointment at least two years of practical experience in iron mines and iron mining and having had at least one year of such experience in this state. He shall not while in office in any way be interested as an owner, operator, agent, stockholder, or engineer of any mine. He shall make his residence or have his office in the mining district of the county for which he is appointed. The salary of each inspector of mines and assistant shall be such as shall be fixed by the county board not exceeding \$7,500 per*

*annum, and he shall be allowed actual traveling expenses not to exceed \$1,200 in any one year. He shall file with the county auditor an itemized account of his expenses every three months verified by his affidavit, showing that they have been incurred in the discharge of his official duties. Before entering upon the discharge of duties of his office, he shall take an oath before some person authorized by law to administer oaths that he will support the Constitution of the United States and the Constitution of the state of Minnesota, and that he will faithfully, impartially, and to the best of his ability discharge the duties of his office, and file a certificate of his having done so in the office of the county auditor. He shall give bond, payable to the county board, in the penal sum of \$5,000, with sufficient sureties to be approved by the county board, conditioned that he will faithfully discharge the duties of his office and this bond shall be filed with the county auditor.*

**COMMENT:** This section is clearly outdated, but beyond the focus of this report as directed by the legislature.

**LAW:** 180.03 Duties. Subdivision 1.

*Subdivision 1. The duties of the inspector of mines shall be to visit in person or by one of his assistants all the working mines of his county at least once every 90 days and oftener if requested so to do as hereinafter provided, and closely inspect the mines so visited and condemn all such places where he shall find that the employees are in danger from any cause, whether resulting from careless mining or defective machinery or appliances of any nature; he shall compel the erection of a partition between all shafts where hoisting of ore is performed, and where there are ladder ways, where men must ascend or descend going to and from their work. In case the inspector of mines shall find that a place is dangerous from any cause, as aforesaid, it shall be his duty immediately to order the men engaged in the work at that place to quit work, and notify the superintendent, agent, or person in charge to secure the place from the existing danger, which notification order shall be in writing, clearly define the limits of the dangerous places, and specify the work to be done or change to be made to render the same secure, ordinary mine risks excepted. It shall be the duty of the inspector of mines to order the person, persons, or corporation working any mine, or the agent, superintendent, foreman, or other person having immediate charge of the working of any mine, to furnish all shafts, open pits, caves, and chutes of such mine where danger exists with some secure safeguard at the top of the shaft, open pit, cave, or chute, so as to guard against accidents by persons falling therein or by material falling down the same, also a*

*covering overhead on all the carriages on which persons ascend or descend up and down the shaft, if in his judgment it shall be practicable and necessary for the purpose of safety.*

**COMMENT:** Subdivision 1 primarily addresses mine worker safety, the subject of which is beyond the scope of this report. The underlined portion above, however, deals with the fencing of shafts, open pits, caves, or chutes during active operations. No information was brought to the attention of the committee indicating that there have been problems with this section. In practice some active areas are fenced and others are not. In all cases, active properties are patrolled which adds to their safety.

**LAW:** 180.03 Duties. Subdivision 2.

*Subdivision 2. Every person, firm or corporation that is or has been engaged in the business of mining or removing iron ore, taconite, semitaconite or other minerals except sand, crushed rock and gravel by the open pit method in any county which has appointed an inspector of mines pursuant to section 180.01 shall erect a fence, barrier, appropriate signs, or combination of them, as directed by the inspector, along the outside perimeter of the excavation, open pit, or shaft of any mine in which mining operations have ceased for a period of six consecutive months or longer. However, in residential and developed areas, along major roads, and in areas of hazardous conditions, the following described fencing must be erected unless exempted by the county mine inspector under subdivision 4. This fencing must consist of two-inch by four-inch mesh fencing; the top and bottom wire shall not be less than nine gauge and the filler wire shall not be less than 11 gauge; the fencing shall be not less than five feet in height with two strands of barbed wire six inches apart affixed to the top of the fence; and the fence posts shall be no more than ten feet apart. In the case of open pit mines in which mining operations cease after November 1, 1979, and before March 1, 1980, the fence, barrier, signs, or combination of them shall be erected as soon as possible after March 1, 1980. Where mining operations cease on or after March 1, 1980, the fence, barrier, signs, or combination of them shall be erected forthwith. In the case of open pit mines in which operations had ceased for a period of six consecutive months or longer before November 1, 1979, and not resumed, the fence, barrier, signs, or combination of them shall be erected within two years from the current date. Any fence, barrier, signs, or combination of them, required by an inspector of mines pursuant to subdivision 3 or other applicable law, shall meet the standards of this section as a minimum. This subdivision does not apply to any excavation, open pit, or shaft, or*

any portion thereof, exempted from its application by the commissioner of natural resources pursuant to laws relating to mineland reclamation, exempted from its application by the iron range resources and rehabilitation board, under actions taken by the board; or exempted from its application by the county mine inspector pursuant to subdivision 4.

**ISSUE:** Subdivision 2 directs that "every person, firm, or corporation that has been engaged in the business of mining" is the responsible party for fencing. This language is broad in its application but presents practical difficulties in its enforcement. County mine inspectors have experienced problems in tracing the ownership of mining companies, especially on long-abandoned iron ore pits. Many companies that conducted natural ore mining operations in Minnesota are no longer in existence. In addition the law does not adequately define the responsibilities of multiple operators on a single property. As a result, it is often the last operator who becomes responsible for fencing because previous operators have gone. An operator that desires to remain in business in the state may be required to assume the costs of fencing properties that have not been a part of previous operations of that mining company. Consequently, the fencing requirements may become an unequal burden on a company that has remained in business in Minnesota.

The 1978 amendment made fencing the responsibility of the operator. Prior to 1978 the landowner ("person, persons, or corporations owning the land") was the responsible party for fencing. It should be recognized, however, that although the landowner was responsible for fencing, it was the operator who did the initial fencing in the majority of cases. This was done because the operator and landowner were the same party or because the operator's lease agreement required the operator to perform the initial fencing. It was not until fences required maintenance that the landowner became the responsible party.

**SOLUTION:** A possible solution is to return to the pre-1978 language of the law where the landowner was the responsible party for fencing. Another possible solution is to amend the law so that when a mine property is idled or abandoned, the operator who created any excavation subject to the requirements of Chapter 180 will be responsible for the initial compliance with Chapter 180 and for 10 years of maintenance activities. After the 10 year maintenance period, the landowner would become responsible for fence maintenance.

The landowner may be a more reasonable responsible party for long-term fence maintenance for a number of reasons including: outside this law, it is the responsibility of the landowner to keep his/her land in a safe condition; only the landowner is in the position to manage his/her property to gain from future use or sale of the land; only the landowner has the right to be on his/her land making improvements or performing fencing tasks; and lastly, ownership defines a perpetual presence in the state unless there is a sale or forfeiture.

A good reason for making the operator the responsible party is that the operators seldom become fractionalized as surface owners often do. The county mine inspector's efforts in searching for responsible parties would thereby be reduced. The operator, however, after leaving the land initially fenced often does not have any ongoing land stewardship responsibilities. After mining is completed, the operator often leaves the state, dissolves its corporation and, thus, practically, escapes legal responsibility to perform fencing duties.

**ISSUE:** Sand, crushed rock, and gravel operators are specifically exempted from fencing requirements by the 1978 amendment to Chapter 180. It is the feeling of some that this is unfair since these operations often leave a large open pit filled with water that may pose a hazard to the public.

**SOLUTION:** It is not clear why sand, crushed rock, and gravel operators were excluded from the law in the 1978 amendment. Prior to 1978 the law could have been interpreted to include such operators. Sand, crushed rock, and gravel operators can presently be regulated by the county or municipal ordinances. Further discussion of this topic is beyond the scope of the legislative charge for this report.

**ISSUE:** The statute states that a responsible party shall erect a fence, barrier, appropriate signs, or combination of them as directed by the county mine inspector. Accordingly, the law only applies to pits located in counties that have mine inspectors.

**SOLUTION:** This was addressed previously under section 180.01 Appointment.

**ISSUE:** Fencing is required after operations have ceased for a period of six months. This does not allow for temporary shutdowns of greater than six months duration.

**SOLUTION:** Because of the difficulty of devising standards to judge the validity of a temporary shutdown, no change in the law was offered for this issue.

**ISSUE:** The 1985 amendments to this subdivision of the law were made to allow for alternatives to mesh fencing. These alternatives included such options as fences, barriers, appropriate signs, or combination of them, as directed by the inspector. However, these alternatives have not been widely used. In effect, the law is viewed by many regulators, fee owners, and operators as not practically allowing for alternatives to mesh fencing but, instead, establishes an



uncompromising standard of duty to install the non-climbable mesh fence through language in subdivision 2. Subdivision 2 states that "in residential and developed areas, along major roads, and in areas of hazardous conditions, the following described fencing (two inch by four inch non-climbable mesh) must be erected unless exempted by the county mine inspector." Portions of the areas specified ("developed areas" and "areas of hazardous conditions") are quite subjective and could include a large portion of the Iron Range. For this reason county mine inspectors, in an effort to provide maximum safety and avoid any claim of personal and county liability, require mesh fencing at almost all locations. Operators and fee owners are reluctant to propose the use of alternatives for this same reason. Furthermore, there is apprehension on the part of the operators that the discretionary authority of the current mine inspectors may be reversed by a subsequent mine inspector or by a subsequent change in the law.

**SOLUTION:** Prior to 1978, no fencing standard was contained in the law. Instead, the county mine inspector was responsible for determining what type of fence or barrier was required for a specific mining hazard at a specific location. As such, the type of fence or barrier required corresponded to the nature of the hazard and its location. Hazardous conditions in populated areas were fenced with mesh. Low hazard conditions in rural or remote areas required only 3-strand wire fencing.

If the mesh fence standard were removed from the law, operators, fee owners, and county mine inspectors would be more likely to use fencing alternatives. This change in the law would allow the county mine inspector to determine the type of fence or warning that is necessary for a particular hazard. It would also eliminate the standard of duty (mesh fence) from which people are reluctant to deviate.

Another solution would be to have the law contain a 3-strand wire fence as the fencing standard with the county mine inspector given the authority to depart from this standard depending on local site conditions. Such a framework would keep a standard in the law but would also allow alternative fencing or the use of barriers, signs or other measures, permanent or temporary, as necessary. This change should avoid difficulties associated with the current law such as questioning the county mine inspector's judgment whenever an alternative to mesh fencing is considered.

**ISSUE:** Some alternatives to mesh fencing (vegetation, rock or earth berms and barriers) as contained in the 1985 amendments may not be practical for abandoned iron ore pits because they are too costly to implement after mining has ceased. That is, rock or earth berms and vegetative barriers are more economical to construct during the operating life of the mine when equipment and materials are readily available. Signs may be of value only in conjunction with activities such as fencing, berms, or vegetation. However, it should be noted that signs are frequently vandalized and have very short life expectancy. Therefore, signs

require frequent replacement and repair to be an effective warning.

**COMMENT:** Such alternatives may have more application for existing taconite operations in conjunction with the mineland reclamation rules which require the sloping and vegetating of overburden portions of pit walls. Such sloping and vegetation activities may result in lessening pit hazards to a degree that signs may serve as an adequate warning. These alternatives appear to be of limited value for previously abandoned natural ore operations unless an operator or fee owner would be willing to assume the high cost associated with a permanent berm. If a permanent berm were constructed, however, consideration should be given to providing the county mine inspector with authority to grant a permanent exemption from maintenance.

**ISSUE:** The costs for initial fence construction and maintenance have threatened to become a significant obstacle to compliance with the law. The standard mesh fence (two inch by four inch mesh, five feet high, topped with two strands of barbed wire and posts not more than 10 feet apart) prescribed in the law is an expensive fence. Materials, road access construction, and installation costs average from \$4 to \$5 per foot (\$21,000-26,000 per mile). Constructing an access road around the pit for the specialized equipment required for installing mesh fence poses two problems. It can greatly increase costs beyond the stated average, and it provides ready access to the pit area, especially if the road is outside the fence, thereby reducing safety and greatly increasing problems with theft and vandalism.

A 3-strand fence of barbed wire with posts not more than ten feet apart was generally accepted prior to 1978 except in or near populated areas. Costs for barbed or smooth wire fence including installation is about \$8,000 per mile or approximately one-third the cost of mesh. Access is not as important for installing barbed wire because the fencing is lighter and easier to install than mesh. Barbed wire's limited utility makes it less susceptible to theft than the mesh fences. Maintenance can generally be accomplished by one or two people.

**SOLUTION:** Prior to 1978 the law read as follows: "...to erect and maintain around all the shafts, caves, and open pits of such mines a fence or railing suitable to prevent persons or domestic animals from accidentally falling into these shafts, caves, or open pits." Under this law, the county mine inspector could require 3-strand wire, mesh, or cyclone fencing depending on the nature and location of the hazard. Mesh or cyclone near towns or other dangerous pit areas proximate to human activity was the choice of the county mine inspectors. Three strand wire fencing was used in remote locations. The public enjoyed the protection of mesh fencing where necessary without it being specified in the law. Returning to the pre-1978 language would restore flexibility.

**ISSUE:** According to subdivision 2, in the case of open pit mines in which mining operations cease after November 1, 1979, and before March 1, 1980, the fence, barrier, signs, or combination of them shall be erected as soon as possible after March 1, 1980. Where mining operations cease on or after March 1, 1980, the fence, barrier, signs, or combination of them shall be erected forthwith. In the case of open pit mines in which mining operations had ceased for a period of six consecutive months or longer before November 1, 1979, and not resumed, the fence, barrier, signs, or combination of them shall be erected within two years from the current date. As specified in the law, the date of compliance has been uncertain because it has been subject to extensions by numerous amendments. To date the legislature has not appropriated sufficient funds to install mesh fencing on state lands as required by the 1978 amendment. As an alternative to appropriating funds, the legislature has, instead, extended the date for compliance. The most recent amendment incorporates the concept of "current date" which is subject to various interpretations, one of which is that it is intended to extend the date of compliance for another two years in perpetuity. Timely compliance with mesh fencing requirements has been a serious problem for the state and a source of aggravation to other fee owners and operators who have complied with the mesh fencing requirements. It should be noted, however, that the DNR has continued to maintain all barbed or mesh fencing that was in place prior to 1978.

**SOLUTION:** The law should be modified so that all parties are on and adhere to a compliance schedule that has fixed dates. This solution is dependent on the appropriation of funds from the legislature to maintain fencing on state lands.

**ISSUE:** In section 180.03, the law provides exemption from its application by the commissioner of natural resources pursuant to laws relating to mineland reclamation, and exempted from its application by the iron range resources and rehabilitation board, under actions taken by the board. Some committee members believe that IRRRB's reclamation practices of establishing and designating water access sites on pit lakes for recreational purposes, stocking of pit lakes with trout and DNR's stocking and subsequent designation of these pit lakes as trout lakes conflict with the requirement of the Mine Inspectors Law that pits be closed by fencing to protect the public safety. The industry and the public may be confused by the apparent collision of management philosophies between promoting recreational use and fencing out the public.

Proper use of the accesses is not a hazardous activity in itself. However, operators and fee owners believe that use of accesses result in improper use of the surrounding pit areas (climbing walls and diving) or that the public may be exposed to pit wall dangers (caving) resulting in accidental injury or death.

**SOLUTION:** Because of increased tourism development in northeastern Minnesota, it is reasonable for the IRRRB and the DNR to enhance the recreational potential

of abandoned mine pit lakes, consistent with public safety considerations, through development of accesses, fish stocking, and trout lake designation. However, since increased use of pit lakes could result in greater potential for injury to the lake users, several changes could be made in the law to protect landowners. These changes include the following.

1. Minn. Stat., Sec. 3.736, Sec. 466.03, and Chapter 87 could be amended to exempt private and public landowners from liability for injuries resulting from pit wall slumping and caving on pit lakes upon which public access sites have been established.
2. The State Tort Claims Act, Minn. Stat. Sec. 3.736, subd. 3(h), the Outdoor Recreation System Act, Minn. Stat. Sec. 86A.05, subd. 9 and similar public access site statutes could be amended so that the boundaries of public access sites include the surface of the water body on which the access is located.

Finally, the DNR and IRRRB should consider providing more information on signs at public accesses on pit lakes, and at pits designated as trout lakes. Such signs should advise that pit lakes may contain hazards not found on other water bodies and users should act accordingly. Recreational users should not leave their boats or the access sites to explore pit cliffs or go diving. Users should also be informed that recreational use of these pits may be only a temporary use since pits may be reactivated as part of a mining operation.

**ISSUE:** Another resource management conflict exists between temporary recreational use of abandoned pits and their future mining potential. The industry is concerned that future mining of inactive mines will not be possible if they become designated and recognized as recreational areas, particularly if substantial monies are invested for recreational purposes.

**SOLUTION:** This concern of the industry and fee owners is recognized by both IRRRB and the DNR. Because of the future mineral potential of abandoned pits, it has always been the understanding of the state that the recreational development of abandoned pits should be approached and advertised as a temporary use. If necessary, protected waters can be drained to allow mining or other use upon obtaining necessary permits.

**LAW:** 180.03 Duties, Subdivision 3.

*When any mine is idle or abandoned it shall be the duty of the inspector of mines to notify the person, firm, or corporation that is or has been*

*engaged in the business of mining to erect and maintain around all the shafts, caves, and open pits of such mines a fence, barrier, appropriate signs, or combination of them, suitable to prevent persons or domestic animals from accidentally falling into these shafts, caves, or open pits. If the person, firm or corporation that has been engaged in the business of mining no longer exists, the fee owner shall erect the fence, barrier, or signs required by this section. The notice shall be in writing and be served upon such person, firm, corporation or fee owner by certified mail.*

**ISSUE:** Subdivision 3 states that it is the duty of the county mine inspector to notify the person, firm or corporation that is or has been engaged in the business of mining to erect and maintain suitable fences around all shafts, caves, and open pits. Such language requires that fencing continue in perpetuity. The concept of perpetual maintenance is difficult to accept since it in effect could require that fences be maintained forever. Even if the maintenance requirement were limited to one or two centuries, it is not reasonable to assume that mining operations will be in business for that long.

To make a difficult situation even worse, the standard mesh fence which current law specifies for many areas is very attractive to theft. The theft and vandalism of mesh fence greatly adds to the cost of maintenance. Prior to 1978, maintenance costs were substantially lower when 3-strand barbed wire was the generally accepted practice in remote areas.

Another issue is that Chapter 180 fails to recognize that a created landform like an open pit can eventually become, over time, a feature of the natural landscape. Some of the pits left after the natural ore deposits were exhausted in Crow Wing County illustrate the fact that some mining features can eventually blend in with the natural landscape.

A related fact that has been raised repeatedly is that natural hazards pose as great a concern as some abandoned pits. Examples include the rock cliffs in the Boundary Waters Canoe Area Wilderness and the bluffs along the St. Croix and other river valleys.

**SOLUTION:** It must be acknowledged that some areas will remain hazardous indefinitely. If the safety of the public is to be perpetually guaranteed in these areas, then perpetual maintenance of a fence or barrier or reshaping the landscape to eliminate the hazard will be required. The amount of perpetual maintenance and associated costs can, however, be minimized through the following methods:

- 1) Eliminating the mesh fence standard of duty.

2) Installing permanent warnings or barriers such as rock berms for which the county mine inspector could grant a permanent exemption from maintenance.

3) Developing permanent landscape and vegetation that reduces the hazardous features. This is most likely to be accomplished by existing taconite operations that are required to slope and vegetate the overburden portion of pit walls. Similarly, some abandoned natural ore operations (Cuyuna Range) are being purchased by developers, improved and sold as lake shore property and likely would not require fencing or fence maintenance.

4) Establishing an actuarially sound fund for maintenance costs. The committee was not able to come to agreement on what the source of monies for this fund should be. In addition, it could not be satisfactorily resolved who would be responsible for administering the fund and performing the maintenance work. Nobody felt it would be wise to become responsible for maintenance of fencing on another person's property even if adequate funding was provided.

5) Establishing a committee of individuals (including representatives from industry, state, and counties) to work with the county mine inspector in developing an acceptable fencing or warning plan that, when implemented, would result in a permanent exemption from maintenance. This would take considerable time and effort but when completed should reduce the cost and problems associated with perpetual maintenance.

It was also suggested that either the IRRRB or the DNR be made responsible for fence maintenance through their mineland reclamation programs. The IRRRB Mineland Reclamation Program works with the reclamation of state-owned mine properties abandoned prior to August 1980. In addition the IRRRB works on cooperative projects with the mining industry on private lands. Funding for this work is received from the Environmental Fund which receives monies from a tax on taconite operations. A more detailed discussion of the IRRRB's reclamation program is found in Appendix E.

The DNR's reclamation program requires that all mining operations active after August 1980 obtain a reclamation permit from the Department. This permit is for the life of the operation and requires all portions of the mining facilities to be reclaimed by the operator.

Under the rules, the operator is required to construct fences for safety as required

by the Commissioner of the DNR or the county mine inspector within 3 years after deactivation of an open pit begins. The commissioner has always yielded to the county mine inspector on fencing of deactivated mining pits and the permits do not specifically address fencing other than to state that the operator must comply with the fencing requirements of Chapter 180.

The DNR is not responsible for the reclamation of lands under permit and receives no monies to perform reclamation or fencing duties required of the operators by the permits the Department grants. In addition, after successfully completing reclamation requirements, the permit is terminated and the DNR no longer has any jurisdiction or permit authority regarding the abandoned property.

Although the above five solutions should reduce maintenance needs and costs, it must be recognized that the public could still ultimately inherit perpetual maintenance. As operators leave the state and fee owners become splintered and diluted until they no longer are interested or able to pay maintenance costs, they will likely let the mining property forfeit to the state.

**ISSUE:** The purpose of a fence as defined in subdivision 3 is clearly to prevent persons and domestic animals from accidentally falling into an open pit. No fence, regardless of the standard, can prevent all such accidents. Wording such as this establishes an unrealistic standard which forces the county mine inspector to require the maximum level of fencing even if the location does not warrant such protection and may encourage claims against the person responsible for fencing, the county mine inspector whose judgment might allow something less than the maximum, or both.

**SOLUTION:** The purpose of a fence could be changed from "prevent persons or domestic animals from accidentally falling" to "warn of the presence of shafts, caves, or open pits and to reduce the possibility of accidental falls".

**ISSUE:** According to subdivision 3, if the person, firm or corporation that has been engaged in the business of mining no longer exists, the fee owner is responsible for fencing. This language which was introduced as part of the 1978 amendments to the Mine Inspectors Law completely changed the traditional concept that the landowner was solely responsible for his/her property, including maintaining it in a safe condition. The exact reason for this amendment is not clear; however, the increasing complexities of ownership of minelands was probably a factor. Unfortunately, the solution of requiring the mine operators to conduct fencing has not been completely satisfactory as discussed in previous sections.

When iron ore was originally discovered in Minnesota, the ownership of any given

parcel of land was fairly simple; one owner of both minerals and surface. Almost immediately thereafter, however, ownership became more complex. Land and mineral speculation in the 1880's and 1890's resulted in early fractionalization of ownership in areas of mineralization in northeastern Minnesota. In some cases mineral interests were legally separated from surface interests while in other cases ownership was left intact. Where the surface and/or minerals remained in private hands, the subsequent ownership was often split and resplit through a series of inheritances until presently a single property may have hundreds of owners of both surface and minerals.

Due to complicated ownership, when the repair or replacement of fence is necessary and no single responsible party can be identified, both operators and fee owners are contacted by the county mine inspector. There are many examples where several parties have been notified to fence the same property. Often the notice is disputed or ignored and the property left unfenced. To serve notice on a fee owner often requires a substantial research effort with no satisfactory conclusion.

**SOLUTION:** There is no easy solution to this issue. As operators leave or dissolve and fee owners become more diluted and removed from realizing any income from their properties, they will be less interested or able to provide maintenance and more likely allow the lands to forfeit.

**ISSUE:** In Subdivision 3, if the person, firm, or corporation that has been engaged in the business of mining no longer exists, the fee owner is responsible for fencing. When lands forfeit for non-payment of taxes the public becomes the fee owner. Tax forfeiture has not made the determination of the responsible party any less complicated. Both the state and county have certain specific jurisdiction on tax-forfeited land and minerals. In those situations where the minerals have forfeited, the state manages the minerals. Where the surface is tax-forfeited, the surface is managed by the county.

**SOLUTION:** Funds must be made available for maintenance of fencing or other requirements on public lands. Some of the possible sources of funding include: Specific appropriation to the state or county; legislative direction to use some portion of revenues derived under Minnesota Statutes 282.08 (tax-forfeited fund); or revenues apportioned to local governments under Minnesota Statutes 93.335 (mineral rentals and royalties collected on these lands).

To relieve liability concerns, the State Tort Claims Act, Minn. Stat. Sec. 3.736, subd. 3(g) and the Municipality Tort Claims Act, Minn. Stat. Sec. 466.03, subd. 13 could be amended to define "unimproved real property" to include mine pits complying with fencing requirements of Chapter 180 or pits that forfeit to the state.



**LAW: 180.03 Duties. Subdivision 4.**

*Subdivision 4. Upon written application, the county mine inspector may exempt from the requirements of subdivision 2, any abandoned excavation, open pit, or shaft which is provided with fencing, barriers, appropriate signs, or combination of them in a manner that is reasonably similar to the standards set forth in subdivision 2, or which in his judgment does not constitute a safety hazard.*

**ISSUE:** The county mine inspectors, operators, and fee owners interpret subdivision 4 as authorizing an exemption to the mesh fencing requirement only in residential and developed areas, along major roads, and in areas of hazardous conditions.

**SOLUTION:** If the pre-1978 language were returned, the mesh fencing standard would be eliminated and this subdivision would no longer be necessary. Because of the various amendments made to Chapter 180 since 1978, the subdivision has lost some of its meaning. It should be reviewed and revised as needed to make it consistent with any subsequent changes made in the law.

**ISSUE:** Because of the relatively temporary nature of fencing (requiring continual repair or upkeep) many committee members felt that the construction of permanent alternatives should be encouraged. Since most alternatives such as rock berms or pit sloping would likely be costly, the inducement offered by the committee was the granting of permanent exemptions from future maintenance.

**SOLUTION:** The law should allow the county mine inspector to grant permanent exemptions, from maintenance, for permanent barriers or warnings which provide protection substantially equivalent to that provided by approved, non-permanent barriers or warnings.

**LAW:** Sections 180.04 - 180.09 deal with other aspects of the mine inspector's duties and have no direct bearing on the fencing question.

**LAW: 180.10 Removal of Fence; Guard.**

*Any workman, employee, or other person who shall open, remove, or disturb any fence, guard, barrier, or rail and not close or replace or have the same closed or replaced again around or in front of any shaft, test pit, chute, excavation, cave, or land liable to cave, injure, or destroy, whereby accident, injury, or damage results, either to the mine or those*

*at work therein, or to any other person, shall be guilty of a misdemeanor. A workman, employee, or other person who, in regard to any fence, guard, barrier, or rail, does any of the acts prohibited by section 609.52, commits theft of the fence, guard, barrier, or rail may be sentenced as provided in section 609.52.*

**ISSUE:** This section was amended in 1985 to increase the penalty for theft of fence from a misdemeanor to a gross misdemeanor or a felony depending on the value of the stolen property. Many believe that vigorous enforcement is now necessary.

**SOLUTION:** The committee was unanimous in its support of this 1985 amendment. However, not enough time has passed to evaluate if the change in the law is a good deterrent. One solution offered previously is that changing the standard of duty to 3-strand wire will reduce its attractiveness to theft. Another solution offered was to physically mark the standing fences in some way that made them less attractive for theft. More vigorous enforcement might also act as a deterrent.

**LAW:** Sections 180.11 - 180.13 deal with other aspects of the mine inspector's duties which are beyond the scope of the legislative directive for this report, or need no further comment.

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## **B. Liability**

**ISSUE:** In addition to public safety, concern over liability is another incentive for the construction of fences. Whether it be around inactive mine pits, electric power transformers, manufacturing plants, or individual homeowners' yards, no one wants to be held financially responsible in the event someone is accidentally injured on lands they own or control.

For mine pits in Minnesota, accepted safety levels have changed with time in relation to the public perception of who is responsible should an accident occur. With the introduction of the Mine Inspectors Law in 1905, additional safety responsibilities were imposed on the mine owner or operator. It became the duty of the county mine inspector to order owners of active mines to furnish all shafts, open pits, caves and chutes with a secure safeguard to guard against accidental falls. It also became the duty of the county mine inspector to notify the owner of lands on which idle or abandoned mines were located, to erect and maintain fences or railings suitable to prevent persons or domestic animals from accidentally falling into such mines. This situation existed for over seventy years until 1978, when initial responsibility for fencing abandoned pits shifted from the landowner to all previous operators, and established non-climbable mesh fencing as the standard suitable to prevent accidental falls. Another legislative change in 1985 allowed the mine inspector to waive the non-climbable mesh fence standard in specific areas where it does not seem to be essential.

There has been hesitation by the county mine inspectors and by a county board as well to allow such variances. A recent example of the dilemma facing operators is the shutdown of Butler Taconite Company. In this instance, the operator approached the county mine inspector for a variance from the mesh fencing standard. The county mine inspector was reluctant to grant a variance without the backing of the county board. The board is reluctant to grant a variance from the standard of duty cited in the law. Currently, there are discussions underway whereby if the operator indemnifies the county against possible liability, the county will allow the county mine inspector to grant the variance.

Concern about injuries and possible litigation led the IRRRB to seek and receive, through legislative actions in 1985, limits on liability relating to the water access sites it develops. These limitations however do not extend to other property owners around the mine pit. The Fencing Committee believes that private and public landowners should be granted additional liability protection from slumping or caving of pitwalls where such water accesses are developed.

The concerns associated with liability are not restricted to mining properties on Minnesota's iron ranges. The concern and uncertainty created by the litigious nature of American society and astronomical damage awards to persons suffering

personal injuries, have led to what has been termed a national crisis. The cost of certain types of liability insurance, the kind that cover the policy holder against injury claims, has skyrocketed, if it can be purchased at all, for those considered at high risk.

**SOLUTION:** This situation has led to the introduction of many state and federal laws designed to resolve this growing problem. Accordingly, the Fencing Committee sought and was provided with alternative language to the present tort liability laws. Suggestions for changes in Minnesota's tort liability laws are included in Appendix F. These suggested amendments are an attempt to limit liability to instances in which a private party, a county, or the state was guilty of "gross or willful and wanton negligence", as opposed to the current situation where there is liability if there would be liability to a trespasser.

Analysis of the proposed language by a limited number of sources resulted in conflicting opinions on what such new language would accomplish. It is the conclusion of the Fencing Committee that the subject is indeed worthy of legislative review, but it has not been able to collect enough authoritative data to conclude that the proposed language will provide the desired results. The concept of "gross or willful and wanton negligence" as expressed in Appendix F should be explored. Other concepts such as liability only for "reckless" conduct might also have some application. This topic, since it only incidentally impacts fenced mine pits, seems beyond the scope of this report. To aid the legislature in its deliberations, a task force involving spokespersons from: the Association of Minnesota Counties; the Association of County Land Commissioners; the State Bar Association; the Association of School Boards; the Trial Lawyers Association; the Minnesota Environmental Congress; associations representing recreational interests; and other appropriate groups as are deemed necessary, could be formed to study suggestions found in Appendix F, and report findings back to the legislature.

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#### IV. RECOMMENDATIONS TO THE LEGISLATURE

The following recommendations were agreed to by the members of the Fencing Subcommittee at a meeting on November 10th in Duluth.

##### Purpose of the fence.

It is recommended that the purpose of the fence be revised to read "to warn of the presence of shafts, caves, or open pits and reduce the possibility of accidental falls."

##### Fencing standard.

It is recommended that a three-strand wire fence be made the fencing standard in the law. In conjunction with the recommended standard, the county mine inspector should have the authority to require different fence types, barriers, signs or combinations thereof depending on local site conditions. The county mine inspector should also have the authority to waive these requirements altogether.

##### Appointment.

It is recommended that in counties with less than five active mines, the county board shall be directed to designate a person to enforce the provisions of Chapter 180 as they apply to the fencing of shafts, caves or open pits.

##### Responsible party.

It is recommended that the law be amended so that the mine operator who created an excavation subject to the fencing requirements of Chapter 180 be responsible for initial compliance with this law and for maintenance during the first 10 years following mine abandonment or for a period of time mutually and contractually agreed upon by the mine operator and landowner. After such period, maintenance would become the responsibility of the landowner.

##### Compliance date.

It is recommended that Chapter 180 be amended so that all parties are on and adhere to a compliance schedule with fixed dates.

##### Public lands.

It is recommended that funds be made available for fencing, fence maintenance, or other requirements on public lands. Some of the possible sources of funding include: Specific appropriation to the state or county; legislative direction to use some portion of revenues derived under Minnesota Statutes Section 282.08 (tax-forfeited fund); or revenues apportioned to local governments under Minnesota Statutes Section 93.335 (mineral rentals and royalties collected on these lands).

Consistency within Chapter 180.

It is recommended that all parts of Chapter 180 be reviewed and made consistent with the above recommendations.

Liability.

1. It is recommended that the State Tort Claims Act, Minn. Stat. Sec. 3.736, subd. 3(g) and the Municipality Tort Claims Act, Minn. Stat. Sec. 466.03, subd. 13 be amended to define as "unimproved real property" to include mine pits complying with fencing requirements of Chapter 180 or pits that forfeit to the state.
2. It is recommended that Minn. Stat. Chap. 87 be amended to exempt landowners from liability for injuries resulting from pit wall slumping and caving on pit lakes upon which public access sites have been established and that Minn. Stat. Sections 3.736 and 466.03 be amended to provide the same exemption for public landowners on pit lakes upon which public access sites have been established.
3. It is recommended that the State Tort Claims Act, Minn. Stat. Sec. 3.736, subd. 3(h), the Outdoor Recreation System Act, Minn. Stat. Sec. 86A.05, subd. 9 and similar public access site statutes be amended so that the boundaries of public access sites include the surface of the water body on which the access is located.
4. It is recommended that Minn. Stat. Sec. 466.01, subd. 1, be amended by specifically including the Commissioner and the Board of the Iron Range Resources and Rehabilitation Board as one of the subjects defined as a municipality for purposes of that statute.
5. It is recommended that Minn. Stat. Chap. 180 be amended to specifically provide that the acts or omissions of a county mine inspector or other person designated by a county board to enforce the provisions of chapter 180 regarding the installation or exemption from installation of fences, barriers, signs or other warning methods or combination of them shall be excluded from liability under Minn. Stat. Sec. 466.03, subs. 5 and 6.
6. It is recommended that legislative hearings be conducted or a task force established to determine the beneficial or adverse results associated with amending tort liability laws in a way that limits liability to situations where "gross or willful and wanton negligence" has occurred, as opposed to the current situation where there is liability if there would be liability to a trespasser. Suggested language is found in Appendix F.
7. If recommendation 6 above is enacted by the legislature, we then recommend that the following language be added to Minn. Stat. Chap. 180.03.

The State of Minnesota, Iron Range Resources and Rehabilitation Board and Commissioner, and counties and their employees, are not

liable for any loss caused by an act or omission of an employee in the execution of its powers under this subdivision unless said conduct constitutes gross or willful or wanton negligence.





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**APPENDIX A**  
**Legislative History of the Mine Inspectors Law**

**Legislative History of Minnesota Statutes**  
**Chapter 180 "Mine Inspectors"**

Chapter 180 was originally enacted as General Laws of Minnesota for 1905, Chapter 166.

**180.01 Appointment.**

This statute was originally enacted as General Laws of Minnesota for 1905, Chapter 166, Section 1.

*Sec. 1. That the board of commissioners of any county in this state where there are at least five mines situate and in operation is hereby authorized and directed on or before the first day of July 1905, to appoint an inspector of mines who shall hold office for the term of three years or until his successor is appointed and qualified for the purpose of discharging the duties hereinafter prescribed; to fix the compensation and traveling expenses of such inspector and provide for payment of the same, and to remove such inspector and appoint another in his place whenever in the judgment of said board the best interests of the owners and employes [sic] of such mines may so require, and to fill vacancies arising from any other cause than removal.*

It was amended by Laws 1951, Chapter 687, Section 1. An assistant inspector of mines can be appointed by the board for every 20 mines in the county. The assistant inspector's compensation and traveling expenses are to be fixed by the board. The board may also remove the assistant inspector when it is in the best interests of the owners and the employers.

**180.02 Qualifications, Salary, Oath, Bond.**

This was Section 2 of chapter 166. It specified the required qualifications of the inspector. The salary of the inspector was not to exceed \$2000 and traveling expenses were not to exceed \$300 per year. A \$5000 bond was to be filed with the county auditor to provide for faithful discharge of the inspector's duties.

*Sec. 2. Such inspector of mines shall be at least twenty-five years of age, a citizen of the State of Minnesota and a resident of the county wherein he is appointed, shall be of good moral character and temperate habits, and shall have had previous to his appointment practical experience as a miner or otherwise engaged as an employe [sic] in mines of the state at least six years, or a mining engineer having had previous to his appointment at least two years' practical experience in iron mines and iron mining and having had at least one year's such experience in this state. He shall not while in office in any way be*

*interested as an owner, operator, agent, stockholder or engineer of any mine. He shall make his residence or have his office in the mining district of the county for which he is appointed. The salary of the inspector of mines shall be such sum as shall be fixed by the board of county commissioners, not exceeding two thousand dollars per annum, and he shall in addition be allowed actual traveling expenses not exceeding three hundred dollars in any one year. He shall file with the county auditor an itemized account of his expenses every three months, verified by his affidavit, showing that they have been incurred in the discharge of his official duties. He shall, before entering upon the discharge of the duties of his office, take an oath before some person authorized by law to administer oaths that he will support the Constitution of the United States and the Constitution of the State of Minnesota and that he will faithfully, impartially and to the best of his ability, discharge the duties of his office, and he shall file a certificate of his having done so in the office of the auditor of the county for which he is appointed, and he shall also give a bond payable to said board of commissioners in the penal sum of five thousand dollars, with good and sufficient sureties to be approved by the board of county commissioners of the county for which he is appointed, conditioned that he will faithfully discharge the duties of his office, and said bond shall be filed with the county auditor of such county.*

In 1911, the legislature increased traveling expenses to not exceeding \$600 per year. Laws 1911, Chapter 133. In 1921, the yearly salary increased to not exceeding \$3600 and traveling expenses to not exceeding \$900. Laws 1921, Ch. 7. In 1951, the salary for each inspector and assistant inspector was increased to not exceeding \$5000, with individual yearly traveling expenses not to exceed \$1200. Laws 1951, Chapter 687, Section 2. In 1953, the yearly salary increased to not exceeding \$6000. The language of the statute was also simplified. The auditor of the county was changed to county auditor and the board of county commissioners to the county board. Laws 1953, Chapter 259. Laws 1957, Chapter 310 increased the yearly salary to the current level of not exceeding \$7,500.

#### **180.03 Duties.**

This was Section 3 of General Laws of Minnesota for 1905, Chapter 166. The inspector was required to visit every mine once every 90 days or more often if requested. If the inspector were to find dangerous working conditions, he was to order the men to stop working and specify the work to be done to change the conditions. When a mine is idle or abandoned, the inspector must notify the owner of the land or the owner's agent to erect and maintain a fence or railings suitable to prevent accidental falls. Notice is to be served personally and in writing if that person is a resident of the county; if not, then newspaper publication for three consecutive weeks.

*Sec. 3 The duties of the inspector of mines shall be to visit all the working mines of his county at least once in every ninety days and oftener if requested so to do as hereinafter provided, and closely inspect the mines so visited and condemn all such places where he shall find that the employes [sic] are in danger from any cause, whether resulting from careless mining or defective machinery or appliances of any nature; he shall compel the erection of a partition between all shafts where hoisting of ore is performed, and where there are ladder ways, where men must ascend or descend going to and from their work. In case the inspector of mines shall find that a place is dangerous from any cause as aforesaid, it shall be his duty immediately to order the men engaged in work at the said place to quit work, and he shall notify the superintendent, agent or person in charge, to secure the place from the existing danger, which said notification or order shall be in writing, and shall clearly define the limits of the dangerous place, and specify the work to be done, or change to be made to render the same secure, ordinary mine risks excepted. It shall also be the duty of the inspector of mines to command the person, persons or corporation working any mine, or the agent, superintendent, foreman or other person having immediate charge of the working of any mine, to furnish all shafts, open pits, caves and shutes [sic] of such mine where danger exists with some secure safeguard at the top of the shaft, open pit, cave or shute [sic] so as to guard against accidents by persons falling therein or by material falling down the same, also a covering overhead on all the carriages on which persons ascend or descend up and down the shaft, if in his judgment it shall be practicable and necessary for the purpose of safety. Provided, that when any mine is idle or abandoned it shall be the duty of the inspector of mines to notify the person, persons or corporation owning the land on which any such mine is situated or the agent of such owner or owners, to erect and maintain around all the shafts, caves and open pits of such mine a fence or railing suitable to prevent persons or domestic animals from accidentally falling into said shafts, caves or open pits. Said notice shall be in writing and shall be served upon such owner, owners or agent, personally, or by leaving a copy at the residence of any such owner or agent if they or any of them reside in the county where such mine is situated, and if such owner, owners or agent are not residents of the county such notice may be given by publishing the same in one or more newspapers printed and circulating in said county if there be one and if no newspaper be published in said county then in a newspaper published in some adjoining county, for a period of three consecutive weeks.*

In 1951, with the addition of assistant mine inspectors, an inspector could visit in person or by one of his assistants all working mines in the county. The word command was replaced with order. Laws 1951, Chapter 687, Section 3.

This statute was divided into four subdivisions in 1978. Subdivisions 1 and 3 basically retained the previous language. Subdivision 2 mandated construction of a fence around the outside perimeter of the excavation, open pit, or shaft of any mine ceased operation for a period of six consecutive months or longer. The minimum standards for the fence were the use of two by four inch mesh, the top and bottom wire must be not less than 9 gauge, the filler wire not less than 11 gauge, a height of not less than five feet with two strands of barbed wire six inches apart at the top and the posts must be no more than ten feet apart. Open pits which cease operations after this act must erect the fence immediately. All others must erect appropriate fencing within one year of the effective date of this act (November 1, 1979). This does not apply to any property exempted from its application by the commissioner of Natural Resources pursuant to laws relating to mineland reclamation or by the county mine inspector. Subdivision 3 changes the notice requirement. Previously, the person, persons, or corporation owning the land or their agent would be notified to erect a fence or railing around an abandoned or idle mine. This was changed so that notice to erect fencing would be given to the person, firm, or corporation that is or has been engaged in mining. Only if whoever was mining no longer exists is the fee owner to be notified. Notice was now to be done by certified mail. Subdivision 4 provides that the county mine inspectors, upon written application, may exempt property from the requirements of subdivision 2 if it does not constitute a safety hazard. Laws 1978, Ch. 596.

The legislature changed the dates for fence erection in subdivision 2 in 1979. If operations ceased between November 1, 1979 and March 1, 1980, the fence must be erected as soon as possible after March 1, 1980. If ceased on or after March 1, 1980, it must be erected immediately. If operations were ceased for six months or longer before November 1, 1979, the fencing must be erected within two years of November 1, 1979. Laws 1979, Ch. 333, Sec. 91.

Laws 1980, Ch. 614, Sec. 98 made the fencing to be erected within three years of November 1, 1979 instead of two years. Laws 1982, Ch. 639, Sec. 34 changed the erection deadline to within four years of November 1, 1979. Laws 1983, Ch. 156 again changed the time from four years to within five years. Laws 1984, Ch. 654, Art. 2, Sec. 119 stated that the fencing must be erected within seven years of November 1, 1979.

In 1985, the legislature again amended this statute. Fencing and railing became fence, barrier, appropriate signs or combination of them as directed by the inspector. In certain high risk areas, the old type of fencing is still required. The time for erection was changed from within seven years of November 1, 1979 to within two years from the current date. The IRRRB may exempt property from these requirements, in addition to the commissioner of Natural Resources pursuant to mineland reclamation laws. Laws 1985, First Special Session, Ch. 13, Secs. 287, 288 and 289. The current version is as follows:

*Subdivision 1. The duties of the inspector of mines shall be to visit in person or by one of his assistants all the working mines of his county at least once every 90 days and oftener if requested so to do as hereinafter provided, and closely inspect the mines so visited and condemn all such places where he shall find that the employees are in danger from any cause, whether resulting from careless mining or defective machinery or appliances of any nature; he shall compel the erection of a partition between all shafts where hoisting of ore is performed, and where there are ladder ways, where men must ascend or descend going to and from their work. In case the inspector of mines shall find that a place is dangerous from any cause, as aforesaid, it shall be his duty immediately to order the men engaged in the work at that place to quit work, and notify the superintendent, agent, or person in charge to secure the place from the existing danger, which notification or order shall be in writing, clearly defined the limits of the dangerous place, and specify the work to be done or change to be made to render the same secure, ordinary mine risks excepted. It shall be the duty of the inspector of mines to order the person, persons, or corporation working any mine, or the agent, superintendent, foreman, or other person having immediate charge of the working of any mine, to furnish all shafts, open pits, caves, and chutes of such mine where danger exists with some secure safeguard at the top of the shaft, open pit, cave, or chute, so as to guard against accidents by persons falling therein or by material falling down the same, also a covering overhead on all the carriages on which persons ascend or descend up and down the shaft, if in his judgment it shall be practicable and necessary for the purpose of safety.*

*Subd. 2. Every person, firm or corporation that is or has been engaged in the business of mining or removing iron ore, taconite, semitaconite or other minerals except sand, crushed rock and gravel by the open pit method in any county which has appointed an inspector of mines pursuant to section 180.01 shall erect a fence, barrier, appropriate signs, or combination of them, as directed by the inspector, along the outside perimeter of the excavation, open pit, or shaft of any mine in which mining operations have ceased for a period of six consecutive months or longer. However, in residential and developed areas, along major roads, and in areas of hazardous conditions, the following described fencing must be erected, unless exempted by the county mine inspector under subdivision 4. This fencing must consist of two-inch by four-inch mesh fencing; the top and bottom wire shall not be less than nine gauge and the filler wire shall not be less than 11 gauge; the fencing shall be not less than five feet in height and two strands of barbed wire six inches apart affixed to the top of the fence; and the fence posts shall be no more than ten feet apart. In the case of open pit mines in which mining*

*operations cease after November 1, 1979, and before March 1, 1980, the fence, barrier, signs, or combination of them shall be erected forthwith. In the case of open pit mines in which mining operations had ceased for a period of six consecutive months or longer before November 1, 1979, and not resumed, the fence, barrier, signs, or combination of them shall be erected within two years from the current date. Any fence, barrier, signs, or combination of them, required by an inspector of mines pursuant to subdivision 3 or other applicable law, shall meet the standards of this section as a minimum. This subdivision does not apply to any excavation, open pit, or shaft, or any portion thereof, exempted from its application by the commissioner of natural resources pursuant to laws relating to mineland reclamation, exempted from its application by the iron range resources and rehabilitation board under actions taken by the board, or exempted from its application by the county mine inspector pursuant to subdivision 4.*

*Subd. 3. When any mine is idle or abandoned it shall be the duty of the inspector of mines to notify the person, firm, or corporation that is or has been engaged in the business of mining to erect and maintain around all the shafts, caves, and open pits of such mines a fence, barrier, appropriate signs, or combination of them, suitable to prevent persons or domestic animals from accidentally falling into these shafts, caves or open pits. If the person, firm or corporation that has been engaged in the business of mining no longer exists, the fee owner shall erect the fence, barrier, or signs required by this section. The notice shall be in writing and be served upon such person, firm, corporation or fee owner by certified mail.*

*Subd. 4. Upon written application, the county mine inspector may exempt from the requirements of subdivision 2, any abandoned excavation, open pit, or shaft which is provided with fencing, barriers, appropriate signs, or combinations of them, in a manner that is reasonably similar to the standards set forth in subdivision 2, or which in his judgment does not constitute a safety hazard.*

#### **180.04    Requiring Employees to Work After Order to Quit; Liability of Employer.**

This was originally enacted as General Laws of Minnesota for 1905, Ch. 166, Sec. 4.

*Sec. 4. If any person or persons are required to continue work in any place or places in which the inspector of mines has ordered employes [sic] to quit work as aforesaid, except to do such work as may have been by him required to be done in order to render such place or places safe, ordinary risks of mining excepted, the person or persons or corporation so requiring employees to work in such place or places shall*

*be liable for all accidents causing injury or death to any employe [sic] arising by reason of such place or places not having been repaired or changed as required by said inspector.*

This statute remains essentially the same as when it was first enacted. "Or persons" and "or places" have been deleted from the current statute and "the person or persons or corporation" has been changed to the persons or corporations.

**180.05 Inspector, Powers; Owner, Duties.**

This was Section 5 of the original act. It allowed the inspector of mines to inspect at any reasonable time, night or day, as long as he did not hinder operations. A suitable person or persons as he may desire to accompany him was to be furnished by the owner, operator or agent. Refusal to allow an inspection was a gross misdemeanor punishable by a fine between \$100 and \$500 for each and every offense.

*Sec. 5. It shall be lawful for the inspector of mines to enter, examine and inspect any and all mines and machinery belonging thereto at all reasonable times by day or by night, but so as not to obstruct or hinder the necessary workings of such mines, and it shall be the duty of the owner, operator or agent of every mine upon the request of the inspector of mines to furnish for his inspection all maps, drawings and plans of the mine, together with the plans of all contemplated changes in the manner of working the mine or any part thereof; to furnish him with some suitable person or persons as he may desire to accompany him through the mine or any part thereof, and also to furnish him suitable ladders and other necessary appliances to make a proper inspection and to furnish upon request the inspector of mines with all necessary facilities for such entry, examination and inspection, and if the said owner, operator or agent aforesaid shall refuse to permit such inspection or to furnish the necessary facilities for such entry, examination and inspection and shall continue so to refuse or permit after written request therefor made by the inspector of mines, such refusal or neglect shall be deemed a gross misdemeanor and upon conviction therefor such owner, operator or agent shall be punished by a fine of not less than one hundred or more than five hundred dollars for each and every offense.*

In 1951, with the appointment of assistant inspectors, this statute was amended. The assistant inspector was given the same duties as the inspector. The owner was now required to furnish some suitable person from a list of at least three candidates submitted by a majority of employees of the mine to accompany the inspector or his assistant. The fine for violation was increased to between \$500 and \$1000 for each offense. Laws 1951, Ch. 687, Sec. 4. Laws 1984, Ch. 628, Art. 3, Sec. 11 raised the maximum fine from \$1000 to \$3000.



#### 180.06 Salary and Expenses.

This is Section 6 of Laws of Minnesota for 1905, Chapter 166. It is provided that salaries and expenses be paid out of the county treasury. No changes have been made.

*Sec. 6. The salary and expenses of the inspector of mines shall be paid out of the treasury of the county for which he is appointed by vouchers similar to those used by other county officials. The board of county commissioners shall furnish the inspector of mines with the necessary books, stationery and supplies.*

#### 180.07 Inspection Requested, Examination.

This was Section 7 of the original act. It allowed 20 or more employees, the owner, operator or agent to request an inspection.

*Sec. 7. Whenever twenty or more persons working in any mine or place where mining is done, or the owner, operator or agent of any mine, shall notify the inspector of mines in writing that his services are needed, he shall immediately make an inspection thereof and shall examine as to the necessary precautions and general safety of the mines and see that all the provisions of this act are observed and strictly carried out.*

Laws 1951, Chapter 687, Section 5 added the certified collective bargaining agent for the employees to the list of those allowed to request an inspection.

#### 180.08 Accidents; Notice, Investigation.

General Laws of Minnesota for 1905, Chapter 166, Section 8 provided that the inspector be notified of any serious accident. If necessary, the inspector is to go to the scene and take such steps as necessary to provide for the employees' safety.

*Sec. 8. Whenever by reason of any accident in any mine, loss of life or serious personal injury shall occur, it shall be the duty of the manager or superintendent of the mine, and in his absence the person or officer under him in charge of the mine, to give notice thereof forthwith to the inspector of mines, stating the particulars of such accident, and the said inspector shall, if he deems it necessary from the facts reported, go immediately to the scene of such accident and make such suggestions and render such assistance as he may deem necessary in the premises and personally investigate the cause of such accident and take such steps as he may deem necessary for the safety of the employes [sic] of such mine and to prevent accidents of a like or similar nature.*

In 1951, it was added that when the inspector goes to the scene, he is to be accompanied by three persons appointed by the manager and three persons appointed by the majority of employees. Laws 1951, Ch. 687, Sec. 6.

#### **180.09 Duty of Owner; Timber of Supports and Props.**

Chapter 166, Section 9 requires a mine to have sufficient timber and logging on hand to be used for support to render the mine reasonably safe and secure. No substantive change has been made.

*Sec. 9. The owner, operators or agent of any mine shall at all times keep a sufficient and suitable supply of timber and logging on hand, when required to be used as supports, props or otherwise in the mining work, so that the workings of such mine may be rendered reasonably safe and secure.*

#### **180.10 Removal of Fence; Guard.**

Section 10 of the original act provides that any person or employee who removes any fence, guard or rail without a replacement is guilty of a misdemeanor.

*Sec. 10. Any workman, employe [sic] or other person who shall open, remove or disturb any fence, guard or rail and not close or replace or have the same closed or replaced again around or in front of any shaft, test pit, shute [sic], excavation, cave or land liable to cave, injure or destroy, whereby accident, injury or damage results, either to the mine or those at work therein, or to any other person, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine not exceeding fifty dollars or imprisonment for not more than sixty days in the county jail for each and every such offense.*

Laws 1985, First Special Session, Chapter 13, Section 290 adds barrier to the list of things not to be removed. A person may be sentenced under section 609.52, if the person commits theft of the fence, guard, barrier or rail.

#### **180.11 Annual Report.**

Section 11 of Chapter 166 requires the inspector of mines to file an annual report with the county auditor and with the state commissioner of labor by September 1.

*Sec. 11. It shall be the duty of the inspector of mines appointed under this act to make and file no later than September 1st of each year with the auditor of the county for which he is appointed and with the state commissioner of labor a full and complete report of all his acts,*

*proceedings and doings hereunder for each year ending June thirtieth, stating therein, among other things, the number of visits and inspections made, the number of mines in operation, the number not in operation, the names of the mines, where located, the owners, lessees or managers, the names of the officers, the quantity of ore shipped, the number of men employed, the average wages for different kinds of work, the number of accidents, fatal or otherwise, the cause of such accidents, and such other information in relation to the subject of mines and mining inspection as he may deem of proper interest and beneficial to the mining interests of the state. Such report shall be included in the biennial report of the state commissioner of labor.*

In 1923, the year end was changed to December 31 with the report to be filed by March 1. Laws 1923, Chapter 41. Laws 1923, Chapter 72 added that the preceding one-half year for which no report has been rendered, there shall be substituted a report for the entire year and submitted not later than May 1, 1923.

The legislature, in 1947, no longer required that the report be included in the biennial report of the industrial commission. Laws 1947, Chapter 99. In 1967, the revisor of statutes was to change the industrial commission to the Department of Labor and Industry. Extra Session 1967 Laws, Chapter 1, Section 6.

#### **180.12 Violations.**

Section 12 of the original act provided that any owner, operator or agent who violated this act was guilty of a gross misdemeanor.

*Sec. 12. Any owner, operator or agent of any mine in this state violating the provisions of this act shall be deemed guilty of a gross misdemeanor and for each offense upon conviction shall be fined not less than one hundred dollars or more than five hundred dollars.*

The legislature added a subdivision to this section. The first subdivision was basically the same except a violator could be covered under another specific statutory provision. Subdivision 2 made a person guilty of a gross misdemeanor if the person was immediately in charge and failed to carry out an inspector's order or authorized work in violation of 180.04, provided that the district court finds that the order is not unjust or unreasonable. Each time an order is not complied with is a separate offense. Each offense will be prosecuted by the county attorney. Punishment was to be provided in Minn. Stat. 1949, ch. [section] 610.20. Laws 1951, Ch. 687, Sec. 7. The criminal code adopted in 1963 changed the statute; punishment was to be provided under Laws 1963, Ch. 753, Art. 1, Sec. 609.08. Laws 1965, Ch. 51, Sec. 37. This changed the maximum fine to \$1000. Laws 1984, Ch. 628, Art. 3, Sec. 11 raised the maximum fine to its current level of \$3000.

**180.13 Neglect of Inspector.**

Section 13 required the inspector to comply with this act or be guilty of a gross misdemeanor with a possible fine of not less than \$100 or more than \$1000. The board of commissioners could remove the inspector for good cause.

*Sec. 13. Any inspector of mines appointed hereunder failing to comply with the requirements of this act shall be guilty of a gross misdemeanor and upon conviction thereof shall be fined not less than one hundred or more than one thousand dollars and be dismissed from office, and the said board of commissioners shall remove him from office for neglect of duty, drunkenness, incompetency, malfeasance in office and other good cause.*

Laws 1984, Ch. 628, Art. 3, Sec. 11 raised the maximum fine to \$3000.

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**APPENDIX B**  
**Minnesota Statutes Chapter 180**

## CHAPTER 180

### MINE INSPECTORS

180.01	Appointment.	180.08	Accidents; notice, investigation.
180.02	Qualifications, salary, oath, bond.	180.09	Duty of owner; timber for supports and props.
180.03	Duties.	180.10	Removal of fence; guard.
180.04	Requiring employees to work after order to quit, liability of employer.	180.11	Annual report.
180.05	Inspector, powers, owner, duties.	180.12	Violations.
180.06	Salary and expenses.	180.13	Neglect of inspector.
180.07	Inspection requested, examination.		

#### 180.01 APPOINTMENT.

The board of commissioners of any county in this state, where there are at least five mines situate and in operation, is hereby authorized and directed, on or before the first day of July, 1905, to appoint an inspector of mines, who shall hold office for the term of three years or until his successor is appointed and qualified, and in addition thereto may appoint one assistant inspector for every 20 mines as the board may determine for the purpose of discharging the duties hereinafter prescribed; to fix the compensation and traveling expenses of such inspector or any assistant inspector and provide for the payment of the same, and to remove such inspector or any assistant inspector and appoint another in his place when in the judgment of the board the best interests of the owners and employees of such mines may so require.

History: 1905 c 166 s 1; 1951 c 687 s 1 (4233)

#### 180.02 QUALIFICATIONS, SALARY, OATH, BOND.

Each inspector of mines and assistant shall be at least 25 years of age, a citizen of the state, and a resident of the county wherein he is appointed, of good moral character and temperate habits. Previous to his appointment he shall have had practical experience as a miner or otherwise engaged as an employee in mines of the state at least six years, or a mining engineer having had previous to his appointment at least two years of practical experience in iron mines and iron mining and having had at least one year of such experience in this state. He shall not while in office in any way be interested as an owner, operator, agent, stockholder, or engineer of any mine. He shall make his residence or have his office in the mining district of the county for which he is appointed. The salary of each inspector of mines and assistant shall be such sum as shall be fixed by the county board not exceeding \$7,500 per annum, and he shall be allowed actual traveling expenses not to exceed \$1,200 in any one year. He shall file with the county auditor an itemized account of his expenses every three months, verified by his affidavit, showing that they have been incurred in the discharge of his official duties. Before entering upon the discharge of the duties of his office, he shall take an oath before some person authorized by law to administer oaths that he will support the Constitution of the United States and the Constitution of the state of Minnesota, and that he will faithfully, impartially, and to the best of his ability discharge the duties of his office, and file a certificate of his having done so in the office of the county auditor. He shall give bond, payable to the county board, in the penal sum of \$5,000, with sufficient sureties to be approved by the county board, conditioned that he will faithfully discharge the duties of his office and this bond shall be filed with the county auditor.

History: 1905 c 166 s 2; 1911 c 133 s 1; 1921 c 7 s 1; 1951 c 687 s 2; 1953 c 259 s 1; 1957 c 310 s 1 (4234)

#### 180.03 DUTIES.

Subdivision 1. The duties of the inspector of mines shall be to visit in person or by one of his assistants all the working mines of his county at least once every 90 days and oftener if requested so to do as hereinafter provided, and closely inspect the mines so visited and condemn all such places where he shall find that the employees are in danger from any cause, whether resulting from careless mining or defective machinery or appliances of any nature; he shall compel the erection of a partition between all shafts where hoisting of ore is performed, and where there are ladder ways, where men must ascend or descend going to and from their work. In case the inspector of mines shall find that a place is dangerous from any cause, as aforesaid, it shall be his duty immediately to order the men engaged in the work at that place to quit work, and notify the superintendent, agent, or person in charge to secure the place from the existing danger, which notification or order shall be in writing, clearly define the limits of the dangerous place, and specify the work to be done or change to be made to render the same secure, ordinary mine risks excepted. It shall be the duty of the inspector of mines to order the person, persons, or corporation working any mine, or the agent, superintendent, foreman, or other person having immediate charge of the working of any mine, to furnish all shafts, open pits, caves, and chutes of such mine where danger exists with some secure safeguard at the top of the shaft, open pit, cave, or chute, so as to guard against accidents by persons falling therefrom or by material falling down the same, also a covering overhead on all the carriages on which persons ascend or descend up and down the shaft, if in his judgment it shall be practicable and necessary for the purpose of safety.

Subd. 2. Every person, firm or corporation that is or has been engaged in the business of mining or removing iron ore, taconite, semitaconite or other minerals except sand, crushed rock and gravel by the open pit method in any county which has appointed an inspector of mines pursuant to section 180.01 shall erect a fence, barrier, appropriate signs, or combination of them, as directed by the inspector, along the outside perimeter of the excavation, open pit, or shaft of any mine in which mining operations have ceased for a period of six consecutive months or longer. However, in residential and developed areas, along major roads, and in areas of hazardous conditions, the following described fencing must be erected, unless exempted by the county mine inspector under subdivision 4. This fencing must consist of two-inch by four-inch mesh fencing; the top and bottom wire shall not be less than nine gauge and the filler wire shall not be less than 11 gauge; the fencing shall be not less than five feet in height with two strands of barbed wire six inches apart affixed to the top of the fence; and the fence posts shall be no more than ten feet apart. In the case of open pit mines in which mining operations cease after November 1, 1979, and before March 1, 1980, the fence, barrier, signs, or combination of them shall be erected as soon as possible after March 1, 1980. Where mining operations cease on or after March 1, 1980, the fence, barrier, signs, or combination of them shall be erected forthwith. In the case of open pit mines in which mining operations had ceased for a period of six consecutive months or longer before November 1, 1979, and not resumed, the fence, barrier, signs, or combination of them shall be erected within two years from the current date. Any fence, barrier, signs, or combination of them, required by an inspector of mines pursuant to subdivision 3 or other applicable law, shall meet the standards of this section as a minimum. This subdivision does not apply to any excavation, open pit, or shaft, or any portion thereof, exempted from its application by the commissioner of natural resources pursuant to laws relating to mineland reclamation, exempted from its application by the iron range resources and rehabilitation board under actions taken by the board, or exempted from its application by the county mine inspector pursuant to subdivision 4.

Subd. 3. When any mine is idle or abandoned it shall be the duty of the inspector of mines to notify the person, firm, or corporation that is or has been engaged in the business of mining to erect and maintain around all the shafts, caves, and open pits of such mines a fence, barrier, appropriate signs, or combination of

them, suitable to prevent persons or domestic animals from accidentally falling into these shafts, caves or open pits. If the person, firm or corporation that has been engaged in the business of mining no longer exists, the fee owner shall erect the fence, barrier, or signs required by this section. The notice shall be in writing and be served upon such person, firm, corporation or fee owner by certified mail.

Subd. 4. Upon written application, the county mine inspector may exempt from the requirements of subdivision 2, any abandoned excavation, open pit, or shaft which is provided with fencing, barriers, appropriate signs, or combinations of them, in a manner that is reasonably similar to the standards set forth in subdivision 2, or which in his judgment does not constitute a safety hazard.

History: 1905 c 166 s 3; 1951 c 687 s 3; 1978 c 596 s 1; 1979 c 333 s 91; 1980 c 614 s 98; 1982 c 639 s 34; 1983 c 156 s 1; 1984 c 654 art 2 s 119 (4235)

#### 180.04 REQUIRING EMPLOYEES TO WORK AFTER ORDER TO QUIT; LIABILITY OF EMPLOYER.

If any person is required to continue work in any place in which the inspector of mines has ordered employees to quit work, as aforesaid, except to do such work as may have been by him required to be done in order to render such place safe, ordinary risks of mining excepted, the persons or corporations so requiring employees to work in such place shall be liable for all accidents causing injury or death to any employee arising by reason of such place not having been repaired or changed as required by the inspector.

History: 1905 c 166 s 4 (4236)

#### 180.05 INSPECTOR, POWERS; OWNER, DUTIES.

It shall be lawful for the inspector of mines or assistant inspector to enter, examine, and inspect any and all mines and machinery belonging thereto at all reasonable times by day or by night, but so as not to obstruct or hinder the necessary workings of such mines, and it shall be the duty of the owner, operator, or agent of every such mine, upon the request of the inspector of mines, or assistant inspector to furnish for his inspection, all maps, drawings, and plans of the mine, together with the plans of all contemplated changes in the manner of working the mine or any part thereof; to furnish him with some suitable person, as he may desire, who shall be chosen from a list containing at least three candidates, submitted by a majority of employees of the mine, to accompany him through the mine, or any part thereof, and to furnish him suitable ladders and other necessary appliances to make a proper inspection and to furnish upon request the inspector of mines with all necessary facilities for such entry, examination, and inspection, and if the owner, operator, or agent refuse to permit such inspection or to furnish the necessary facilities for such entry, examination, and inspection, and continue so to refuse or permit, after written request thereof made by the inspector of mines, such refusal or neglect shall be deemed a gross misdemeanor, and, upon conviction thereof, such owner, operator, or agent shall be punished by a fine of not less than \$500 nor more than \$3,000 for each offense.

History: 1905 c 166 s 5; 1951 c 687 s 4; 1984 c 628 art 3 s 11 (4237)

#### 180.06 SALARY AND EXPENSES.

The salary and expenses of the inspector of mines shall be paid out of the treasury of the county for which he is appointed by vouchers similar to those used by other county officials. The board of county commissioners shall furnish the inspector of mines with necessary books, stationery, and supplies.

#### 180.07 INSPECTION REQUESTED, EXAMINATION.

When 20 or more persons working in any mine or place where mining is done, or the owner, operator, or agent of any mine, or the certified collective bargaining agent for the employees of said mine, shall notify the inspector of mines in writing that his services are needed he shall immediately make an inspection thereof and examine as to the necessary precautions and general safety of the mines and see that all the provisions of this chapter are observed and strictly carried out.

History: 1905 c 166 s 7; 1951 c 687 s 5 (4239)

#### 180.08 ACCIDENTS; NOTICE, INVESTIGATION.

When by reason of any accident in any mine loss of life or serious personal injury shall occur it shall be the duty of the manager or superintendent of the mine, and in his absence the person or officer under him in charge of the mine, to give notice thereof forthwith to the inspector of mines, stating the particulars of such accident, and the inspector shall, if he deems it necessary from the facts reported, go immediately to the scene of such accident and make such suggestions and render such assistance as he may deem necessary in the premises and personally investigate the cause of such accident and take such steps as he may deem necessary for the safety of the employees of such mine and to prevent accident of a like or similar nature. The inspector shall be accompanied by three persons appointed by the manager or other person in charge of the mine and by three persons appointed by a majority of the employees of the mine to serve in such cases.

History: 1905 c 166 s 8; 1951 c 687 s 6 (4240)

#### 180.09 DUTY OF OWNER; TIMBER FOR SUPPORTS AND PROPS.

The owner, operator, or agent of any mine shall at all times keep a sufficient and suitable supply of timber and logging on hand when required to be used as supports, props, or otherwise in the mining work so that the workings of such mine may be rendered reasonably safe and secure.

History: 1905 c 166 s 9 (4241)

#### 180.10 REMOVAL OF FENCE; GUARD.

Any workman, employee, or other person who shall open, remove, or disturb any fence, guard, barrier, or rail and not close or replace or have the same closed or replaced again around or in front of any shaft, test pit, chute, excavation, cave, or land liable to cave, injure, or destroy, whereby accident, injury, or damage results, either to the mine or those at work therein, or to any other person, shall be guilty of a misdemeanor. A workman, employee, or other person who, in regard to any fence, guard, barrier, or rail, does any of the acts prohibited by section 609.52, commits theft of the fence, guard, barrier, or rail may be sentenced as provided in section 609.52.

History: 1Sp1985 c 13 s 290

#### 180.11 ANNUAL REPORT.

It shall be the duty of the inspector of mines to make and file no later than March first each year with the auditor of the county for which he is appointed, and with the department of labor and industry, a full and complete report of all his acts, proceedings, and doings hereunder for each year ending December 31, stating therein among other things the number of visits and inspections made, the number of mines in operation, the number not in operation, the names of the mines, where located, the owners, lessees, or managers, the names of the officers, the quantity of

ore shipped, the number of men employed, the average wages for different kinds of work, the number of accidents, fatal or otherwise, the cause of such accidents, and such other information in relation to the subject of mines and mining inspection as he may deem of proper interest and beneficial to the mining interests of the state.

History: 1905 c 166 s 11; 1923 c 41 s 1; 1923 c 62 s 1; 1947 c 99 s 1; Ex1967 c 1 s 6 (4243)

#### 180.12 VIOLATIONS.

Subdivision 1. Any owner, operator or agent of any mine in this state violating the provisions of this chapter shall, except as otherwise specifically provided, be deemed guilty of a gross misdemeanor, and for each offense, upon conviction, fined not less than \$100 nor more than \$3,000.

Subd. 2. Any person who is in immediate charge of the working of any mine who fails to carry out any order of the inspector, issued pursuant to section 180.03 or who permits, directs, or authorizes any person to work in a manner which violates the provisions of section 180.04 shall upon finding by the district court of the county where the mine is situated that the order of the inspector was not unjust or unreasonable or an abuse of his discretion be guilty of a gross misdemeanor, and upon conviction thereof, shall be punished as provided in section 609.03. Each time an order of the inspector issued under section 180.04 is not complied with, shall constitute a separate offense. Each offense shall be prosecuted by the county attorney of the county in which the offense took place.

History: 1905 c 166 s 12; 1951 c 687 s 7; 1965 c 51 s 37; 1984 c 628 art 3 s 11 (4244)

#### 180.13 NEGLECT OF INSPECTOR.

Any inspector of mines appointed hereunder failing to comply with the requirements of this chapter shall be guilty of a gross misdemeanor; and, upon conviction thereof, fined not less than \$100 nor more than \$3,000 and be dismissed from office, and the board of commissioners shall remove him from office for neglect of duty, drunkenness, incompetency, malfeasance in office, or other good cause.

History: 1905 c 166 s 13; 1984 c 628 art 3 s 11 (4245)



The commissioner of natural resources, with the assistance of the commissioner of the iron range resources and rehabilitation board and county mine inspectors, shall study the adequacy of existing laws relating to the protection of the public from hazards arising from the existence of excavations, open pits, shafts, or caves created by mining other than mining of sand, crushed rock, or gravel, and shall report findings, conclusions, and recommendations to the 1987 session of the legislature. The commissioner shall consult with private owners and operators of active and inactive mines in the study.

Sec. 64. Minnesota Statutes 1984, section 3.736, subdivision 3, is amended to read:

Subd. 3. **EXCLUSIONS.** Without intent to preclude the courts from finding additional cases where the state and its employees should not, in equity and good conscience, pay compensation for personal injuries or property losses, the legislature declares that the state and its employees are not liable for the following losses:

(a) Any loss caused by an act or omission of a state employee exercising due care in the execution of a valid or invalid statute or regulation;

(b) Any loss caused by the performance or failure to perform a discretionary duty, whether or not the discretion is abused;

(c) Any loss in connection with the assessment and collection of taxes;

(d) Any loss caused by snow or ice conditions on any highway or other public place, except when the condition is affirmatively caused by the negligent acts of a state employee;

(e) Any loss caused by wild animals in their natural state;

(f) Any loss other than injury to or loss of property or personal injury or death;

(g) Any loss caused by the condition of unimproved real property owned by the state, which means land that the state has not improved, and appurtenances, fixtures and attachments to land that the state has neither affixed nor improved;

(h) Any loss arising from the construction, operation, or maintenance of the outdoor recreation system, as defined in section 86A.04, or from the clearing of land, removal of refuse, and creation of trails or paths without artificial surfaces, or from the construction, operation, or maintenance of a water access site created by the iron range resources and rehabilitation board, except that the state is liable for conduct that would entitle a trespasser to damages against a private person.

(i) Any loss of benefits or compensation due under a program of public assistance or public welfare, except where state compensation for loss is expressly required by federal law in order for the state to receive federal grants-in-aid;

(j) Any loss based on the failure of any person to meet the standards needed for a license, permit, or other authorization issued by the state or its agents;

(k) Any loss based on the usual care and treatment, or lack of care and treatment, of any person at a state hospital or state corrections facility where reasonable use of available appropriations has been made to provide care;

(l) Any loss, damage, or destruction of property of a patient or inmate of a state institution;

(m) Any loss for which recovery is prohibited by section 169.121, subdivision 9.

The state will not pay punitive damages.

Sec. 346. Minnesota Statutes 1984, section 466.03, is amended by adding a subdivision to read:

Subd. 6c. **WATER ACCESS SITES.** Any claim based upon the construction, operation, or maintenance by a municipality of a water access site created by the iron range resources and rehabilitation board.



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**APPENDIX C**  
**Participants in Fencing Committee Meetings**

# FENCING MAILING LIST

Participant	Affiliation
Dave Meineke	Meriden Engineering
Jeff Hammerlind	Meridian Aggregate
L. A. Anderson	Hanna Mining Company
John Boentje, Jr.	Pittsburgh Pacific Company
Jim Rhude	Rhude and Fryeberger, Inc.
Cedric Iverson	United States Steel Company
David Sandstrom	St. Louis County Mine Inspector
Steven Jelencich	Crow Wing County Mine Inspector
Alvar Hupila	Itasca County Mine Inspector
Mike Dean	St. Louis County Attorney's Office
John Vogel	St. Louis County Land Commissioner
Representative Joe Begich	Iron Range Delegation
Orlyn Olson	IRRRB
Thomas Congdon	Congdon Office Corporation
Paul Willard	Day Development Company
John Suihkonen	Eveleth Fee Office
Richard Baehr	Great Northern Iron Ore Properties
David Hartley	Hartley Office
D. H. Pirolo	Inland Steel Mining Company
D. B. Lemay	LTV Steel
Warrin Finn	Mesabi Mineral Association
A. G. Connor	Meriden Engineering
Chuck Hoffman	Pickands Mather & Company
M. R. Banovetz	Reserve Mining Company
J. B. Snyder	Shenango Furnace Company
Philip Taylor	Taylor Properties
Keith Jansen	United States Steel Company
John Dimich	Itasca County Attorney's Office
Darrell Lauber	Itasca County Land Commissioner
Steven Rathke	Crow Wing County Attorney's Office
Lansin Hamilton	Crow Wing County Land Commissioner
G. Kotonias	National Steel Pellet Company
Jack Banke	Ogelbay Norton Company
President	Adams Estate Properties
President	Alworth and Washburn Interests
President	Henry F. Brown Holding Company
Al France	Lake Superior Industrial Bureau
Joseph Gnoza	Hanna Mining Company
Dan Hestetune	consultant
R. W. McBride	LTV Steel
Tom Malkovich	Ogelbay Norton Company
R. C. Hemmersbaugh	Reserve Mining Company
Phil Groebe	Inland Steel Corporation
Nick Brascugli	United States Steel Company
Brian Hiti	IRRRB
Larry Schmelzer	National Steel Pellet Company
David Marshall	Itasca County Land Department
Dan Lamphere	Lamphere Excavating, Inc.
Mac Karpen	RAMS
Douglas Schrader	Inland Steel Company

# PRELIMINARY FENCING MEETINGS

November 1985 to January 1986

Participant	Affiliation
Alvar Hupila	Itasca County Mine Inspector
Dave Sandstrom	St. Louis County Mine Inspector
Barry Lesar	St. Louis County Mine Inspector's Office
Kevin O'Connell	St. Louis County Attorney's Office
Steve Jelencich	Crow Wing County Mine Inspector
Orlyn Olson	IRRRB
Al France	Lake Superior Industrial Bureau
Jim Rhude	Rhude and Fryberger
John Boentje	Pittsburgh Pacific
Jeff Hammerlind	Meridian Minerals
Representative Joe Begich	Iron Range Delegation
Mike Dean	St. Louis County Attorney's Office
John Vogel	St. Louis County Land Commissioner

# FENCING COMMITTEE MEETING PARTICIPANTS

March 25, 1986

Participant	Affiliation
Dave Hartley	Hartley Fee Office
Dan Hestetune	Consultant
Arlo Knoll	Department of Natural Resources
John Vogel	St. Louis County Land Commissioner
Peter Banovetz	St. Louis County Attorney's Office
Barry Lesar	St. Louis County Mine Inspector' Office
Dave Sandstrom	St. Louis County Mine Inspector
Paul Pojar	Department of Natural Resources
Bob McBride	LTV Steel
Douglas Schrader	Inland Steel
Phil Groebe	Inland Steel
Steve Dewar	Department of Natural Resources
Tom Malkovich	Oglebay Norton
John Suihkonen	Eveleth Fee Office
Cindy Buttleman	Department of Natural Resources
Jim Rhude	Rhude and Fryberger
Keith Jansen	U. S. Steel
John Boentje	Pittsburgh Pacific
Dick Baehr	Great Northern Iron Ore Properties
A. G. Connor	Meriden Eng., Congdon Trust, Chester Co.
Warren Finn	Mesabi Mineral Association
Al France	Lake Superior Industrial Bureau
Larry Schmelzer	National Steel Pellet Company
Joe Gnoza	Hanna Mining Company
Dan Lamphere	Lamphere Excavating
Alvar Hupila	Itasca County Mine Inspector
Dave Marshall	Itasca County Lands Department
Lansin Hamilton	Crow Wing County Land Commissioner
Cedric Iverson	U. S. Steel
Charles Hoffman	Pickands Mather Company
Orlyn Olson	IRRRB
Brian Hiti	IRRRB

# FENCING SUBCOMMITTEE MEETING PARTICIPANTS

April 10, 1986

Participant	Affiliation
Orlyn Olson	IRRRB
Dave Sandstrom	St. Louis County Mine Inspector
Alvar Hupila	Itasca County Mine Inspector
Arlo Knoll	Department of Natural Resources
Steve Jelencich	Crow Wing County Mine Inspector
Paul Pojar	Department of Natural Resources
John Vogel	St. Louis County Land Commissioner
Mike Dean	St. Louis County Attorney's Office
David Marshall	Itasca County Lands Department
Steve Dewar	Department of Natural Resources
Lansin Hamilton	Crow Wing County Land Commissioner
Al France	Lake Superior Industrial Bureau
Cindy Buttleman	Department of Natural Resources
Jim Rhude	Rhude and Fryberger
John Boentje (alternate)	Pittsburgh Pacific
Warren Finn	Mesabi Mineral Association
Dave Hartley (alternate)	Hartley Fee Office
Dan Lamphere	Lamphere Excavating
Mac Karpen	Range Area Municipalities & Schools

# FENCING SUBCOMMITTEE MEETING PARTICIPANTS

April 24, 1986

Participant	Affiliation
Arlo Knoll	Department of Natural Resources
David Marshall	Itasca County Land Department
Steve Jelencich	Crow Wing County Mine Inspector
Mike Dean	St. Louis County Attorney's Office
John Vogel	St. Louis County Land Commissioner
Al France	Lake Superior Industrial Bureau
Lansin Hamilton	Crow Wing County Land Commissioner
Dave Sandstrom	St. Louis County Mine Inspector
Barry Lesar	St. Louis County Mine Inspector's Office
John Boentje	Pittsburgh Pacific Company
Warren Finn	Mesabi Mineral Association
Cindy Buttleman	Department of Natural Resources
A. G. Connor	Meriden Engineering
Paul Pojar	Department of Natural Resources
Dan Lamphere	Lamphere Excavating
Steve Dewar	Department of Natural Resources
Ray Svatos	IRRRB
Orlyn Olson	IRRRB
Al Hupila	Itasca County Mine Inspector



# FENCING COMMITTEE MEETING PARTICIPANTS

October 22, 1986

Participant	Affiliation
Tom Malkovich	Oglebay Norton Company
Phil Groebe	Inland Steel
Bob McBride	LTV Steel Company
Arlo Knoll	Department of Natural Resources
Bruno Scipioni	U. S. Steel, retired
Cedric Iverson	U. S. X.
Nick Brascugli	U. S. X.
E. W. Kleinendorst	Great Northern Iron Ore Properties
Dave Michels	Great Northern Iron Ore Properties
Cindy Buttleman	Department of Natural Resources
Orlyn Olson	IRRRB
Al France	Lake Superior Industrial Bureau
Al Hupila	Itasca County Mine Inspector
Barry Lesar	St. Louis County
Dave Sandstrom	St. Louis County Mine Inspector
Paul Pojar	Department of Natural Resources
Ray Svatos	IRRRB
Larry Schmelzer	National Steel Pellet Company
Joe Gnoza	M. A. Hanna Company
Dan Lamphere	Lamphere Excavating, Inc.
A. G. Connor	Meriden Eng., Sargent Land, Congden
David Marshall	Itasca County Land Department
Chuck Hoffman	Pickands Mather and Company
John Vogel	St. Louis County Land Department
Mike Dean	St. Louis County Attorney's Office
Dan Hestetune	mining consultant
Dave Hartley	Hartley Fee Office
Mac Karpen	RAMS

# FENCING SUBCOMMITTEE MEETING PARTICIPANTS

November 10, 1986

Participant	Affiliation
Arlo Knoll	Department of Natural Resources
Philip Olfelt	Attorney General's Office
Steve Dewar	Department of Natural Resources
Dave Sandstrom	St. Louis County Mine Inspector
Elwood Rafn	Department of Natural Resources
Mac Karpen	RAMS
Paul Pojar	Department of Natural Resources
Steve Thorne	Department of Natural Resources
Warren Finn	Mesabi Mineral Association Fee
Andrew Tourville	Attorney General's Office
Michael Dean	St. Louis County Attorney's Office
Cindy Buttleman	Department of Natural Resources
Alvar Hupila	Itasca County Mine Inspector
DeLyle Pankratz	IRRRB
David Marshall	Itasca County Land Department
Barry Lesar	St. Louis County Mine Inspector's Office
Al France	Lake Superior Industrial Bureau
Chuck Hoffman	Pickands Mather & Company

# FENCING COMMITTEE MEETING PARTICIPANTS

December 17, 1986

Participant	Affiliation
Mike Dean	St. Louis County Attorney's Office
Al Hupila	Itasca County Mine Inspector
Lansin Hamilton	Crow Wing County Land Commissioner
Orlyn Olson	IRRRB
Al France	Lake Superior Industrial Bureau
Nick Brascugli	U. S. X.
Cedric Iverson	U. S. X.
John Suihkonen	Eveleth Fee Office
Dan Hestetuen	mining consultant
Arlo Knoll	Department of Natural Resources
Cindy Buttleman	Department of Natural Resources
Dave Hartley	Hartley Office
Tom Malkovich	Oglebay Norton Company
A. G. Connor	Meriden Eng., Congdon Trust, Chester Co.
Dave Michels	Great Northern Iron Ore Properties
E. W. Kleinendorst	Great Northern Iron Ore Properties
Barry Lesar	St. Louis County Mine Inspector's Office
Paul Pojar	Department of Natural Resources
Dave Sandstrom	St. Louis County Mine Inspector
Ray Svatos	IRRRB
Mac Karpen	RAMS
Charles Hoffman	Pickands Mather & Company
David Marshall	Itasca County Land Department
Steve Dewar	Department of Natural Resources

# FENCING COMMITTEE MEETING PARTICIPANTS

February 11, 1987

Participant	Affiliation
Orlyn Olson	IRRRB
Nick Brascugli	U. S. X.
Cedric Iverson	U. S. X.
Dan Hestetuen	mining consultant
Arlo Knoll	Department of Natural Resources
Dave Hartley	Hartley Office
A. G. Connor	Meriden Eng., Congdon Trust, Chester Co.
Barry Lesar	St. Louis County Mine Inspector's Office
Paul Pojar	Department of Natural Resources
Dave Sandstrom	St. Louis County Mine Inspector
Ray Svatos	IRRRB
David Marshall	Itasca County Land Department
Steve Dewar	Department of Natural Resources
Philip Olfelt	Attorney General's Office
Bob McBride	LTV Steel Company
Joe Gnoza	M. A. Hanna Company
Larry Schmelzer	National Steel Pellet Company

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**APPENDIX D**  
**Fencing Mileage in St. Louis County**

# St. Louis County

OFFICE OF THE MINE INSPECTOR

Inspector of Mines

DAVID A. SANDSTROM

St. Louis County Court House  
Virginia, MN 55792

DATE: NOVEMBER 6, 1986

SUBJECT: BREAKDOWN OF FENCING AND EXCEPTIONS TO FENCING IN ST. LOUIS COUNTY

Areas that require fencing but we are having difficulty getting the responsible parties to repair the fences.

- |                    |                  |
|--------------------|------------------|
| 1. Wade Mine       | 1600 + or - Feet |
| 2. Lambertson Mine | 3960 + or - feet |
| 3. Embarrass Mine  | 600 + or - feet  |

Areas that have been exempted from fencing by the St. Louis County Mine Inspectors Department.

- |                    |                  |
|--------------------|------------------|
| 1. Forsyth Mine    | 3960 + or - Feet |
| 2. Knox Annex Mine | 5966 + or - Feet |

Total unfenced and unbermed areas equal 15,492 + or - feet or 2.93 + or - miles.

The three mines listed, that require fencing are from the list of fenced mines. The problem we have with these areas is getting anyone to repair the B.O. sections of fence.

The total milage for unfenced lands that require fencing is approximately 1.05 miles. The total milage for areas that have been exempted by the St. Louis County Mine Inspectors Department is approximately 1.88 miles. These figures leave 125 + or - miles of fenced minelands that are not generally problem areas and 3 + or - miles of unfenced lands that are guarded by other means, such as waste stockpiles, swamps, etc.

Areas that have, to the best of our knowledge, been exempted from fencing by the I.R.R.R.B.

- |                   |                  |
|-------------------|------------------|
| 1. Glen Mine      | 7920 + or - feet |
| 2. Embarrass Mine | 300 + or - feet  |
| 3. Gilbert Mine   | 700 + or - feet  |
| 4. Kinney Mine    | 300 + or - feet  |
| 5. Judson Mine    | 700 + or - feet  |
| 6. Stubler Mine   | 150 + or - feet  |
| 7. Miners Pit     | 700 + or - feet  |

These figures would appear in the mines that are fenced section of our preliminary report. The footages add up to approximately 2.04 miles. This leaves approximately 123 miles of fenced lands in St. Louis County.

America's Iron Ore Center...



at the Head of the Seaway

-78-

"An Equal Opportunity Employer"

# St. Louis County

OFFICE OF THE MINE INSPECTOR

*Inspector of Mines*

DAVID A. SANDSTROM


St. Louis County Court House  
Virginia, MN 55792

None of these figures include experimental berming that has started this year. That total footage is approximately 3960 feet or 0.75 miles. Again this would have to be deducted from the fenced lands, as it was not included in the " other " category in our preliminary report. ( Our preliminary report was completed prior to starting the experimental berms )

The mines with experimental berms are as follows.

- |                         |                  |
|-------------------------|------------------|
| 1. Embarrass            | 2640 + or - feet |
| 2. Duncan, Douglas Area | 1320 + or - feet |

This leaves approximately 122 miles of fenced lands in St. Louis County that are not generally problem areas.

  
D. A. Sandstrom

St. Louis County Mine Inspector

America's Iron Ore Center...



at the Head of the Seaway

"An Equal Opportunity Employer"





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**APPENDIX E**  
**Summary of IRRRB's Reclamation Program**

- IRRRB/MINELAND RECLAMATION -

11/07/86

The Iron Range Resources Mineland Reclamation Program is involved in the reclaiming of abandoned mining lands. At the present time the work is being done on properties owned by the state, county or local units of government and in cooperative projects with the mining industry on industry lands.

This is a program which deals with the abandoned mining lands after mining is completed. Some of the reclamation efforts include: reshaping and stabilizing mine pit walls, rock stockpiles and overburden stockpiles; developing public accesses to water filled mine pits and stocking those pits with fish; seeding grass; fertilizing areas of low productivity; and planting or seeding trees and shrubs. These areas when reclaimed are aesthetically pleasing and once again productive. Reclamation is not just stopping erosion, but it is determining a subsequent use for the lands such as recreation, tourism, forestry, fisheries or wildlife habitation, etc.

The planting of grass, shrubs and trees are used to control erosion, to establish forest areas and to screen mining sites from roadways and populated areas. Earthen or vegetative barriers are established around hazardous areas as a warning and to keep people away from these sites.

The mineland reclamation program is intended to improve the quality of life along the three Iron Ranges (Cuyuna, Mesabi and Vermilion) of northern Minnesota.

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**APPENDIX F**  
**Suggested Changes in State Tort Liability Law**

3.736 TORT CLAIMS.

...

(h) Any loss incurred by a user within the boundaries of the outdoor recreation system and arising from the construction, operation, or maintenance of the system, as defined in section 86A.04, or from the clearing of land, removal of refuse, and creation of trails or paths without artificial surfaces, or from the construction, and operation, or maintenance of a water access site created by the iron range resources and rehabilitation board, except that the state is liable for conduct constituting gross or willful and wanton negligence. ~~the state is liable for conduct that would entitle a trespasser to damages against a private person.~~

87.025 OWNER'S LIABILITY; NOT LIMITED.

Except as provided in this chapter nothing herein limits in any way any liability which otherwise exists:

(a) For conduct constituting gross or willful and wanton negligence.

~~(a) For conduct which, at law, entitles a trespasser to maintain an action and obtain relief for the conduct complained of.~~

(b) For injury suffered in any case where the owner charges the person or persons who enter or go on the land for the recreational use thereof, except that in the case of land leased to the state or a subdivision thereof, any consideration received from the state or subdivision thereof by the owner for such lease shall not be deemed a charge within the meaning of this section.

466.03 EXCEPTIONS.

...

Subd. 6d. [PARKS AND RECREATION AREAS.] Any claim based upon the construction, operation, or maintenance of any property owned or leased by the municipality that is intended or permitted to be used as a park, as an open area for recreational purposes, or for the provision of recreational services, or from any claim based on the clearing of land, removal of refuse, and creation of trails or paths without artificial surfaces, if the claim arises from a loss incurred by a user of park and recreation property or services. Nothing herein shall limit the liability of a municipality for conduct constituting gross or willful and wanton negligence proximately causing a loss. ~~Nothing in this subdivision limits the liability of a municipality for conduct that would entitle a trespasser to damages against a private person.~~

