

that the miners used, are given a 3000-foot electric train ride through a mine tunnel and are shown the underground mining area and equipment. During 1967 almost 38,500 people visited the park, with over 16,000 taking the underground tour.

As a result of the unique character of the Iron Range, the tourist industry has shown a continuous growth in the area. Further expansion of the tourist industry in the mining area is contemplated. For example, the state is presently investigating the feasibility of establishing a state park in one of the huge open pits.

MINING AND OUR ENVIRONMENT—PRESENT ACTION

Minnesota is aware that much must be done in the field of planned mine waste disposal, considering that the mining of the present commercial taconite reserve alone will result in the creation of many billions of tons of inert tailings. Additional research is needed to find uses for this now seemingly useless byproduct, and means of storing this material in a manner compatible with the natural environment.

The mining industry has shown an awareness of the problem by conducting experimental planting on surface dumps, tailings basins and stockpiles. Tailings basins have generally been placed in areas which would be least detrimental to our natural resources and screened from public view except by air. Research is presently being conducted to rejuvenate sterile tailings basins to allow vegetation growth by fertilization and soil conditioning.

Water pollution due to mining, a major problem to much of the mining industry and the country, is practically non-existent in Minnesota.

The Strip and Surface Mine Study Policy Committee of the Department of the Interior recognized this fact in their report "Surface Mining and Our Environment" by stating: "The minerals in the formations are chemically inert and the terrain is flat; thus the mining operations cause little or no water pollution". Through the cooperative efforts of state agencies and the mining industry, plant waters are recirculated through closed-circuit systems and large settling basins have been established to handle any discolored mine waters. Much work is being done to prevent pollution of our lakes and streams from surface water run-off by the construction of dikes, ditches settling basins, and plant and stockpile layout.

The Department of Conservation is presently conducting research directed toward improving the quality of taconite plant water. An experimental method of removing colloidal particles from plant water is being studied to allow greater re-use of the water in taconite processing. If successful, this will further reduce the water pollution potential and will also decrease the amount of fresh make-up water required for taconite processing.

There is a vast difference between iron mining in Minnesota and coal mining in other areas of the country. In most coal operations, mining in a particular area is completed in a relatively short period of time, with the operator moving on to other areas with no reason to return. Due to the immense reserve and the structure of the formation, iron ore mining in Minnesota is a very stable industry, and the mining area will not be exhausted in the foreseeable future. Only in the southeastern part of the state, in the Fillmore County area, where small shallow iron ore deposits occur, does a situation similar to coal mining exist. In this area it has long been the practice to return the area to its natural condition upon completion of mining. By contouring and replacement of the top soil, farm crops are being raised on the mined-out areas shortly after mining operations are concluded.

The following steps have been taken in regard to the state's infant copper-nickel industry. The rules and regulations for the granting of State copper-nickel mining leases recognize the pollution and environmental control problems that could develop. As a result, the state leases contain provisions for protection of the environment and for reclamation as follows:

(Paragraph 6) Rights under the lease "* * * shall not include the right to reduce or smelt ore upon said mining unit without agreement between the lessee and the Commissioner, authorizing such use of the surface of the land and providing for the necessary protection of life and property."

(Par. 23) The provisions of the lease are "* * * subject to all applicable federal and state statutes, order, rules and regulations, and all operations under this lease shall be conducted in conformity therewith. No interference, diversion, use or appropriation of any waters over which the Commissioner or any other state agency has jurisdiction, shall be undertaken unless authorized in writing by the Commissioner or the said state agency."