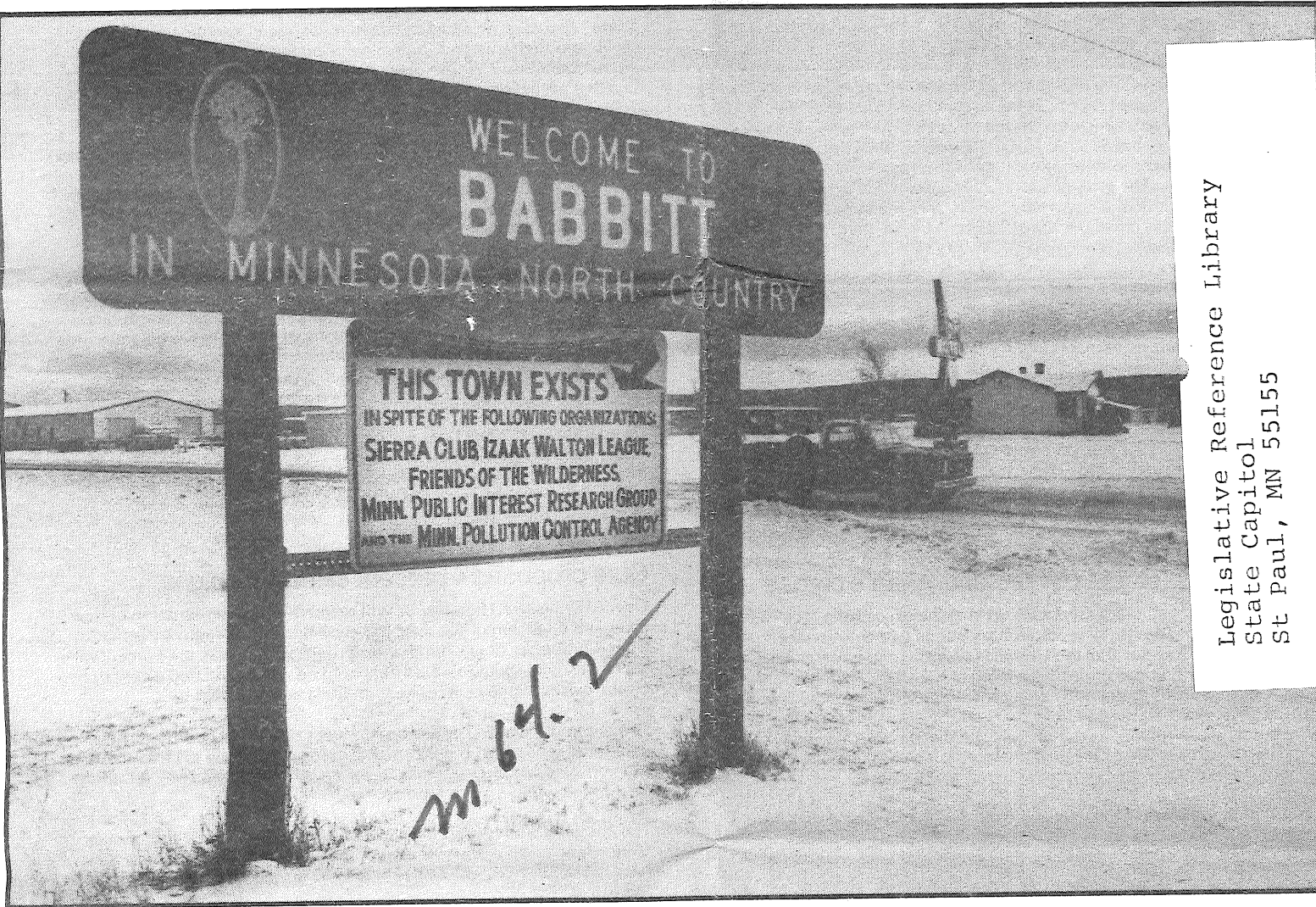


# mesota daily

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## Copper-nickel mining favored, feared

By John Tibbetts

**Babbitt, Minnesota**—In northern Minnesota, deep in the white birch woods of the Superior National Forest, sits one of the largest reserves of copper-nickel mining in the world. But, this enormous mineral wealth is close to the unique wilderness of the Boundary Waters Canoe Area (BWCA).

AMAX, a Denver-based mining company, wants to mine the copper-nickel reserve, but environmentalists are afraid that a mining operation would disturb the delicate ecological balance of the wilderness.

Jack Malcolm, project manager of AMAX's test mine near Babbitt, is the driving force behind copper-nickel mining in Minnesota. A congenial, robust man, he argues that the mining could be done without causing serious environmental problems to the BWCA. Also, copper-nickel mining would help a failing local economy. Nationally, it would help meet the rising demand for these minerals.

Environmentalists claim the detrimental effects to the wilderness are not worth a short-term economic boom to northern Minnesota. After the mining, water leaching from the remaining rock, called "waste rock," could enter lakes and streams and damage aquatic life. Also, the danger to the BWCA from acid rain would be aggravated by sulfur emissions from a smelter.

Malcolm admits there will be environmental impacts to the area. "But what we have here is a trade-off," he said.

When Malcolm speaks to government bureaucrats and environmentalists, he is an excellent lobbyist for his cause. Even his opponents acknowledge his ability. "Jack is a good public relations man," said Steve Chapman, an environmentalist and a member of Clean Air, Clean Water Unlimited.

Malcolm agrees with Chapman on this point. "Public relations is doing a damn good job and then telling people about it. At AMAX, we feel we're doing a good job."

### Test mine

The job Malcolm refers to is an AMAX test mine near Babbitt, which could be the first step toward full-scale mining in Minnesota. AMAX soon will apply to the state to expand the test mine. AMAX has spent \$17 million on the mine and in the proposed next stage will spend \$40 million more.

In the first stage, which lasted six years and ends in the middle of this month, AMAX mined 50,000 tons of ore and tested reclamation techniques with the piles of waste rock.

In the second stage, projected also to

lems with the test mine which they have not yet solved. Saline groundwater enters the mine and must be disposed of by pumping into holding basins. The water, which contains heavy metals such as lead and mercury, has caused leaf burns to trees.

The salt water was not anticipated by mine officials and no one knows how much more there is. "They haven't solved their water waste problem yet," Chapman said. "They ought to solve their present problems before they're allowed to go ahead."

And while monitoring the piles of waste rock, AMAX discovered that high concentrations of copper and

would be three miles long, a half a mile wide and 1,200 feet deep. Also, a 3,500-acre pile of waste rock would sit in the woods of the Superior National Forest.

How dangerous is copper-nickel mining to Northern Minnesota? The state has attempted to answer this question with a recently-completed \$4.3 million study of the effects associated with copper-nickel mining.

The study concluded that copper-nickel mining could pose several threats to the environment. The study said, in part, that:

- Nickel is toxic to aquatic organisms in trace concentrations.
- Fugitive dust from open-pit mines, haul roads and tailing basins could indirectly affect the BWCA, and;
- A smelter would aggravate existing and projected acid precipitation in northeastern Minnesota by sulfur dioxide emissions.

The study refrained from judging if the minerals should be mined.

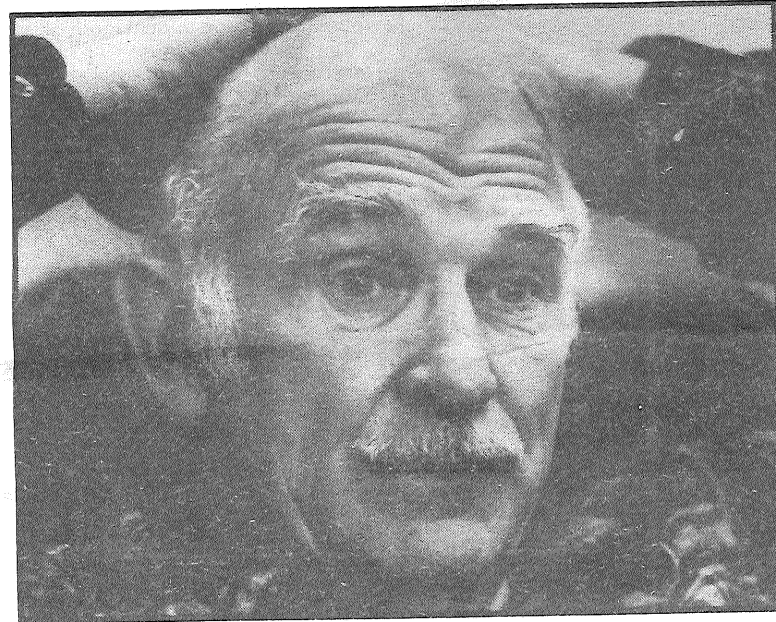
The study will be reviewed by an 11-member committee named by the Environmental Quality Board (EQB). The committee is made up of state officials, Malcolm, environmentalists and local officials from northeastern Minnesota. The committee will advise the EQB on the accuracy of the study. It is scheduled to complete its review in three months. Then the legislature is expected to decide if copper and nickel will be mined in Minnesota.

### Affected communities

Babbitt is a very small town in northeastern Minnesota, where the main industry is taconite mining. At 3 p.m., after a day's work, miners stream into Babbitt, which looks like a new subdivision, with ranch houses and runty trees.

Without mining, this area would be in trouble. The only other major industries around Babbitt are logging and tourism, according to Kent Eklund of the Minnesota Department of Economic Development. It is an economically depressed area which

Copper Nickel to 11



Jack Malcolm

take six years, AMAX would establish a small mill or concentrator on the premises and would test the methods needed to mill and smelt the ore.

Environmentalists like Chapman fear that any extension of a test mine would make copper-nickel mining a stronger possibility. "If they go ahead with this next stage, it will be not only beginning mining, but it would be mining," Chapman said.

Chapman also claims that AMAX has some serious environmental prob-

nickel were getting into the groundwater, said Paul Eger of the Department of Natural Resources (DNR).

Environmentalists say this is exactly the kind of problem that would hurt the BWCA. Leaching of heavy metals would flow through the watershed into boundary waters.

After 40 years of full-scale mining, the area near Babbitt would acquire a new face: it could look more like a moonscape than a landscape. A hole in the ground left by the strip mines

Photo/Cindy Karp

Photo/Cindy Karp

## Copper Nickel from 3

needs more industry, Eklund said. The copper-nickel study has predicted that Babbitt, along with Ely and Hoyt Lakes, could profit from copper-nickel mining.

But only 50 percent of the residents support copper-nickel mining, according to Babbitt mayor Matt Kapsch. "Myself, I would like to see it," Kapsch said. "We have very few retail outlets in town. Copper-nickel would build the town up. You have to leave to buy women's clothes."

Besides jobs, the area also would profit from increased tax revenue if a smelter were built in the area. How-

ever, the study concluded that it would not be necessary to have a smelter in the vicinity of the mine. It is common practice for mining companies to send ore long distances to be smelted.

Environmentalists are especially opposed to having a smelter near the BWCA. A smelter is a refining facility that separates metal from the raw ore and its impurities. Smelters emit sulfur dioxide, which causes acid rain—which has been named by environmentalists as a serious ecological problem.

Malcolm acknowledges that "emotionally, it might be best to have the smelter elsewhere. Duluth could be

considered. But let's be sure that we look at science, not emotion."

Malcolm admits that, in the past, smelters have been "serious abusers of the environment." But, he says, in recent years, technology has been improved, especially by the Japanese—which can considerably reduce the sulfur dioxide emissions.

"Nearly everyone who has worked with smelters has his own horror story. In the old days, all we cared about was jobs. But now, if we invest the money, it has to be done in an environmentally sound manner. That is the only way to make a profit."

AMAX recently signed an option to buy the abandoned U.S. Steel plant in Duluth, which may eventually be converted to a smelter. But Malcolm said this site may not be used.

Will Babbitt and the surrounding area really profit from copper-nickel mining? Environmentalists claim that there will be a boom-bust and the area would profit for a short period, until the ore is mined. Then, the area would revert to its present economic problems.

But Malcolm is convinced that copper-nickel would be a boon to the area. "Taconite is cutting back and it's going to be hard on everybody. Gov. Quie said we're going to need a new tax base up here in northeastern Minnesota and copper-nickel will help."

## Prices

Even if copper-nickel mining is approved by the legislature, Malcolm said there is no guarantee that AMAX will go ahead with its mine. Malcolm

said he believes that the copper-nickel "resources are so important they will be mined." But, he is only "51 percent sure that we (AMAX) will get the money" to mine it. There is competition within AMAX for mining sites, he said, adding that the Babbitt site may not be the winner.

Copper-nickel mining in Minnesota depends on the international market. Presently, copper prices have been running around 85 cents a pound. For copper mining to be feasible in Minnesota, the price must go up to \$1.50 a pound, Malcolm said. Business Week magazine recently said prices may go up that high by the mid-1980s.

In the mid-1970s, mines in Peru, Chile and Zambia flooded the market with metal and prices dropped. But the last two years, production has fallen and prices have risen. Malcolm is depending on these prices to continue to rise. Another recession, the state study noted, could send the prices sliding back down and copper-nickel mining in Minnesota would have to be postponed indefinitely.

# Study of copper-nickel tailings funded

A University of Minnesota mining institute has received a federal grant to study possible uses of minerals contained in copper-nickel tailings.

The Minnesota Mining and Mineral Resources Research Center at the university's Minneapolis campus will use the \$110,000 grant, from the U.S. Department of Interior, to follow up tailings research done for the state's recently completed copper-nickel study.

Tailings are the crushed waste rock left over after the metals — copper and nickel, along with traces of gold, silver, platinum and palladium — have been com-

mercially extracted. Copper-nickel exists in potentially commercial deposits just north of Duluth. Minnamax, the local subsidiary of Amax Inc. — a major U.S. mining company — is in the development phase of a copper-nickel mine and mill near Babbitt.

The research center was established at the university in 1978. One of 22 centers established around the country by mining legislation passed in 1977, the center is underwritten by federal money but operates through the university.

Ken Reid, British-born director of the research center, said the funding for the study is for 1980,

with a similar amount to be funded in 1981.

"The study is to see which minerals we can separate out," Reid said in a telephone interview from his Minneapolis office. Objectives of the study include determining if it's possible to separate material that is potentially valuable, and the feasibility of separating material that is potentially hazardous.

Reid said the major environmental problem with the tailings is the suspected presence of sulfides, a byproduct of the milling process. Minerals which might be extracted from the tailings for commercial use include:

- Anorthite, a raw material used in the production of aluminum and ceramics.

- Ilmenite, a source of titanium.

- Magnetite, a raw material for iron-making.

- Graphite, used in the electrical and chemical industries.

- Olivine, a raw material of foundry sand.

"We can separate the tailings materials into quite a few categories," Reid said, but he stressed that although the separation process is technically feasible, it is not yet feasible on a commercial scale.

"It's research," he said. "We don't know the answers."

1/10/80 Duluth News-Trib



# editorials

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## Don't take any copper-nickel

The Boundary Waters Canoe Area is again in grave danger. Having survived threats from timber and hydro-electric interests, it now faces a new, even wealthier enemy: copper-nickel mining. One of the largest reserves of copper-nickel in the world, worth an estimated \$80 billion, sits in the birch woods of the Superior National Forest, just south of the BWCA. The state has recently completed a study that illustrates the danger of copper-nickel mining in the wilderness of northeastern Minnesota—but will this proof of danger stop the mining?

The state stands to gain up to \$33 million a year through royalties if the ore is mined. This does not include taxes, which would add to the pot. There is talk of extending the taxation of copper-nickel with the justification that mining interests were aided greatly by tax benefits in the 1964 Taconite Amendment. In any case, the state would make an enormous profit from the mining, and the economically depressed area surrounding the proposed mine would benefit with jobs and higher tax revenue.

But is the profit worth the cost to the wilderness? The BWCA already is faced with the danger of acid rain—contamination resulting from emissions of sulfur and nitrogen oxides in burning fossil fuels. Sulfur dioxide pollution, much of it from a copper smelting plant in Sudbury, Ontario, could one day destroy the boundary waters. If copper-nickel were mined at the Minnesota site proposed by AMAX Inc., heavy metals leaching from piles of waste rock are expected to flow through the watershed to the BWCA and aggravate already serious acid rain conditions.

Also, tailings from copper-nickel mining, which contain sulfides, would dry out and be swept up by the

wind and carried as dust-like particles into the BWCA. A proposed smelter, even if it is not near the BWCA, would further add to the acid rain problem. There is at present no way to completely control these environmental problems.

The Superior National Forest would be endangered as well by copper-nickel mining. AMAX says a combination of open-pit and underground mining is the only economically feasible way to extract the ore. But open-pit mining would inevitably leave huge holes, which, when filled with water, would contain high amounts of heavy metals—eventually contaminating the area.

AMAX has asked to extend its test mine, one more step in assuring that copper-nickel would be mined in Minnesota. The state should deny the request. Copper-nickel should not be mined in Minnesota. The threat of permanent damage to Minnesota's canoe wilderness should outweigh the economic boom from an enterprise that would be finished in less than four decades.



# State asks AMAX to tell plans

The Minnesota Pollution Control Agency has asked AMAX Exploration, Inc., for a prompt report on plans for exploration, mining and processing of copper and nickel ore in northern Minnesota. *mcy 2*

The agency said studies show salt-laden water has been pumped out of the 1,700-foot deep test shaft near Babbitt. The agency said it "cannot...accept AMAX's recommendation to simply continue monitoring the bog."

AMAX officials have reported the groundwater, which enters the shaft at a rate of 11 gallons per minute, has been found to be highly saline. The salt water is pumped from the shaft into a bog and has caused leaf burn to some plants.

The water also contains heavy metals such as lead and mercury, which, if allowed to enter rivers and lakes, could affect aquatic life. Tentative plans now call for the water to be stored in basins or bogs.

The state agency has asked AMAX to file a report this month, according to the letter recently sent to the mining firm.

Terry Hoffman, agency executive director, told the firm that when the copper-nickel exploration project was begun in 1974, AMAX estimated the exploration and feasibility study would take three to five years.

"Now, almost six years later, AMAX still has not formally informed the agency what its short ... and long-range plans are for either the test shaft or a full-scale mining operation," she wrote.

She said one alternative the staff feels available, for eliminating impact on the environment, is to close the test shaft.

Officials of the firm were not

See AMAX Page 2 A

## AMAX From 1A

available for comment, but an AMAX attorney, Raymond Haik, Minneapolis, said the state agency should set water quality standards for copper-nickel and then see if AMAX can meet them, "rather than foreclosing on any development at this time.

"There's a tremendous mineral resource up there," he said. He said it should be developed at the same time the Boundary Waters Canoe Area is protected.

AMAX's test shaft near Babbitt is about 50 miles northwest of Duluth and 20 miles south of the BWCA.

Hoffman also told AMAX it may have to monitor potential ground water contamination at the abandoned U.S. Steel Co. plant site at Duluth. AMAX, Inc., parent firm of AMAX Exploration, signed an option recently to buy the abandoned plant.

There's speculation AMAX may want to set up a copper-nickel processing plant there.

The pollution control agency had asked U.S. Steel to find out whether there was potential ground water contamination on the 500-acre site. U.S. Steel closed the old plant some eight years ago.

1/15/80  
Duluth Herald

# Mining data sought by MPCA

By Dean Rebuffoni  
Staff Writer

A state agency has put AMAX Exploration, Inc., on notice that it must quickly justify the need for keeping open its controversial copper-nickel test shaft near Babbitt, Minn.

The Minnesota Pollution Control Agency (MPCA) said recent studies show that salt-laden water pumped from the 1,700-foot-deep shaft has harmed vegetation in a nearby bog and could threaten area waters. Because of that, the MPCA said, it "cannot at this time accept AMAX's recommendation to simply continue monitoring the bog."

Rather, it said, more information on AMAX's future plans is vitally needed. It told the company to outline in detail its plans for exploration, mining and processing of copper and nickel ore in Minnesota. Those plans should be submitted this month, the agency said in a recent letter to AMAX officials.

AMAX officials could not be reached for comment Monday. But Raymond Haik, a Minneapolis attorney who represents AMAX, said yesterday that the MPCA "needs to set water-quality standards for copper-nickel and then see if AMAX can meet them, rather than foreclosing on any development at this time."

"There's a tremendous mineral resource up there," said Haik. "The idea ought to be to encourage development of the resource while, at the same time, protecting the BWCA (Boundary Waters Canoe Area Wilderness). The way to do that is to set environmental standards."

AMAX has sunk its test shaft to explore for copper and nickel near Babbitt, about 50 miles northwest of Duluth and 20 miles south of the BWCA. The company said recently that it will not decide until sometime this year whether it wants to proceed with actual mining at the site.

In her letter to AMAX, Terry Hoffman, the MPCA's executive director, said: "When this copper-nickel exploration project was initiated in 1974, AMAX indicated that the exploratory phase and feasibility study would last approximately three to five years. Now, almost six years later, AMAX still has not formally informed the MPCA what its short-range and long-range plans are for either the test shaft or a full-scale mining operation."

"One alternative the MPCA staff feels is available at this time for

AMAX continued on page 4B

## AMAX

Continued from page 2B

eliminating (environmental) impact is to close the test shaft," Hoffman's letter said. "Therefore, the MPCA would like AMAX to provide justification for its need to keep the test shaft open and lay out future plans for the exploration project."

She also cautioned AMAX that it may have to assume responsibility for monitoring potential ground water contamination at the site of the abandoned U.S. Steel Co. coke plant in Duluth.

AMAX, Inc., the parent firm of AMAX Exploration, recently signed an option to buy the abandoned plant, and there is speculation that AMAX may want to develop a copper-nickel smelter at the site.

Hoffman told AMAX that the MPCA has asked U.S. Steel to develop a study to determine whether there is actual or potential ground water contamination as a result of U.S. Steel's operations at the 500-acre site. She said AMAX should discuss with U.S. Steel its responsibility for this monitoring program if AMAX actually buys the abandoned plant.

U.S. Steel closed the plant in 1972 because its operations were outmoded and after a long battle with the MPCA over pollution-control measures. The plant produced coke, a coal extract used in making steel.

AMAX officials have said that, while they are studying the Duluth plant site, that effort is not directly related to any copper-nickel development.

But it has been widely suggested that AMAX may want to build a smelting operation at the site. A smelter is needed to process copper and nickel ore, and AMAX has been considering a mining operation at Babbitt that could produce up to 60,000 tons of copper-nickel ore each day.

Environmentalists contend that a smelter could harm air quality.

The issue of salt-laden wastewater from the AMAX test shaft is important because the Babbitt project site stretches across the Laurentian Divide. Wastewater discharged off the site could enter Langley Creek, which connects with streams flowing north into the BWCA.

But wastewater also could enter the Partridge River and other streams that run south into the St. Louis River, which flows into Lake Superior.

AMAX has asked for MPCA permits allowing it to discharge its test-shaft wastewater into Langley Creek. State environmentalists oppose any such discharge, and some of them contend that any AMAX wastewater discharge — provided it does not exceed pollution-control standards — might be directed into the nearby Partridge River.

In her letter to AMAX, Hoffman said that, given the MPCA's responsibilities to preserve the BWCA, "if a permit were to be issued ... it would likely be for a discharge to the Partridge."

"This action by the MPCA would be based on the conclusion that a discharge to Langley Creek would result in a material adverse impact on the BWCA environment and that a feasible and prudent alternative — a Partridge River discharge — exists," she said.



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# PCA wants firm's plans on copper-nickel

The Minnesota Pollution Control Agency is pressing AMAX Exploration Inc. to make a decision on whether to develop copper-nickel mining in northeastern Minnesota.

The state agency has asked the Denver-based mining company, which has an exploratory shaft sunk near Babbitt, for a prompt report on its plans for exploration, mining and processing copper-nickel in Minnesota.

An AMAX official said Tuesday his firm would like to comply with the state request, but the company simply hasn't made any decisions yet.

"We really don't know what our plans are," said Jack Malcolm, project manager of the Minnamax test shaft near Bab-

bitt. "We expect to know by February or March," Malcolm said.

Malcolm explained that the Babbitt site is competing with other potential AMAX development sites located in other states.

Also, the mining company is closely watching the price of copper and nickel.

Malcolm has said that as copper prices rise to near \$1.50 per pound, development in northeastern Minnesota becomes lucrative.

The state's concern was apparently prompted because salt-laden water has been pumped from the 1,700-foot shaft to a basin. The water is seeping from the basin into a nearby bog and has caused some leaf burn to plants.

State officials apparently are

concerned the saline water could enter streams and be carried to the Boundary Waters Canoe Area, 22 miles north, or to Lake Superior, some 90 miles south.

The agency said it "cannot accept AMAX's recommendation to simply continue monitoring the bog."

Malcolm said his company is intensively monitoring the water situation, which he called of "rather minimal" environmental significance.

"I don't see the seriousness of it," Malcolm said. "I would bet there is more salt on the streets of Duluth."

Terry Hoffman, agency executive director, told AMAX that

See Mining Page 2A

## Mining

From Page 1A

when the copper-nickel exploration project was begun in 1974, AMAX estimated the exploration and feasibility study would take three to five years.

"Now, almost six years later, AMAX still has not formally informed the agency what its short and long-range plans are for either the test shaft or a full-scale mining operation," she wrote in a letter to AMAX.

Malcolm said things have changed over the six years the firm has been testing the Babbitt site. He said the company fully expected to be operating a mining operation there by now. However, delays, some caused by acquiring permits, set back the project, Malcolm said.

"And we found a much larger deposit than we thought," he said. There is an estimated five billion tons of copper-nickel ore in a band three miles wide and 50 miles long stretching from near Duluth to the Boundary Waters Canoe Area. Development could mean a \$50 billion industry.

Hoffman also told AMAX it may have to monitor potential ground water contamination at the abandoned U.S. Steel Co. plant site at Duluth. AMAX recently signed an option to buy the site.

There's speculation AMAX may want to set up a copper-nickel processing plant there, but AMAX officials have said there are now no such plans.

# Gold fever even affects copper

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Los Angeles Times

Speculation in gold and silver has spilled over into the copper market, causing prices to rise 18 percent in the last week, to \$1.26 a pound from \$1.065 on Jan. 11 for the spot price.

Copper traders say that speculators who believe they missed out on gold's spiral are looking for another tangible place in which to invest money. Copper is particularly attractive because it is relatively cheap.

The increase in copper prices, the traders say, is a further reflection on the worldwide political uncertainty over the Russian invasion of Afghanistan, and the hostage situation in Iran. In questionable times, they say, many people don't trust paper money and want to invest in tangible goods.

"What's driving up the price of copper is sheer speculation and jumping on the bandwagon," one New York copper merchant said. "It's an unreal market."

The merchant noted that the last time the price of copper rose—to \$1.411 a pound in May 1974—the increase was based on a shortage of supply. This time, however, he said there are substantial inventories.

The speculative fever is bringing new participants into the market.

"Our office has been inundated with inquiries. People who have never dealt in commodities before are buying copper," said Arnold Brisk, metal analyst with the Beverly Hills office of Bache Halsey Stuart Shields Inc., a New York-based brokerage firm.

Brisk warned that the current crop of speculators could be taking big risks because the market is "extremely volatile." However, he says, he believes the price of copper will rise even more this year.

First, he notes that the large stockpiles of a few years ago, which caused the price to drop to 53 cents a pound in the fall of 1977, are being whittled down.

Second, he says a failure in U.S. copper industry labor negotiations this summer may result in a strike, which would stretch inventories even more.

Third, he notes that copper is a strategic material—used in aerospace, tanks, ammunition and shell casings—and that if U.S. defense industry spending rises substantially, there may not be enough copper to go around.

The copper glut, which started in 1974, occurred because a lot of new copper mining capacity came on line at the same time, Brisk said.



# Range towns can accommodate new mining influx, mayor says

1/23/80 Duluth Herald

Cities on the northeastern end of the Mesabi Range will be able to cope with anticipated growth associated with copper-nickel development, the mayor of Babbitt said Tuesday.

Matt Kapsch, Babbitt mayor and an industrial security officer for Reserve Mining Co., will present a report dealing with that subject to the Environmental Quality Board's copper-nickel advisory committee in St. Paul today.

The 12-member committee, appointed late last year, will study the adequacy of the state's cop-

per-nickel task force report. That report was completed last fall after five years of research. The advisory committee will review the copper-nickel study for accuracy and thoroughness by June of this year.

Kapsch, who represents local governments on the advisory committee, said area towns affected by the potential copper-nickel development — Babbitt, Aurora, Hoyt Lakes and Ely — will be able to double their populations without running into severe financial problems.

The copper-nickel task force

reported that a shortfall in tax revenue could severely hamper the ability of municipal government to provide services.

"The city is capable of maintaining its primary functions of water and waste-water treatment (and) the functions of the street and police departments," Kapsch said in his report. "If the city of Babbitt can answer the space needs of its people in the next decade, Minnamax will pose no problem that can't be handled easily."

Babbitt's 1970 population was

See Mining Page 8A

## Mining

From Page 1A

3,076.

Kapsch said simultaneous development of a copper-nickel industry in the area could pose problems for local governments. Minnamax, a subsidiary of Amax Inc., is the only company now investing in copper-nickel development in Minnesota, although a number of other companies hold copper-nickel leases in the northern part of the state.

"A second development by Inco or U.S. Steel could pose problems" for cities like Babbitt, Kapsch said. He added that simultaneous development would have a serious impact on school systems in the area, though he pointed out that copper-nickel development might help offset declining enrollment in local schools.

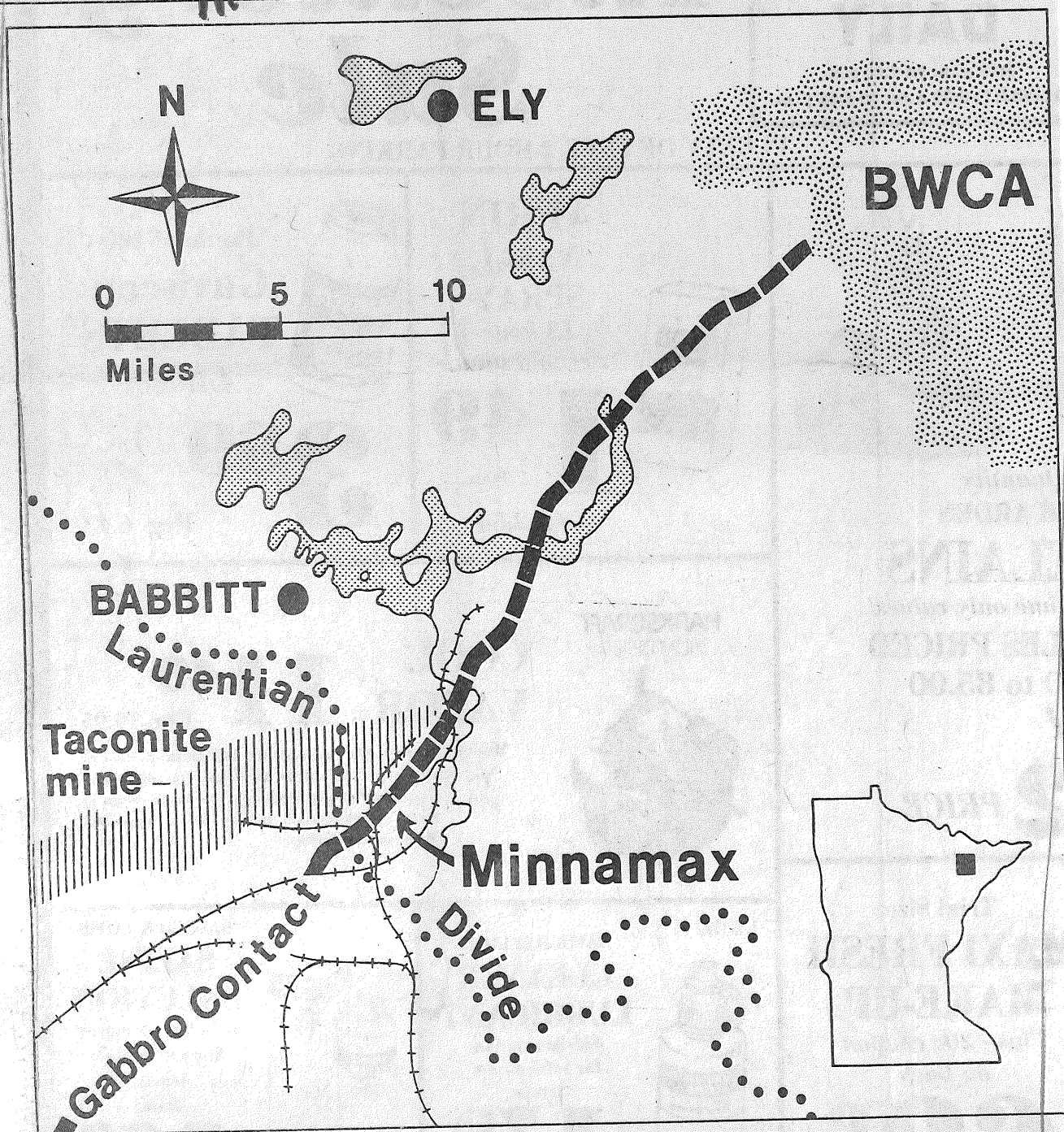
The Babbitt mayor said he disagreed with the task force report's contention that satellite industries — like mining supply firms — will locate in Babbitt, Hoyt Lakes and Aurora.

"That was predicted for Babbitt when Reserve Mining opened," he said, pointing out that most mining supply firms supply the Range from offices in the Hibbing-Virginia area.

Also presenting reports to the advisory committee today will be Dwight Lahti of the State Department of Revenue, who will discuss copper-nickel taxes, and AMAX's Jack Malcolm, who will explain open pit versus underground mining.

A Minnesota Department of Natural Resources official will review the Mineland Reclamation Program to the committee. Part of the controversy over copper-nickel is what to do with mines after operations have ceased.

Peter Ashbrook, of the state planning agency, said the advisory committee will probably meet at least once a month before coming up with a final report to the Environmental Quality Board in June.



Copper-nickel exploration site

## Copper-nickel project needs pilot plant proof



# Copper-nickel project needs pilot plant proof

By W. KAYE KIVISTO

It will be at least another four years and \$60 million before studies are completed and full scale mining of copper and nickel could be seriously considered in northeastern Minnesota, according to Jack Malcolm of American Metals Climax Exploration Inc.

Malcolm, project manager of the AMAX test shaft near Babbitt, spoke to about 40 persons at the Iron Range Interpretative Center Tuesday night as part of a winter lecture series sponsored by the center.

The money is necessary to build a pilot plant, he said, and about two years to get clearance from all the state and federal agencies involved and build the plant. Those timeline figures are optimistic, he said.

Although the company has been testing the mineral deposits and the effects of mining on the environment for six years now, it wants to build a pilot plant to check out its mining and smelting ideas, Malcolm said.

Interest in copper-nickel mining in Minnesota has been spurred recently by a state-

funded study that said the industry could be worth \$50 billion.

Data results of AMAX's Minnamax test shaft have shown there is plenty of the copper-nickel mineralization in the area to make mining profitable, providing the price of copper goes up a bit, Malcolm said.

Minnesota has 5 percent of the copper supply in North America and 25 percent of the supply of nickel. The United States imports both of those metals, copper more than nickel.

The test shaft is about 30 miles from the Boundary Waters Canoe Area and within the Superior National Forest.

Malcolm told the group that the mining operation would be two-fold. About one fourth of it would be underground and the rest would be open pit mining.

Ideally, Malcolm said, a smelter plant would be close to the mining operation to keep the cost of refining the material low.

In anticipation of the audience's concern for the effects of a smelter on the en-

vironment, Malcolm showed slides of modern smelting plants in Japan.

The Japanese plants, he said, would be similar to one that would be built for AMAX's purposes in Minnesota. The foreign plants have very low pollution emission, he said.

The Minnesota Department of Natural Resources, the Forest Service, Minnesota Pollution Control Agency and AMAX have all been carefully watching the environmental effects the test shaft has had on the surrounding area. So far there have been no major problems, Malcolm said.

There was concern in the fall of 1979 when it was noticed saline water from the project mixing in with fresh water, Malcolm said. He tried to minimize the ecological danger of introducing salt water into a fresh water system saying there was very little of the undesirable water.

The water that did escape the AMAX closed water system caused leaves on some trees to discolor, Malcolm said. The affected trees are being watched and the leaves have been

returning in the spring, he said.

The socio-economic impact on the nearby towns and school systems were also outlined by Malcolm. Not only would employment and tax revenue be up, but schools wouldn't experience quite the drop in enrollment they anticipate, according to Malcolm's study.

However, before all the plans can become reality, more money must be appropriated by the company for further study, Malcolm said. The financial fate of the project is expected to be known by mid-spring, he added.

A pilot plant would be the second phase of the project, the test shaft being the first phase. Monitoring the environmental impact and determining the economic feasibility of a large scale mining operation would be included in the second phase framework, Malcolm said.

A 250-ton per day production from the pilot plant would be watched for at least a year to test the mining, smelting and refining techniques the company has in mind, Malcolm said.

Mining the mineral reserves will undoubtedly occur, Malcolm said, but the timing will be essential.

Current market prices for the product are too low to make the huge investment that would be necessary to rev-up the industry profitable, Malcolm said. He added that costs of meeting the environmental protection requirements adds to the wait-and-see attitude of the company.

The life-span of a mining operation would be 20 to 50 years, according to the state agency's study. Other companies have also shown interest in the minerals, including INCO (International Company).

# Sites developed for expansions

AMAX Inc., a company contemplating copper-nickel mining in northeastern Minnesota, in November signed a six-month option to buy U.S. Steel's abandoned Duluth works.

If the multinational corporation elects to buy the 500-acre Morgan Park site — its option expires this spring — a seven-year effort to find another use for the sprawling industrial site will come to an end.

One company official labeled the U.S. Steel site as a "prime piece of industrial property." Another official said AMAX plans to study the property's investment potential and the feasibility of reopening the plant's coke plant.

Although AMAX's announcement touched off speculation the firm may be interested in locating a copper-nickel smelter in Morgan Park, company officials dismissed those rumors.

For the past five years, AMAX's Minnamax project has been studying the possibilities of mining a copper-nickel vein near Babbitt. The company estimates it could produce up to 100,000 tons of copper-nickel ore a year.

"Because the Minnamax project is still in the early stages of development, it is premature to consider the possibility of processing copper-nickel concentrates in Duluth or other locations," said Herbert Kay, AMAX vice president for engineering and technology.

Other 1979 developments on the industrial front included:

- With the help of the Seaway Port Authority of Duluth's industrial development department, nearly \$12 million in industrial revenue bonds were issued in

Mills and International Multifoods Corp. expand their grain handling facilities.

- American Hoist and Derrick Co. announced plans to expand its Duluth facility this spring, boosting the annual payroll by about \$500,000. The St. Paul-based crane and heavy equipment manufacturer will consolidate production of backhoes at the Duluth plant in May 1980. American Hoist now employs 216 workers at a plant on Port Terminal Drive near the harbor.

- The city completed work on its 20-acre Oneota Industrial Park. Interest in the park was keen and the port authority had agreements pending on nearly all parcels by mid-year, reported Jerome Marks.

- Work has begun on filling Erie Pier with dredge spoils. The slip, roughly between 40th and 46th avenues west at the waterfront, is to be an 82-acre industrial site.



# Copper matter of impact

BY BILL BECK

There's an old "good news, bad news" joke that has the Lord speaking to Moses. "I'm going to visit a plague on the Egyptians," the Deity tells Moses. "The water of the Nile River will turn red; locusts will descend on the fertile cropland of the Delta; and the waters of the Red Sea will be parted so you and your people can escape bondage."

"But now, the bad news — you'll have to write the environmental impact statement."

Jack Malcolm could well spend the better part of the next decade writing the environmental impact statement for something only a little less complicated: The first full-scale copper-nickel mine, mill and smelter in northeastern Minnesota.

Malcolm, a native of South Dakota's Black Hills and a 30-year veteran of metal mining around the world, is project manager for Minnamax's plans to develop a copper-nickel mine near Babbitt. He's been at the project six years already, and he expects to be in northern Minnesota until he retires in 1986.

The Minnamax project is a subsidiary of Amax Exploration Co., Denver, which is in turn a subsidiary of Greenwich, Conn.-based Amax Inc., a multi-national min-

ing and industrial company.

Last fall, the Copper-Nickel Task Force — an administrative body chartered by the state five years ago — completed its report on the potential impacts of copper-nickel mining on the environmental and social fabric of the northern part of the state. The five-volume report, comprising more than 30 separate chapters, was passed on to the Minnesota Environmental Quality Board for review.

The report points out that copper-nickel mining presents a hazard to the air and water quality of the fragile northern Minnesota environment. But the report stops short of condemning mining, and suggests that mining can be done without harming the environment if monitored closely by state agencies.

The task force report is currently being discussed by a citizens' review board — including environmentalists, local government officials, mining company representatives and state agency personnel among its members. It will make recommendations to the Environmental Quality Board this summer.

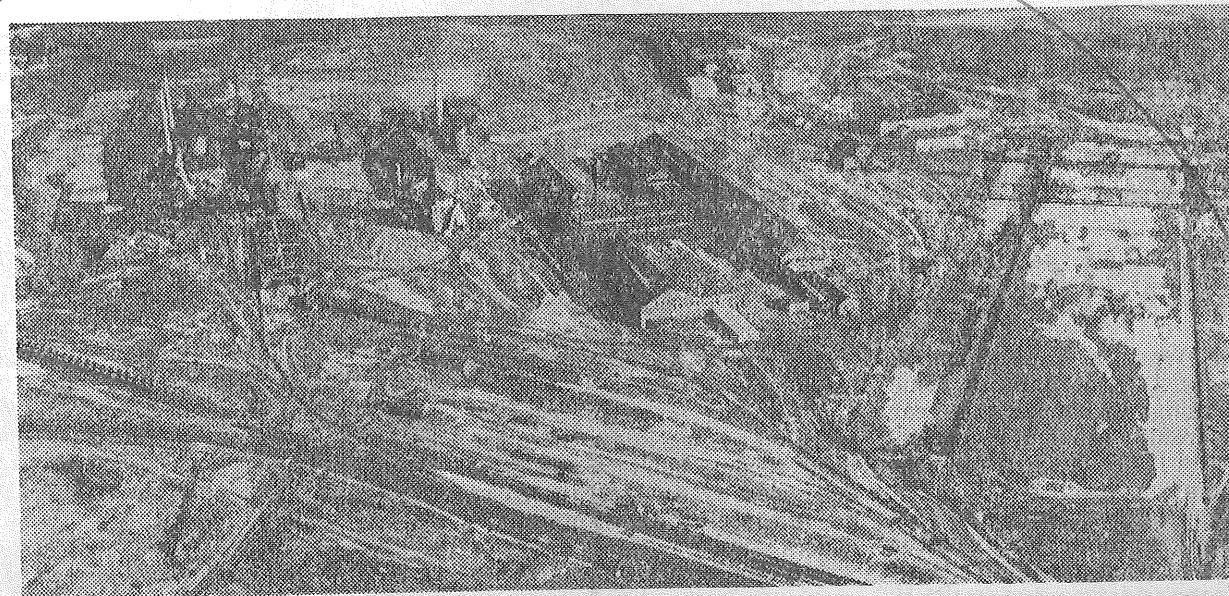
One action awaiting state recommendation is a future sale of lease rights to state land in the copper-nickel area north of Du-

luth. The sales, which are administered by the Department of Natural Resources, are handled on both a rental and royalty basis. The last such copper-nickel lease was sold in November, 1973.

Ironically, Minnamax, which is far and away ahead of the rest of the field in developing a copper-nickel mine in Minnesota, doesn't own the rights to any leased land of its own. The company entered into an agreement with Bear Creek Mining Co., a subsidiary of Kennecott Copper Co., to develop Bear Creek's leased land near Babbitt.

The company agreed in 1974 to spend \$5 million developing Bear Creek's property in the area and pays Bear Creek and other private interests \$300,000 a year for the rights to the state leases. If Minnamax ever develops a commercial copper-nickel mine on the property, Bear Creek has the right to take a 49 percent financial participation in the project.

Malcolm and environmentalists like Steve Chapman of Clear Air, Clear Water and Alden Lind of the Save Lake Superior Foundation — who say they respect the environmental judgment of the 56-year-old mining engineer — play a complex game of one-upsmanship in their attempts to win support for their prospective



U.S. Steel's coke plant has been mentioned as a possible site for a copper-nickel smelter.

sides.

Environmentalists want, at the least, to force any company mining copper-nickel to write a full-scale environmental impact statement.

Malcolm wants the environmentalists to be aware that arbitrary opposition to mining could mean a delay in development of the property, with the resultant loss to the state of tax revenues and employment opportunities in an area of the state that is dependent on the iron-mining industry for its economic well-being.

At the first meeting of the copper-nickel review board in Duluth last December, Malcolm said that the company is seriously considering reducing its potential output at the Babbitt site — from 60,000 tons of copper-nickel ore per day to 30,000 tons per day — because of problems meeting air and water quality guidelines with a larger smelter.

Already there's political pressure on the environmentalists to reach a reasonable compromise with the mining companies. At a December press conference, Gov. Al Quie said he thought economic problems in the iron and steel in-

dustry — which have caused work hour reductions at taconite plants on the Mesabi Iron Range — pointed to the need of diversifying northeastern Minnesota's economic base with the addition of copper-nickel mining.

While environmentalists look with alarm at the proximity of an open-pit copper-nickel mine to the Boundary Waters Canoe Area, mining company officials point to the environmental dislocation of more than 80 years of open-pit iron mining in northeastern Minnesota. Malcolm said the Minnamax pit near Babbitt would be adjacent to Reserve Mining Co.'s Peter Mitchell pit.

But economics will be as important a consideration in determining the future of copper-nickel mining in Minnesota as environment. Malcolm said copper prices — always a volatile commodity — will have to reach \$1.50 a pound before Minnamax could exploit the Babbitt property profitably.

As the world enters a new decade, the price of the red metal is above \$1 a pound, still short of the \$1.50 a pound level but far

ahead of the 65 cents a pound it has been trading for in recent years.

Then, there's competition within Amax for development of new properties. The parent company will report record earnings of more than \$100 million in the fourth quarter of 1979, according to the company's senior vice president for finance. Amax earnings for the first three quarters of 1979 are already ahead of last year's \$160 million in earnings.

The company recently purchased Rosario Resources Inc., a major silver producer, for \$341 million and plans to invest \$500 million in the next few years for energy resources.

The company would like to develop more molybdenum properties in the Rocky Mountain states, and Amax is developing a phosphate mine in Florida. In a joint venture with the Colville Confederated Tribes in Washington, Amax is exploring the possibility of developing a copper-molybdenum deposit near Mt. Tolman.

"We're competing for money from Amax," is the way Malcolm puts it.

# Mining firm may seek test plant

By Dean Rebuffoni  
Staff Writer

A mining company that is exploring for copper and nickel near Babbitt, Minn., said Monday that it soon may seek state approval to build a small pilot concentrating plant at its project site.

An official of AMAX Exploration, Inc., said the plant, which still must be approved by top company executives, would test methods to remove impurities from raw copper-nickel ore. If that approval is forthcoming, then AMAX will apply for state permits to build the plant.

That is certain to result in opposition from environmentalists who contend that such a plant would be a clear step toward actual copper-nickel mining in Minnesota. They also

would be expected to demand that the state require an environmental-impact statement before any construction.

Under AMAX's proposal, ore would be taken from three small open pits and a 1,700-foot-deep test shaft that it has sunk near Babbitt. After the ore was mined and milled at the site, it would produce a powderlike sulfide concentrate laden with such impurities as iron, sulfur and traces of other metals.

In turn, the concentrate would have to be treated in a smelter, which removes the iron and sulfur and can remove some of the other impurities. If AMAX is allowed to build a concentrating plant at the site, it would ship the concentrate to its

AMAX continued on page 10B

## AMAX

Continued from page 2B

smelting and refining operations in New Jersey.

Smelting of the concentrate would leave a product that is about 90 percent pure copper and nickel, after which a refining process would remove virtually all of the remaining impurities. Refining would recover small amounts of precious metals from the smelted ore, including gold and platinum.

AMAX revealed its desire to build a concentrating plant in a letter to the Minnesota Pollution Control Agency (MPCA). The letter was from Jack Malcolm, manager of the Minnamax Project, the company's venture near Babbitt.

In a telephone interview yesterday, Malcolm said the pilot plant would have the capacity to handle up to 250 tons of crude copper-nickel ore each day. That would produce about 10 tons of concentrate.

"It also would allow us to test the environmental impacts of the concentrator right on site," he said. "But it will take a long time before we could get that into operation."

Malcolm said that even if AMAX is able to get the necessary state permits for the plant next year, it couldn't be in operation until mid-1982. He said that water used in the pilot plant would be recycled, and that none would be discharged into nearby streams.

The pilot plant would operate until the end of 1983, and AMAX would then need at least two years to perform smelting and refining tests of the concentrate produced by the plant, he said.

"So 1985 would be the decision point for us," said Malcolm. "We would either decide then to go for a full-blown mining operation or just forget it. Even then, if all went well, it wouldn't be until 1988 or 1989 before we could have a full-blown mining operation."

Several years ago AMAX said it might be possible to put such a mining venture into operation by 1979, but it has set back its timetable repeatedly for various reasons.

Malcolm's letter was in response to the MPCA, which put AMAX on notice last month that it must quickly justify the need for keeping open its test shaft.

The MPCA also had raised questions about salt-laden water pumped from the shaft, saying it had harmed vegetation in a nearby bog and could threaten area waters.

In his letter, Malcolm said he was surprised by the MPCA's concern, add-

ing that only about 11 gallons per minute of slightly saline water is being pumped from the shaft. He said the company's research shows that the water could be mixed with the waters of Langley Creek and "not disturb the quality of that water."

Environmentalists have contended that the saline water eventually could flow into the Boundary Waters Canoe Area Wilderness.



# New copper-nickel laws urged

BY BILL BECK

Of the News-Tribune staff

The state's copper-nickel tax laws probably should be rewritten before mining begins, the author of much of Minnesota's mineral taxation legislation told state officials reviewing the copper-nickel task force report.

"I think you've got to come up with a new formula for copper-nickel taxation," said Fred A. Cina, who is now director of the Range Association of Municipalities.

He indicated the Legislature should look at changing the proposed assessment structure for a copper-nickel smelter. If built in Minnesota, a smelter would go on property tax rolls. Cina suggested a smelter be taxed by production taxes in lieu of property tax, and that a substantial percentage of the tax be earmarked for a special environmental fund.

Cina — the former Aurora DFL state representative who wrote much of the 1967 legislation concerning copper-nickel —

made his remarks to the state committee reviewing the recently completed copper-nickel task force report. The committee, composed of representatives of state government, mining companies, local government and environmental groups, met Tuesday at the Normandy Inn.

The committee is scheduled to make recommendations on the report — completed last fall after five years of work — to the state Environmental Quality Board before summer.

"That's the smartest thing to do — start over and take a fresh look at it," said Minnamax project director Jack Malcolm of Cina's suggestions. "The income from royalty revenue ought to be looked at very hard."

• Minnamax, a subsidiary of Greenwich, Conn.-based Amax Inc., is proposing a large copper-nickel mine and mill near Babbitt.

Dr. Steven Chapman, a Twin Cities environmentalist and committee member, agreed that a re-

vision of the state's tax laws on copper-nickel is "necessary. We have deficiencies in our present tax systems. Let's correct those."

Chapman suggested that the State Department of Revenue study copper-nickel taxation to determine the best possible return for the state, a reasonable return on investment for the company and an equitable distribution of revenues to communities affected by copper-nickel development.

Malcolm said the company's only concern with rewriting state tax legislation is that it might result in substantially higher taxes.

The company recently estimated that a 60,000-ton-per-day mine and mill would cost Amax \$950 million in 1980 dollars and pay about \$23.5 million in direct taxes to the state annually. A smaller 30,000-ton-per-day facility would cost Amax \$574 million to build and pay about \$13.8 million in direct Minnesota taxes annually.

Malcolm told the committee

that Minnamax hopes to go through with a pilot mill near the Babbitt site to process about 250 tons of crude ore per day. If Minnamax gets permission from the parent company the pilot project would cost about \$40 million and take about six years to complete. Malcolm stressed that the company would not undertake full-scale mining until at least 1986.

Malcolm said the continued escalation in copper prices is making the Minnamax project more economically attractive. Malcolm has said in the past that copper prices of \$1.50 a pound will make the Babbitt project financially feasible. Copper prices last week hovered around \$1.40 a pound.

"I don't want to backtrack," Malcolm said, reiterating that Amax still wants to complete its long pilot project before beginning full-scale mining. "It's not one of those things that the corporation is just going to jump at it. But I'm encouraged."



Hibbing Tribune  
3-12-80

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# Four more years before copper-nickel study is done

By W. KAYE KIVISTO  
It will be at least another four years and \$60 million before

studies are completed and full scale mining of copper and nickel could be seriously con-

sidered in northeastern Minnesota, according to Jack Malcolm of American Metals

Climax Exploration Inc. Malcom, project manager of the AMAX test shaft near

Babbitt, made his comments at the Iron Range Interpretative Center in January as part of a winter lecture series sponsored by the center.

The money is necessary to build a pilot plant, he said, and about two years to get clearance from all the state and federal agencies involved and build the plant. Those timeline figures are optimistic, he said.

Although the company has been testing the mineral deposits and the effects of mining on the environment for six years now, it wants to build a pilot plant to check out its mining and smelting ideas, Malcom said.

Interest in copper-nickel mining in Minnesota has been spurred recently by a state-funded study that said the industry could be worth \$50 billion.

Data results of AMAX's Minnamax test shaft have shown there is plenty of the copper-nickel mineralization in the area to make mining profitable, providing the price of copper goes up a bit, Malcom said.

Minnesota has 5 percent of the copper supply in North America and 25 percent of the supply of nickel. The United States imports both of those metals, copper more than nickel.

The test shaft is about 30 miles from the Boundary Waters Canoe Area and within the Superior National Forest.

Malcom told the group that the mining operation would be two-fold. About one fourth of it would be underground and the rest would be open pit mining.

Ideally, Malcom said, a smelter plant would be close to the mining operation to keep the

cost of refining the material low.

In anticipation of the audience's concern for the effects of a smelter on the environment, Malcom showed slides of modern smelting plants in Japan.

The Japanese plants, he said, would be similar to one that would be built for AMAX's purposes in Minnesota. The foreign plants have very low pollution emission, he said.

The Minnesota Department of Natural Resources, the Forest Service, Minnesota Pollution Control Agency and AMAX have all been carefully watching the environmental effects the test shaft has had on the surrounding area. So far there have been no major problems, Malcom said.

There was concern in the fall of 1979 when it was noticed saline water from the project mixing in with fresh water, Malcom said. He tried to minimize the ecological danger of introducing salt water into a fresh water system saying

there was very little of the undesirable water.

The water that did escape the AMAX closed water system caused leaves on some trees to discolor, Malcom said. The affected trees are being watched and the leaves have been returning in the spring, he said.

The socio-economic impact on the nearby towns and school systems were also outlined by Malcom. Not only would employment and tax revenue be up, but schools wouldn't experience quite the drop in enrollment they anticipate, according to Malcom's study.

However, before all the plans can become reality, more money must be appropriated by the company for further study, Malcom said. The financial fate of the project is expected to be known by mid-spring, he added.

A pilot plant would be the second phase of the project, the test shaft being the first phase. Monitoring the environmental impact and determining the economic feasibility of a large

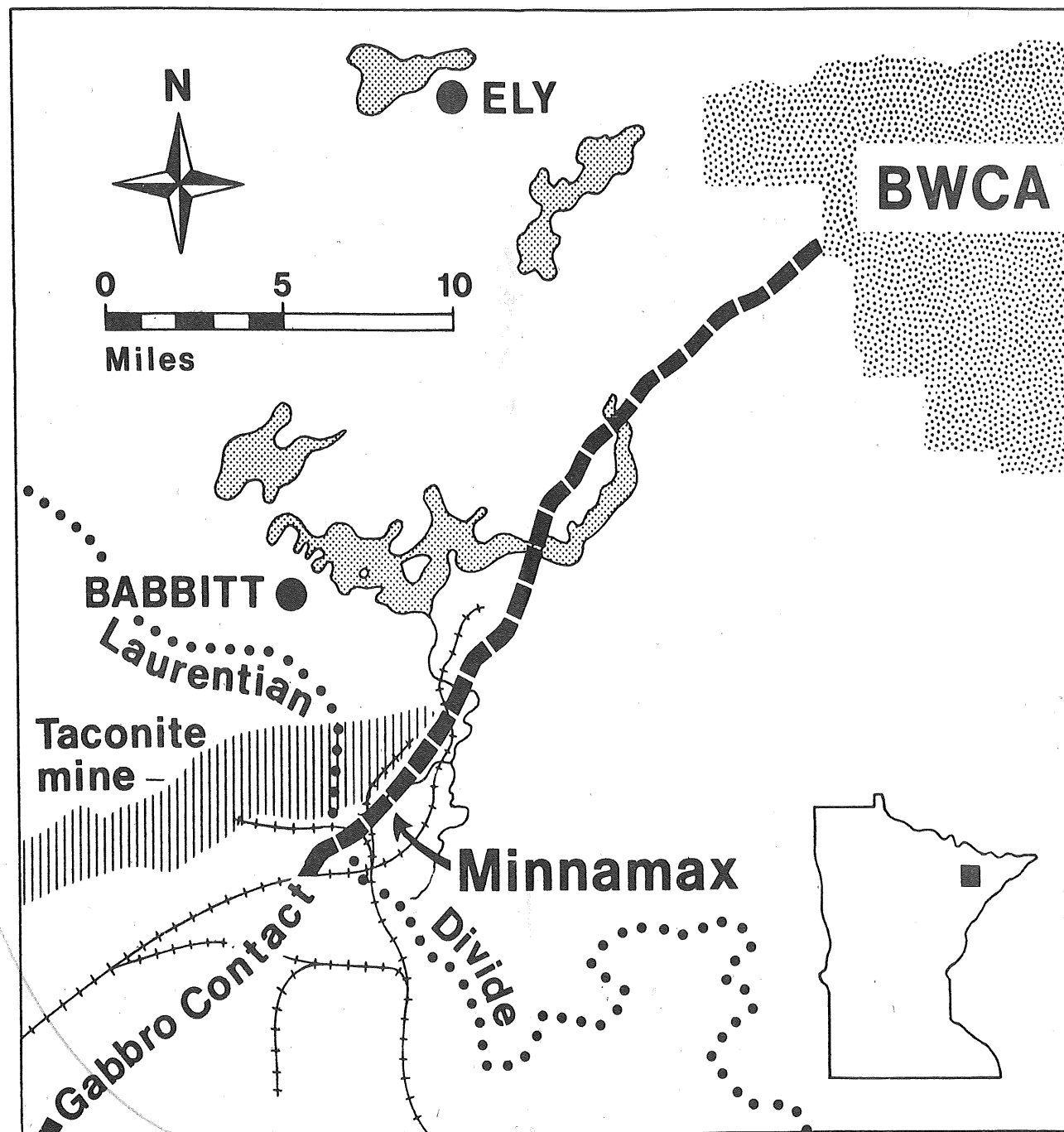
scale mining operation would be included in the second phase framework, Malcom said.

The life-span of a mining operation would be 20 to 50 years, according to the state planning agency's study. Other firms have also shown interest in mining the minerals, including INCO (International Nickel Company).

Mining the mineral reserves will undoubtedly occur, Malcom said, but the timing will be essential.

A 250-ton per day production from the pilot plant would be watched for at least a year to test the mining, smelting and refining techniques the company has in mind, Malcom said.

Current market prices for the product are too low to make the huge investment that would be necessary to rev-up the industry profitable, Malcom said. He added that costs of meeting the environmental protection requirements adds to the wait-and-see attitude of the company.



Copper-nickel exploration site

# Counties combine to study copper-nickel

*Hibbing Daily Tribune*  
7-11-60

By WINIFRED KIVISTO

DULUTH — The St. Louis and Lake County boards have crossed county lines to work together to determine the potential impact of copper-nickel mining in the counties.

At a joint meeting Thursday, members of both boards agreed to a resolution establishing a local copper-nickel work group and task force. Both boards will meet in their respective counties Monday and are expected to pass the resolution then.

Lloyd Houle, a Lake County commissioner who served on the state's five-year study of copper-nickel mining potential in northern Minnesota, said the two local groups will focus on protecting local interests.

Those interests are monetary and in the form of taxes, he said.

The task force will be preceded by the work group. The steps to forming two bodies were developed by the Arrowhead Regional Development Commission at the request of the counties.

The 10-member work group

will be made up of four county commissioners; two township officers (one from each county); and the mayors or city council members of Ely, Babbitt, Aurora and Hoyt Lakes.

The work group will suggest task force membership and an "initial work program for the establishment and activities of the task force," according to the ARDC outline.

The job will then be to find money to provide staff support to the task force. The ARDC proposal envisions the work group defining what needs to be examined and letting the task force work on how to address those needs.

A deadline of early September has been for the formation of the task force.

St. Louis County Commissioner Ed Hoff voted to present the resolution to the full board but tempered his vote with pessimism.

"AMAX is going to stall around too long. We're interested in today and seeing something going," he said.

AMAX, American Metals Climax Exploration Inc., has been working a test shaft in the

Superior National Forest, about 30 miles from the Boundary Waters Canoe Area, for more than six years.

The company has said a pilot copper-nickel mining plant would be necessary to test the environmental impact and economic feasibility of a larger plant.

Mining the reserves will occur, Jack Malcom, a company official, has said, but market prices for the product are a key as to when it will happen.

That wait-and-see slow movement on the part of AMAX was the focus of Hoff's remarks.

"Studies are all right, but I'm not too optimistic, to be honest with you," he said. "It seems to me we're getting the runaround from them (AMAX)."

"AMAX is all over the world...mining where there is probably a cheaper labor source," he said. The area can't wait for those supplies to run out before AMAX decides to mine copper-nickel in northern Minnesota, Hoff said, "Maybe another company would be more interested."

# Area counties to start copper-nickel study

BY ANN SCHIMPF

Of the News-Tribune staff  
Minnesota commissioned a five-year study on the potential for copper-nickel mining in northern Minnesota. Then last fall, the state appointed a task force to study the study and come up with recommendations for action.

Thursday, St. Louis and Lake counties got into the business of copper-nickel task forces, too.

"The state task force addressed statewide concerns. Now we've got to look out for our own interests," Lake County Commissioner Lloyd Houle said. (Houle served on the state panel.)

At a joint meeting of Lake County and St. Louis County commissioners, a resolution was agreed upon that would establish

an area copper-nickel task force. In addition to representation from Lake and St. Louis counties, the panel also will contain one member each from Ely, Babbitt, Aurora, Hoyt Lakes and two townships.

If both county commissions formally approve the resolution at their meetings Monday, the 10-member work group will begin work immediately. Sept. 1 has been set as the deadline for the task force to come up with formal recommendations for the two county boards.

"Mainly our group will be looking to come up with a tax package that will give the copper-nickel people a peg to hang their hats on," Houle said. "The state has been looking green (dollar signs) at our taconite tax ever

since it was passed and we want to be sure that with copper-nickel we still have a profitable local tax arrangement."

St. Louis County Commissioner Ed Hoff interjected a note of caution at the meeting.

"Studies are all right, but I'm not too optimistic about copper-nickel development with Amax," he said. "It seems to me like we're getting the runaround from them. They have been building up the hopes of people in my area, but all that has happened is that 10 of the 15 people at the pilot plant have been laid off."

Minnamax, a subsidiary of Greenwich, Conn.-based Amax, Inc., has a copper-nickel test shaft near Babbitt. Project director Jack Malcolm is currently seeking permission from the par-

ent company to activate a pilot project that would process about 250 tons of crude ore per day. Cost of the pilot project would be about \$40 million and it would take six years to complete. He says the company would not undertake full-scale mining until at least 1986.

In a statement to the state copper-nickel task force last winter, Malcolm said his company estimated that a 60,000 ton-per-day mine and mill would cost Amax \$950 million and could pay about \$23.5 million in direct taxes to

the state annually.

Hoff said one of the concerns the counties' task force should address is getting other companies interested in development of the copper-nickel deposits.

"Maybe we should get some local companies who don't have international supplies of copper that they can mine with cheaper labor," he said.

Houle explained that another concern of the new task force will be the establishment of an property tax to provide revenue during the time before production

begins. The taconite tax provides revenue based on production only, Houle said.

"We must look at what will be done to reimburse the counties for the roads, schools and other services which must be provided before production begins," Houle said.

Both Houle and Hoff said location of a smelter in either Lake or St. Louis County to keep processing revenues as well as mining revenues within the state also will be a focus of the local task force.



# Copper-nickel plans drawn

7-11-80 *Duluth Herald*

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St. Louis and Lake Counties are not going to be left behind in the copper-nickel planning process. Thursday, commissioners from both county boards drafted a resolution to form a joint copper-nickel task force.

"The state task force (formed last fall) addressed statewide concerns. Now we've got to look out for our own interests," Lake County Commissioner Lloyd Houle said.

If the resolution is approved by the boards at their meetings Monday, a 10-member work group will begin work immediately. Sept. 1 has been established as the date for the group to come up with formal recommendations for the local governments.

In addition to representation

from Lake and St. Louis, the group will contain one member each from Ely, Babbitt, Aurora, Hoyt Lakes and two unincorporated townships.

A major concern of the work group will be to provide guidelines for taxing copper-nickel mining.

"Mainly our group will be looking to come up with a tax package that will give the copper-nickel people a peg to hang their hats on," Houle said.

St. Louis County Commissioner Ed Hoff told the group that he is concerned about the slow progress AMAX is making on its test mine in the Babbitt area. He said he would like the work group to address the possibility of bringing

in other companies to develop Northeastern Minnesota's copper-nickel resources.

Minnamax, a subsidiary of Greenwich, Conn.-based AMAX Inc., has the only copper-nickel test shaft in the area. Project director Jack Malcolm is currently seeking permission from the parent company to activate a pilot processing plant. Malcolm has said the company would not undertake full-scale mining until at least 1986.

Both Houle and Hoff said location of a smelter in either Lake or St. Louis County — to keep processing revenues as well as mining revenues within the state — also will be a focus of the local task force.

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# Copper-nickel task force clears hurdle

A proposed two-county task force to study what copper-nickel production would do to the area's economy and landscape cleared its first hurdle Tuesday.

The task force, to consist of nine members each from St. Louis and Lake counties, was authorized by St. Louis County Board at its meeting Tuesday. The proposal next will be submitted to the Lake County Board, probably when that board meets at 7 p.m. Wednesday in Fall Lake Township near Ely.

Lake County officials had rejected the task force proposal in

the past because it gave St. Louis County a majority in voting membership. The version approved by the St. Louis County Board equalizes representation, however, and Lake County Board Clerk MelRoy Peterson said Tuesday he believes the compromise plan will be acceptable to most Lake County commissioners.

Task force membership, as the proposal presently stands, would include one commissioner each from the two counties; four elected municipal officials from St. Louis County cities in the copper-nickel mining impact area, one

each from Babbitt, Ely, Hoyt Lakes and Aurora; three elected municipal officials from Lake County, one each from Two Harbors, Silver Bay and Beaver Bay; one elected official from Fall Lake Township in Lake County and one elected official representing the St. Louis County Township Officers Association.

It also provides for one representative of the Lake County School District; one member jointly representing the school districts of Aurora-Hoyt Lakes, Babbitt and Ely; one representative of the League of

Iron Range Municipalities; one at-large member appointed by the St. Louis County Board, and three at-large representatives of Lake County.

A citizen-member study group which has been attempting to establish the task force recommends the at-large delegate appointed by St. Louis County commissioners be from Duluth.

St. Louis County Commissioner Alvin Hall, Ely, who authored the task force resolution, said Duluth should be provided representation because of the possibility a copper-nickel smelter may be

built in the city.

Hall said the task force findings are to be submitted to the Minnesota Legislature by next February.

If given a similar go-ahead by Lake County commissioners, the task force will study taxation issues brought about by copper-nickel mining and smelting operations, physical effects on nearby cities and townships through increased housing and utility demands, economic benefits and costs of providing public services and possible locations for smelting the mined copper-nickel ore.



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# AMAX won't start mining before 1990

By Dean Rebuffoni  
Staff Writer

AMAX Exploration, Inc., which once hoped to begin mining copper and nickel ore in Minnesota by 1979, said Friday that it couldn't begin full-scale operations until at least 1990.

The company is having problems renegotiating its agreement with another mining firm on about 6,000 acres of mineral rights near Babbitt, Minn., where AMAX is exploring for copper and nickel.

AMAX also must obtain permits from state environmental agencies to build a small pilot plant at the Babbitt site. It is needed to test methods to remove sulfur and other impurities from crude ore.

The upshot is that the company has again set back its plans for developing some of Minnesota's copper-nickel deposits.

"We're in a holding pattern," said Jack Malcolm, manager of Minnamax, the company's exploratory project near Babbitt, about 50 miles northwest of Duluth. AMAX has sunk a 1,700-foot test shaft at that site to determine if it contains commercially valuable ore deposits.

The Minnamax project is located within a 40-mile-by-20-mile area in St. Louis and Lake counties that geologists estimate contains about \$50 billion of low-grade copper and nickel.

Although its plans are uncertain, AMAX is considering two possible operations at the Babbitt site.

Malcolm said the larger of those op-

erations would require a capital investment of nearly \$1 billion. It would consist of open-pit and underground mines, and would produce up to 60,000 tons of crude copper-nickel ore each day. After smelting and refining, that would produce up to 286 tons of copper and 50 tons of nickel each day.

The second possible operation, which would require a capital investment of about \$650 million, also would consist of open-pit and underground mines. It would produce about 30,500 tons of crude ore each day, about half the production of the larger operation.

"We had hoped by last August or September to have some word from our parent corporation (on whether to proceed)," said Malcolm. "Now we think we may have a decision sometime next year."

One of the problems facing AMAX is its agreement with Bear Creek Mining Co., a subsidiary of Kennecott Minerals Co. Bear Creek has mineral rights on about 6,000 acres of land near Babbitt, including the Minnamax project site.

That agreement, which was signed in early 1974, expires in 1982 and must be renegotiated. It is expected that Kennecott will seek a larger financial return from AMAX as part of such a new agreement. To date, however, attempts by AMAX to begin negotiations have been fruitless.

Also, if AMAX decides to proceed with the larger of its two proposed operations, it ultimately would need 20,000 acres of land around the Babbitt site. In addition to the 6,000 acres on which Bear Creek-Kenne-

cott holds mineral rights, AMAX would have to obtain leases on land and mineral rights held by other mining companies and the federal and state governments.

Malcolm said that if AMAX is able to reach a new agreement with Bear Creek-Kennecott and if his corporate superiors give the go-ahead for a pilot plant, then AMAX could proceed on this schedule:

- Prepare an environmental impact statement and obtain state permits for the pilot plant. That would take at least a year, or until sometime in 1982.

- After that, a year would be needed to build the small plant, which would have the capacity to handle up to 250

tons of crude copper-nickel ore each day. In turn it would produce about 10 tons of a powderlike sulfide concentrate laden with impurities such as sulfur, iron and traces of other metals.

- The pilot plant would operate until about the end of 1984, and AMAX would then need at least two years to perform smelting and refining tests of the concentrate. That would be done at an AMAX facility in New Jersey.

"So, if all things are positive we would complete our over-all evaluation (of the desirability of full-scale mining) in 1986," said Malcolm. "After that it wouldn't be until 1990 before we could have a full-scale operation."