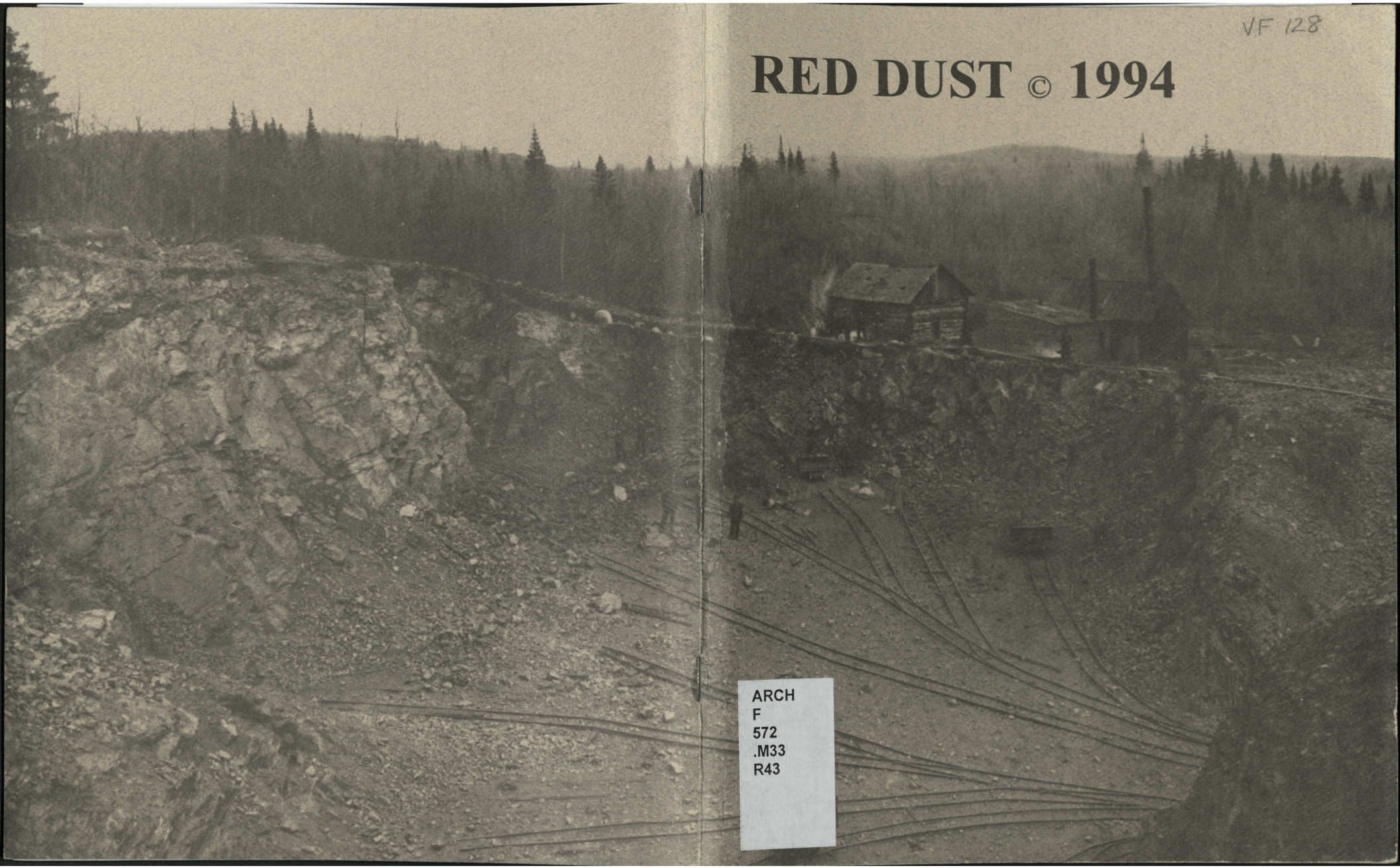

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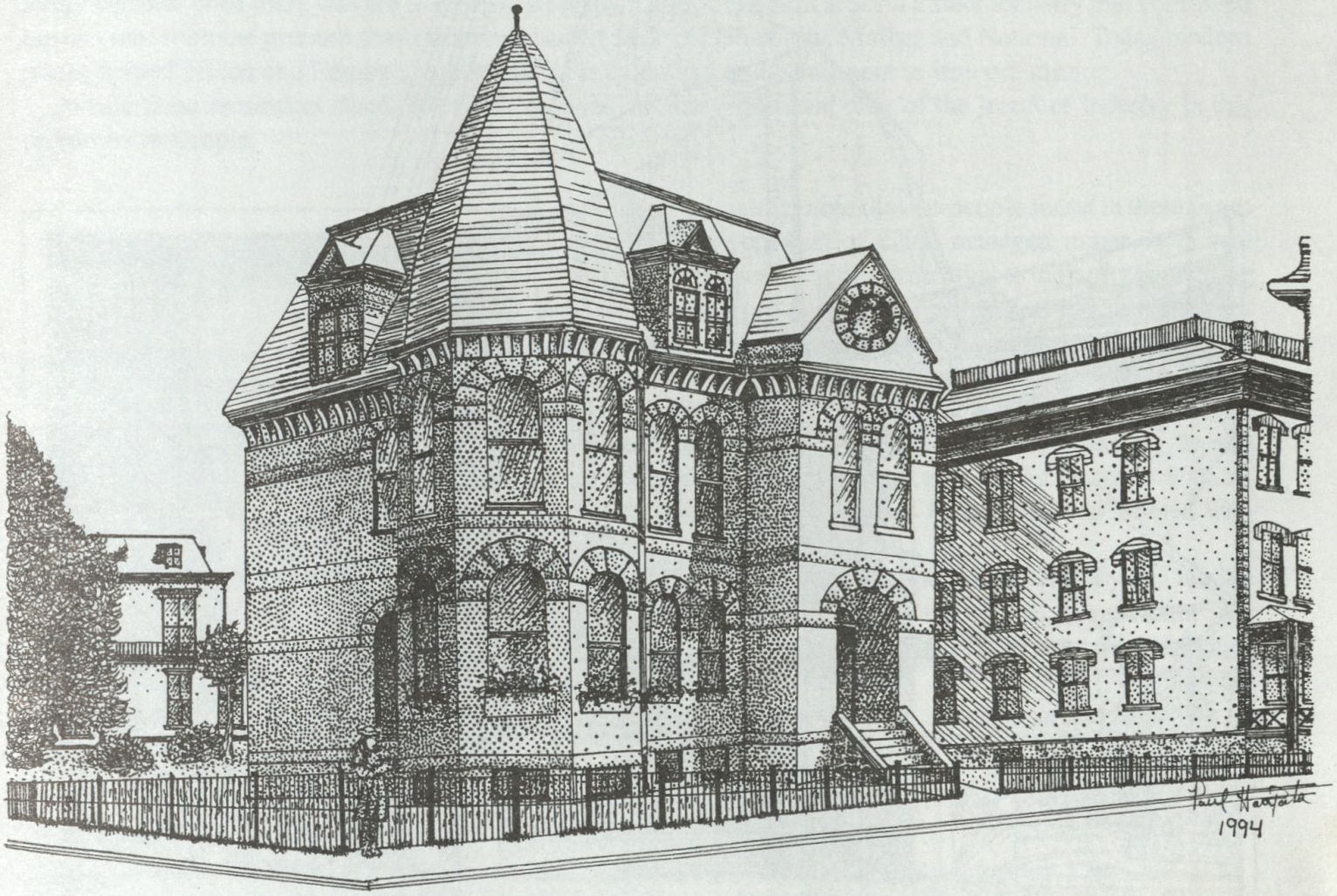
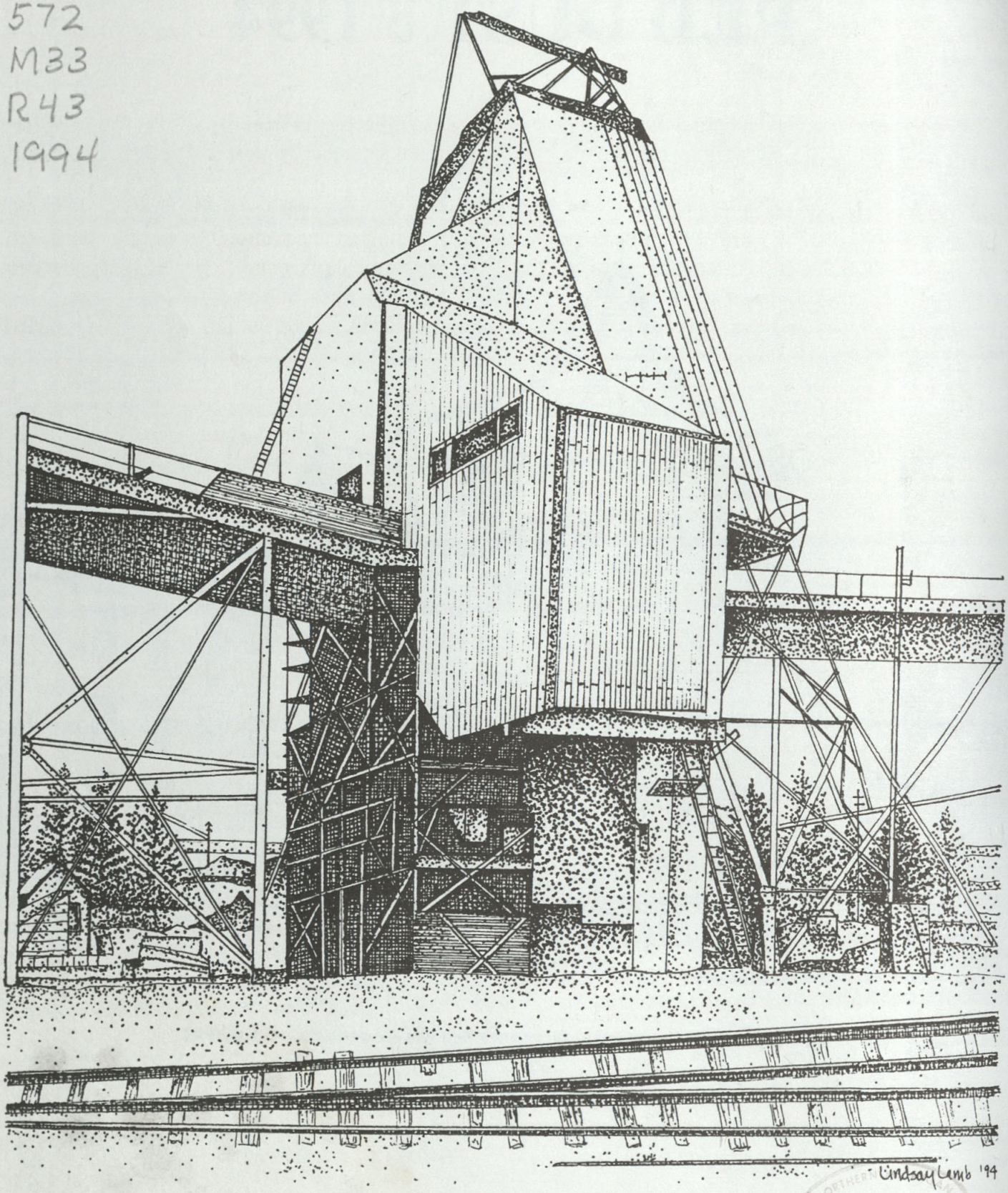


CCI Land Office, currently Negaunee Schools Administrative Building

Cover photo: circa 1890, Tilden Mine - photo courtesy of Jack Deo.



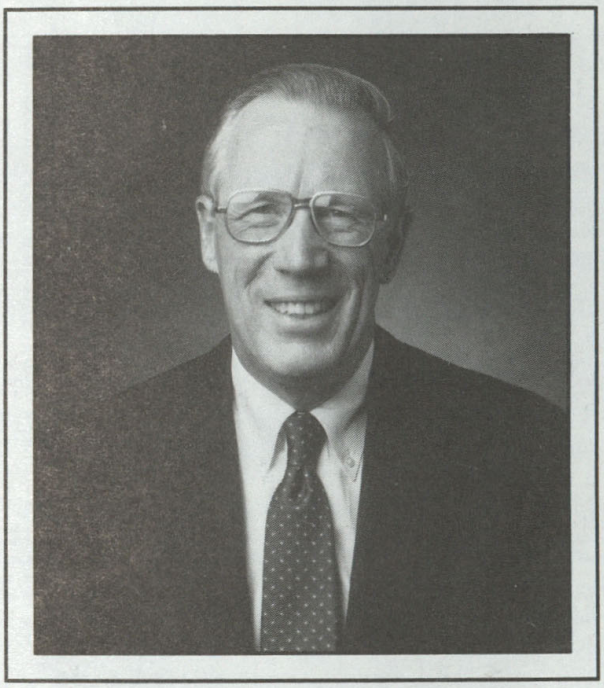
"Mather 'A' headframe"

PREFACE

As we pause this year to celebrate the sesquicentennial of the discovery of iron ore in the Lake Superior region, it is important to remember we are not celebrating a mineral alone but its meaning in our past, present and future.

Historical markers commemorate the discovery; museums chronicle the past; and towns and villages stand today because once there was ore to be mined nearby. Cities were built around a steel industry that consumed the ore sent from the pits and shafts of mines named Jackson, Blueberry, Mather and National. Today modern mines named Tilden and Empire are monuments to a continuing commitment to iron ore mining.

While these reminders stand, this book captures another significant side of the iron ore industry in this region — its people.

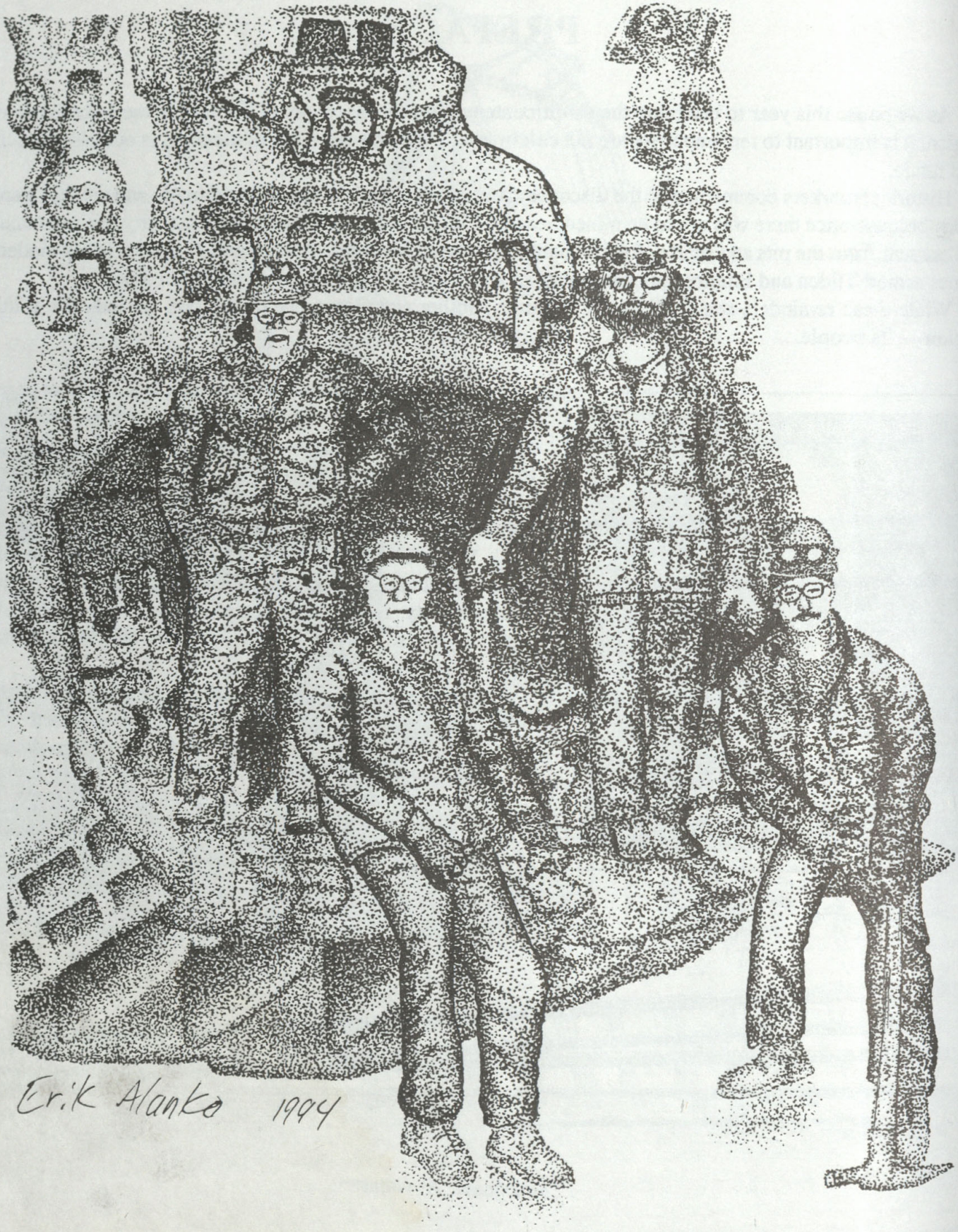


I am pleased to note that the people found in these pages represent the very best of Cliffs-managed mines, both past and present — people with a dedication to their careers, willing to work hard to provide the best life they can for their families and whose efforts have helped to make the communities in which they live better places for everyone.

While iron ore mining defined a region, the people shaped a culture based on solid values such as honesty, loyalty and reliability. Those qualities were found in our forefathers and they are still found today in the men and women who work in the iron ore industry.

We are proud of these people as employees, family, friends and neighbors. Their ability and commitment will ensure that iron mining in the Lake Superior region continues its pioneering tradition.

M. Thomas Moore
Chairman and Chief Executive Officer
Cleveland-Cliffs Inc


Erik Alanko 1994

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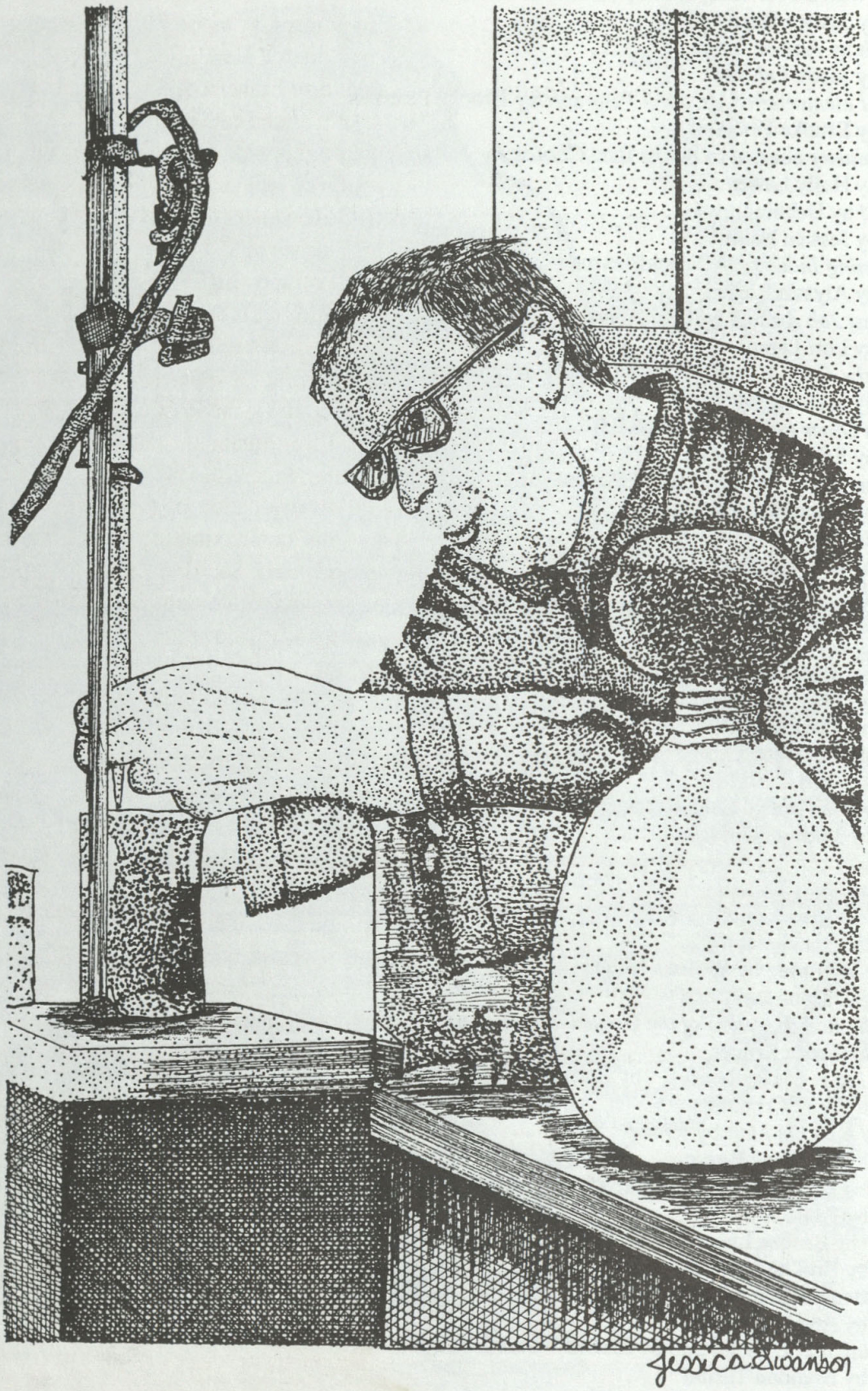
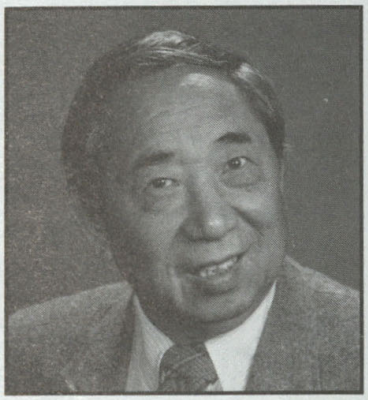

Jessica Swanson

A SLOW START WITH A PROMISING END

"It was certainly a slow boat to the United States," jokes Tsu-Ming Han as he reminisces about his long journey from China to the U.S. back in December of 1947. It had been a slow journey by boat, twenty-two days from Shanghai through Hong Kong and Manila and ending in San Francisco.

Mr. Han came to the United States at the age of twenty-two for advanced education. His field of study was Economic Geology, and he was very much interested in studying ore deposits. He did his post-graduate work with degrees from the University of Cincinnati and the University of Minnesota. With the setback of his financial support being totally cut off by the Chinese Communist Government, he was offered and accepted a summer job, recommended by his supervising professor, Dr. G. M. Schwartz, to Mr. Burton H. Boyum, Former Assistant Chief Geologist of Cleveland-Cliffs for investigating ore at the Humboldt Mine, the first low-grade ore processing plant at the Marquette Range. At the end of that summer, he was asked back by both Mr. Boyum and Mr. L. J. Erck, Chief Metallurgist, as a permanent employee, and he accepted. He worked as a mineralogist at the Research Laboratory for both the Geological and Metallurgical Departments.



Tsu-Ming Han

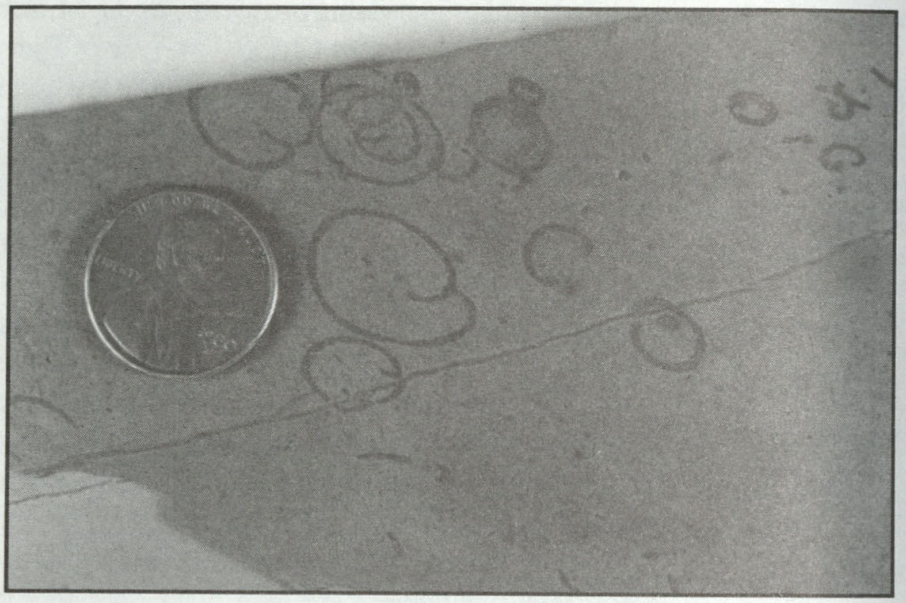
Mr. Han was in charge of the Mineralogical Section at the Research Laboratory. His routine work was evaluation of crude ores from different land offers and outside explorations, conducting independent investigations on ores from different mining projects, such as Empire and Tilden; and studying the quality of milling products from concentrators; and the effects of the microtextural and mineralogical transformation of pellets on the quality of the final pellet product. The less routine work covered the investigation of both the plant operating and the product quality problems. In this connection, the plant operators recognized the problems, and Mr. Han identified the cause of the problems. These problems might be labeled "big" or plant threatening problems.

Mr. Han told me the cause of most of the problems at the plants so far have been identified. He also told me that some of them cannot be solved because of the intimate association of undesirable constituents with the ore minerals. The most difficult part of his job was to create ideas toward the investigation and solution of the problems. "One of my most challenging tasks was to find the cause of the poor separation between the ore minerals and the waste in one part of the ore body at Tilden" during the 1970's. It was a serious problem that caused panic throughout the CCI management group. Through his investigation, he discovered that the cause of the poor metallurgical separation was the presence of small amounts of montmorillonitic clay in the ore body. Although this clay is not visible to the naked eye and cannot be positively identified by microscopic means, it can be detected by a method invented by him. It is referred to as the "Shake Test". Further research is needed before considering this material as "ore".

Mr. Han's job title was senior research scientist, and he states that "curiosity was and still is the driving force for me to conduct my research." This is probably one main reason why he has been so successful. "In short, my biggest responsibility was how to improve the physical and chemical quality of the final pellet product, and how to find the cause of metallurgical problems, occasionally occurred at the plant. He says nowadays, people trust and emphasize the "numbers" too much and overlook observation and examination. He stated that in order to know the cause of the problem, one should examine the products, just like when a doctor wants to know the patient's discomfort, he has to know the chemistry of the blood and must also examine the patient thoroughly to look for signs and symptoms.

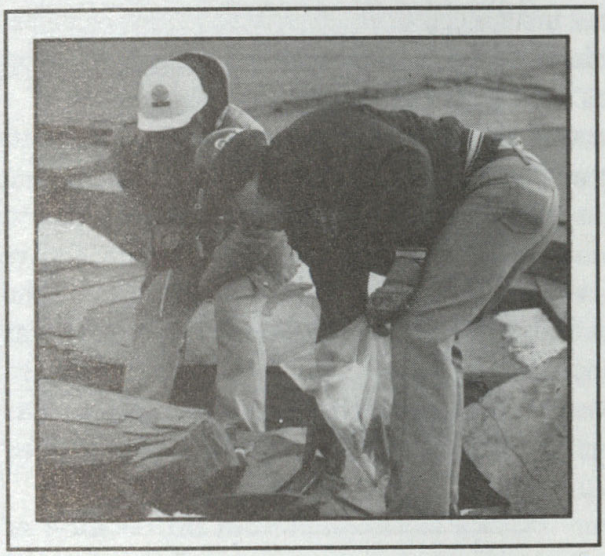
At the Research Laboratory, they use a variety of equipment to investigate a problem. For instance, when he needs to identify a mineral, he uses an x-ray diffraction apparatus, an electron microscope, and a light microscope. In order to determine the physical and thermal properties of minerals or pellets, he uses high temperature furnaces, differential thermal analysis (DTA) and thermal gravimetrical analysis (TGA) apparatuses. In order to identify minerals and their textural relationships, he uses a light microscope.

Over the years, he has implemented many new programs and has accomplished a number of achievements. In 1974, he was asked by Dr. Jacob E. Gair of the U.S. Geological Survey to write a section of "Lithology, Stratigraphy, and Petrology of Iron-Formation at the Empire Mine" for the Geological Survey Professional Paper "Bedrock Geology and Ore Deposits of the Palmer Quadrangle, Marquette County, Michigan. He noticed a piece of rock with a fossil-like material during his field work at the mine. However, he did not believe that it was a fossil simply because it was too early geologically for any life to exist. About ten years later, Mr. Robert Berglund, presently General Manager of Tilden Mine, found a piece of rock with the same fossil-like material as the one found in 1974. Mr. Berglund than gave it to Mr. Went Slitor, Chief Geologist of the Empire Mine, who let Mr. Han examine it. Mr. Han was very interested in studying this kind of geological feature. After his examination, he came to the conclusion that the fossil-like markings in the specimen found in 1974 were actually a fossil. Thereafter, every time he went to the mine, in addition to his regular work, he also kept his eyes open for the stratigraphic location where the fossil was situated. On a Saturday at about 1:30 in the afternoon, in the fall of 1990, his searching yielded results. As he was leaving the mine, he saw a light area located on the eastern wall. He pulled his truck over and walked towards the wall to examine it. That was when he located the actual fossil in place. It is reasonable to assume that this fossil is about 2.1 billion years old since the Negaunee Iron-Formation has given an isotopic date (Sm-Nd isochron) of approximately 2110 million years. The fossil is spirally coiled, megascopic in size, and carbonaceous resembling Grypania spiralis found in a younger geological strata in Montana. Though this is not his proudest discovery, I am truly amazed. As a student it's hard for me to imagine something this amazing being discovered in a land once known as "A Frozen Wasteland" not long ago. According to him, his most significant contribution was the investigation of the origin of magnetite in the Precambrian iron-formations throughout the world.



Photograph of actual fossils found in Negaunee with penny included as a point of reference.

I asked him in his own opinion, what the future may hold for the Tilden and Empire Mines. His response did not come as a total shock to me. He told me he thinks both the Tilden and Empire have their own separate



problems. The Empire will face the beneficiation of harder and finer-grained ore types. Higher cost for treating these ore types is expected. The Tilden has wide variations of ore types and extensive research is needed for processing some of these ore types. If no research is undertaken in the near future, these ores will be treated as "waste". Consequently, the ore reserve will be significantly reduced. In short, Mr. Han believes both the Tilden and Empire will continue in operation for years to come. However, the operating costs will continuously increase due to the cost of future technology.

I also asked him why CCI has been so successful in iron ore mining. He stated, "It seems to me that the success of CCI is attributed to the following: First, CCI is the only iron ore merchant, whereas the others are mostly owned by steel companies. Second, CCI is not only a partial owner, by also a manager of the operating mines. Third, CCI has had a strong management and a group of technical staff dedicated to the iron ore mining; and fourth, CCI owns a lot of ore reserves in the Marquette District." These were his opinions about the key to the success of CCI. CCI is the manager of different mines owned by CCI and many steel companies in separate locations. Therefore, most of the pellet product produced is directly shipped to these respective companies. However, in order for CCI to remain competitive, the product being shipped must meet the chemical and physical quality requirements that these companies demand. Hence, in order to satisfy the customers' demand, high technology research must constantly be conducted at the Research Laboratory, such as the evaluation of the physical quality of pellets by tumble and compression, and the chemical and physical properties under different reducing environments, such as low temperature breakdown, reducibility, high temperature melting and so forth. In short, the technology for steel making advances and the quality of the raw material applied by CCI has to be improved accordingly through research. Iron ore pellets could very well be replaced by metallized pellets or scrap iron in the near future.

As the educated man that Mr. Han is, I thought it would be interesting to ask what advice he would give the students of today. So I did. He suggested that students should understand the principle and fundamentals of learning, and should try their best to receive an advanced degree, permitting students to work with their heads instead of their hands. One should not only center on one's own interest but also think of one's future job and income; and in order to get ahead of one's profession, one should try to create opportunity rather than look for and wait for it. But, the most important thing of all is to get along and work well with other people.

My interview with Tsu-Ming Han has certainly changed my perspective of the technical side of mining. I never realized how much science and research was involved in the mining industry. I guess with my former knowledge of mining, I always took for granted that mining was more of a "hands on" than a "heads on" career.

— Jenna Alderton

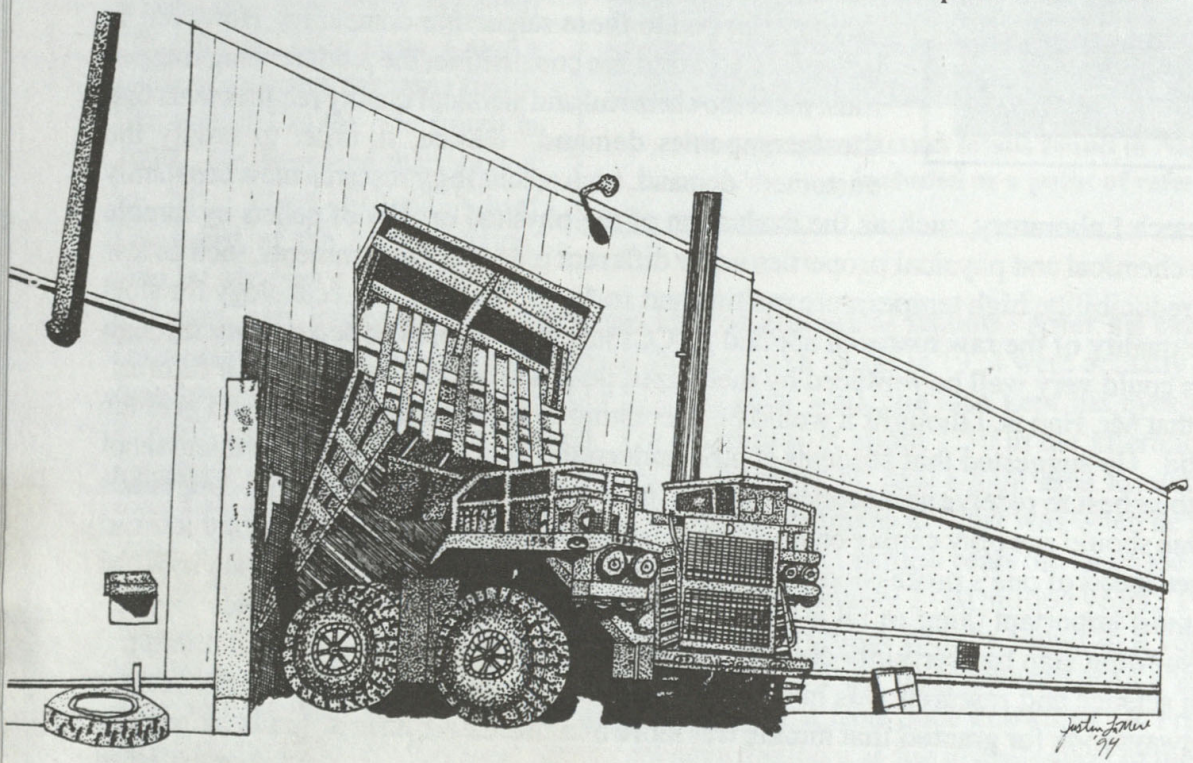
A MINING LIFE

"I always knew there was more to be done than I was going to be able to get done on one any particular day. . ." These words were spoken by Mr. Hugh Leach when talking about his high-level management job in various mines in Minnesota and Michigan's Upper Peninsula. Mr. Leach was born in 1916, the son of Edward and Helen Leach, in a small mining location in northern Minnesota, ". . . about 100 yards from an underground mine," he stated. He married in 1941. He and his spouse, Mary, had eight children, Susan (Kalamen), Elizabeth (Betsy Esber), James, Barbara, Peter, Allen, Stephen and Richard.

Mr. Leach became interested in mining at a very early age. He grew up ". . . right in and among the mining activity . . . ," he stated. His father and brother, Ed, worked in the mining industry. It was naturally in his blood to become affiliated with the mining industry.

Mr. Leach's mining career began with educational preparation. After he graduated from high school, he attended college at the Minnesota School of Mines. He took courses in all facets of engineering and metallurgical research. This was the initial training, but he also acquired some education by ". . . doing the work and overseeing the various processes." He worked in different summertime jobs during college to help pay off his tuition.

Mr. Leach's forty-five year career began in 1935. When he was twenty-three years old, he had his first "real" job in engineering. At first he worked at the Argonne Mine, and numerous other small mines in Minnesota that were all part of the Evergreen Mines Company. He worked in that capacity until 1945. In 1945, he went to work for Cleveland-Cliffs Iron Company as a superintendent of the Hill-Trumbull Mine in Minnesota where he worked until 1953. In 1953, he was appointed manager of seven mines in Minnesota. Finally, in 1958, he was transferred to the Ishpeming district of Cleveland-Cliffs as manager. Three years later, in 1961, he was transferred to Cleveland as vice-president of research and development. He became vice-president of Western Operations which was the position he retired from in 1980.



Crude ore once it is crushed down to chunks less than 10" in size is dumped in covered ore storage buildings.

In his position as manager of research and development, it was his responsibility ". . . to oversee the development of new procedures, ordinarily through metallurgical research . . .," Mr. Leach explained. He stressed that this research ". . . made the Tilden and Empire Mines feasible, concentrating low-grade iron ore to produce better high-grade pellets." He was also in charge of exploration, which involved mines in

Australia and Canada and the development of research on Colorado oil shale, particularly related to mining it. He was also involved in the exploration for uranium in various places such as Colorado and Wyoming.

Mr. Leach played an important role in the mining industry. While he was working, Cleveland-Cliffs was part of a three company consortium that was working on a development of a mining process for mining oil shale underground. They were also working on a retorting procedure for producing oil from oil shale. Oil shale, as Mr. Leach told me, is a shaley, laminated rock which contains a hydrocarbon. When heated, a gaseous vapor is produced, which can become oil. Mr. Leach's job was very important because he played a major part in the development of these processes. Mr. Leach thought it was very challenging to come up with a new process for mining underground. But he thought time put in was worth it, because as he stated, "I think we developed procedures for mining oil shale that will still be used in a lot of mines out there. We proved it could be done and done cheap, and that's the essence of it."

Mr. Hugh Leach

Mr. Leach also thought it was challenging to develop the Empire and Tilden Mines as a whole. It was a challenge to produce a good, sellable concentrate at an acceptable cost from low-grade ores. These low-grade ores, in prior times, were considered nonsalable and nonusable. But such a challenge was the thing Mr. Leach enjoyed most about his job. "There was never an end to it," he said. Another process that Mr. Leach found exciting was the process that he thought made the Tilden Mine possible. The Tilden Mine started concentrating hematite taconite. "Nobody had concentrated hematite taconite previous to Tilden," Mr. Leach stated. Without the taconite pellet, there would be no Empire or Tilden and, consequently, no jobs for thousands of men. "Cleveland-Cliffs is known around the world for this," he said. The Chinese must have thought the process was pretty interesting, too, because they came to the United States and wanted some Cliffs metallurgists to go to China to show them how to do it. But Cliffs said that they were too busy to go to China, so the Chinese stayed in the U.S. and watched Cliffs do the process. Without the development of these processes to use low grade ore, mining operations in Marquette County would have ceased.

Mr. Leach was the innovator behind many new procedures and processes. One of the new procedures that Mr. Leach found especially interesting involved the use of autogenous grindings. The way this worked was that chunks of rock were poured into mills twenty-five to thirty feet in diameter. Autogenous grindings, as Mr. Leach explained, means that the ore grinds itself. No large, steel grinding balls are needed to assist in the grinding. Mr. Leach thinks that this is one of the processes that made the Empire possible, because the steel grinding balls were expensive, and the grinding worked just as well without the steel balls, resulting in a significant saving of operation costs.

Mr. Leach's working conditions were usually very nice. He spent most of his time in offices in various places. Sometimes, though, the conditions could get harsh. Mr. Leach always accepted the conditions that he had to handle.

Mr. Leach worked for forty-five years, and over the years he has seen many humorous and dangerous situations. One of the most dangerous situations was a plane crash, and he was in it! It was late at night, and the pilot saw what he thought was a landing strip which in reality were streetlights. The pilot landed the plane just beyond the street. Nobody got hurt, but the airplane was ruined. Mr. Leach was not involved in any other dangerous situations, but he witnessed a lot of things like blasting accidents and trucks tipping over. He was

responsible, in many of these situations, for what was to be done following these accidents, like getting the victims to the hospital and communicating with the family.

One of the most unique things that Mr. Leach had ever seen occurred when he and some other explorers were trying to find a good, safe place for an oil shale mine entrance. Mr. Leach and few a other engineers wanted the entrance in one place, while another man wanted the entrance in a different location. The group all went out into the field to look at both places. While they were standing there, a tremendous fall of rock occurred where the one engineer had envisioned the mine entrance to be. "That settled the discussion," Mr. Leach stated.

Mr. Leach told me what he thought about the safety standards. He told me that the safety standards in both underground mines and open pits were good, and improving markedly. It is up to the supervisors to make sure the conditions are as safe as they can possibly be, but — "Nobody's perfect," Mr. Leach stated, "We can never totally overrun human error. When I mean error, I don't mean deliberate mistakes that man makes, but errors in judgement that can create an accident."

Mr. Leach is an outgoing man. He has many friends, and he got along well with his co-workers. He thought that they were "a bunch of fine men". They were all involved in metallurgical or mining engineering. "They were all capable," Mr. Leach said, "very well educated and outstanding pillars in their field. Look at Empire and Tilden today," he stated, "that's the result of some brilliant work on the part of some very hard working people."

When Mr. Leach or his co-workers performed well on the job, their reward was usually an advancement in position. One time, though, Mr. Leach and a small group of men were going to receive an award for their development of the Tilden process. The research department as a group decided that nobody was going to get the sole award for this. They wanted at least six people to get this award, but the American Institute of Mining Engineers would not give it to all of them, so nobody got it. Mr. Leach felt that he should not get credit for it because he was only a part of a large group of people that were involved. "It was a real team effort," he said.

What does the future hold? Well, for the iron industry, Mr. Leach thinks it is always going to be strong, but various small changes are going to have to be made to fit the steel industry's needs. Mr. Leach thinks the future for the Tilden and the Empire looks good. However, changes must be made regarding blast furnaces. "Blast furnaces will probably be reduced in importance," he continued, "and as a consequence, we're going to have to change the product that is produced by the Empire and Tilden to match the requirements of the blast furnace industry." For Cleveland-Cliffs to remain competitive in the future, Mr. Leach thinks they will have to produce a product that goes into electrical furnaces. This product is called D.R.I. - direct reduced iron. "I think it's going to move in that direction," he continued, "and Cleveland-Cliffs is going to move with it."

Mr. Leach thinks Cleveland-Cliffs will be known in the future just as well as it is known now, as a successful company. A powerful company that produced good ore. A company promoting progressive, innovative research and development.

Mr. Leach thinks Cleveland-Cliffs was successful because they had the ability to innovate. They had a hard working research department, and they had exploration groups that went the farthest in their field. He thinks CCI is also successful because they have been willing to take some chances on projects. CCI had another advantage, according to Mr. Leach. Cleveland-Cliffs acquired ownership of the ore bodies that they now are mining. This enabled them to develop consortiums with other steel industries, produce the ore, and have a market for the product.

Mr. Leach's message to students is to get an education. "You need to know how to read, write, and do arithmetic," he says. He thinks students should have the ability to read and understand what is read. He also thinks students must have the ability to write coherently, and be able to understand what is written. He says that

students should know how to use arithmetic properly. These simple skills, he thinks, will get a person a good job. He told me that anyone with these skills could get a job at Cleveland-Cliffs. He stated, "If you can't read and write and do arithmetic competently, you don't belong on Cleveland-Cliffs payroll, or on anybody else's for that matter." Mr. Leach also thinks that students should have some basic knowledge of computers. To achieve these goals, Mr. Leach thinks student should study a lot. He thinks they should spend some time reading. He also thinks that students should be informed about the government.

Mr. Leach will always have happy memories about the Cleveland-Cliffs Iron Company. He will always remember Cleveland-Cliffs as a fair, honest company that was hard driving, but in a complimentary sense. Mr. Leach is very happy that he worked for Cleveland-Cliffs exclusively. He had other job opportunities, but, as he said, "I couldn't see any reason why I should leave Cleveland-Cliffs. I enjoyed every bit of it and I would do it all over again."

Mr. Leach and "friend" at Conibear Camp.

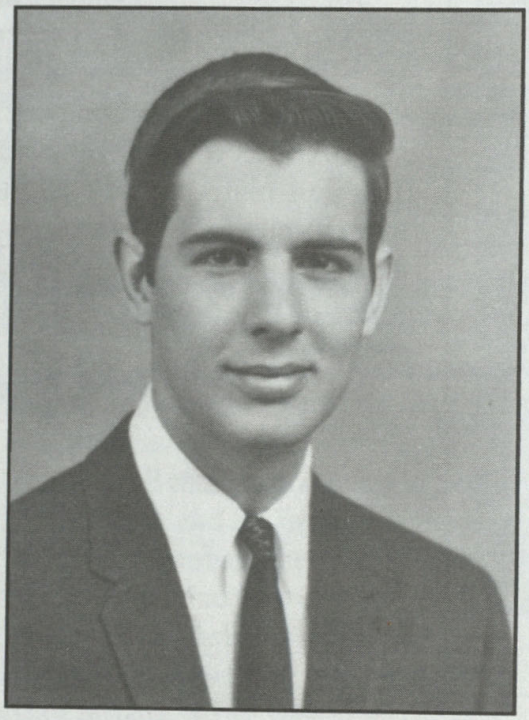
Mr. Leach is a very active man who likes to hunt, fish, and garden. He played a major part in the Cleveland-Cliffs Iron Company's research and development. Through him I learned of the tremendous role research and development played in keeping Marquette County mines operating.

— Amber Tonge

OCCUPATIONAL MEMORIES OF MR. JOHN PETERSON

"The most challenging or difficult things that you end up doing are the things that are unexpected," said Mr. John Peterson as he told me about his career and experiences as a plant repairman for the Tilden Mine in National Mine, Michigan.

Mr. Peterson, son of John and Agnes Peterson, was born on May 2, 1951, in Marquette, Michigan. With his mother as a housewife and his father as a conductor for the Lake Superior and Ishpeming Railroad Company in Negaunee, Mr. Peterson grew up to be a very intelligent and friendly person. Also, he is a father of two children, Brooke, who is currently thirteen, and Johnny, who is ten years old. Mr. Peterson is a brother to Paul Peterson and a husband to Margaret Peterson. Let me tell you about the interesting and exciting experiences he shared with me about his career in the iron industry.



Mr. Peterson's high school graduation picture, 1969.

After he graduated from Ishpeming High School, Mr. Peterson went to college at Northern Michigan University for one year before he started working for Cleveland-Cliffs Iron Company. He started on March 26, 1973, at the Ore Improvement Plant located in Negaunee's Eagle Mills Location. Describing the plant he said, "It is very, very, very dusty and dry. That place was a horrible place to work." He also worked at the Pioneer Pellet Plant during major repairs. After that, he worked briefly at the Empire Mine in Palmer. Since 1979, Mr. Peterson has been working at Tilden Mine, which is one of CCI's mines located south of Ishpeming.

Mr. Peterson, as a plant repairman, has had many duties over the years in his tenure at the Tilden Mine, including fixing machinery. "The current job, to go into as much detail as possible would probably take a very long time," explained Mr. Peterson. Currently, he is working in an area called a boiler room. In the boiler room, Mr. Peterson and his co-workers do not just fix machinery. There are compressor rooms and reagent areas that he works in besides the boiler room. First, the reagent areas handle all of the chemicals that come into the mine which aid in the process of producing iron ore pellets. Next, in the compressor rooms, maintenance repairs all of the machinery which include: vacuum pumps, snapblow air compressors, instrument air compressors, and plant air compressors. Mr. Peterson and his co-workers make sure that if things are not running they fix it.

According to Mr. Peterson, unexpected duties are the most challenging or difficult part of his job. For instance, if he has to go into damaged areas where a fire has occurred or something has exploded, fixing up those areas can be quite difficult and dangerous because "you don't know what to expect," stated Mr. Peterson. He also has been a conveyor attendant. Mainly, those jobs were just clean up work and monitoring machinery. "Lately now, in the last few years, we've got more into computer work," stated Mr. Peterson. Currently, computers are a big part of many jobs in the mine including Mr. Peterson's.

Mr. Peterson uses a lot of tools to fix things at the mine. To fix some of the machinery he uses hand tools

like wrenches and hammers. For cutting steel he uses torch sets. He also uses some types of welders. At the mine site there are laser alignment tools that he sometimes uses. "Every year there is more special equipment that we are able to use," said Mr. Peterson. Tools of many varieties are used in his responsibilities as a plant repairman.

While working at the Tilden Mine, Mr. Peterson has enjoyed many things. "I don't think I'd work anywhere else. Living where I do, it's close to home. One nice thing about my job is when I leave my job it stays there. I'm lucky to have a job that I don't have to bring, if you want to call it homework, home. That's a very nice part of my job," Mr. Peterson explained. Another thing he enjoyed was being able to develop a good sense of accomplishment when he would work on expensive, heavy machinery and get the job done fast and efficiently.

In his job right now, Mr. Peterson works with nine or ten people. He has benefited from becoming acquainted with all of the people he has worked with. Also, many good friendships have developed over the years. "If you work with people long enough, you get to know them well enough, you find out that just about everybody you work with has a little bit of weird streak in them," stated Mr. Peterson. "Which kind of leads you to the conclusion, after a while, that I must have a little weird streak in me, too," said Mr. Peterson jokingly. "You more or less have to change your personality with each person that you work with to be able to get along. We got some dandies on our crew," explained Mr. Peterson. They are all good workers even though they are humorous Mr. Peterson told me. There is one co-worker of Mr. Peterson that they nicknamed "Jumpy". Everybody tries to surprise him, and when they do, he jumps and says goofy things. Another person on Mr. Peterson's crew is called the "Whistler". He whistles strange things all of the time. "They're all a good bunch of guys and they're almost like family after a while," explained Mr. Peterson.

A number of times throughout the year, Mr. Peterson and his co-workers go to seminars. These seminars help the workers better use the machines and know the tools required to repair them. The seminars are put on by the companies that sell the mines the machinery. These are special training classes.

Mr. Peterson and his co-workers have been in some dangerous situations throughout the years. "I've been involved in a few myself, and I've seen a few," explained Mr. Peterson. He also said, "It's something you always try to avoid," referring to unsafe or dangerous situations. One time, Mr. Peterson operated a crane lifting a vacuum pump by a nylon sling. It weighed about 9,000 to 9,100 pounds! The sling broke once the crane had reached its highest point, about 20 feet off of the floor, and came crashing down. Mr. Peterson got out of the way just in time! Nothing happened to Mr. Peterson, but it destroyed a 500 horsepower motor. Losing such a piece of equipment was a very expensive accident. Mr. Peterson has been burned with sodium hydroxide. Another injury occurred when he was with a friend on a cement foundation, and he slipped off and damaged his knee. Mr. Peterson missed four months of work, and his knee needed surgery. "Like we say at work, 'Oh, just this once I'll take a chance.' We've said it 500 times. Eventually it does catch up with you," stated Mr. Peterson. He has seen people involved in accidents. One time he saw a person knocked down by a crane block! "A lot of those things aren't really much fun remembering," said Mr. Peterson. The work force is older now. There are not nearly as many recent high school graduates working at Tilden anymore. The majority of the work force used to be in their twenties. "That's probably why a number of accidents happened back then," said Mr. Peterson. "People at that age will goof around. You don't see as much horseplay anymore," he continued.

With these potentially dangerous situations at the mines, safety standards are changing every year. "They're much stricter now," explained Mr. Peterson. Workers have to wear ear protection, safety harnesses when working on high equipment, eye protection, head protection, and wear clothing to protect them from certain chemicals. Mr. Peterson's biggest responsibility is not getting hurt. "My biggest responsibility is to my family and to be able to work and not get hurt and continue working and stay healthy for my family," stated Mr. Peterson.

Mr. Peterson is currently a member of the steelworkers union. He was a member ever since the day he started working for CCI. He attends union meetings where workers talk about new and old business and how to make things safer at the mine. The steelworkers union is very important to the workers. "Human, nature being the way it is, people will generally take advantage of other people unless there is a balance of power," Mr. Peterson explained. "No one person will be persecuted or picked on unfairly," Mr. Peterson stated explaining the need for a union. "So, it provides a balance of power and enables things to be a lot more equal," stated Mr. Peterson.

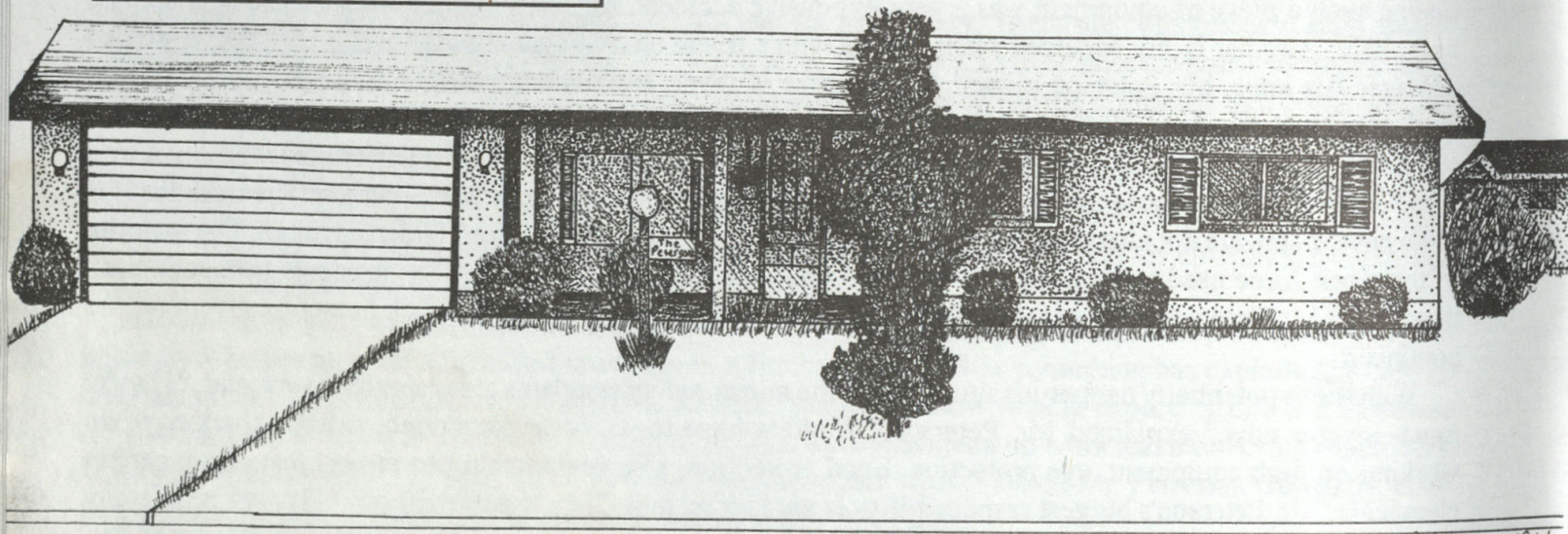
Over the past twenty years, Mr. Peterson has experienced four strikes. Normally, three years is how long contracts last. As it gets closer to the deadline, the union starts negotiating with the company. If they cannot agree on certain aspects, the workers have to prepare to cease work. If there is not going to be an agreement, they get ready for a strike. Workers gather at the union hall to talk with their negotiators and see if there will be a strike. If agreement is not reached, and the vote is taken, there is a strike. The strike usually involves about 1,800 people! "Strikes aren't fun. It's actually a scary thing really," explained Mr. Peterson. At the union meetings, people boost or lift each others confidence and try to make each other feel better. If someone is sitting at home, during a strike, he or she feels alone and scared, but if that person is at a picket line he would feel much better. At a picket line, the workers show people they are on strike and that they have faith in what they are doing.

Mr. & Mrs. John Peterson, 1994.

As for the future of the Tilden Mine, Mr. Peterson thinks that it is very bright. One reason is because the workers do such a good job. "I think most people do the best they can. They have a lot of pride in their work, and I think that has helped them a lot," explained Mr. Peterson. The workers have a good work ethic, and Mr. Peterson thinks that the workers will be remembered for that.

I enjoyed hearing about Mr. Peterson's occupation. It was interesting and exciting. Mr. Peterson is my father who I look up to and admire greatly. I will always remember the time we shared discussing his fantastic memories of his job. Thanks, Dad.

— Brooke Peterson



The Peterson home

"THE IRON INDUSTRY SEEMED TO BE THE BEST CHOICE FOR WORKING"

"Well, the iron industry seemed to be the best choice for working, steady work and the money part," said my grandpa Paul LaForge, when I asked him why he chose to work in the iron industry.

Paul Roger LaForge was born in Ishpeming, Michigan, on April 22, 1934. Both of his parents started off working in the woods and at their farm, but eventually his father went into mining. Grandpa said, "Pretty near all my relatives worked in the mines at one time or another."

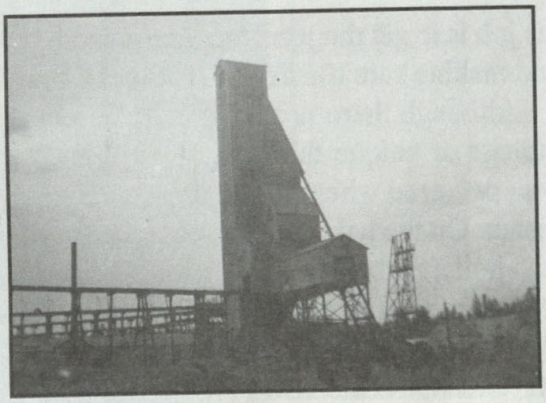
LaForge Farm, Republic, Michigan, late 1940's

My grandpa had to quit school in the tenth grade to go to work. He took it upon himself to get interested in machinery and mechanical equipment. This interest in machines helped him get to his present day job which is that of a welder.

My grandpa started working for a company called Inland Steel. This particular mine was located in South Greenwood about five or six miles from Ishpeming, and it was also an underground mine. Grandpa says the underground mines followed the ore bodies.

In the underground mines there were different rooms called stopes. To get to these stopes they developed what was called a drift. Some of the smaller drifts were called dog drifts. Miners also had to climb in areas called raises. They worked from these areas into pockets of ore.

Grandpa said that working in the underground mines was not a bad experience. When he started off forty-two years ago, the miners had an electric light with a battery. These lights clamped to their heads. Most places were lit up well. The main drifts had lights every few feet. The mines were not as dark and gloomy as most people think they were. Although he explains, "There were some places where you were, when you turned off your light it was blacker than any night you've ever come across. I mean it was total blackness. There was no light or reflection of any kind." The working conditions and weather were consistent.



Greenwood Mine Shaft, early 1960's

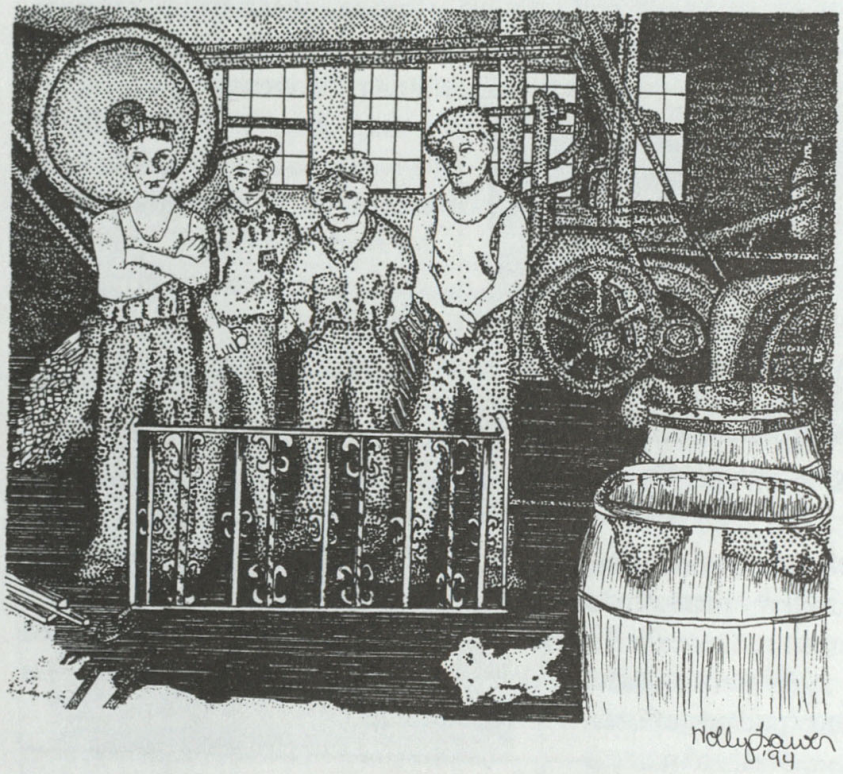
Grandpa then described one of the worst accidents he had ever seen. The accident happened underground. He witnessed one of his co-workers fall into a "grizzly". The grizzlies are openings in rails where the raw ore was dumped before shipping it up to the surface. When his co-worker fell, he fell with his legs through the grizzlies. He fell forward breaking his leg and hip.

One of the most challenging and difficult jobs my grandpa faced was also a little bit frightening. He sat on

top of the opening of the shaft going into the Greenwood Mine and welded the steel which was used to cap off the shaft. Even though he had a safety belt on, it was difficult for him to sit there knowing that a half-mile deep hole was directly under him.

When the underground mine he was working at shut down in 1963, my grandpa took a chance and became a welder. Because he did not know how to do this job, he once again had to start on the bottom of training and work his way up.

Next, he was employed at the Republic Mine where he worked in the pit department which is the actual mining department. He was hired as a welder and has worked as a welder since then.



After the Republic Mine shut down, Grandpa was transferred to the other CCI properties which include the Tilden Mine, the General Shops which is called the Brownstone, and the Empire. He is currently employed at the Empire Mine.

Grandpa thinks the most challenging part of his current job, a welder, is to know what kind of wire or welding rods and materials to use. If the material would be on some sort of a frame, it would be a T1 steel which is a stronger type of material. If the material would be in a place where it would quickly wear out it would be manganese because it can take a lot of abrasion without too much wear. The newer wire rods are replacing the welding rods because they are cheaper and there is less waste.

Even though there is a lot that the welders have to know about materials, Grandpa thinks the most important part of his job is to get the job done in the least amount of time possible, getting the job done to the best of his ability, and making sure the thing he makes or repairs works or fits the way it is supposed to.

Although there is a lot of work to be done, some humorous or unique things have happened. One such incident occurred when my grandpa was going off to eat his dinner. On the way there he passed one of his co-workers who hollered to him "Paul, can you come here a minute?" "No", Grandpa said, "it's time for dinner." "Well," the other worker said, "come here it will only take a second." In the end, Grandpa decided to walk over and see what he wanted, and when he did his co-worker asked, "Will you take a bar and try to get this bucket door off my feet? My legs are caught and I can't seem to move." Grandpa thinks this was quite funny because his co-worker was not hurt in any way. He was just stuck under a shovel bucket door which prob-

On left, Ken Mattila, on right, Paul LaForge, 1970's Republic Mine Weld Shop

ably weighs about five tons. Another humorous incident was when two welders, Bob, and his partner, decided to go down into the pit. On the way back they were pulling a manlift behind their repair truck. When they stopped and unhooked the manlift, for some reason the truck started rolling away on its own. Bob, being the youngest, started running after the truck. Well, Bob ran and eventually caught up to the truck. Bob jumped into the truck and set the brake. He probably stopped what could have been a serious accident. Grandpa said no one was hurt and nothing was lost so it all came down to "Run, Bob, run."

When my grandpa first started working in the mine, "Safety was kind of secondary and now I think it's the primary objective." He stated that there are several safety inspectors that come to the mines. Now the companies have a federal inspector, a Marquette County inspector, safety inspectors who work at the mines, and union inspectors who frequently visit the mines. Years ago there were no safety inspectors or union safety inspectors at the mines. Grandpa thinks safety has come a long way and that it is a good idea.

Things have changed a lot since Grandpa started working for CCI. They have bigger, better, faster equipment, and in my grandpa's case, better fan systems to remove the smoke and dust from the welding area.

During the development of an improved fan system, my grandpa and several others were flown to Lansing to observe the fan systems in a General Motors plant. After returning, the group thought of new ideas to improve the smoke removal systems at the mine.

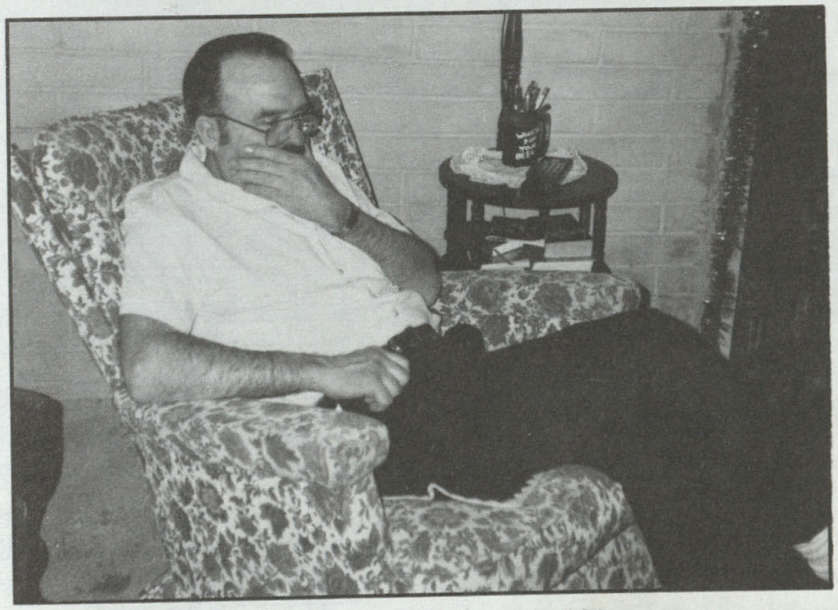
All of these improvements make Grandpa's work easier if not repetitious. He says that it seems like once workers start at the mines, they are there until they retire. He thinks the way things are today are because of the way the company and the union get along. Things seem to get better every day.

Even though many mines have failed, my grandpa thinks CCI has been successful because they have always produced a good product and have always been able to sell what they produce.

My grandpa has enjoyed his current job for over thirty years, and he does not think he would change jobs. He says if he had a chance to do it over again in the same area where he was born he would do the same thing again.

I am glad I got to talk with my grandpa and hear the stories he told me. My grandpa has been working in the mines for nearly all of his life, and we both hope he was right when he said the mines have quite a few years left.

— Joe LaForge

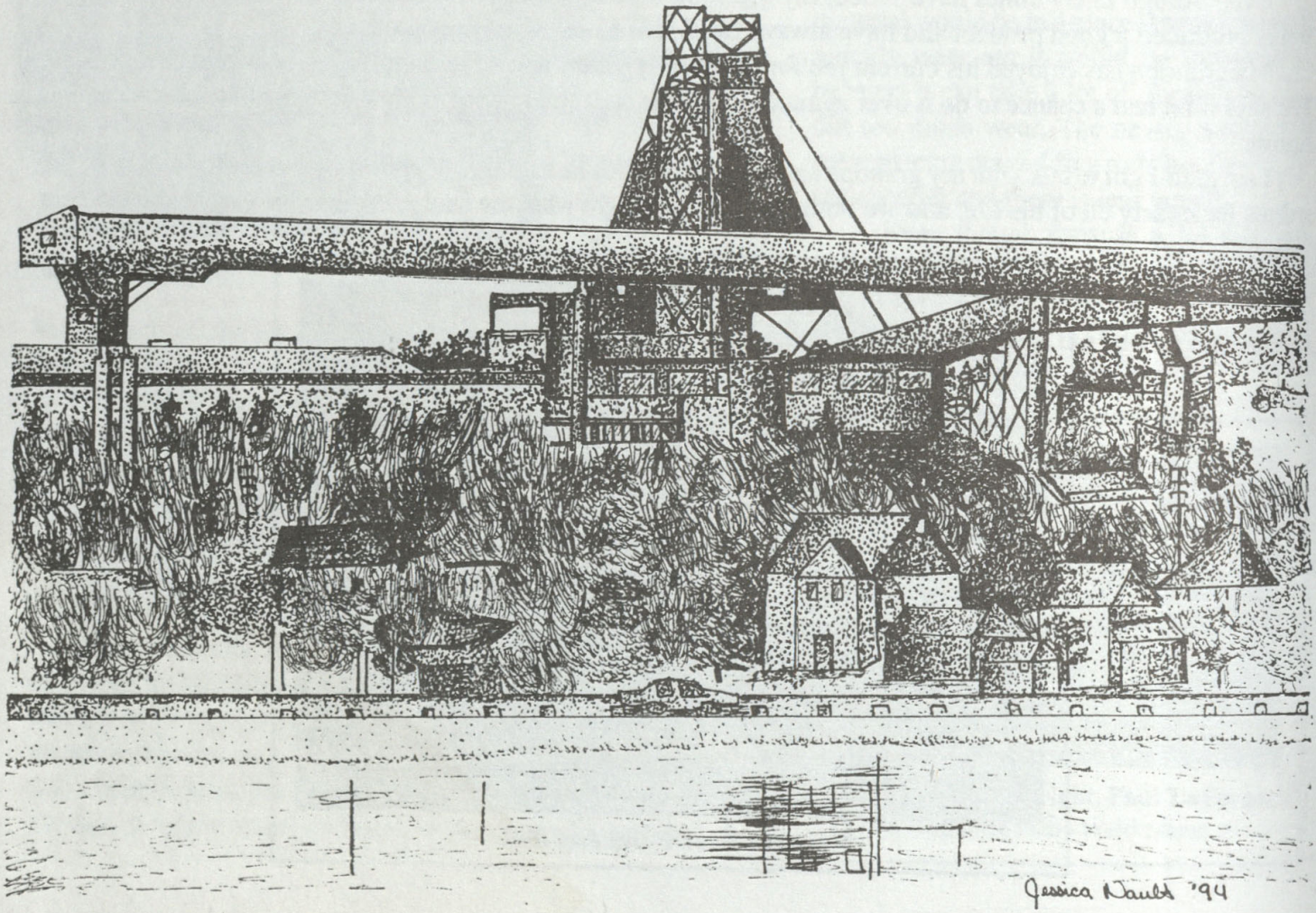


Grandpa Paul, Christmas 1991

LIFE WITH CCI

As I interviewed Ron Korpi, a worker for Cleveland-Cliffs Iron Company, I found that mining was a challenging, demanding job. He had a lot of interesting information to share with me about his experience working in the mines. In the following story, you will get to share the same experience of finding out about mining.

Ron Korpi was born in March of 1937, in Humboldt, Michigan. His parents, Nestor Korpi and Martha (Santaholma) Korpi, moved to Ishpeming, Michigan when he was about eight months old. Ron Korpi has three brothers and four sisters. In chronological order they are: John, Ethel, Edith, Irvin, Jeanette, Donna, and Dennis. Ron Korpi's father, Nestor, worked in the mining business for thirty-seven years. In those years he worked in two mines. They were the Lloyd Mine and the Mather B Mine. As an employee for CCI, Nestor Korpi was a miner and a cage rider. As a cage rider, Nestor Korpi delivered supplies and other materials to levels that needed them. When Ron Korpi's brothers were old enough they, too, joined his father as miners. Soon, Ron and his younger brother would also carry on the family tradition of mining employment. Mining has been in the Korpi family for many generations. Some relatives employed by the mining companies were his grandfather, who worked at the Barnes and Hecker and Lloyd Mines, two cousins, one uncle, one aunt, three nephews, three brothers, and one brother-in-law. Concerning Ron's grandfather, Ron told me "My grandfather, Jacob Korpi, worked at the Barnes and Hecker at the time of the cave-in, but luckily he was on another shift at the time it happened." He was referring to the tragic cave-in.



Ron's brother, John, worked at the following mines: Mather A, Mather B, Republic, Tilden, and Empire. John's jobs consisted of working in mining, operating, and maintenance. John retired in 1990 after forty-four years of working with CCI. Ron's brother, Irvin, worked on diamond drills and on maintenance at the Brownstone shops. Irvin retired in 1993 after working for CCI for forty-two years. Ron's youngest brother, Dennis, worked at the Mather B Mine, Tilden, and is presently working at the Empire Mine. Dennis started working with CCI in 1969 and has worked on maintenance most of the time.

Ron went on to describe a couple of serious accidents Nestor Korpi had in his thirty-seven years as a miner. One time while working, Nestor had a drill rod fall from above him and land, going through his boot and foot. The drill that went through his boot and foot was about one inch in diameter and about six feet in length. The other accident that he was involved in was also very serious. A large rock came through the air at him and grazed him, breaking his collar bone, chipping four vertebrae, and breaking his leg. When Nestor's family heard the first report on his condition, they were told that he would probably die. Nestor spent a few months in the hospital and few more months recuperating at home. This accident happened in the year of 1946 which turned out to be a lean year for the family because it was also the year of a long strike. Nestor recovered from his injuries and retired in 1966 from the Mather B Mine.

Ron told me an interesting story about his first recollection of the mines, "When my dad went back to work after being injured, he was limited in what he could do, so he worked in the dry for a few months. The dry is where the miners keep their work clothes and their street clothes and change from one to the other.

"While he was a dryman, I got to work with him a few times when he was on midnight shift. This was great fun for a ten year old kid seeing the miners come up from underground in their dirty,wet clothes, their faces the same color as their ore colored clothes. I remember talking with the mine cop when he made his rounds, eating lunch and drinking coffee from a thermos bottle, thinking I was of help cleaning the dry. To a ten year old, this was big important stuff."

One of the factors for Ron Korpi choosing to work in the mines was of his family's long association with the mines and in Ron Korpi's own words "because of the money. It was only like ten cents an hour more than I was making, but ten cents an hour was quite a bit in 1965," Ron chuckled.

Working conditions as Ron Korpi described for me are pretty good even though Ron works outside on all the controls and measuring devices. Ron said that it's pretty nice being out in the fresh air. "I've been doing that for the last four or five years. It's so much better than being inside." As Ron continued, he stated what kinds of standards should be improved in the mining industry such as the disposal of chemicals. Ron Korpi went on to say that before the mines made changes in the working conditions, it was very dirty and dusty. While working at the Pioneer Pellet Plant, Ron stated, "sometimes you couldn't see a person standing ten feet in front of you." They had respirators, but the respirators were not very helpful because they would just get clogged with dust. Miners took off the masks to breathe. Ron said when he left the Pioneer and Ore Improvement Plant, after thirteen and a half years of working there, it was cleaner because the mines' safety and health programs M.S.H.A. made them install dust collectors in places, and they had to clean up the areas. "It was cleaner, but it was still pretty dirty when I left. In fact, to show you how dirty it was, I remember I would wake up in the morning and my pillow case would be pink from the ore dust that would seep out of the pores of my skin. It took a long time for the dust to work its way out of my system."

As we continued to discuss the Pioneer Pellet Plant and the Ore Improvement Plant, Ron went on to tell me some things about them and what was done to the ore that they received. "The Pioneer Pellet Plant started production in 1965. It pelletized ore from the Ore Improvement Plant. The Ore Improvement received ore from the Mather B primarily and the ore was put through a dryer, then it was pulverized in rod mills and sent up to the Pioneer Pellet Plant. Both plants were extremely dusty and dirty. The Pioneer Pellet Plant and the

Mather B ended production in 1979."

When I asked Ron what kind of duties he had performed over the years with CCI, Ron explained that he started off as a laborer and conveyor attendant for about three years. There was a chance to enroll in a training program for instrument repairman. When he finished the course, he took the test, passed it and got the job he wanted. Looking back it was the best move he could have made.

Special training or higher education that Ron needed to work in the mines was not as important at the time of his hiring as it is now because there was not so much technical equipment, but as the complexity of computers increased, training was required. Ron stated, "You're always learning because things are always changing."

When Ron Korpi finished explaining the need to be constantly learning, he began to tell me about the equipment he uses. On the job, Ron uses all different kinds of meters. For example, he uses volt meters and amp meters. He also uses oscilloscopes and different diagnostic machines.

Ron Korpi stated that the most difficult parts of his job are when he runs into something he does not understand. However, once he has mastered what he did not understand, his job becomes easier and successful repairs can be achieved.

Ron specified that what he liked best about his job is learning about things he did not previously know. Ron also said he liked finding out that he can complete new and unfamiliar repairs as they came along.

While talking, Ron commented on how his job duties have changed over the years. Ron said that over the years the workers have done more troubleshooting and replacing rather than troubleshooting, repairing, and replacing. The reason for this change is due to the smaller packages and computer chips. When these modules break down, they cannot be repaired because of their size and complexity. They have to be replaced instead of repaired.

When I asked Ron about any kinds of special projects he has been involved in, he went into detail about the first computer installment at the Pioneer Pellet Plant in 1971. It was a large project that took help from many workers to install. The Pioneer Pellet Plant and the Ore Improvement Plant were the only plants in the world, at the time, that were completely run by computer.

Ron explained a diversification decision that CCI made awhile back when they started buying coal mining properties and oil shale properties. They bought the properties, but stocks struck rock bottom. They were in big trouble until they got rid of their coal and oil shale and focused on iron mining and making pellets.

Curiosity brought me to ask what Ron thought was the key to the success of CCI's mining where other companies had failed. Ron felt success continued because the company, eventually, stayed focused on producing pellets where other companies did not stay focused.

I went on to ask my next question about why the steelworkers union was so important to the workers. After thinking the question over Ron replied, "It gives them a sense of dignity, it gives them a decent wage which is really hard to come by these days." This statement really made me think because I never realized how hard it was to find a good job with a decent amount of pay. As Ron continued talking about the steelworkers union, he also made a comment that the unions are not only important to the mine workers but also to the other people with non-related jobs because it affects the amount of jobs there are and the amount of money people are paid.

Nearing the end of the interview I asked Ron Korpi if he remembered a unique or interesting story that happened while the steelworkers were on strike. He remembered one. The story that Ron told me happened in the year of 1946 in West Ishpeming. Ron Korpi was young at the time that this took place. It happened two blocks away from where he now lives. At the time of the strike, people who worked for the mines were crossing the picket line everyday. These people were known as "scabs". A scab is a person who is willing to work for wages or conditions less than the union will work for. After work everyday these "scabs" were followed home by a large group of people. One day when they were followed home by the group there was a truck parked in

front of the "scab's" house. The group started rocking the truck back and forth until one of the "scabs" came out with a gun. He did end up shooting one man in the leg.

Ron Korpi married his wife, Naoma, in 1960 before he started working in the mines. Ron has one son, Donald, and three daughters, Kathy, Nancy, Molly, and five grandchildren.

Throughout the interview I learned things about mining that I never knew before. What I learned from Ron is that there are many pieces of equipment a worker has to know and learn about. I also learned that when computers came along, he had to learn how to operate them and master the skills to do his job well and not make a mistake. Although I only listed a few of the things I learned, he taught me a lot more about the meaning of mining and the effort it takes to do a good job.

— Debbie Lowes

Ron Korpi

THE FIRST MINING INDUSTRY

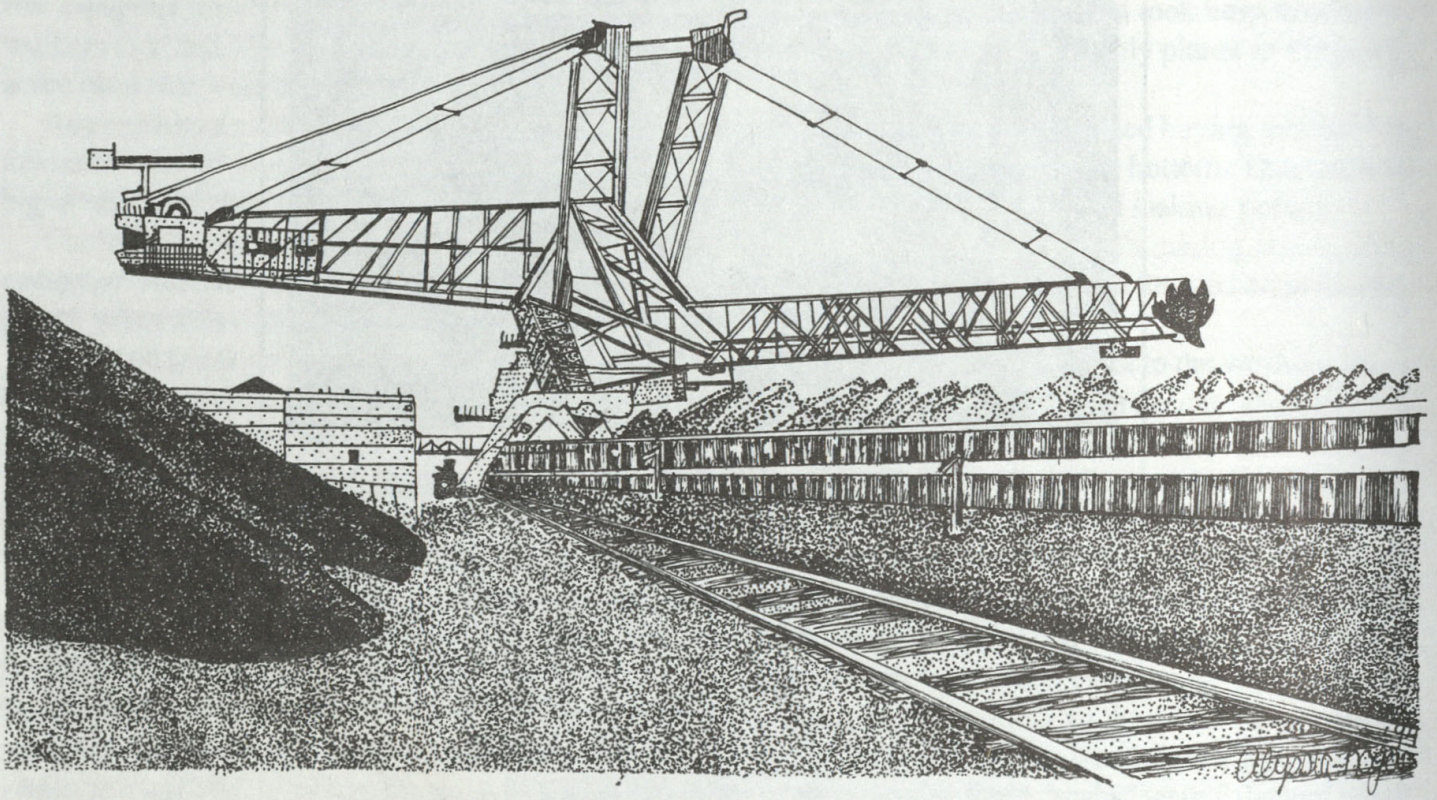
"The William Burt Expedition wasn't really an expedition," says Fred Rydholm, local historian for Marquette County. The expedition was actually a survey party from 1839 until 1846. They were to survey the lineal lines of the township, but soon it was changed to a geological survey and lineal survey. The people on this survey party were Richard Taylor, Michael Donner, William Burt, his two sons, and Jacob Houghton.

On the 18th of September, 1844, the survey party came to Lake Superior where they camped overnight. From there they traveled west using two solar compasses and some magnetic compasses. However, the magnetic compasses were not functioning properly which baffled William Burt. He told his men to look around to see what they could find. "Every single one of them came back with a chunk of iron ore and their pockets full," Mr. Rydholm laughingly related. The ore had interfered with the compasses ability to work properly. This new discovery excited William Burt because it proved that the solar compasses that he had invented worked!

This expedition opened a whole new territory for mineral claims which meant that people could buy land and know what they were buying. "And that opened up the mining industry in 1845," says Mr. Rydholm.

The Jackson Mining Company was started by Philo Everett from Jackson, Michigan. Philo Everett had taken a trip to Detroit, Michigan to talk to a friend where he found out that he could get some land in the Upper Peninsula. Philo decided to try his luck. When Philo told some friends about his decision, they decided to help him.

Philo did not know the exact location of the iron ore, so he stopped in Sault St. Marie and talked to Chief Madosh. Madosh's niece Tipo Keso had just come from Teal Lake where her uncle Majigesik had a camp. Tipo Keso suggested to Philo to go up there but Philo could not understand the instructions she gave him. Philo hired a Cree Indian, Louie Nolan, to be his guide. Louie Nolan had worked on Grand Island as a clerk for the



Modern technology has transformed the mining industry dramatically since the early days of the Jackson Mining Company.

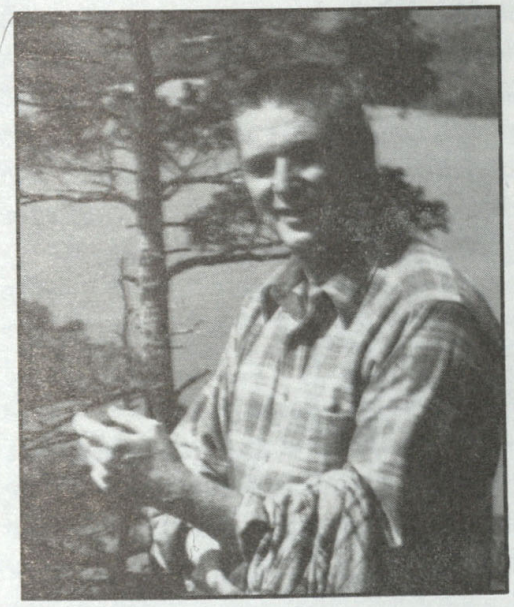
Northwest Fur Company. Louie Nolan knew where the iron was and told them he would help. Louie got them as far as Teal Lake in Negaunee, but he could not find the iron ore. They soon got discouraged and traveled toward the Copper Country. As they came to Huron River, they met Majigesik coming from L'Anse. Majigesik decided to help them out.

Madosh and Majigesik were brothers and chiefs by birth. Their father was a great Chippewa chief and was a descendant of the Noka Tribe. The Nokas were a branch of the Chippewa, but soon they just called themselves Chippewas. The name Nokas was no longer used. Majigesik was a very kind and understanding man, but he was very superstitious and religious. He did not understand the magnetic quality of iron. When he brought them to the iron ore, he walked around it and then walked onto it. Majigesik also had little prayer houses all through the woods near his summer camp at the mouth of the Carp River. He lived by the Dead River and by the Pine River. He had forty people who lived with him. They were a small band of people because there was not a lot of food.

Majigesik knew the location of the iron ore, but he did not know that it was valuable. T.S. Car and another person went with Majigesik to check it out. Majigesik showed them a big pine tree that had blown down which had iron ore all over the roots of it. Right where they had discovered the ore, they built the Jackson Mine.

They immediately went and got a mineral claim and that sight became known as the Cleveland Iron Claim and another site became known as the Jackson Iron Company Claim. The Jackson Company built a forge on the Carp River where the Michigan Mining Museum stands today. The Jackson Mine had two sites. One was the site where they built the forge to process the ore. The other was the site where they were mining the ore and where the people lived. The Jackson Mining company managed to build a forge and sell the processed ore downstate. There were few roads, and it was difficult to deliver the ore. The forge went out of business in two or three years.

The Jackson Mining Company went out of business because of a man named Tsar Jones. Tsar Jones was once the president of the Jackson Mining Company, but he had a real bad reputation. "He was real strict and real mean and the Tsar of Russia had that reputation," said Mr. Rydholm. After a period of time everybody quit on him and the company folded. It was then sold to the Cleveland Mining Company and the company changed its name to the Marquette Forge and Iron Mining Company. Even though the Jackson Mining Company went out of business, the stories and the people are still talked about today.



Fred Rydholm

During my interview, Mr. Rydholm shared some biographical information with me. Fred Rydholm was born on 22nd Street East Avenue, Marquette, Michigan. Mr. Rydholm's parents names were Ebert Furdenand Rydholm and Lois Harwood Rydholm. He had one brother named Ebert Harwood Rydholm. He's been married for forty years to Mrs. June Elsi Beltrame, and they had two children.

I enjoyed learning about the discovery of iron ore. Fred Rydholm makes history interesting and fun. He is admired by many people because of his interesting way of telling a story. I hope to visit him again and talk more about the history of the area.

— Nicci Bowman

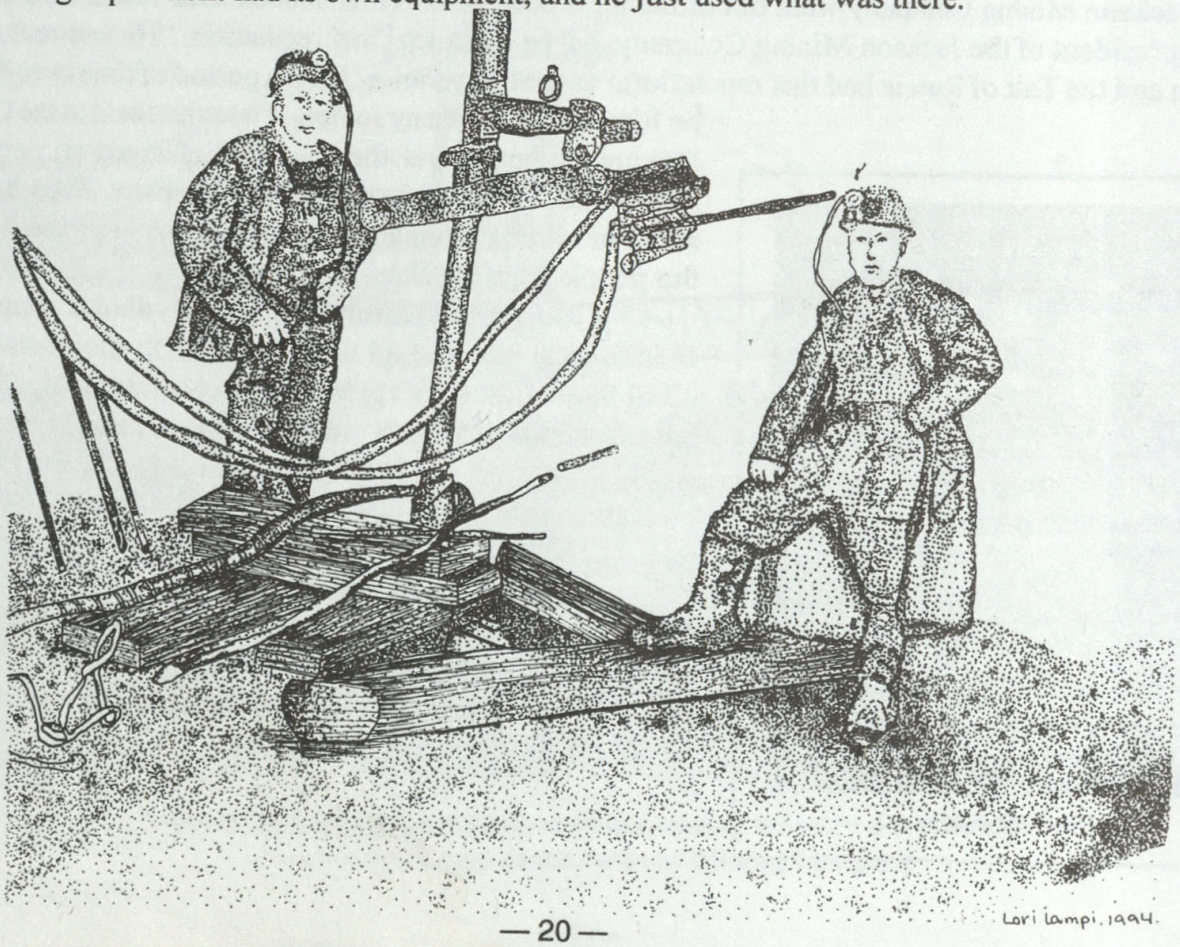
IT WAS THE BEST JOB AROUND

"Well, it was about the best that there was around, and I wanted to stay around this area," stated my great-uncle Alfred Koski, as he told me about the beginning of his forty-six years of working for the Cleveland-Cliffs Iron Company.

Alfred Koski was born to Alfred and Elizabeth Koski on August 16, 1907, in Ishpeming, Michigan. Of the twelve children, Alfred was the oldest followed by: Lily, Eleanor, Anna, Martha, Art, George, Reuben, Oscar, John, Evelyn and Edna. When I asked Alfred to name his relatives who have also worked for CCI, he responded with quite a few: Grandfather, Titus Honkala along with his sons, Edward, Herman, Frank, and Oscar Honkala. Alfred's father and his brothers John, Paul, and Jacob and Alfred's brothers Art, Reuben, and Oscar all worked in the mining industry.

Although Alfred did not go to college until after he was employed by the engineering department, he took a short course at Michigan Technological University and spent one year at Northern Michigan University. Alfred said that although it did not seem as if he had a direct mining experience, he was asked to come into the engineering department because he had experience around the mine. He started, and worked his way up from there.

Through his years of employment in the mining industry, Alfred had many different job duties. He first started out as a laborer followed by motorman, electrician's helper, draftsman, an instrument man, surveyor, assistant engineer, and in the engineering department; he retired as a senior engineer. Alfred found it difficult to describe the duties of his job because there was so much involved, and each job had its own requirements. He said, "but as far as engineering goes, it's making studies and the supervising of construction and repairs." The equipment or machinery that Alfred used depended on where he worked. For example, the drafting room and engineering department had its own equipment, and he just used what was there.



The most difficult duty for Alfred throughout all his years was the connection between Mather A shaft and Mather B shaft. He explained to me that when mining is down 3,000 ft. and 10,000 ft. apart on surface, to connect the two shafts, a tunnel is driven between the two mines. Alfred also explained that the elevation had to be considered so that vertically and horizontally they both would meet at the same place. He said it would be very embarrassing if it did not. "When we did meet the two mines together it was quite an accomplishment even though they were about 3/8 of an inch off from the line when the rails came together," laughs Alfred. He told me that there was even a write-up in some of the technical papers about this accomplishment. Besides connecting the Mather A and Mather B, Alfred did the initial work on all of the new plants that are operating today as well as Humboldt and Republic that are not currently operating. He also was involved with developing the Mather A, and following its completion he went into the service. He was still in the service when the developing of Mather B started, but when he came back, Alfred did the rest of the developing for Mather B. Alfred had to try and get the approximate location where the plants would be built. After that he worked on the cost of the project and the feasibility. He recalls spending nights trying to figure out how to do it. But when he saw it accomplished and working, it gave him a good feeling.

While working at the mine, Alfred experienced and witnessed quite a few accidents. Most of them were due to carelessness like falling down from higher working places. Some accidents occurred when the workers drilled and then charged the hole with powder to blast. Sometimes the workers were unlucky and all the explosives did not go off. If they then drilled in the hole, and they happened to drill into the ends where the explosives were they would explode, and the workers would get it in the face. Fortunately no one was hurt when this happened. Alfred chuckled when he remembered this. Another accident happened at Mather B when men were up on surface trying to straighten out a bar on the elevator. They hit it with a sledge hammer, and the handle broke. The head of the sledge fell down and it hit the man in the head.

When workers are repairing in the shaft, alignment dangers can be encountered because men working are above and below. It a worker drops a tool or something, it will travel hundreds of feet and could be very dangerous. Alfred had tools come close to hitting him quite a few times. Giving Alfred a couple more minutes to think, he remembers a quite humorous accident that happened to his father. His father and his Uncle John worked in the Beaufort Mine just west of Michigamme. It was a shallow mine, and the men climbed up and down the ladders instead of using the cages like in the deeper mines. He said his father and Uncle John blasted with explosives just before lunch break. They went back underground to find a cow in the stope still alive. "The cow had fallen through," he laughs. Alfred explained to me that the ore was close to the surface underneath a pasture. When they blasted, everything fell down into the stope. He said that there was sunlight shining down into the stope. There was the cow, and it wasn't even hurt, he laughed. Alfred's father and his uncle had to somehow get the cow out and bring it back to the pasture. Fortunately they were successful.

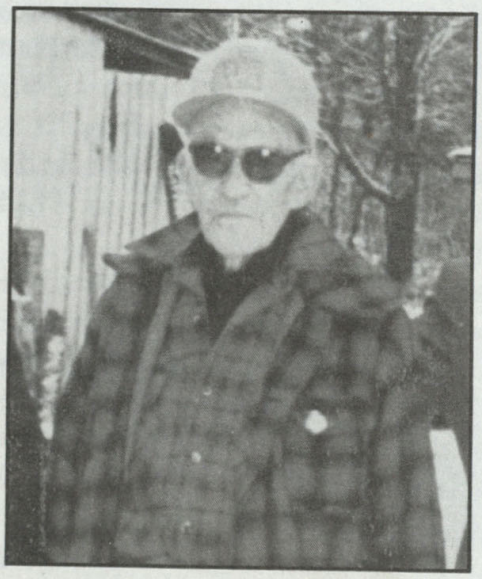
The most humorous situation that remained vivid with Alfred is when he was working with a fellow, running a line into the woods. The fellow was going ahead cutting the brush when he noticed a rabbit and called Alfred's attention to it. The man told him to look at the rabbit sitting down. The fellow proceeded ahead. With him he had a new pair of Mexican gloves in his pocket. The gloves fell out and Alfred saw them fall. When the fellow left, Alfred picked up the gloves, and he put them where the rabbit was sitting inside the hollow stump. The man came back and said, "Oh, I lost my gloves." Alfred said, "Oh, you couldn't have lost them because you were just going back on the line." The fellow went back where he had come from to look for his gloves, but he could not find them. Alfred told him that maybe the rabbit took them. The fellow did not think the rabbit took them, but Alfred told him to go and look where the rabbit was sitting down. The man looked and was amazed! He could not believe a rabbit would take his gloves. The man was baffled over it. When Alfred got back to the office, Alfred told some of the men there about the incident and told them not to tell the fellow the

truth. The men in the office played along with the prank and questioned the fellow about what had happened. The fellow still could not believe a rabbit would take his gloves. The men in the office did not tell him, and for a long time they got him to talk about it.

Throughout all the years of Alfred's jobs at the mine, his biggest responsibility was safety. A miner must be alert. Alfred explained that as time went on safety methods began to improve. People were made more conscious of safety, so there were not as many accidents. Alfred states, "Now when I look back most of them were carelessness, or not thinking, or not taking precaution." Alfred said that Cleveland-Cliffs was the first mining company that adopted very strict safety standards. Whatever they did Cleveland-Cliffs was always great for safety. As technology advanced, there became fewer hazards. Alfred explained that if you compare today, 1994, with 1910 when Cleveland-Cliffs organized the safety department, there has been a lot of improvement. The improvements include more equipment available for promoting safety, and men are more educated and willing to accept new ideas.

According to Alfred, the key success for CCI is that the first developers acquired land that had minerals in it, which helped them survive. Also there were improvements in underground mining, but this mining method became very expensive. Companies were able to get ore from Brazil. The ore in Brazil was on the surface and could be mined just with a steam shovel. It did not even have to be blasted which made the price quite competitive. The underground mines closed because they could not compete. A new mining technology developed which was pelletizing the low grade ore. This process saved CCI. Researchers were responsible for advancements in pelletizing and beneficiating. CCI researchers were really pioneers of the process. They are outstanding in the field today because they started early and began making studies of it before World War II. The biggest impressions that stood out in Alfred's mind about CCI was abandoning the underground mining and progressing to beneficiating and pelletizing which was done without interruption. It was all due to the good research work and study.

When I asked Alfred what the future looks like for the iron and steel industry, he said that right now it is very competitive. We are fortunate in this area because Cleveland-Cliffs has a lot of holdings not only in the United States but also foreign properties, and they are investigating others. If anything happens to Cleveland-Cliffs in the United States forcing them to close, the company can still exist with its foreign properties. There is enough iron ore here in Marquette to last for many generations. Alfred said that the mines have only taken the cream. There are vast deposits of iron ore but it is going to depend on economics in years to come if it is feasible to mine. If economics are favorable, then mining will be here for a long time to come.



Alfred Koski at Koski Camp in November 1993 during hunting season.

His advice for the future students is to read a lot and study anything. Alfred told me that when the West Ishpeming School was built it had a very elaborate library, and he read every book in the library while going to school!

Great-Uncle Alfred shared much information with me about his years when working for CCI. I am especially grateful that I had a chance to spend this time with him, for five and one half weeks after our interview he died at age eighty-six. He was an intelligent man who did the development for the Mather A and Mather B Mines and did the initial work on all of the plants that are operating today.

— Lori Lampi

"THEY WERE THE ONLY JOBS AVAILABLE"

"They were the only jobs available in 1942," stated Robert Johnson who is my grandpa. Grandpa is a tall, slim man with gray hair and blue eyes.

In 1924, my grandpa was born in Escanaba, Michigan. His parents were Evald and Myrtle Johnson. His father attended Michigan Technological University and later worked in the mines. His mother, who was a teacher before she was married, became a homemaker. Grandpa has seven sisters and two brothers: Duane, Billy, Carol, Elaine, Myrtle, Susie, Joanne, Marjorie, and Helen. My grandpa is widowed, and he has two sons, Charles and Robert, and one daughter, Barbara.

Mr. Robert Johnson, 1979 at the Mather "B" Mine.

Robert worked for Cleveland-Cliffs Iron Company from 1942 to 1986 in various mines: the Maas Mine, Mather B Mine, and the Tilden Mine. When I asked him why he started working there, he told me they were the only jobs available in 1942. "Once you got into them the security and the pay days felt so good, you stuck right to them," he stated. His brother Duane and most of his brothers-in-law also worked in the mines.

Grandpa told me a story about a very dangerous incident at one of the mines. He had been working underground doing scope mining; that's where there is a big hole in the ground. They put benches around it, and they walk around the whole thing as they mine. Each bench is twenty-five feet apart. "One day I was up on the sixth or seventh, and I was up about 125 feet. I was drilling holes so I could blast. I put my equipment away, and I was going back to get powder and dynamite. I went back out to where I was working and it was gone. If I would have stayed there another fifteen minutes I would have fell 150 feet."

Grandpa also shared a very humorous story with me about the mines. There was a man who was always hungry, and he ate anything that anyone would give him. One day the other miners decided to fool him, and they took his sandwich apart. The bologna was taken out and a piece of red gasket material that looked like bologna was put in. "He tried for about ten minutes to tear a chunk off that bologna till he finally realized what was happening," my grandpa said while laughing.

Grandpa has performed many different duties like motorman and timberman, but at the Tilden Mine he was a clarifier operator. The job of clarifying the water is very important to the environment. Grandpa explained what he did. "I took all the mud and muddy water from the mines that used to come out to me." With certain chemicals like alum, hydrochloric acid, and polymers the water was cleaned, then shipped out to the Carp River which then goes into Lake Michigan. They cleaned millions of gallons of water a day, and they had to check the water every hour. Cleveland-Cliffs Iron Company always cleaned the water better than they had to, and the water had to be cleaner than when it came out of the river. The company spent thousands of dollars each day to clean the water. If the water was not clean enough, the state could shut the building down. The building was called the clarifier building, and it was about eight miles away from the mines. This job required special training. For example, how to use certain chemicals and to read different meters and how many millimeters of chemicals were needed for millions of gallons. His job also required special machinery and equipment like meters, chemicals, jack hammers, and Ingersollrand bucket loaders.

My grandpa feels that the most difficult part of his job was trying to find the cheapest way to get clean water to meet the state standards before it was sent back into the river. But for the most part, he enjoyed the security and working with the fellows.

Grandpa also explained the safety standards, and how they have changed. "They've changed 100% around

especially with the government into it now and the mines are so strict, too. The mines themselves for insurances have programs now where you got to go to school," he explained. The duties he used to perform have been changed, too. "It's less physical and more machinery," he stated.

After telling me about safety, my grandpa told me about a special project that he was in for helping other workers. He used to be in a mine rescue unit, where they had to wear an apparatus underground in case of a fire. "You had to breathe self-contained oxygen. You had to enter smoke filled and fire filled places to rescue men and try to put out the fires." The fires may have started by spontaneous combustion from old rotting timbers or sometimes even electrical fires.

Even though my grandpa worked in the mines for many years, at one time he did want to change jobs. "At one time I was going to go to a veterinarian school after I had been in the mines for about two years. But then things didn't look too good around so I stayed in the mines," he said.

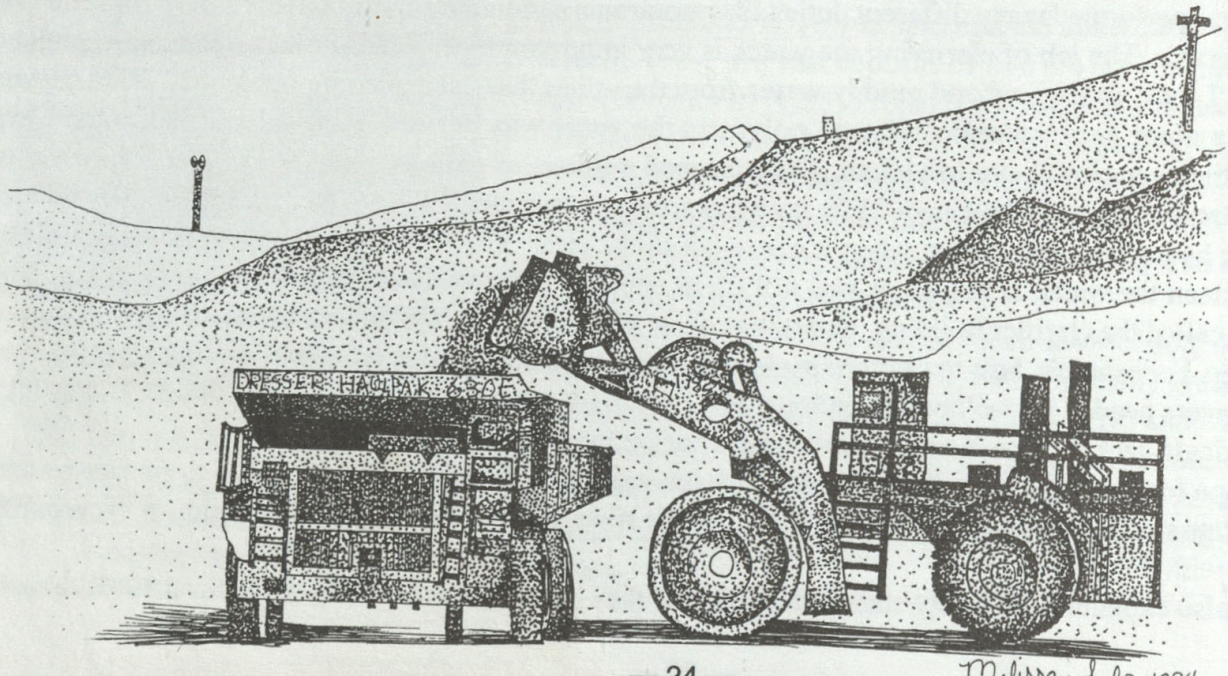
For the future, Grandpa feels that the Empire and Tilden Mines look very good because although they have become more mechanized and it is costing more to buy the equipment, they can double production. The iron and steel industry look very good too. In the future the company must keep costs down, improve equipment and have more productive workers. I asked my grandpa to tell me why CCI has had success when the other companies have failed. He said, "The company and the men, the relationship both have tried over the years to make everything better, more productive to each side." Far into the future CCI will be remembered because it has been very good for Marquette County and the whole Upper Peninsula. My grandpa feels that the Cleveland-Cliffs Iron Company was a good company, and they looked out for the welfare of their men. He also stated that he would work in the mines all over again through the good times and the bad.

Also for the future, the young people of today are also starting to think about what they are going to do. My grandpa gave some advice, "Stay in school and learn. Study harder than you think you can because this world today is so competitive, and usually a high school diploma isn't quite enough."

In the past few years, women have played a bigger part in the mining industry. Grandpa told me that when he started working in the mines, there were never any women. But now, they have taken over jobs that men have been performing such as geology and engineering.

I have enjoyed very much spending this time with my grandpa and learning about his career. It has helped me to think about what I would like to do in the future. It was a very interesting experience for me. I am very grateful that he had the time to share his career with me.

Amy Johnson



"THE JOBS OF OTHER PEOPLE DEPEND ON ME DOING THE BEST JOB THAT I CAN DO"

"We were living in Arizona at the time, and we wanted to come back and live in the Midwest," stated my grandfather, John Reddy, when I asked him why he chose to work in the iron industry.

The son of Steven and Elizabeth Reddy, my grandpa was born on June 1, 1933, in Platteville, Wisconsin. He has three brothers: Michael, Steven, and Ralph. Grandpa is currently married to Jan Reddy, and is the father of Jacki, Jill, and Jeff.

Throughout his life, Grandpa has worked for many different mining companies before coming to work for CCI. They were Magma Copper in Superior, Arizona, the Kennecott Copper Ray Mines Division, and Jones and Laughlin Steel. Grandpa vividly recalls one time when he was involved in a very dangerous situation when he was working for a mine in Arizona.

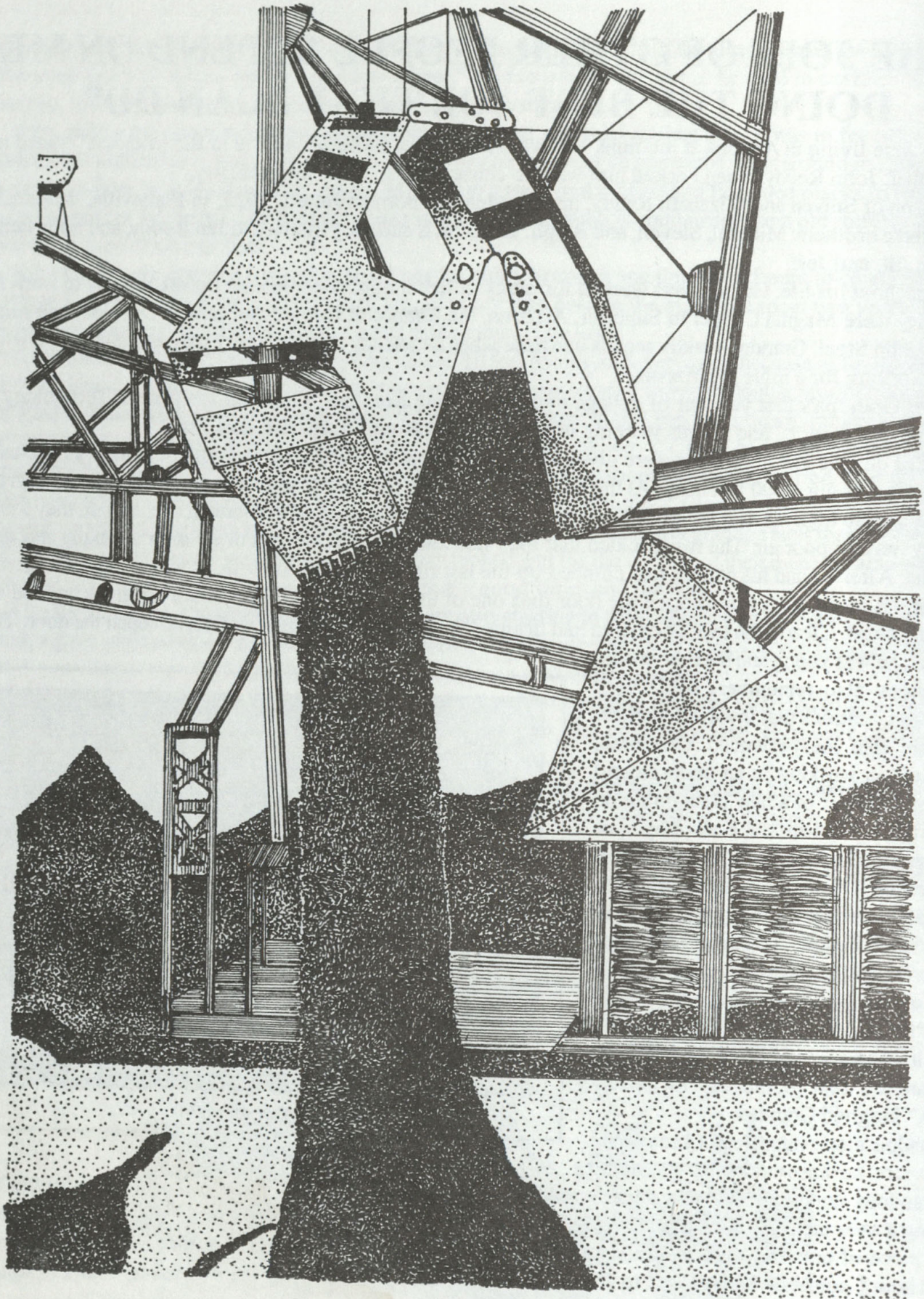
It was Grandpa's first year out of college after graduating from the Wisconsin Institute of Technology in 1958 with high honors, and he was working in a mine that was very deep, and very hot.

On that day, he and his partner were given a job assignment to check a pump at the bottom of a little-used shaft that was about 5,000 feet deep. At the bottom of the shaft, the temperature was over 100 degrees, and the humidity was so high it was raining! When Grandpa and his partner reached the bottom of the shaft, they found that they were in poor air. The two decided that they had less than two minutes to do their checking and then climb out. After he and his partner had climbed up the last fifty feet to get to the door where they had entered the shaft, "It took both of us to open the door that one of us could have easily opened when we entered the area," he stated. Clearly the lack of oxygen had drained their energy, making it difficult to open the door. This was when he was young and inexperienced.

Grandpa also remembers some very humorous situations that involved workers that were also inexperienced. One time, when he was working in an underground mine, he was part of a new crew going on shift. In this crew, there was a new employee who was not familiar with the noises of underground. One of the miners had started a fan that was extremely noisy, and this new, inexperienced employee thought the mine was caving in! He tried to crawl under a nearby ore car, and since it was a very small space, "He ended up covered with mud. Of course it was the beginning of the shift, and he spent the rest of the day in muddy clothes," laughed Grandpa.

Mr. Reddy on right.

Grandpa also remembers a time when the company he was working for was doing some random sampling. This was done by taking a rope that was knotted about every eighteen inches and throwing it over the edge of the ore pile. Everywhere there was a knot, whoever was doing the sampling would grab a piece of ore. They had sent this young employee to do the sampling, and after he had been gone for several hours, someone was sent out to find out what was taking him so long. He was finally found waiting to



Eric Lindstrom
'94

come up from underground, and he stood there with all this rope. "He had untied all the knots and tried to tie all the samples of rock into each one of the knots," explained Grandpa. "He spent hours doing it!"

Grandpa, who is a graduate engineer with a Bachelor of Science degree in Mining Engineering, is the first of his family to work in the mining industry. He has been employed in the industry for about thirty-one years, spending most of the time working for the Cleveland-Cliffs Iron Company. While at CCI, Grandpa has worked at the Mather B Mine, the Republic Mine, the Humboldt Mine, CCI General Offices, and the General Shops. During this time he has been an engineer, a superintendent, and a manger. The most difficult thing that Grandpa has had to do since coming to work for Cleveland-Cliffs was making the change from managing a production-type operation to managing a maintenance organization. He found this difficult because he had been associated with production his whole career.

"Currently, I manage the Central Repair Facility, which is called the Brownstone, or Central Shops. We repair mining equipment and rebuild mining machines," said Grandpa when I asked him about the main duties of his current job. While repairing and rebuilding mining equipment, he uses many different types of equipment. Some of them are welding machines, a large press brake, bending rolls, drill presses, and lathes. The biggest responsibility of Grandpa's current job is managing his unit as safely and efficiently as possible because, "the jobs of other people depend on me doing the best job that I can do," he explained. His job is also very important because the equipment that is repaired in the General Shops is necessary to keep the mines in operation. Over the years, Grandpa has found that the most enjoyable parts of his job are the many challenges it presents and because each day is a little bit different.

Grandpa also manages all the idle properties such as the Republic Mine, and other idle buildings owned by Cleveland-Cliffs that are scattered throughout Marquette County. Grandpa recently won an environmental award for work at the Republic Mine. It was an award the company received for reclaiming the tailings area. Tailings are the extra rock that is not in the final iron ore product. The tailings area covered over 700 acres and the dark material could absorb heat, making the area like a desert. Surface temperatures there could reach around 130 degrees Fahrenheit. The company selected many seeds and fertilizers to be planted in the tailings area. Some of them were sweet clover, alfalfa, rye grass, and oats. An irrigation system was also installed so water could be applied to the area at a certain rate during the process. Now, there are more than sixty species of birds, mammals, and reptiles that live in this area. Grandpa said that he finds it "very rewarding to turn something back into what it was before."

Mr. Reddy on right

Grandpa is also on the company's team when negotiating a new contract. I asked him what happens when they are negotiating. He says that it is a give-and-take situation. The union, representing the employees, as well as the company have certain goals. The two sides want to mutually come to terms and agree to a contract that is beneficial to both sides.

I asked Grandpa what he thought the future looked like for the Tilden and Empire Mines. He responded by saying, "I think the future of the Empire and the Tilden is very good. The ore bodies contain large reserves. The plant equipment is constantly being improved, so it's state-of-the-art equipment." But in order for CCI to stay competitive, "They're going to have to continuously stay on the cutting edge of technology that's necessary to produce efficiency," stated Grandpa. Grandpa also believes the steel industry has a bright future. He does not think it will experience any rapid growth, but experience slow, gradual growth.

Grandpa also provided me with some excellent opinions about CCI. He believes that the company's key to success where other companies have failed has been "the knowingness of the company to invest in people, equipment, and research." Grandpa also thinks that CCI will be remembered as, "a pioneering company with dedicated workers."

As some advice to the young people of today, Grandpa said, "Decide what your goals are early and prepare yourself with the knowledge and the skills needed to accomplish them." For a student that is thinking about working for CCI someday, Grandpa says that they should try to "be educated in a discipline that's needed by the iron mining industry or to be sufficient in one of the trades or crafts."

Looking back over the years that he has worked for the Cleveland-Cliffs Iron Company, Grandpa said that the one thing that has impressed him the most has been the dedication of the people working for the company. "They're a group that works together. It's a close-knit community. Everybody kind of chips in and does their job, and does what they have to do in order to meet the growing concerns."

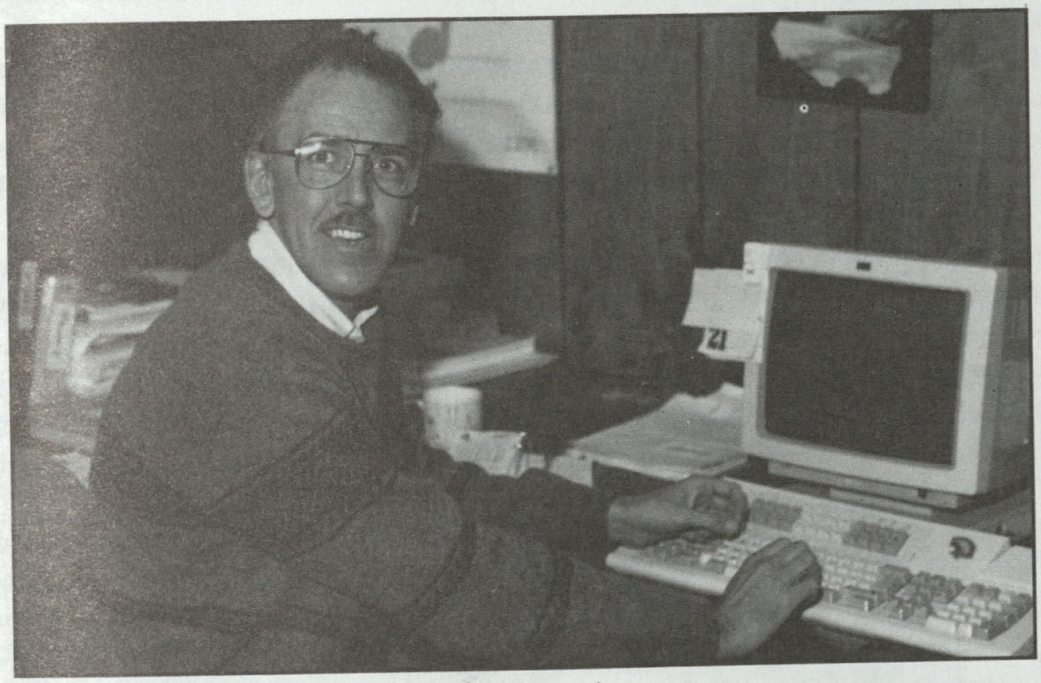
— Brad Crimmins

"THE LEADING EDGE"

Daryl Champion is an operations analyst at the Tilden Mine. Throughout his career he has been involved with computers in some way. In addition to his position, he has been active in many public services and community activities.

Daryl did not learn about computers in school because during his years in school there were no computer classes. His interests began when he graduated from Ishpeming High School in 1962 and got a job working for Sears Roebuck and Company as a stock clerk. Daryl's daily work involved processing catalog orders that were prepared by computer at their main Chicago store. The orders had been teletyped from the Ishpeming store.

When a job opening at the Mather A Mine came up Daryl went to work there since that is where CCI's central computer was located. Before Daryl started, he did not have a college education or any real training. To obtain more training Daryl enrolled in the area training program affiliated with Northern Michigan University, which consisted of a forty week course, eight hours a day. It taught the students all about computers. Since Daryl has worked for CCI, they have given him the opportunity to get schooling on all the changing technology.



Daryl Champion

Daryl started working for CCI at the Mather A Mine in computer operations. This meant he had to run the jobs, run and manipulate the data, do the payroll, as well as the accounts payable, and cost applications. Daryl moved on from being a computer operator to a training coordinator at the CCI office on Spruce Street, training people to operate computers at various mines. Currently, he is working at the Tilden Mine which allows him to support and train the users at all the mines that CCI owns, so that they can use the computers. He also puts together training programs and provides the training. Daryl is in charge of ordering and approving the computer equipment which he also has to run or assist other users in running.

Daryl has been working for CCI for twenty-seven years. Over the years he has been to all the mines including those that are now idle here in Marquette County. This has required Daryl to travel a lot. But now the mine is putting in a new video teleconferencing system with TV screens and cameras that will allow him to stay in his office and train all these people without all the travelling.

Daryl's biggest responsibility is supporting the mainframe and personal computers, printers, terminals, monitors, modems, and the different computer languages. Most of Daryl's work is spent on the mainframe

computer. The mainframe computer is the main computer in Cleveland, Ohio, that all the other computers are hooked up to. The mainframe has not always been in Cleveland. It used to be at the Mather A Mine. When they moved it to Cleveland, they offered everyone an opportunity to go with it. Daryl had a difficult decision to make. Did he want to pack up and bring his wife Clare, and three children, Delcene, Mark, and Scott to Cleveland or stay in Michigan and "play his cards"? Today, he is glad that he made the decision to stay in Michigan even though some of the people he worked with are now in positions higher than his because they went to Cleveland.

Daryl shared with me a story that he remembered from when the mainframe computer was at the Mather A Mine. He started by saying that about every three months an IBM customer engineer would come in and take apart the equipment to make sure that it was working correctly. One time when the technician got it all apart, he left to take his lunch break. While he was gone, Daryl and some of the other employees took some extra springs and a bolt from the back room and stuck them on the table with the other parts. When the technician came back, he got the equipment back together and there were the extra pieces. He picked them up and threw them in the garbage and left. ". . . so the joke was on us in the end I guess!" chuckled Daryl.

Daryl enjoys his job very much including all the time he gets to work with people, and he would not go back and change anything, even though there are some tough parts. ". . . the most difficult part is really constantly being aware of all the technology changes," stated Daryl.

Even though Daryl's job has some difficult parts there are some good elements too. Because computers have to be in a clean environment, Daryl does too. He does not have to wear the hard hats and other safety equipment that other employees wear. The only time Daryl has to wear a hard hat and "get dirty" is when he goes out into the mine to fix a computer. Otherwise Daryl sits in his office environment with his "ergonomically correct" equipment.

The "ergonomically correct" equipment is one form of safety that the mine has. This equipment includes hand and wrist rests for people who type a lot as well as chairs for people who must sit most of the day. Daryl stated that early in his career the company was not as stringent on ergonomic standards. However, that has changed. Daryl talked about a group called ILCI which stands for International Loss Control Institute that comes to the mine and grades them on safety, including how many days an employee has for recovering from injuries or accidents. Daryl said that if the grade is low, the price of pellets will go up to pay for those costs which may affect how much the partners buy.

When I asked Daryl some questions about the future for the Tilden and the Empire mines, he responded, "We have to constantly be aware of costs. Do what we can to cut costs, and work safely if we're going to survive." He also added that when he began working for the mine, people believed the mines would be around forever. We now know that they will not. This is a world market and the mines have to keep their costs down so that the people who buy pellets from the mine will not go to another place.

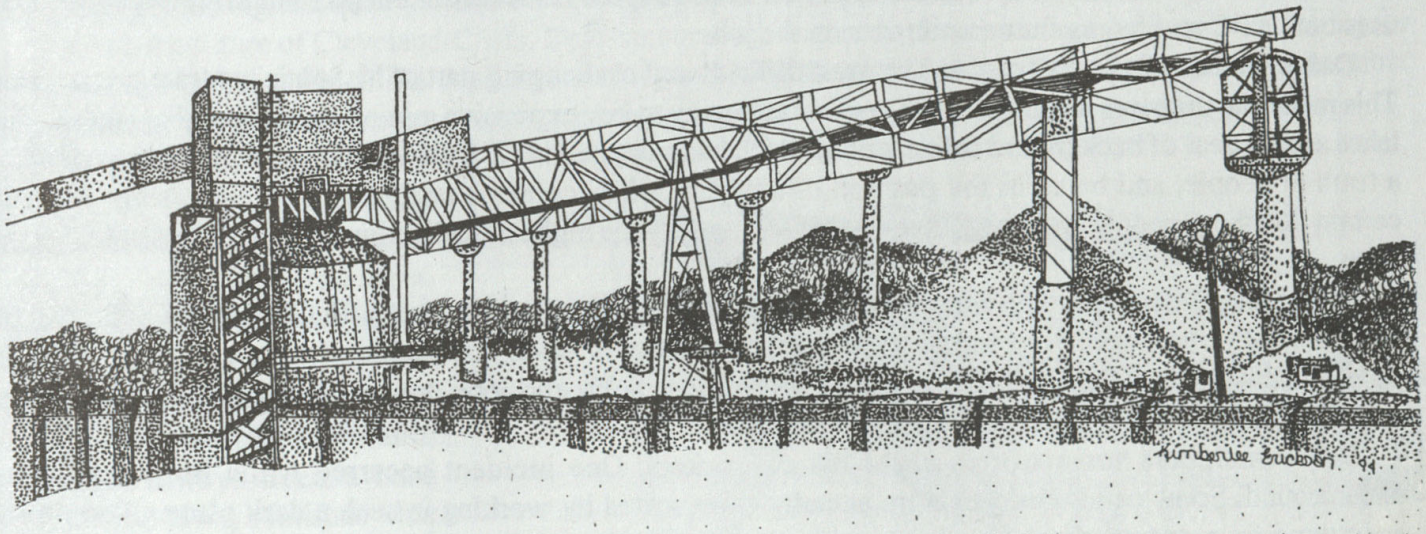
Daryl also said that he has had an opportunity to work with women throughout his career. Therefore, he has not seen much of a change. Now, the Tilden mine has women working with the safety equipment on, running big machinery. He said that it was not happening when he started twenty-seven years ago. "Now they are treated, and rightly should be treated, like any other employee that are performing the same jobs. They are doing it as well as the men. So they're out there, and I think you'll see more and more of it in the future," commented Daryl.

Daryl is very busy on the job and off. When I asked him what public services and activities he was involved in, I was astonished by the long list he gave me. Currently, he is the vice-president of Ishpeming High School's Sports Booster Club. He was on the Renovation Committee to help improve Ishpeming High School. He was involved with the Big Brother program for a dozen years and had a little brother. He is also serving on the

Bethel Lutheran Church Council and is a member of the Ishpeming High School Alumni Committee. Daryl has been involved with the Elks Lodge in Ishpeming serving as each of the officers up to and including Exalted Ruler of the Ishpeming Lodge. He left that to be the Grand Exalted Rulers District Deputy for a couple of years. Daryl has been a chairman of the Elks Youth Committee and was even the Youth Committee Chairman for the Michigan Elks where he helped win national honors. He is proud of the awards he won. All of these activities help make Ishpeming and Marquette County a better place for people. Daryl was also involved in a group called Guide, which is an IBM sponsored group that allows the people that use IBM programs to get together several times a year and discuss any problems or ways to improve their programs.

Daryl shared lots of interesting facts with me about where he worked and where he is currently working. I had a great time listening to the stories that he remembered and was astonished by all the activities that he has been involved in. I am lucky to have such a terrific uncle.

— Kimberlee Erickson



TECHNOLOGY IS THE KEY

The Alanko family; left to right, Dale, Kim and Erik in front, Tanner

"Cleveland-Cliffs must always stay in the forefront of modern technology." These were the words of Dale A. Alanko, who I recently sat down and talked with about his experiences in the iron mining company.

Dale was born on May 18, 1954, in Marquette, Michigan. He was the oldest of two sons. His brother's name is Steven. He is currently married to Kim (Brown) Alanko.

Dale has held many different mining positions during his career. He began at the Mather Mine as a transfer scraperman. From that position he became a motorman. After that he became a stopeman, and from a stopeman he went into mining the ore. His next assignment was as a maintenance mechanic, and then a maintenance planner. Currently, Dale is a purchasing agent for Cleveland-Cliffs.

As a purchasing agent, the main duty of Dale's job is buying equipment for the company. His general responsibility is for the pit area. Dale is also responsible for buying all parts and services for P&H, Bucyrus Erie, Marion shovels, Gardner-Denver drills, all of the capital contracts in the pit, and all lubrication. Dale uses both a PC and a mainframe computer on the job.

Dale's job has many challenges. The most difficult and challenging part of his job is contract preparation. This means he prepares a contract with another company to buy expensive mining equipment from them. This takes a great deal of background information, which has to be gathered. Dale and his co-workers must develop a team of people, and being in the position of a buyer Dale becomes a facilitator. "It's a challenge to make certain that these people work together, so that we can buy the highest quality, lowest cost as possible," states Dale.

On the job, Dale works with many other people. Throughout all of his years with Cleveland-Cliffs, "all the co-workers I've had have been fantastic people," says Dale. He does not think anyone can compare with the people that work for Cleveland-Cliffs. These people give 110% and look out for one another. It is this effort and spirit that has made Cleveland-Cliffs so successful.

Dale remembers some stories about his co-workers. One incident occurred while he was working underground. Some of his buddies were actually quite scared by working in such a dark place. "People felt everything from seeing ghosts to visions, and you name it. They did not like to be alone," says Dale. Some people could hear footsteps while working underground. In some areas especially where mining had stopped for long periods of time, like between the Mather A and the Mather B, workers could actually see the boot imprints of people who had left and walked out on their last shift twenty or thirty years ago. A lot of men were really spooked by this.

Beginning with his underground work Dale details the working conditions of his different jobs. "All the features such as light, water, electricity, and air, had to be brought in. You had to create your environment," explains Dale. He also said it was damp, and either too cold or too hot in many places. There was very poor air

flow. It was also very hard to keep the work area clean. When Dale was at the Tilden Mine, he worked in the open pit. The conditions were fantastic in the summer months, under a nice bright sun, with a little bit of rain now and then. However, it was a different story during the winter. When it was twenty below zero, the men definitely had to be prepared for the elements. If a worker touched steel with a bare hand, it would actually stick right to the steel. Now Dale works in an office complex, so it is quite comfortable.

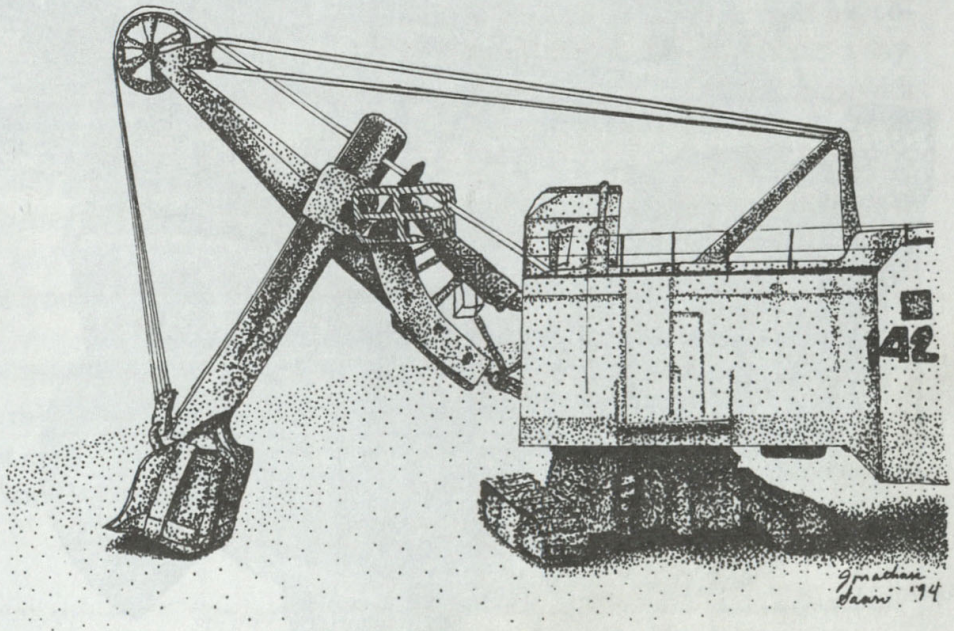
Dale told me some interesting stories of some unique working situations. At a depth of 3400 feet, which the Mather Mine was, it took an intense work detail to keep the place dewatered. This was the mechanic's responsibility. A lot of the pumps that were used were old piston gearing pumps that came from World War I ships. Even the newest pumps that were there were twenty-five to thirty years old. Dale says, "When the pumps weren't running and the water started coming in, it was a definite scramble to keep the place in operation."

Along with working in unique areas, Dale has also been in some dangerous situations. He was involved in an accident at the Mather Mine in 1974. It was at the end of a night shift when he was about to clean off his work equipment and his boots with a high-pressure steam cleaner. The Mather was preparing for a possible strike that year, so some of the equipment was disconnected. The air hose had been disconnected and draped over a pipe. When Dale engaged the butterfly valve to turn the air on, it flew over and hit him in the mouth, and he lost his two front teeth. As far as witnessing an accident, Dale can remember a fatal one. It happened on the same shift as he was on, except that Dale was on a different level. Apparently someone had become buried, and it was a very tense and hectic situation until the worker's body was recovered. "You can never give enough to safety," explains Dale.

In finishing up our interview, Dale gave his opinions that to keep Cleveland-Cliffs going strong, they can never become complacent. If Cleveland-Cliffs were to become complacent, they would be left basically in their competitor's dust. They also must be up-to-date with technology. Without proper items such as computers, geostationary satellites for finding ore bodies, and bigger and better earth-moving equipment, they would not be able to get the highest quality ore to market. They have to keep their domestic market viable.

As with the future of Cleveland-Cliffs, Dale has some advice for the future students who will be looking for jobs, perhaps at Cleveland-Cliffs. Students must always keep their standards very high. They must remember to do their very best job at everything they do. If they succeed in all of these, they will be ready to rise to take the challenge at something put forth before them. The importance of doing a job right or correctly the first time more than just doing the job to get it done is extremely important. Dale has always been a hard worker, and always finishes what he starts. I will never forget his words, "I thoroughly enjoy work, and I couldn't ask for a better company to work for than Cleveland-Cliffs."

— Erik Alanko



WORKING IN THE MINE

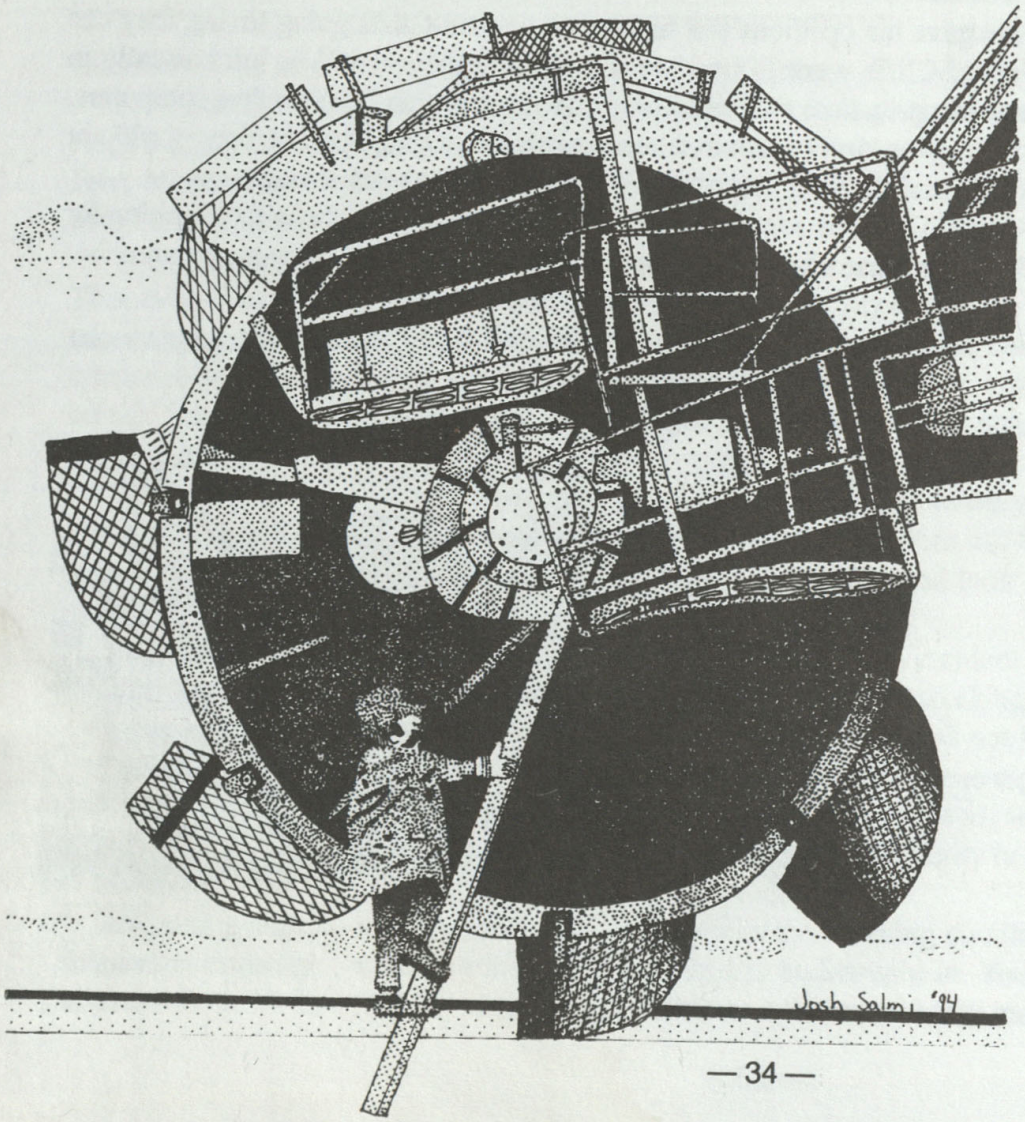
When I asked Bill Huot why he chose to work in the iron industry, he stated, "I was tired of going to college, and I wanted to start earning money, so I quit school and went to work at the mine."

Bill was born in Marquette County in 1951. His parents names are Lawrence and Jean Huot. Bill's father was a carpenter at the Tracy Mine for the Jones and Laughlin Company in Negaunee, and his mother was a housekeeper. Bill's wife's name is Carol, and they have two sons, Kurt and Jeffrey. Bill has been working in the iron industry for eighteen years doing a variety of jobs.

When Bill first started in the iron industry, he was a fan attendant. Next, he went to the labor crew because it was day shift work. After that he went to be a lube technician. "I greased and oiled all of the machinery conveyor belts," said Bill. He was laid off, and when he came back, he became a truck driver of Euclids out in the pit for six weeks. Later he substituted as a lube technician again before he was transferred back to the pit. He took and passed tests to become a plant maintenance repairmen, and that's what he's been doing now for the past five years.

Currently Bill has been working in the pellet plant at the Tilden Mine. Any machinery that breaks down he has to fix and get running again. Repairs may involve the traveling grate, the kiln, or any of the balling lines. His job may be changing castings, or it can be changing or vulcanizing conveyor belts. His duties also include changing lube systems. The maintenance department worker fixes any machinery needing to be fixed.

Bill said that it is challenging to go to work each day because he never knows what job he is going to be put on. He goes there, and the foreman assigns him a job. He is told to go to a certain area and work on a piece of machinery because something is wrong with it. The rollers need to be repaired or changed, or perhaps a reducer might need to be changed. He never knows what's wrong before he gets there. He must go there and figure out what is wrong. "So I guess it's challenging every day when I go because you never know what you're going to be doing," Bill stated.



To prepare for this challenging work Mr. Huot had to take tests. It is a four year training program to become a maintenance man. First a worker takes a fifty question written test. Also there is a math and a practical applications test. If a worker passes them, he takes tests of practical abilities

such as welding, cutting with a torch, lining up bearings, pulling pumps apart and other such skills. There are ten tests a worker must pass before being certified sixteen points, which determines the level of pay.

There are many tools and pieces of equipment that Bill Huot has to use to do these jobs. He uses welders, acetylene torches, and all types of hand tools. Workers must be qualified to use cranes, fork lifts, knuckle booms, and overhead cranes or any equipment that is required in the job classification type.

Bill told me about a new computer program called Format that the workers have set up to handle the work log. "This last pinion was a project where four of us were put on it. That lasted seven weeks; that was the only project that I was put on," he stated.

This difficult job was within the last couple of months. On the kiln there is a big gear that goes right around it called a bull gear. What turns the bull gear is called a pinion; it is another gear and it is turned by a motor and a reducer. He had to pull off the pinion and the reducer. The pinion weighed eleven tons and the reducer weighed fifteen tons. He had to pull them out with some other workers and have them remachined in Milwaukee. Bill and the crew had to have them lined up again with a ten-thousandths of an inch tolerance. Imagine the difficulty of moving over twenty-five thousand pounds and adjusting them to that small amount. Achieving this goal involved using different pieces of equipment they had to make and different tools they had to use. Bill said it was a lot of fun, and the challenge was interesting.

When I had asked Bill what the biggest responsibilities of his job were he stated, "Keeping the pellet running. Not just me but the whole maintenance group. Keeping it running to produce pellets, and doing it safely because there's so much responsibility, so much moving equipment. Somebody could be hurt at anytime."

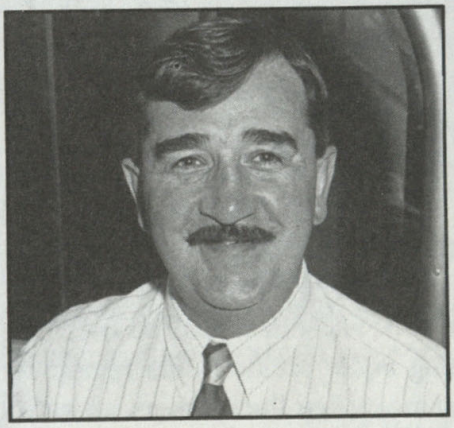
Bill described his working conditions at the pellet plant as uncomfortable. The air has a fine bentonite clay in it. Temperatures are extremely high. Even where Bill is working now, although it's not a very high temperature, it is so humid that clothes stick to the workers. Workers are dripping wet all of the time. It is extremely noisy, and workers have to wear ear plugs all of the time. In the winter they sometimes have a shut down because it is so cold. The conditions are not good at all. "I wouldn't recommend that job to anyone," said Bill.

Looking into the future Bill said that CCI will continue to be a large producer of iron ore. CCI has the largest iron ore kiln in the world, which aids in producing many millions of tons of pellets. Like many big companies it may sometimes seem that CCI's only concern is the dollar bill, and that they do not care about the individual. However, individuals are important to CCI and to each other. When I asked Bill what his co-workers are like, he said "Co-workers get to be your friends because you work with them eight hours a day. You're with the workers more than your own family. So you get to be pretty close to them. The ones I work with are a good bunch of guys."

Bill gave advice to the students of today. He said, "Continue your education and don't take it lightly. The better you do today, the better you will do tomorrow. Stay in school and try hard; it will make it easier for you in the future. The harder you work now, the easier it will make it for you tomorrow."

I am very glad I got to speak with this very interesting man. I learned a lot of what it is like out in the mine. I had a wonderful time interviewing him, and I hope that I get a chance to speak with him again. He gave me and other students some very good advice.

— Shane Nault



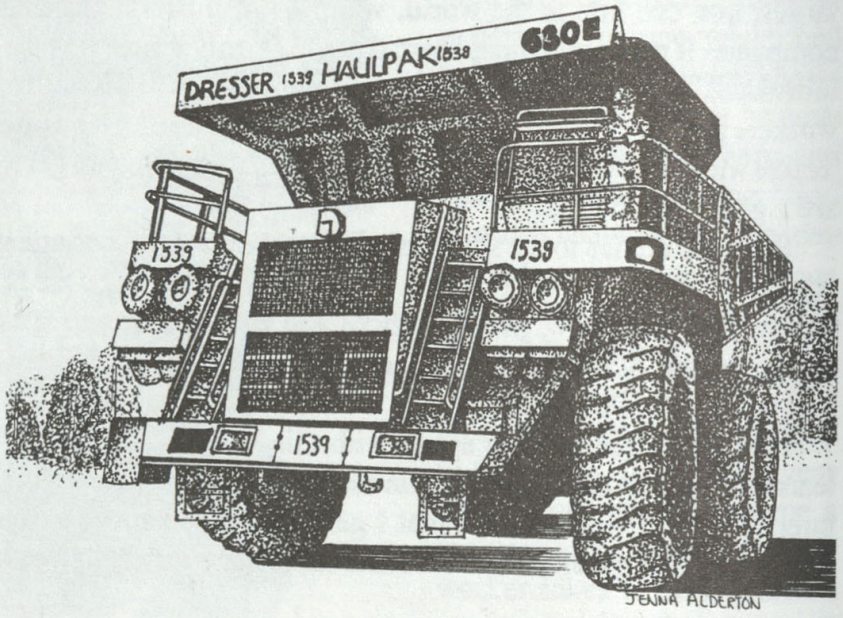
Mr. Bill Huot

EGOR, THE MINER OF MANY MINERALS

Gold, copper, silver, and iron play an important role in my father, Ronald Vuorinen's life as a miner.

My father's entire family came from Finland in 1950. They decided to settle in the Upper Peninsula because they had relatives here, and it reminded them a lot of Finland. They were one of the first working families to come over to this country by plane. Most families came by boat. My father was the only child in the family born in this country. His other four brothers Risto, Reijo, Jurmu, and Urpo were born in Helsinki and Korso, Finland. His dad, a great carpenter, was Aatto Samual Vuorinen who was well known for his woodworking and the building of many homes in Finland as well as this country. My father's mother's name was Lempi Susanna Vuorinen. She was a housekeeper for Suomi College in addition to taking care of the family. My father was born in Hancock, Michigan on September 20, 1952, which makes him forty-one years old. He married my mother Karen (Horsma) Vuorinen in 1974. They have two sons, my brother Ronald Wilhem Vuorinen, nineteen, and myself Chad David Vuorinen, fourteen.

My father has been employed for over twenty years in the mining industry. His career started in 1972, at the White Pine Copper Mine, one of the world's largest mobilized underground copper mines. My father operated various types of heavy equipment and handled explosives. Mining heads the tops of the list when comparing the high risks involved in jobs. My father said, "If I was a cat I would probably have lost five of my nine lives." He was remembering when he got hit by a slab of rock that had fallen off the ceiling and hit him in the shoulder.



Another risky aspect of his job was robbing pillars to create a cave-in to relieve pressure on other areas of the mine. He said, "They used to call me Egor, the cave miner." He earned this nickname because he went in the most dangerous sections of the mine. If the section of the mine did not fully cave in after being blasted, my dad would go in and set more charges to finish the job. At times when he was coming out of the mine, the roof anchors would be breaking from being under pressure. He remembers one instance when the workers all sat down for a lunch break. They had started to eat when they heard on the underground radio that two men were buried in a cave-in. They all shut their pails and sat in silence. Unfortunately, both men died.

Luckily, tragedies were not an everyday occurrence. There were also humorous aspects to my father's job. He remembers a funny story from when he was working at White Pine. He said that it is dark underground except for the immediate lights which are from the head lamp on the helmets and the lights on the equipment. A loader man was waiting at the pocket for a truckload. That truck driver stopped around the corner and put on these hairy ape-like gloves. He then snuck up behind the loader man and threw his arms around him. It scared the living daylights out of him, and he took off running!

In April 1977, my father was hired by Cleveland-Cliffs Iron Company in Ishpeming, Michigan. He is currently working at the Empire Mine in the pit. My father operates graders, 190 ton production trucks, the dozer, and does other various duties. He feels one of the most challenging jobs is to push waste rock off a fifty foot ledge with a dozer. One of his biggest responsibilities is to operate the equipment safely and efficiently so nobody gets hurt, but his job is still completed.

The early to mid 1980's was a very hard time for the iron ore industry, and as a result my father was laid off his job with CCI. From 1983 to 1986 my father resorted to construction work. In February of 1986, the White Pine Copper Company called him back. He drove back and forth from Ishpeming to White Pine, about 106 miles one way, for eight months. An opportunity arose to work at the Ropes Gold Mine which was much closer to home because it was located outside of Ishpeming. He was hired the same day he was interviewed. His duties included operating different types of underground mining equipment like the big drill he used to drill holes to put dynamite in to facilitate blasting. My father remembers one eerie story. He was operating a loader at the 1000th level. He was hauling dirt from the underground pocket when he felt a cold chill. He turned his head, and he saw these little lights in the draw point area. He dropped the load into the underground pocket. The hoistman called him and asked him what he was doing in the chute area. He told the hoistman he was not in the chute area nor was anyone else. Apparently they had seen the lights too. Also the lights had been seen at about the 450th level where nobody had been working. The scary part is that back in the late 1800's, three men had died in that area. My father worked afternoon shift at the Ropes Gold Mine until the night a cave-in occurred. Fortunately no one was injured, but the mine still closed shortly after.

My father was rehired by CCI in 1987, and he is currently employed at the Empire Mine. He feels "it's been rewarding and challenging work." He also feels secure in the outlook for CCI in the future. In order for CCI to remain competitive, costs must be held down and cut back on wastes to compete in the world market. One secret of CCI's success is their quality control for coming up with four different kinds of pellets. My father says that CCI will probably go down in history "as a great iron ore producer."

I really enjoyed this interview with my father. I now realize that he had to change jobs three times and travel a great distance to one of the mines due to the instability of the mining industry. He worked hard and even put his own life in jeopardy so that he could support his family.

— Chad Vuorinen

Ron Vuorinen at work at the Tilden Mine.

MANAGING THE MINE

Mr. James Fegan says, "I think my main duty is to provide vision for the future and a plan to lead and oversee all activities in the active work force." Mr. Fegan is currently the manager of the Empire Mine. I think his vision is important because of his current position. His job has required training in technical, business, and management fields and in human relations. His most difficult assignment is when he has had to inform family members or relatives when someone has been seriously injured.

Mr. James Fegan has worked in eight different mines including the Humboldt, Republic, Tilden, and Empire in Michigan. His jobs have ranged from geology, mining engineering, maintenance, operating supervision, and finally a manager of mines. He has been in the mining industry for thirty-six years. Mr. Fegan feels his biggest responsibility is to produce a quality product at a competitive price and at the same time provide for people to achieve an atmosphere of fairness and dignity.

Concerning change Mr. Fegan said, "I think in terms of ten years as general manager, the big change has been in an extreme amount of attention we have to pay to the quality and cost."

Mr. Fegan feels that recognition of his job performance has resulted in promotions. Recently he accepted an award on behalf of Cleveland-Cliffs, the award was from Ishpeming Chamber of Commerce for business of the year.

Throughout the thirty-six years Mr. Fegan has been in the mining business, he has been involved in many special projects. The most exciting and freshest in his memory, "is introducing and trying to develop a concept of total quality management and also as part of that, a statistic-based innovative process management style where people are more involved and get to make more decisions about their work." He explained "It's been pretty exciting."

Mr. Fegan said there has been a dramatic change in safety standards. "We have gone from an attitude of protecting people from themselves and from machines to designing the work environment around the people. It's a pretty new thing; it includes fancy words like ergonomics and things where we actually are beginning to try and design the work environment around the peoples' capabilities." It is a significant change, and he thinks that the area where the future improvements will be is in developing an understanding of the human nature and how it applies to work.

The newest equipment he uses is the computer, both the PC and the terminal off their mainframe. A rather exciting piece of equipment that is just being installed puts them into a telecommunications network with all the other mines in the company.

Mr. Fegan explained that future CCI workers have to realize that there are going to be fewer and fewer non-technical jobs. "Jobs at all levels of activity are going to require that the people have more than just the ability to work physically." He also stated, "Workers will need a dedicated work ethic." Workers also need to learn as much industrial math and statistics as they possibly can, and they need to have contemporary computer skills. Mr. Fegan emphasized that for almost any job from now going forward, the worker will have to use math, statistics and computers.

Mr. Fegan advises everyone to get all the education available and work as hard as possible. Students should

achieve the highest grades they can, and get as much work experience as possible. A very important piece of advice was "You should know right from wrong and live with a positive attitude."

In the last couple of decades women have come to be accepted in the work place, in some technical and leadership jobs. "I think that we'll continue to see that role expand and continue into the future." Mr. Fegan commented that women are not very prevalent in senior management positions yet, but he thinks we will see them there eventually as women's roles continue to expand.

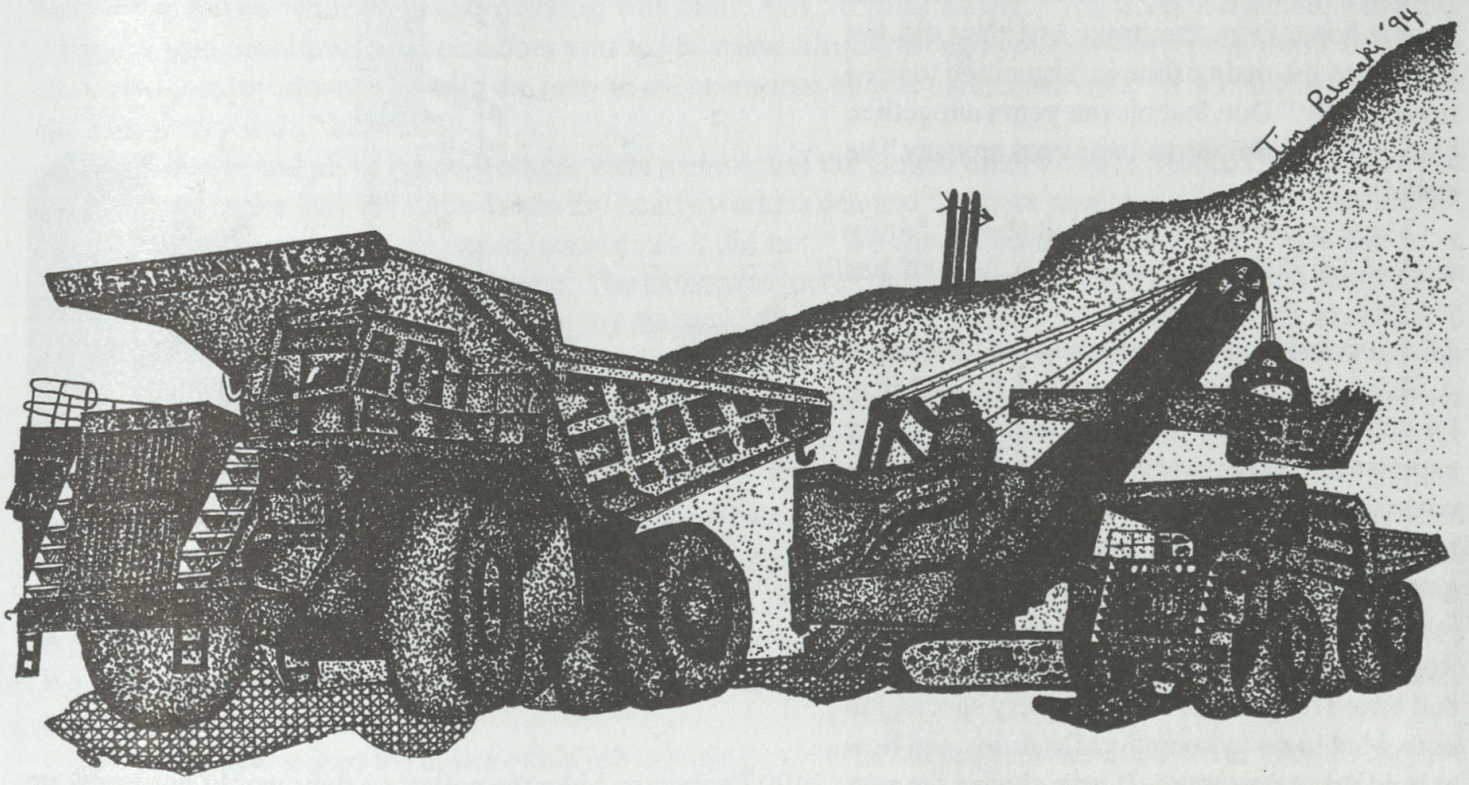
For the young people, the future probably holds opportunity for CCI as long as they can improve what they do, and develop products that find a niche in the market. "The future is promising" comments Mr. Fegan. Mr. Fegan says that even though the Tilden and Empire could connect, it is not very likely in the future.

Mr. Fegan feels that the iron and steel industry has become extremely competitive both in terms of price and quality of product. "Iron and steel have become commodities that are really globally competitive." Mr. Fegan feels that CCI needs to improve on productivity; they also need to continue to improve their quality, and they need to continue to reduce the cost.

When asked if he would do it all over again, and make the same choices he has made in the past, he answered, "I like what I do, and I like the direction my career has taken, but a career can only take a certain direction if the opportunities are there."

Mr. Fegan's overall retrospective is, "CCI would be remembered as one of the best iron ore producing teams in the world!"

— Sarah Pietro



"CRUSHER DON"

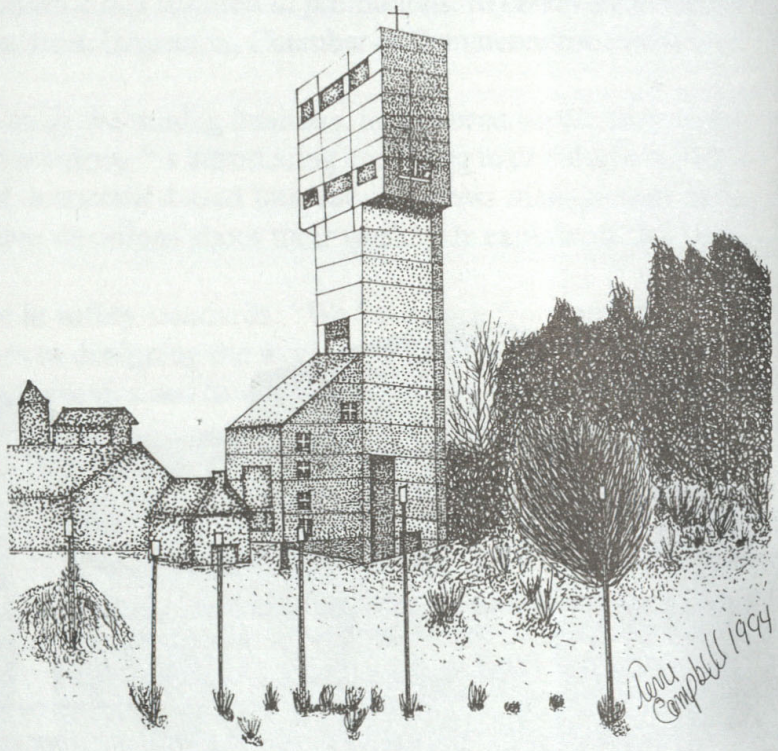
Mr. Don Roberts is the son of Mr. and Mrs. Richard Roberts. Don was born May 17, 1920, in a location called Salisbury, a suburb of Ishpeming. Amazingly, Mr. Roberts was born in the same room as his mother had been years earlier. He was raised in Iron River from age two.

Mr. Don Roberts during his service years.

Mr. Roberts started his working career in 1940, at the Spies Mine in Iron River. Mr. Roberts had to work in the mine because he needed a job, and there was not much work anywhere else. He could not go to college because they did not have enough money. His first mining experience only lasted one year. "On November 6, 1941, I was called into the service of our country. When I came home, I was discharged. I spent a lot of time in a hospital in Paris and in England."

"It took three and one half years to recover to be able to work at all. My left should blade was broken and some of the bone was shot off and missing, but I am very fortunate. My buddy who was with me in the same foxhole died nine days later, so I am thankful to be home at all," he stated.

"Not being able to work I went to Northern and tried to become a teacher during my recuperation period." Don explained that he was too nervous, and shell-shocked to settle down to study, and he dropped out of college. When he could finally go back to work, he started at the Mather A Mine in 1948. Upon his return he found out that he had lost his time with the company. "I did report to the mine when I came home from the army, but they did not report it to the main office in Ishpeming to keep my seniority." Don lost eleven years altogether. "I did end up with thirty-two years anyway," he stated.



Three generations of Mr. Roberts' family worked for different mines. Don himself has worked at the Spies Mine in Iron River, Michigan and in Marquette county at the Mather A, Humboldt, Cliffs Shaft, and the Tilden Mine. He retired from the Tilden Mine after having experienced a great variety of jobs. Don was a contract miner, a motorman, and he worked in maintenance. Another position he held as crusher operator lead him to remark, "I was labeled as Crusher Don." This job that Mr. Roberts held in Humboldt was operating the kiln that baked the pellets. "It was a very special job as to what to do to keep the kiln going and how to hold the temperature. It was always the same 2400 degrees to bake the pellets so they would not break up and bunch up what is coming through the kiln." Don explained that it was the most challenging job he ever had

because if the temperature got too hot, it would cause big chunks to form and sometimes the kiln would stop, causing hot spots. Holes would appear on the kiln. "Most of the time we would avoid that trouble by cutting down the gas and the heat would go down and it would be okay, then the operation would continue to bake the pellets as usual. We had to know what to do and how to do it quick, or we would have to shut down for quite some time for repairs that would be needed," he stated.

Mr. Roberts explained to me some of the most dangerous situations he had been in when he worked underground. Parts of the mine that were very wet were called raises which are tunnels going straight up. The raise filled up with water along with ore. It was very difficult to get the ore out of the chute without the water. At times the miners would have to drain the water out of it. If the dirt came down with the water it caused the chute to burst and all the water buried up the cars. "Mather A had the same problem, but when they got the top timber chutes it would eliminate all water coming down in the chutes." Mr. Roberts witnessed many accidents underground which brought back too many painful memories to talk about.

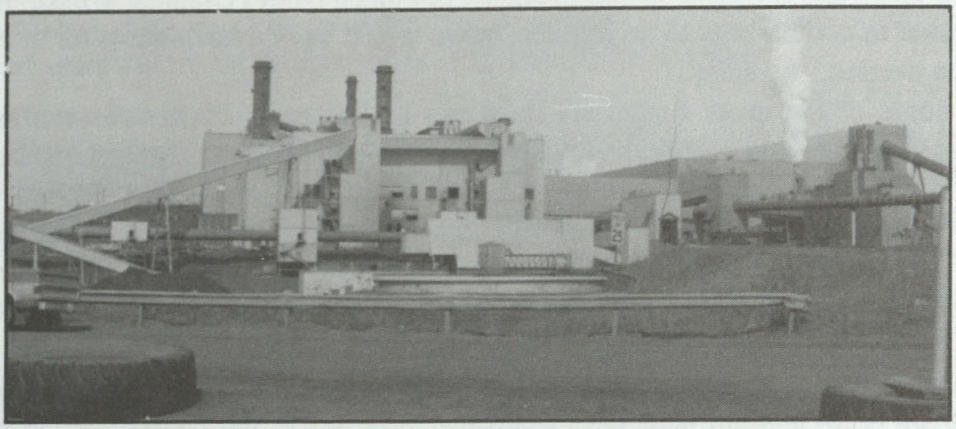
Mr. Roberts did have some fun at work and he shared some humorous and unique situations. "When I was contract mining we used to take off our boots and put them upside down in a pile of dirt. When the boss would come to check us out, we would hide and he would think we were in that pile and he would start digging. That was one of our good jokes. At other times we would connect live wires from the trolley wire to the track and watch the rats and mice come there for a piece of bread, and it would electrocute them." His wife, Mrs. Marian Roberts, thought that it was "terrible" to do that. He said, "It was work but at times we made it a fun place to work."

Mr. Roberts enjoyed working with his co-workers. "I enjoy working with men and in most cases we get along quite well, sharing our jobs together. We have had a lot of communications. There was never a time that you had to work by yourself or had a partner that didn't work with you. Everyone had a partner, and he became very close to you while you were working with him." Mrs. Roberts added, "You make a lifetime friend too. They see you downtown and remember you so you make friends through your co-workers as well." Don must have really enjoyed working with the men in the operations he was connected with. "It was like a family; we got along very well," he stated.

Mr. Roberts and all of his co-workers were members of the United Steelworkers Union. Don recalled that their longest strike was 101 days. When the hourly workers demand for more money was not met, they did not go to work. Sometimes a strike paid, sometimes it did not. "We wanted an understanding on what should've been done and what could've been done. The union was more concerned in the right to work and seniority — that was the main thing. Years ago when my dad was boss at the Spies Mine, he came home one day and told me he had to fire a man. That was in the 30's and that man was one of our best friends. In those days there was no union." Mr. Roberts had no reason to fire him, it was just because the captain did not like him. "If there was a union in those days they couldn't do that because seniority would count. If they just dislike somebody or something, they could just let them go for no reason. That's what the union fights for today," he explained. When the workers go on strike, it involves the hourly workers, but it does not involve the bosses. "It included all the hourly workers, quite a few thousand at some time, there's probably 2200 hourly men working for the company at the time when I worked for the company." When the workers go on strike they form a picket line. A picket line prevents the hourly men from going to work. During a strike the operations are down, and nobody is supposed to work. "If someone does get through the picket line, they are not very well liked. They are called a scab," stated Don.

Don has experienced the duties of his job changing as well as the people who work there. "Technology is a big factor. The companies have to work at a minimum cost to pay us. If they don't make money, there's no jobs. They try to eliminate men through technology to do the same thing and cut out as many men as possible so they

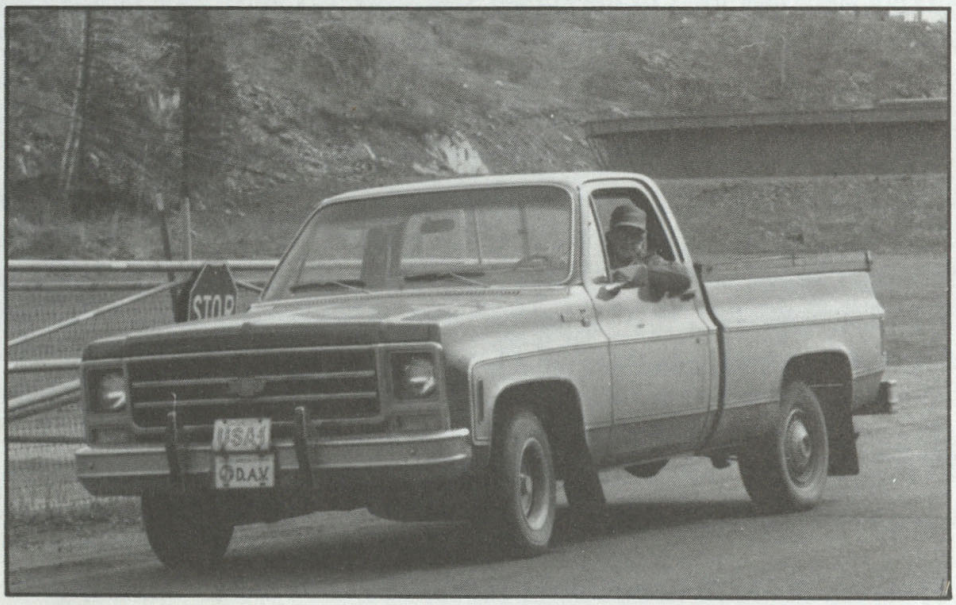
can save money and still compete," he explained.



Tilden Mine 1983

Believe it or not, Mr. Roberts has never wanted to change his career. "I was quite satisfied with what I was doing, and hung in there until I retired," he stated. When women came into the work force Mr. Roberts did not notice a change in the company in any way. "They did do their part. I worked with the very first women that came into CCI when I was in Humboldt. If you can put her where she can do her part and do the job well, she will do her part. They share a large part in the work force for CCI. I am sure it will not change anything in the future," said Don. When Don had finished explaining to me how the role of women had changed and what the outlook in the future may be like for the role of women, he went on to tell me what he thinks the future outlook for the Tilden and Empire Mines may be.

"I think that both the Tilden and Empire Mines have a good future if the company and the working men come together and work things out for both parties; that is the name of the game. One must work with the thought that he is working for himself and do the very best he can do to keep the company so competitive that there will always be work. I think the future looks good if they will stop the importation of steel from other countries that is taking jobs away from this country. I am definitely sure that if they would eliminate all the imports of steel, this country would survive as far as the steel industry is concerned." Mr. Roberts believes that the key to success of CCI when other companies have failed was because they have had access to more property for their expansion and "If they want to expand and can acquire their property they can keep operating, whereas the other

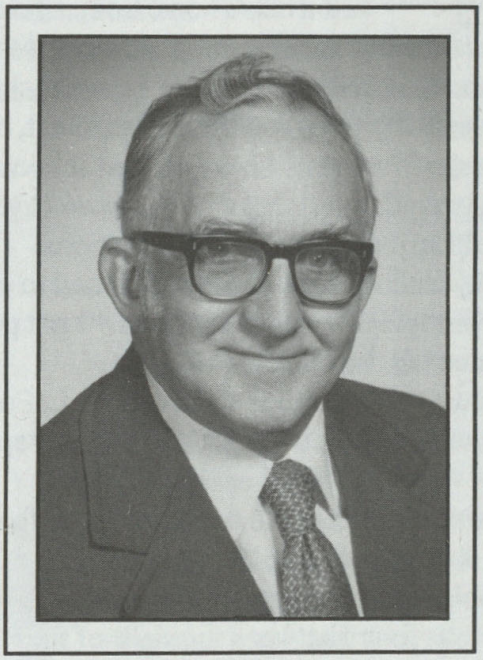


Last day of work at the Tilden Mine, April 28, 1983.

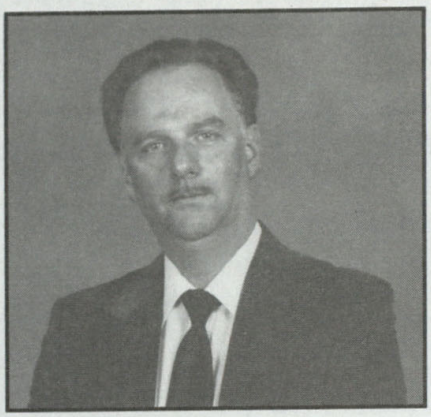
companies are done because they just don't have any more room to operate. Cleveland-Cliffs has always been a sound company. I am sure that if they stick with iron and steel they will just keep going," he expounded. When I asked Don about future possibilities for people working in the mines, he replied, "The young people of today should study in computer science and accounting and should have a business career in mind. A company will always need people with training in technology of some sort." For instance, "All the construction trucks are controlled by one computer. There is no chance for a break from one shovel to another," he added.

Mr. Roberts advised me to stay away from the mines until I learn all I can. "When you think of a mine, you think of pick and shovel but there are some technical jobs you can get into if you have the right training. I would advise any young person to go to college, learn all you can to better yourself." If you learn all you can first, when you ever need a different or better job your chances of getting one are much greater.

— Terri Campbell



AN EXPERT ON THE PAST



Mr. Leo LaFond

"I used to hide under the table and listen to all the stories." These are the words of Mr. Leo LaFond while recalling the hours of talk among parents and grandparents. Talking that, more often than not, turned to mining. Mr. LaFond recently visited the National Mine School and shared his knowledge of early mining. I got a chance to meet with him later, and very quickly I found that his childhood interest in mining history is still very evident in his life today.

Mr. LaFond was born in Ishpeming, Michigan on September 23, 1944. He is the son of Edward and Rose LaFond, and the husband of Mrs. Linda LaFond. He also has a son, Jason, in fourth grade. In fact, Jason was responsible for Mr. LaFond's involvement in giving historical mining presentations.

Jason came home from school one day and asked that Mr. LaFond bring some mining artifacts into his class. Mr. LaFond filled a box with old mining tools and drove Jason to school. Once there, he was asked by the teacher to explain what he had brought, to bring in more, and eventually to visit other classes. Next, he began to visit other schools, which is how his "travelling mining history show" began. "I kind of liked it because I found out that kids didn't really know that much about the old underground mines. It made me more eager to get out and find some more old stuff," stated Mr. LaFond while recalling those first few presentations.

Because of his former job as safety chairman, Mr. LaFond has had to examine and inspect many old mines. He remembered seeing old artifacts just lying around down there. "I got permission from the company to go in there and see what I could find," stated Mr. LaFond.

When he returned to the old mines to locate the artifacts, Mr. LaFond found many. Not only from this resource, but from talking to old miners, interviewing people, and collecting things that they had just had on their shelves for years.

The most difficult part of Mr. LaFond's research is deciding the difference between fact and fiction. Many times after researching an old story, it turns out to be "hearsay". Much of Mr. LaFond's research time is spent at libraries and museums making copies of documents and old records. Many times he tries to get pictures to go with the information. One picture was found between the walls of the Brownstone Shops where Mr. LaFond currently works. It was a picture of several men, which he had enlarged. While looking through old newspapers, he found the same picture with all the names listed below it!

When Mr. LaFond retires, which he hopes will be at least twenty or thirty years from now, he is not quite sure who will carry on the historical presentations. One thing he knows for sure, "I don't like to send things to a museum for one reason. You can't have the access to it anymore," explains Mr. LaFond. "I know a lot of things that went to a museum and someone from Lansing said 'I like this. Let's haul it down to Lansing' and then it's gone." Mr. LaFond thinks that by having his own private museum, it ensures that everything stays in the area.

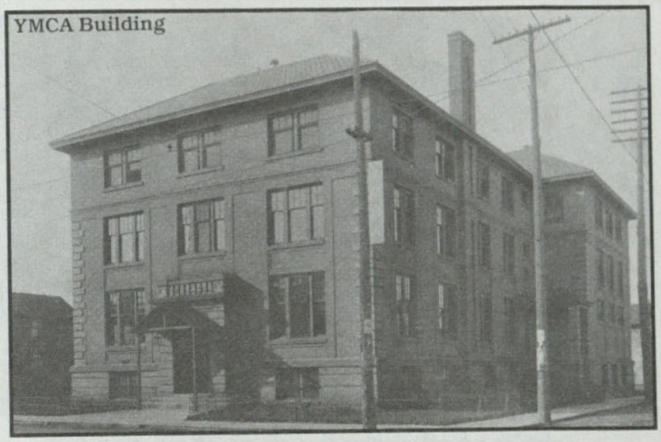
When I asked Mr. LaFond to name some of the most important or noteworthy mines of the past, I very quickly realized just what a difficult request that was!

The mines Mr. LaFond has concentrated his interest on are the Lake Mine and the Lake Angeline Mine in Ishpeming which are connected underground. He is also interested in the Superior Mining Company which operated as one of Ishpeming's first mines. The Superior Mine is a very historic mine. When Ishpeming almost entirely burned down in 1874, the Superior Mine played a large part in rebuilding the town. It helped to build

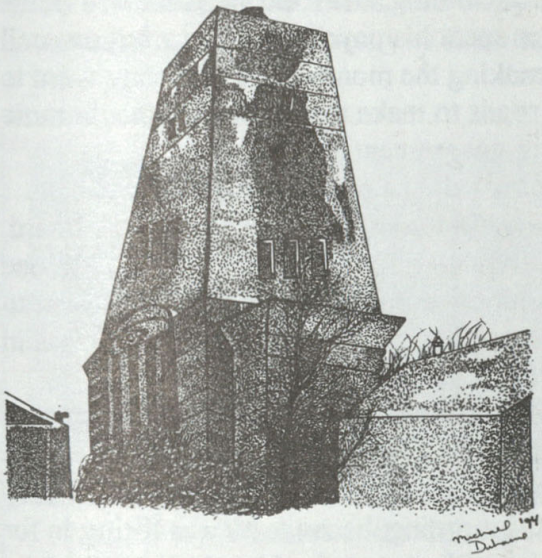
schools, churches, hospitals, and Ishpeming's first YMCA building by donating land, money, and construction time.

In our area, the mines run in a geographical line beginning with the Salisbury Mine located in Ishpeming followed by the National Mine which is our school's namesake. After making a circle come the locations of the Holmes Mine and the Cliff Shaft and Cleveland Mines.

The previously mentioned Cliff Shaft Mine and Greenwood Mine, according to Mr. LaFond's research were the best mines to work in. The working conditions in these mines were tops because they were hard ore mines. Hard ore mines were very safe because there was no reason to worry about caving. Soft ore mines were the most dangerous mines to work in because workers had to tunnel in, drill upwards, and cave the ore down before putting it in skips and sending it to the surface.



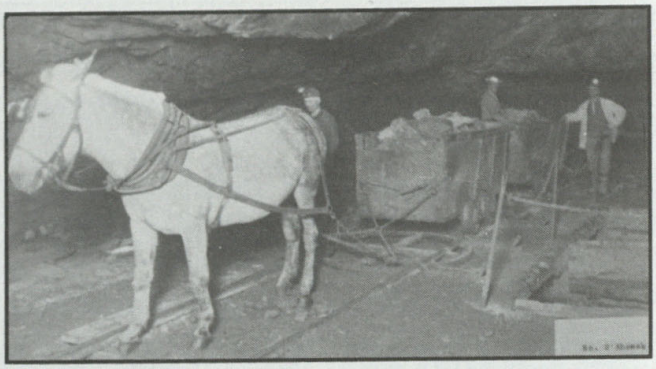
Ishpeming, Michigan's first YMCA building built in 1907.



The Greenwood Mine was very dry. "As a matter of fact, to operate some of the drilling machines they had to pump water in where they usually had to pump water out!" Mr. LaFond laughingly stated. The Greenwood Mine was a rather small mine, employing about fifty workers. The Cliff Shaft Mine was very similar in everything but size. "There were some holes down there that you could probably fly an airplane around in," said Mr. LaFond. The Cliff Shaft Mine operated for ninety-nine years. It was one of the area's first and only hard-ore mines.

Besides being an expert on the location of mines in the area, Mr. LaFond also has extensive knowledge about past mining methods. Starting in the mid-1800's mining was all done through surface drilling. As surface ore depleted, shafts were put down. Donkeys were used to haul the ore up. "They would pull one car up, but if you hooked two cars on them they wouldn't pull anymore, " Mr. LaFond tells presentation viewers referring to the donkeys. Following shafts, many tunnels were made. Shafts were sunk about 600 feet and drilled sideways into ore bodies before going down another 300 feet and tunneling in. The shafts resembled a tree trunk with a series of branches. Shafts were sunk straight down. At the time a mine shaft opening was about eight feet by eight feet. You would use it for lowering the man down and hauling the ore up," states Mr. LaFond. Later, the mine operators decided to use a small cage for the men to ride down in. Using a hoisting rope and a horse on an underground spindle, they hauled the ore up in small amounts. In many places, during the 1800's to the 1890's, the men descended into the mine on old wooden ladders. Carrying all their equipment and trying to hold on was quite a tough job even for the experienced miner. The equipment the average underground miner carried may have included a hard hat, a light, a belt, boots, and a packsack. At the end of a shift, they had to haul it back up!

The formation of the union is another subject that Mr. LaFond is knowledgeable on. The first actual organization for a union began in 1946. The United Steelworkers of America formed the union in and around



Although this is an Ahmeek coal mine, similar ore transporting methods were used in early iron ore mines.

the Ishpeming/Negaunee area. The main focus of the union of miners is to make sure that the miners are treated fairly. They also want companies to keep jobs open that the workers can perform.

At the highest peak, the wages of a miner in the 1880's were a dollar a day, but some were about sixty-five cents. It must be remembered that money went a long way in those days. A "company hospital" fee of one dollar was deducted from a miner's two-week pay check in case hospitalization was needed. Thirty cents were also taken off for feeding the miner's families when they were sick. There were no cars, only horses and wagons. There was no insurance, eye-care, or dental care, and access to hospital care was limited. "If you got hurt, you were gone. They didn't want someone at the mine with a broken leg or arm," states Mr. LaFond.

Because of lack of transportation and good road systems, it was very hard for the mine owners to get paper currency into the Upper Peninsula to pay the miners. To solve the problem, the owners actually created their own form of paper money called "iron money". Iron money could only be used in the "company store" which sold anything and everything a miner and his family needed. Pots, pans, clothing, and food are just a few of the many items the stores carried. The company store was where a miner spent his paycheck. This went on until about 1870 when the government began charging the company for making the money. The company went to court. The dispute was solved by the government agreeing to build roads to make the Upper Peninsula more accessible. The mining companies would in turn pay the miners using government paper currency.

A device that came about in the early days of mining was something called a brass check. Brass checks were a check-in, check-out system. Each miner who worked underground was assigned a peg on a large board. On the peg hung two small tags with his number on them. When he went underground on his shift, he took one of the small tags and put it in his pocket. When his shift was over, he returned it to the hook. If a shift came to a close and someone's tag was not on the hook, the miners knew he was still in the mine, and they went back in to look for him. Brass checks were a safety precaution.

The brass checks were a result of the Barnes-Hecker mining disaster. After this disaster, the companies eyes were opened to the need for more safety precautions and organization. When the Barnes-Hecker Mine collapsed and filled up with water and sand, Mr. LaFond's grandfather was trapped inside. He was there by chance. Instead of coming on his regular afternoon shift, he came in the morning, because he was filling in for someone who had a doctor's appointment which turned out to be rather unfortunate for him. He is one of the forty-one bodies that were left in the mine. Fifty-one men died in that accident. Brass checks were used until record keeping was switched to computers.

Hot temperatures and wet mines made for horrible working conditions. A consistent fifty-eight degrees may not sound uncomfortable, but for the average underground miner wearing heavy clothes, boots, and safety goggles, fifty-eight degrees felt pretty hot. That was the way it was during the early days of mining. In some mines, the miners took a cold lunch down into the mine and had to find a place to eat underground amid the continuously dripping water using only a candle in their hat for light.

Heavy clothes and safety goggles were a must. With all the blasting and drilling going on, a thick choking dust was created early in the work day. Besides making it difficult to see, the dust was a health hazard. "My dad used to come home from the mine and be coughing up black stuff continuously. He'd blow his nose and it would come out black," said Mr. LaFond.

Back in the early mining era, there was nothing to protect a miner's hearing. Mr. LaFond made the observation that while interviewing many of the old miners, they had difficulty hearing which is something that may be related to all the explosions they were exposed to.

Mr. LaFond's father lost his hearing in that way. He was a blaster. The fact that when a blast that he had prepared went off containing maybe fifteen charges or sticks of dynamite he could pinpoint each one, count them, figure out if one did not go off, find it and replace it to finish the blasting showed that he was very experienced. The job that Mr. LaFond's father held was very scary and dangerous. Many lives were lost just because people tried to take shortcuts and did not do the job right. Being a blaster was a job of precision which had to be done correctly if safety was to be number one.

1907 Work Crew at CCI Brownstone Shops
First row, L. to R.: Sparrow (Foreman), Ostlund.
Second row: Unkown, Hebbard, Mayrand, Tourville, Betts, Cooney (LS&I conductor), Unknown, Faudrem, McDowell.
Third row: Daugherty, Voegtline, McGraw, Beale, Lemin, Williams. Rear, standing: Kalm.

In the early days of mining there were few or no safety standards in the mines, and many accidents occurred. Part of the reason was that many of the miners were immigrants from other countries who spoke nothing but their own languages, and communication was difficult. The main focus of the early days was getting the ore above ground.

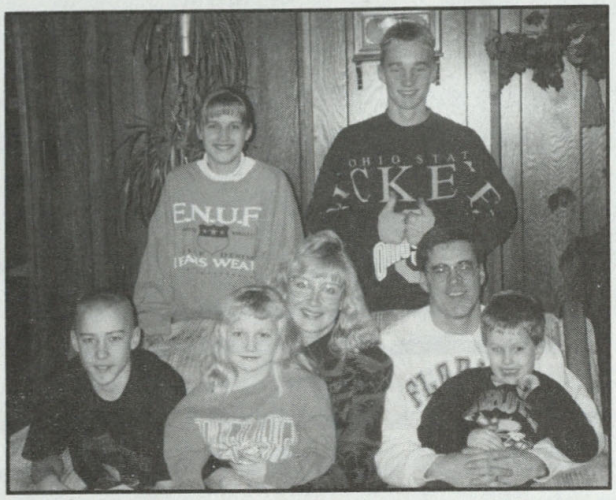
Workers at the CCI repair shops.
Photo includes both father and grandfather of Dr. Glen Seaborg of the U.S. Atomic Energy Commission. Father is Theodore Seaborg, fourth from left in foreground. Grandfather is third from right in background. Other identified are Sparrow, in foreground, second from left; Tourville, seventh from left and Limin, tenth from left on end. In second row are Mercer on right end; Voegtline, fourth from right and Fondrein, tenth from right. Year not given.

Reclamation of land and restoration of the environment is now a major concern of the mines. One reclamation project that I find interesting is the complete transformation of the Mather B Mine in Negaunee. Negaunee's high school now stands where the Mather B Mine and its buildings once stood.

One of the main reasons Mr. LaFond chooses to give presentations is that he thinks it is important that the young people of today learn about their area and its history. He finds that many people who have lived here in Ishpeming or close by all their lives do not know the extreme conditions that their forefathers had to work under. They do not know how hard it was for many people to make ends meet and how things were not as easy back then as they are today. I think that by knowing this and remembering that the path was often rocky for those who paved the way before us, can be a lesson for life. I enjoyed talking with Mr. LaFond and thank him for the enriching experience.

— Lindsay Lamb

THE BIG PRODUCTION TRUCKS



The Lawson family: standing, Becky and Jared. Seated, left to right: Derek, Megan, Mrs. Connie Lawson, Mr. Bruce Lawson holding Griffin.

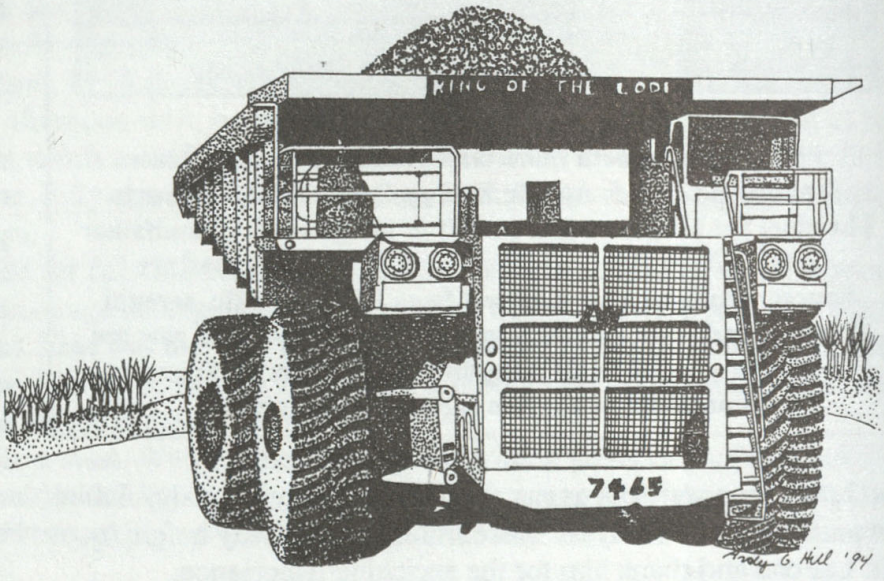
"In 1974 when I graduated, it was either work in the iron industry or go to college, and at the time they were hiring people and the money was good." These were the words my father, Bruce R. Lawson, told me when I asked why he chose to work in the iron ore mining industry.

Bruce was born in Ishpeming, Michigan, on September 7, 1956, to Robert and Doreen Lawson. Bruce has two sisters Susan and Judy and a twin brother Brian. He has five children: Jared, Derek, Rebecca, Megan, and Griffin, and a wonderful wife Connie.

Bruce has worked for Cleveland-Cliffs Iron Company for nineteen years, and he hopes he can work there another twenty years right up to retirement. Bruce has relatives who work for CCI, including his brother and brothers-in law, and father and father-in-law who have retired.

Before Bruce started working at the mine he and his brother worked at Sawyer and Stoll which was a lumber company that made treated lumber. "I did not care for that job. I knew I was not going to do that after high school so I knew I had to get a good job," said Bruce. He also stated that although he was thinking of going to college, when the opportunity at CCI came along, he felt he had to take it.

Bruce has worked at both the Tilden and Empire Mines. Currently, he is working at the Tilden. At both of the mines Bruce has worked in the mill and pellet plant which is inside work. He has also worked in the pit which is outside work. "Any job they had out there . . . except maintenance work which involves special job programs to get skilled to be trained for those things," stated Bruce when I asked him what duties he performed for CCI. Bruce's current job assignment is as a truck driver. Bruce has to load up at a shovel in the pit and bring the rock containing the iron ore to the crusher. At the crusher the load is dumped. The truck continues to make trips back and forth between the pit and the crusher. The 190 ton trucks Bruce and his co-workers drive are bigger than some garages. "The tires are almost ten feet high, so you can picture four tires as high as a basketball rim. I mean that is just the tires; you then have to climb a ladder just to get up into the cab which is a good five to six feet above the tires," Bruce explained.



Some of the procedures for driving

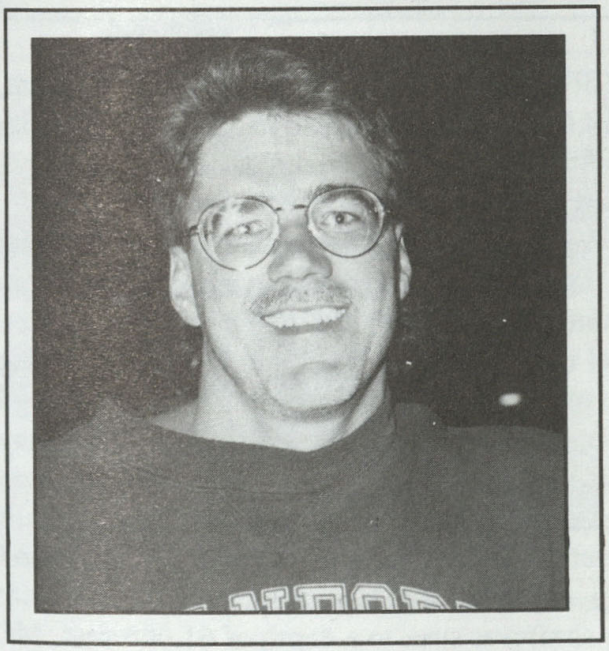
a big machine involve visual perception actuity. Bruce said that he is looking down fifteen to twenty feet which means becoming accustomed to this perception and judging distances accurately.

"The shovels themselves are special as they're so huge," replied Bruce when talking about special equipment. Some other special equipment are two-way radios used to call the central dispatch. He also has a computer in his truck. "We press a button to get to our assignments. The assignments tell us where to go and what shovel to go to. There are numbers on the shovels. For instance, there is a shovel number twenty-four, number twenty-two, and so on. We go to that shovel and press the button 'arrive'. When we are loaded up we press 'load'." After Bruce presses the load button, the computer sends a message up to dispatch which tells them where they are at the time. After loading up, Bruce presses the button "assign" so the dispatch knows where they are going to take the load. The computer is in the cab of the truck, and it hangs from the ceiling so the truck drivers can reach up and press all the buttons they need to press.

Bruce also described his working conditions. He told me he is outside all day but in a truck. When I asked him if it ever gets hot in the truck, he replied, "Some of the trucks have air conditioning which is nice because on the big trucks, they got the engine right next to you." Bruce told me that if your heater does not work, the worker must bring in the truck and get a new truck.

As a driver, the biggest responsibility Bruce has to be watching out for are little pick-up trucks so he does not back into them. "One incident I can remember is when this guy was driving a big production truck and the guy ran over a little pick-up truck and just kept on going and he never knew that he ran over the pick-up," said Bruce. Bruce was in a situation like this but it was with a production truck. "I was hauling a load downhill . . . I went to slow down a little bit but the truck didn't have any brakes . . . There was a truck coming up the other side, so I steered in front of the truck onto the berm or in other words the side of the road and jumped six feet down to the ground. Luckily the truck stopped on the berm, and I just had a few bumps and bruises," recalled Bruce about a scary situation. I asked Bruce if he ever gets lonely on the trucks working by himself. He said he can take radios or magazines if he gets bored. In the five to eight minutes it takes to load a shovel, he can either read the magazine or listen to the radio.

Bruce told me how the mine is monitored by a group called MSHA which is a group that comes out to the mine periodically and makes checks on safety conditions. "They make sure the berms are high enough and things are all cleaned up . . . So there's a watchdog out there to make sure the safety rules are abided. It's pretty good," replied Bruce about safety. He also stated that miners are required to take one day off their job to go to a safety course. "You have to stay in your street clothes, and go into a trailer and for that eight hours there you go through a safety course so you know everything," he explained.



From doing this interview I learned a lot about what Bruce does at work and the big production truck he drives. I also learned that he is part of a union called the United Steelworkers of America. I hope that Bruce can work at the mine for another twenty years before retirement.

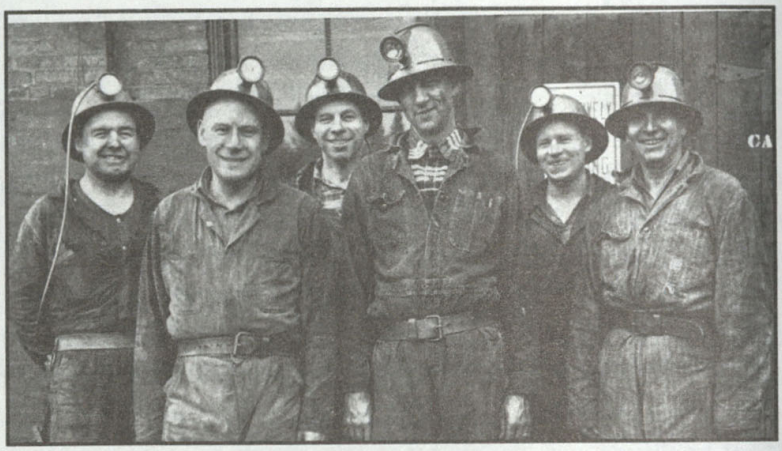
— Rebecca Lawson

"I DON'T KNOW HOW I WOULD DO ANYTHING DIFFERENT"

Mr. Ray Satterley started working in the mining industry in 1925, after graduating from Michigan Technological University. He started his forty-three year career as a mining engineer in Minnesota for Inland Steel. Mr. Satterley came to Michigan in 1930 as superintendent of the Greenwood Mine, transferred to the Morris Mine in 1935, and to Iron County in 1940. He returned to Marquette County again in 1946, as general manager of all Inland Steel mines until his retirement in 1968.

Mr. Satterley was born in Hubbell, Michigan on August 10, 1904, to Joseph and Emma Satterley. He had two older brothers, Osmond and Rueben. Mr. Satterley was married for forty-three years before his wife Emily died in 1972. He has one son, David.

When I asked Mr. Satterley why he chose to work in the iron industry, he explained it like this. "It goes way back to the mining community because my grandfather was killed in the copper mines in the Copper Country, and I was connected with mining. When I graduated from college, I was not sure if I would go into the mining industry, but the first job I could get was in mining."



Mr. Ray Satterley with visitors to Morris Mine from Indiana. Front row, left to right: Kurt Neustaetter, technical assistant to superintendent of Blast Furnace Department; L.R. Berner, superintendent Steel Products, and L.B. Luellen, assistant general superintendent Primary Products. Back row, R.W. Edwards, superintendent Morris Mine, R.D. Satterley, general superintendent, and B.T. Burwell, assistant superintendent Morris Mine.

Management does have its own set of problems as Mr. Satterley went on to explain to me, "The most difficult part of my job, being in management, was to get along with my fellow workers. As far as management is concerned, you also had to get along with your other miners and other workers who you were in contact with continually." The duties of Mr. Satterley's job spanned from being an engineer to the point where he became general manager of all operations.

Mr. Satterley started as superintendent of the Greenwood Mine, and he was involved in many special projects. In 1930, the Greenwood Mine was started. At that time, Inland Steel was buying hard ore from Cleveland-Cliffs Shaft Mine, which was the only mine in the country that sold hard ore to a specialized market. Hard ore was used sparingly at all the steel plants. Inland Steel management decided that instead of buying hard ore from Cleveland-Cliffs, they would try and start to find a mine of their own. The area of the Greenwood was drilled, but they did not find any hard ore. After drilling about eleven more times, they still did not find any ore. However, the decision was made to sink a shaft anyway. The shaft was a unique situation because it was sunk in a swamp which meant it had to be sunk under air pressure. Mr. Satterley explained this as being built like a tunnel. The shaft was sunk with casings, which were concrete cylinders that were eight feet in length and twenty-four feet in diameter. They were sunk through the swamp and used to hold water back. They were sunk down to ledge and sealed before the shaft itself was sunk. The shaft was sunk to a depth of 61,000 feet. Mr.

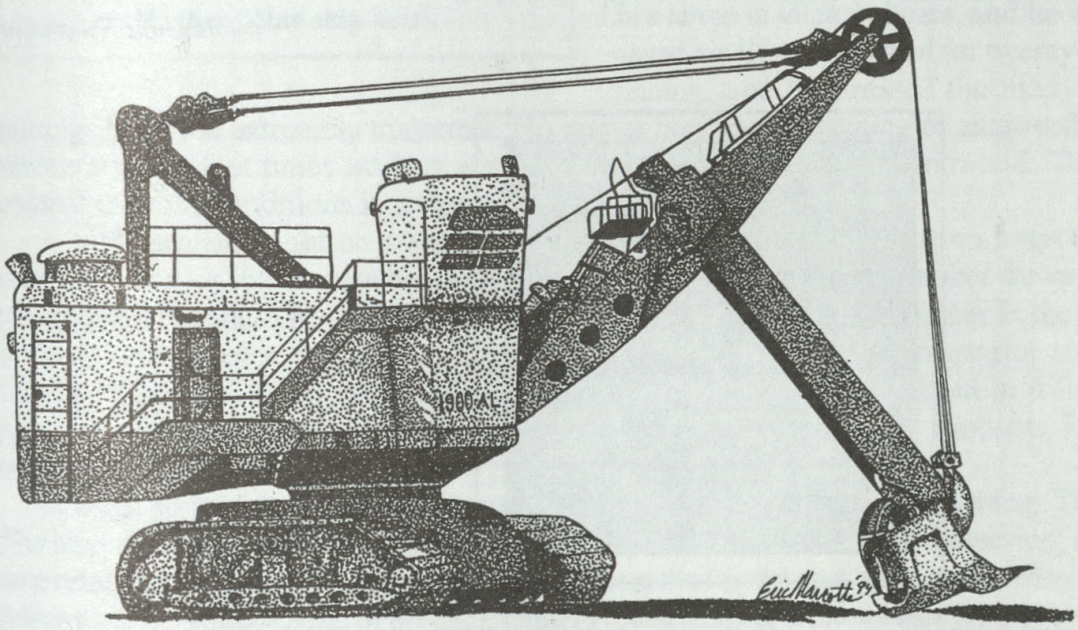
Satterley stated, "The mine was never big, the ore bodies were small, but they performed what our company needed, which was a small amount of that hard ore type of material that we could mine and use instead of buying it from Cleveland-Cliffs." He also implemented a few ideas at the Greenwood Mine which had not yet been used before in the mining industry. They were detachable bits and electric lamps.

The Greenwood Mine was closed in the early 60's. The ore that was mined there now has no value because of technical changes, and the use of pellets took over.

Mr. Satterley's job had its enjoyments and its problems. The most enjoyable part of his job he stated as, "I think what I enjoyed most about my job was to be able to try in the best way possible to cooperate with the people that you have to deal with daily, including union representatives and working people." The only problems he ever encountered was seeing that the miners who were injured were properly taken care of and tended to. Many problems made him consider changing jobs. The problems were very difficult to answer and to work with. On one incident, Mr. Satterley came home and told his wife, "I'm disgusted, and I'm gonna quit mining. I'm going into farming." She answered, "If you do, you'll be sinking a shaft in the back yard."

There have been many changes in the mines since Mr. Satterley began working. One change that has impacted the well-being of the workers is safety standards. "Safety conditions between the time I started to work in 1925, and today, are so completely changed, and improved on, that to describe any particular change is almost impossible. Everything has changed from the basic working conditions to the present day working conditions, and the necessary changes have been made to help people with their work, without having any accidents of any kind," he stated.

The job duties that Mr. Satterley had are also very different today. He again said, "There has been a complete change in the operations of mines, and in the iron ore industry. From the time I started in 1925 and retired in 1968, the conditions to start with in those days were unique and very primitive to the point now where everything is done in a very scientific way."



New and improved equipment helps keep CCI competitive in the industry.

Mr. Satterley had many opinions of the mining industry and some advice to give. One opinion he had was, "The Tilden and the Empire are gonna continue operating as long as they can mine the iron ore and sell it at a profit in competition with other iron ore companies." The iron and steel industry has changed over the years and its existence will depend on the future. This is reflected on what the steel companies are making, and industry in general. There have been

great changes in the types of steel that is used in automobiles, construction, and in each case, the type of ore that is mined for the steel industry. Mr. Satterley also had opinions on what CCI has to do to remain competitive. He believes everything must be done to keep the iron and steel industry going. To be competitive, Cliffs must be able to mine their ore at a profit that is affected by labor costs and other costs that go into the mining of the ore. Cleveland-Cliffs Iron Company will always be remembered in the future. Mr. Satterley stated, "Cleveland-Cliffs has been considered as one of the best operated mining companies that are operated in the Lake Superior district. They'll be remembered, and have been remembered as an outstanding company."

Mr. Satterley watched over the years as the role of women changed and grew in the industry. He explained, "The role of women in the iron industry has been changed completely. When I first worked with underground mines, we wouldn't even allow a woman to go underground. It has developed to the point where women can do any of the jobs that men are doing. It will continue to grow as far as the use of the women in industry." He explained that this was due to technology. Mining is no longer strictly physical labor.

Mr. Satterley is hoping that the students of today will make the most of their lives. His advice to all students is to stay in school, go on for a continued education, and to develop their education along the lines of what is happening today with the advancement in technology. "The whole world, and the whole operation of everything is depending on the development of skills and higher skills in all types of industry," he stated.

Although Mr. Satterley is retired, he still tries to keep active. I found that Mr. Satterley has a very interesting hobby. He enjoys collecting electric trains. He showed me them, and I was very impressed with the amount of work he puts into them. He tries to do some kind of activity every day that requires some kind of thinking to help keep his mental processes sharp. Mr. Satterley belongs to the American Institute of Mining Engineers where he is now a legion of honor.

I enjoyed talking with Mr. Satterley very much. I still get to visit with him every week at church also. He was a very important man in the iron mining community, and I acknowledge him for that. Mr. Satterley ended with this closing statement. "If I had to do it all over again, I don't know how I would do anything different. I was raised in a mining area, and close to a school that at the time when I went to college was mainly a mining college. It fell into place and I don't know what else I would start out with."

—Jessica Swanson

EXPERIENCES IN MINING

Mr. Eric Beinlich said, "If I gave them all to you, I think you would run out of paper" when I asked him what kind of duties he has performed for CCI over the years. He said, "I started out as a mining engineer, became an operating engineer and an underground superintendent, a superintendent, a manager and then a general manager." Mr. Beinlich started with Cleveland-Cliffs Iron Company as a mining engineer. He worked for twenty-five years in underground mining, and he stressed the many dangers of underground mining.

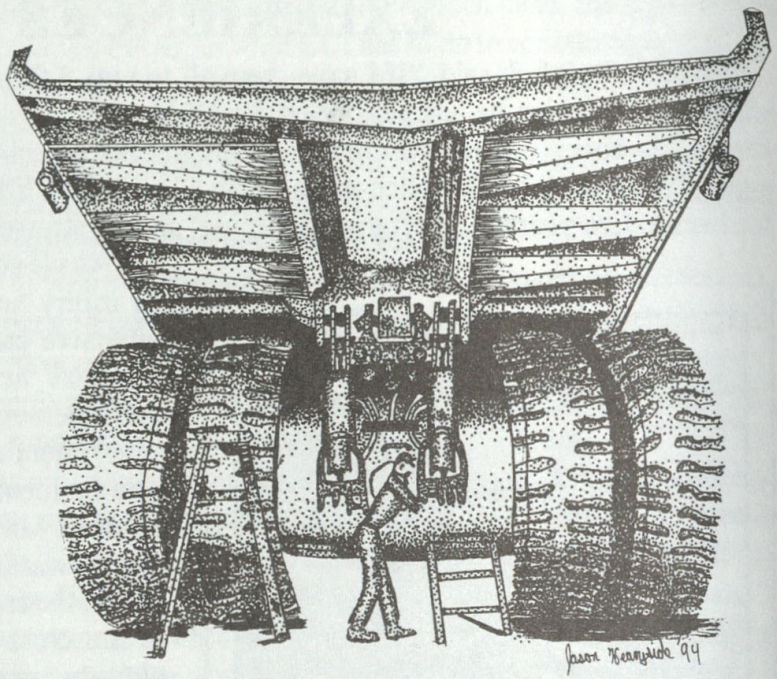
Mr. Eric Beinlich, General Superintendent, inspecting Mather Mine skip hoist.

As we continued our conversation, Mr. Beinlich told me of an injury he incurred while on the job. "I was in a coma in intensive care for weeks." These words really surprised me because he never really mined for iron ore; he had a management position. At the time, he was underground superintendent and safety was one of his greatest concerns. The incident occurred at the end of the morning at the Mather B Mine. Mr. Beinlich was coming out of the mine when he was made aware that the ore production was stopped. The main ore line to the crusher station was blocked. Mr. Beinlich proceeded to the crusher station to see what was going on. There were already ten or twelve men that were working on the problem for over an hour. The effort and manpower were necessary because this is where all the ore goes into the skip and was hoisted up the shaft. Mr. Beinlich went up in that area, and he looked up to see what the problem was. Just as he looked up, a chunk hit him on the head. It knocked his hard hat off and sent it down the crusher. A supervisor behind him grabbed him so he did not follow the same path as the hard hat. "I pulled out of it, but it was a serious head injury," he stated. Mr. Beinlich was in a coma in intensive care, and he was taken to Detroit which saved his life. He worked for twenty-five years in underground mining, and he stressed the many dangers of underground mining. Safety is extremely important. No matter how much planning or engineering was done or how hard workers worked, at times workers were still in trouble especially underground. This is because there is less control over the conditions in underground mining.

A real surprise might be a water pocket. There were wet conditions underground. There was also great pressure because shafts were being sunk as much as thirty-five hundred feet down from the surface which is two-thirds of a mile. The deeper the mining went, pressure increased. Deeper in the ground if the ore was soft, it would start to squeeze. It was called plastic ore. Mr. Beinlich told me to imagine something like peanut butter squeezing on you. It can not be kept open no matter how much steel is put in it for support. No matter how much concrete or everything else was installed, it would just slowly squeeze. The situation could not be controlled.

In open pit mining, workers are on the surface where they can see everything. They know what's going on. The iron industry switched to open pit mining because manufacturing, engineering, or operation switches were cost related. CCI had to produce the best product at the lowest cost. Open pit mining used larger equipment and fewer men to produce a ton of product. Underground mining is more labor intensive. It is also going to be more costly. The switch to open pit mining was to cut cost in an attempt to stay competitive. CCI Research Department developed a process that made it possible to pelletize low grade ores that are mined on the surface. Underground ores were sixty percent iron which was direct shipping; nothing had to be done to it. The open pit ore has to be

broken down, crushed, ground, and pelletized before being shipped. The deeper underground mining goes, the more problems and higher the cost there are. Presently, all mining in Marquette County is open pit.



Mr. Beinlich details some of the biggest changes in the iron industry. The biggest change was from directly shipping ore which was the underground product to shipping the pelletized products from the open pit mine. Now all the ore is put into pellets which is much better to handle in railroad cars and boats. To produce the ore in the old days it demanded more physical labor. The trend in open pit mining is from small open pit equipment to larger, larger, larger equipment. Trucks which used to be thirty or thirty-five tons have greatly changed the type of labor needed and now go as high as two-hundred-forty tons.

Mr. Beinlich thinks that the mining industry has a good future. Both the Empire and the Tilden Mines are competitive now. There are a lot less mines in the United States than there used to be. The Tilden and Empire both made it through the period when many mines closed. "I think there will be continuous competition by those mines to stay right up in the front in technology, and if they do that they will be successful and probably mine for another twenty to thirty years." Mr. Beinlich felt the company needs to be competitive worldwide because mining is a worldwide industry. It is a very difficult situation because labor costs are much lower in foreign countries, particularly in South America and Africa. Mr. Beinlich believes we can stay competitive but it is not going to be easy. CCI can still be successful if they continue to progress, and Mr. Beinlich thinks they will.

Mr. Beinlich said that there were a lot of enjoyable parts in the job, and he said that throughout his time he worked with all different people. It was really nice to get to know such a number of people. The best thing of all was the friends he met or worked with. Also very enjoyable was the successful completion of a project on which he spent a lot of time planning and engineering.

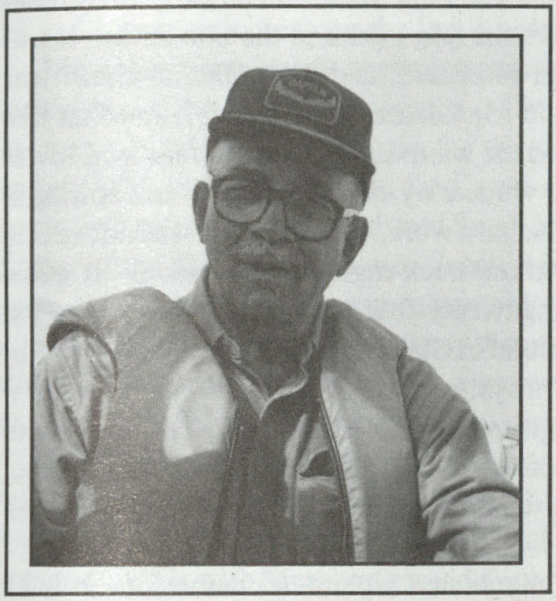
Mr. Beinlich was born in Pennsylvania in 1929. He has one brother named Arthur and one sister named Arlene. He told me that he only has one other person in his family that worked at a mine, his brother.

Mr. Beinlich's wife's name is Kathy. He has five sons: Eric, Jefferson, Brad, Curt, and Greg. In Mr. Beinlich's spare time he likes to fish, and he enjoys being with his grandchildren, camping, and attending sports events.

I think that Mr. Beinlich has a lot of important, interesting information about the mining industry. I am very happy that I had a chance to interview this man. I think that people can learn a lot from him and I also thank him for letting me learn about his career as well as his personal life.

— William Moyle

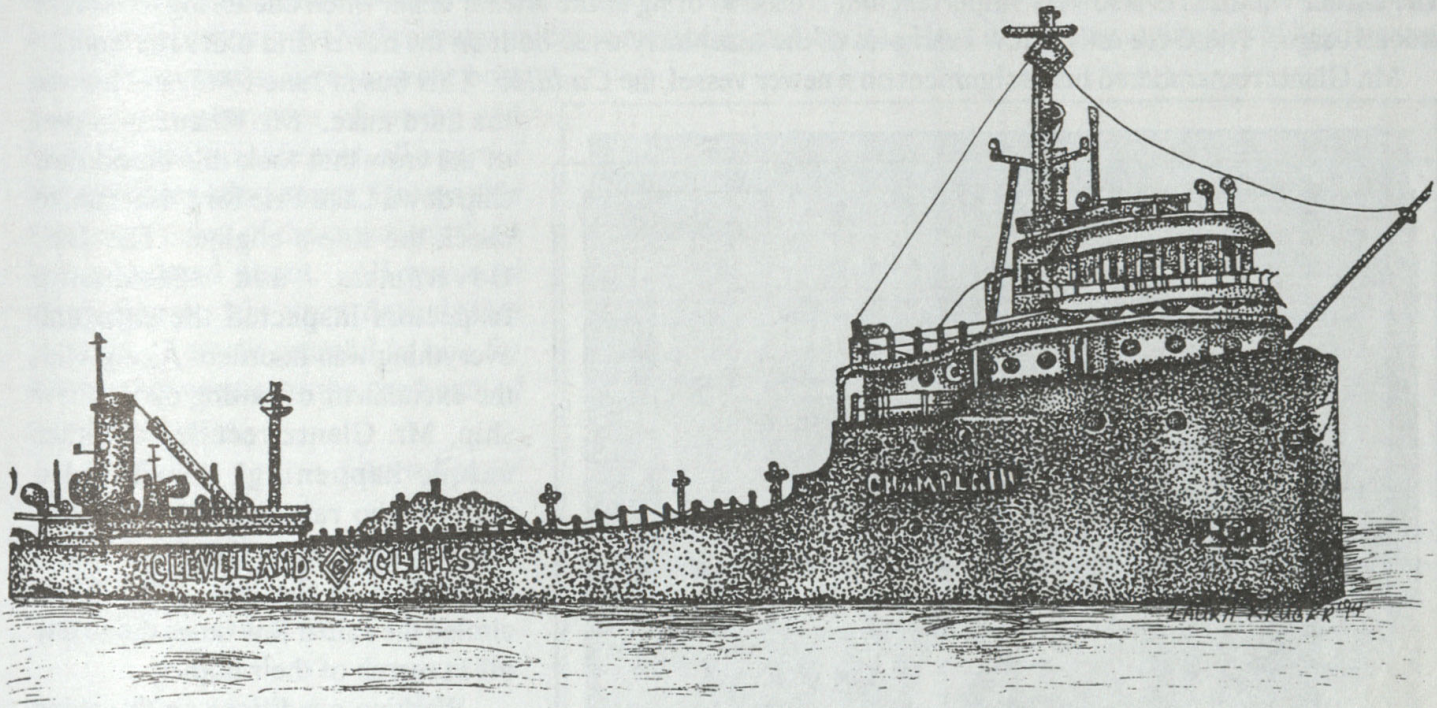
SAILING ON THE ROUGH WATERS OF THE GREAT LAKES



When I was a little girl, I always wondered what those big ships on Lake Superior were carrying and what it would be like to work on one. Talking to Mr. Allan Glantz gave me the opportunity to find out what being on the ore ships is really like.

"I graduated form high school during the Great Depression years, and sailing on the Great Lakes seemed to be the most attractive," states Mr. Allan Glantz of Marquette, Michigan. Mr. Glantz sailed on the rough waters of the Great Lakes for forty-two years.

Mr. Glantz's career on the ore boats began with hard work and training at a school for deck officers. There he achieved a Pilot First Class license. This license allowed Mr. Glantz to sail the Great Lakes and their tributaries as far as Anacosti Island. He also obtained a Third Class Operators license, which was a requirement necessary to operate a radio telephone. In Duluth, Minnesota he earned his Master's license.



Mr. Glantz sailed on many Cleveland-Cliffs Iron Company ore boats. Of the many ships he was on, the *Champlain*, the *Cadillac*, the *William G. Mather*, the *E.B. Green*, and the *Cliffs Victory* one of the faster ships on the Great Lakes in its time are probably the ships most well-known. To operate these large vessels, it takes many men, doing a variety of jobs.

Some of Mr. Glantz's duties included, loading and unloading, clerical work, operating the radio telephone, and piloting. In conjunction with these duties, Mr. Glantz was often faced with some additional challenging chores.

It was August 23, 1951, and Mr. Glantz was assigned to the *Colonel* as First Mate. On an early November morning the boat was at anchor at Waiska Bay which is located above the Soo Locks, in the Soo River. It was there because of strong storm conditions. "When the storm wind increased, and more anchor chain was released, the pressure became too great and it cracked a wildcat!" said Mr. Glantz. A wildcat is somewhat like the clutch of a car. It engages the engine's power source, and operates the windlass. In order to raise and lower the anchor, a windlass is needed. The engineers began to repair the wildcat by using scrap iron and bolting it on each side of the crack. It was in working condition, but after all the hard work, the scrap iron was not strong enough. The crew ended up using a big hand operated chain fall, and one deck engine and its cable. "It was a slow process and a tremendous job, and we all worked hard during the twenty-four hour period." Once the job was finished, they sailed on to Presque Isle to load ore and then to unload in Cleveland, Ohio. Even though Mr. Glantz's duties were sometimes more challenging, he still enjoyed his job.

"There's so many duties involved with a ship, that it's next to impossible to relate them all, but some stand out," explained Mr. Glantz. Mr. Glantz said he enjoyed pilot house duty. "That's the most pleasant job for me, but you have to be on your toes." On this duty in the pilot house he would steer the ship and order the wheels man to steer a course already predetermined.

In order to do these duties, and make many of the previously mentioned repairs, a number of kinds of machinery are used. Among the most important were the hatch winches, powered by steam engines, used to pull the hatch coverings off the openings to the cargo hold. The coverings then ride on rails and are stacked. The anchor windlass is also very important and is used to bring in the anchor chain when anchoring to load or unload cargo. These are only a few examples of the machinery used both on the newer and older ore boats.

Mr. Glantz remembered his assignment on a newer vessel, the *Cadillac*. This was in June 1943, and he was the third mate. Mr. Glantz was part of the crew that took this brand new ship down Lake Erie for a trial run, to check the ship's engine. The U.S. Government and Steamship Inspectors inspected the ship and everything was in order. Along with the excitement of sailing on the new ship, Mr. Glantz recalled a rather unique happening! A shipyard worker who raised carrier pigeons released them when they were out in the middle of the lake. The birds circled the ship a few times then flew off in search of their homes.

Top row, left: Joe Rose, then Chief Engineer and native of Marquette.
Middle row, right hand side: Allan Glantz, serving as A.B. Watchman. Loading coal in Toledo.

Working conditions on the ships were decent, but the weather conditions on the Great Lakes did not always cooperate. These conditions sometimes lead to ships going

aground and sinking. While on vacation leave Mr. Glantz recalled hearing on his radio that the storm conditions were so severe that he thought to himself, "If anything is going to happen on the Great Lakes, it's going to happen tonight!" Sure enough, there was Walter Cronkite on his television saying the *Edmund Fitzgerald* had gone down. "We all felt bad, and come to find out, I lost a personal friend on that ship. At one time long ago he and I were watchmen on the Presque Isle, and also room partners."

Mr. Glantz saw many improvements in the working conditions on board the ore boats. He told of the evolution of the wireless telegraph. The early ships had a wireless telegraph II, and they had a wireless operator called "Sparks". Later, the wireless was replaced by the radio telephones. First they had what was called A.M. radio telephones; they were ship to shore, ship to ship, and long range. Later F.M. telephones came into existence and were used for short distance communicating between the ship and some shore station. Some of the shore stations were located in Buffalo, New York, Lorain, Ohio, and Duluth, Minnesota. The early ships had magnetic compasses only, and they usually carried two for emergencies. Later they used a gyroscope for setting courses. They were a big electronic machine with a dome over it. Mr. Glantz explained that, "it was probably about 1950 or so, when we were able to get radar installed. We were able to determine the course and the direction of any ship in the water if we had to observe for safety purposes."

Working on the ore boats was not an easy job, for the rides home were long and tiring. Mr. Glantz spent a lot of time away from his family. He and his first wife Margaret, had three children who are, Patricia, a teacher, Gretchen, a music teacher here at National Mine School, and Robert who is a senior writer at a public relations firm. After his wife Margaret passed away in 1980, Mr. Glantz remarried. He is now currently married to Mrs. Geraldine Upson Glantz.

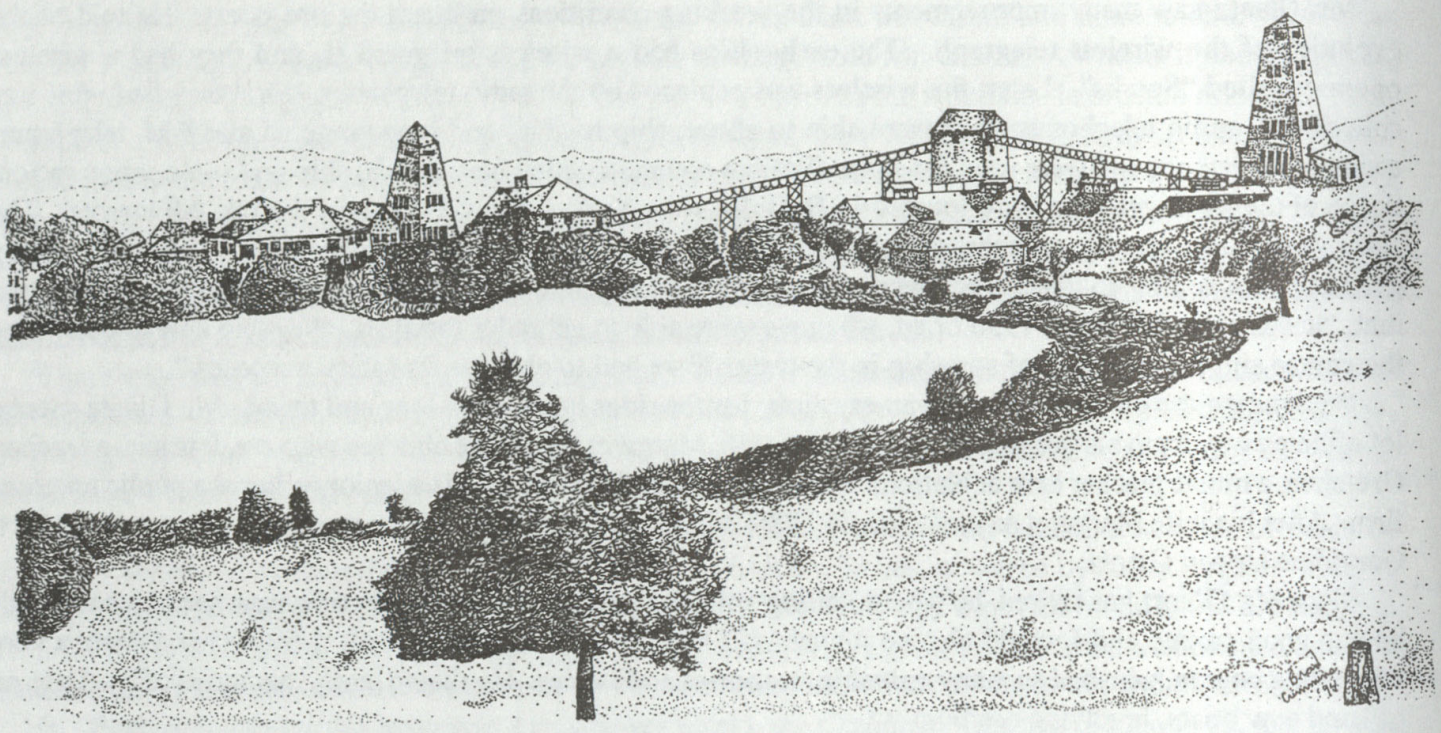
Since Mr. Glantz has retired, he's been sailing small boats, which is a recreation he now has given up. "It's been a good career, and I would choose it again if I had to!" Mr. Glantz related. I found Mr. Glantz a very interesting person, who had so many valuable memories and stories. He shared many memories of his times on old and new boats, involving ore boat technology, memories of towing and being towed to a safe port, all a part of his very interesting career. He was able to answer many of the questions that I had wondered about. All was now clear due to his very descriptive pictures. I am so grateful to him for sharing his career on the ore boats of the Great Lakes.

— Laura Kruger

Gerri and Allan Glantz

"THE MAIN JOB IS UNDERSTANDING"

When entering Cleveland-Cliffs' main office, I remember being very nervous. After finding Don Ryan's office, which is conveniently located in the corner of the building, I walked in lacking confidence in myself. At that time, I met a man who was very confident and calm. This did not surprise me because Mr. Ryan has been



An old view of the "Main Office" by Lake Bancroft

in numerous activities, events, and commercials, explaining and helping the public understand CCI and all that it does here in Marquette County.

Mr. Ryan started working at CCI sixteen and a half years ago, but he acquired most of his experience years earlier through his work in radio and television. "I worked in public relations. I have worked in government relations kind of work and so, I was really looking for a job that would make use of those experiences," stated Mr. Ryan.

CCI was the only company large enough to have a position requiring Mr. Ryan's experiences. Now, however, a person would need a degree in management, communications, or media to hold this job. "If you work in public relations, people expect you to know. So, first of all you have to know where you can go to get the answers . . .You have to try and stay current with as many things as you can that are happening, that people are most likely to ask you about." Mr. Ryan uses these skills today in his job as the Director of Public Affairs for CCI.

"The main job is to try and help people understand what we do, what Cleveland-Cliffs is doing, what the Empire and Tilden Mines are doing, so that the community and the public will be supportive."

Being the Director of Public Affairs, Mr. Ryan has a lot of duties, one is dealing with the news media. "More often it's a matter of the press calling and wanting information, because we're a big industry, big employer, big landowner. We've been here so many years. We're a regular news beat." Another part of Mr. Ryan's job is to be active in the community. Consequently, Mr. Ryan is also involved in various civic

organizations. He is on the Economic Club Board, Chamber of Commerce Board, and he is co-chairman of Operation Action U.P. When Mr. Ryan is not working with community organizations, he is at his office putting together information about the Empire and the Tilden Mines so people can have a better idea of what is happening at the mines.

Mr. Ryan's job can go from being in organizations to local government affairs. Recently, there was talk of new ordinances being passed in Marquette County, and CCI management was concerned about the effect on the mines. "Part of my job is to meet with local government officials to talk about it and see if we can work it out." When I asked Mr. Ryan his most challenging or difficult part of his job he replied, "Dealing with the news media." Mr. Ryan explained to me that sometimes he gets calls from the newspapers or TV stations, asking what's going on at this operation or where is this happening? In these situations, a person in Mr. Ryan's position, must be able to answer their questions and be able to do it as quickly as possible. Primarily, these questions pertain to the mine and its operations. He has to know where to get the answers, and that can be hard!

Another unpleasant problem besides getting the information for people's questions, is a strike. In Upper Michigan there is such a big percentage of people working in the mines that a strike affects the community sometimes as much as the workers. That is why, when I asked Mr. Ryan what the most challenging duty he had to perform he said: "The most difficult time was probably the strike of 1990." When there is a strike in the mining industry, there is a lot of media interest, and that is where Mr. Ryan comes into the picture. "If I'm the guy whose name is appearing in the paper or on the TV, you have to be credible. What you're trying to do is work with the news media to answer their questions." In doing this Mr. Ryan has to be careful. He would not want to hurt the negotiations in any way, so he has to choose words carefully.

There are also benefits to working in public relations. Mr. Ryan's working conditions are a lot different than the people who work in the mines. He has a small corner office in CCI's main building that is well equipped and offers a scenic view of glittering, ice-covered Lake Bancroft.

Most recently, Mr. Ryan and his co-worker have been working on a television advertising program. They take a couple days out of the week to make commercials. "We're not selling anything. They're really intended to help people better understand, again, what it is that we're doing." In the commercials they explain to the public what CCI is doing to preserve the environmentally sensitive areas, improvements to the operations, and explaining the mining processes.

After Mr. Ryan explained the intricacies of his job as public relations director, I asked him what he thinks the future will hold for the Tilden and the Empire Mines. "I think it's pretty clear that the iron ore industry is going to be smaller," he answered. This is not the best of news considering our community is based on iron ore production and has been for many years. Looking back on the iron ore industry in the Upper Peninsula, it is clear that many of the mines have closed because the percentage of iron ore use has declined. Iron ore competes against scrap iron used in mini mills. Iron ore is not is such great demand any more, so the iron ore companies are getting smaller. Mr. Ryan explained that if the mines continue to make high quality pellets and keep costs under control, they should have a good future, but, that is not guaranteed. "It's something we're going to have to earn in competition with other mines because there is still too much capacity in the United States to produce pellets compared to the amount that is needed," stated Mr. Ryan.

The future for the iron industry in general is that changes will have to be made. Right now, the companies, are looking into direct reduced iron and that is just one change. Another might be the re-opening of the Republic Mine, which would make the direct reduced iron. Direct reduced iron is a product that is a step beyond that of the Empire and Tilden Mines. They would use iron ore pellets and melt them into direct reduced iron, which is where the only growth of the mines would be.

When asking Mr. Ryan what he thought the mines should do to remain competitive he said: "It's really just

a matter of when any product has a larger supply than demand, you really have to work hard to be the best." That is exactly what the Tilden and Empire Mines are striving for. It is not that easy, though, when there is more raw material than use for it. The successful companies will be the ones that make the pellets that are in demand, and the ones that are the cheapest.

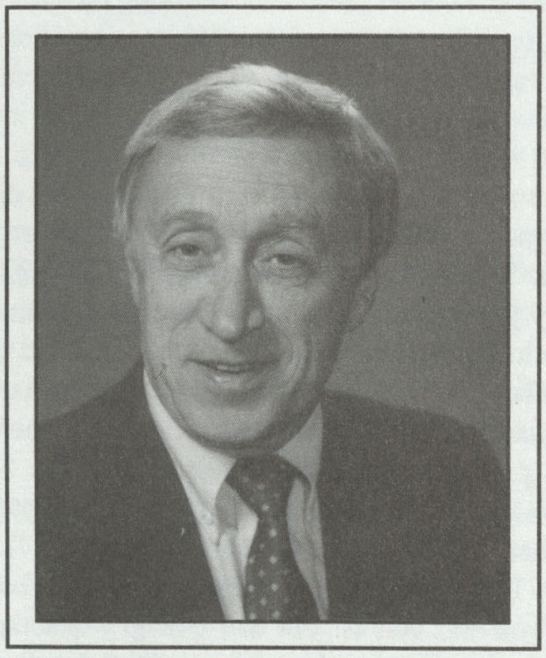
CCI has to meet their customers needs. Mr. Ryan explained to me the process of selling pellets and testing them. "It's a lot different than just sending a piece of unprocessed ore to a steel company or more recently then just saying, "Here's a pellet!" he stated. CCI has one of the most advanced pellet testing laboratories in the world located in Ishpeming to test pellets. This test equipment can tell how the pellets will react in a blast furnace, and the lab can find the formula that makes the kind of pellets the companies want. Also, it can improve the actual process of making the pellets. "There is a lot more than people realize," Mr. Ryan explained.

Adding to the success of the Empire and Tilden, Mr. Ryan explained that CCI is a sound company and has been for many years. They were the only company that was strong enough to stay open when many other companies were going bankrupt. CCI was the reason why the mines stayed open. "Cleveland-Cliffs has been, I guess you could say, the strong foundation that's kept things going."

After this interview I now can understand what it is that the Director of Public Relations does. His major function is to help the community understand the mines and what is happening in them.

I know they have succeeded in doing this, for I now know more about the industry and the important role CCI plays in the community. CCI has provided employment throughout the years and still does so today. CCI is the foundation of the community. I thank Mr. Ryan for sharing his knowledge and time with me.

— Courtney Boase



MEMORIES OF A UNION MAN

Mr. Ralph Maki was born January 29, 1915. He is the son of Emil and Lempi Maki and the brother of Wilho, John, Richard, and Ruth. Mr. Maki has been married to Marion for fifty-five years and together they have a son named Roland. They also have two grandchildren and three great-grandchildren.

Mr. Maki and his brothers, as well as his son Roland, followed in their father's footsteps by working in the iron industry. Mr. Maki was a miner for thirty years and a welder for ten years. As a miner he developed rock drifts and mined iron ore. He has worked at several mines which include the Lloyd, Mather A Mine, Maas, Mather B and the Bunker Hill Mine. Mr. Maki said "The charging and the blasting part you have to be very careful." He also said "It was a stressful job" because there are many dangerous positions for a laborer while mining underground.

Early family photo of Ralph, Marion and son Roland Maki.

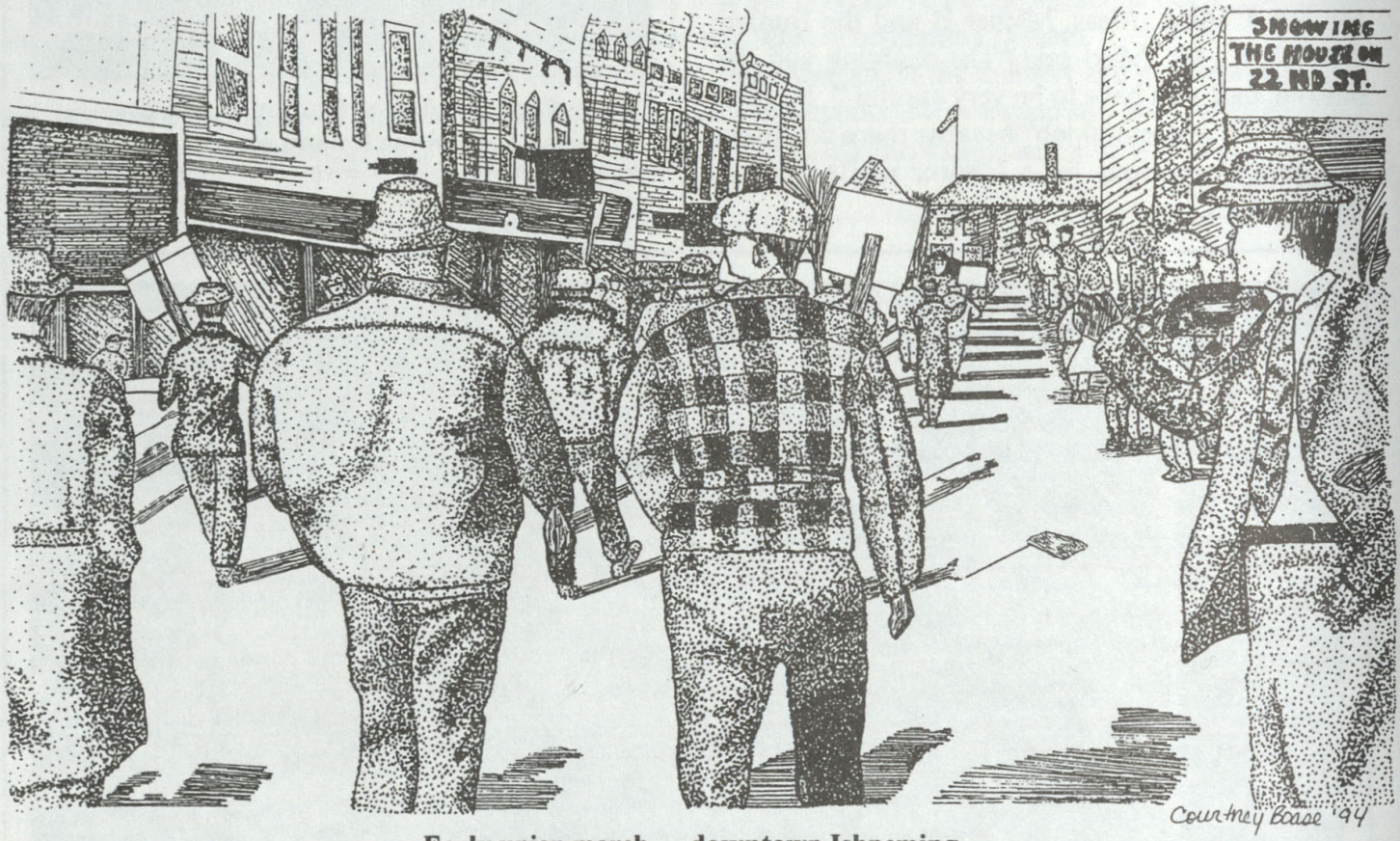
Rev. Hillila conducting memorial service at the Barnes-Hecker site.

The danger of mining is illustrated by Mr. Maki's dad, Emil, working at the Barnes and Hecker Mine. In 1926, the mine caved in unexpectedly and swiftly filled up with water and sand. It was a sad, sad day for Mr. Maki and of course the others who lost loved ones in the tragedy.

Along with the death of Mr. Maki's father, fifty-one other men lost their lives in the worst mining disaster in Michigan's history. The company recovered ten bodies out of the cave-in mine, but they felt that it was too dangerous to continue. As a result of this, the decision was made to cap it, and it became a burial spot for the forty-one miners.

Mr. Maki reflected, "It's too bad that a man's life was only worth eight-thousand four hundred dollars," referring to the settlement the family received as a result of the disaster. Four thousand two hundred dollars was spread over three hundred weeks which was provided for under the employees' liability law of this state. CCI paid the same amount they received from the state of Michigan. Mr. Maki's dad had been sick on that day, but he wanted to go to work. His wife had not wanted him to go. "But he said we need the money," stated Mr. Maki's father.

In 1927 there was an inquest and all officials were questioned about the incident, but no miners were



Early union march — downtown Ishpeming

questioned. The jury decided that the company was not at fault and the mine was not a safety hazard. Mr. Maki's opinion "is that it was a safety hazard, when you mine under an underground lake and quicksand. The guys at the inquest returned a verdict, that the deceased met their death in Barnes-Hecker Mine by a cave-in . . .cause of cave-in is unknown."

The loved ones of the men who died got a lot of help from the Red Cross, Salvation Army and also businesses. Rev. Hillila and his wife gave spiritual guidance. He had a memorial service at the caved-in mine.

He was a pastor of the Finnish Lutheran Church which is now Bethel Lutheran Church.

Mr. Maki's mother, Lempi, had, a tough road ahead of her. Because she had to raise five children with only death benefits, she felt it necessary to go to work. Lempi worked at the H.W. Gossard Company for thirty-three years. She never remarried, and she died when she was eighty-seven years old.

Mr. Maki did not learn English until he was in kindergarten. His dad had come from Finland. Mr. Maki never finished high school which made him upset. Two of his brother and sister completed high school and one brother continued on to college.

Because of the life-long impact on the family caused by his father's untimely death, Mr. Maki became involved in organizing the steelworkers union. "In 1939, with help from the International and CIO who sent an organizer to assist us, we had enough men organized to vote the union in. That was 1943 and 1944. CCI did not recognize the union until after the 1946 strike; the first contract with CCI was signed May 15, 1946," stated Mr. Maki. The first strike lasted about one-hundred and four days. The strike usually actively involves "about two-thirds of the union." It is usually about two-thirds on a picket line also, although all hourly workers are part of the strike.

At a picket line one day a "scab", one who goes to work when others are on strike, "was driving a truck that was all armored, big bumpers on 'em that were made of steel," came as fast as he could through the picket line which included the men, their wives and children. "He could've killed someone,," related Mr. Maki.

Another time during a strike two bosses came over to Mr. Maki's house and asked him to come back to work, for ten cents an hour more. He questioned "Is that signed by the union?" They admitted it was not. He said "Well the union's looking for eighteen and a half cents an hour and when we get eighteen and a half cents and hour, then I come back to work." This illustrates Mr. Maki's support and belief in the union.

The steelworkers union is so important because it led to a "better standard of living, better wages, health insurance, vacation, paid holidays, and pensions," said Mr. Maki. "That's all in a nutshell right there." Mr. Maki is very emphatic about his involvement in the union. Even today he belongs to the Marquette County Retired Steelworkers, which he was instrumental in founding. There are eighty members; they meet once a month and pay dues. Any extra money they have, they give to the Salvation Army or some other worthy cause. This group does not have any voting rights but stay updated on what is going on with the active steelworkers' union. In the last contract the current workers received a bonus of one thousand dollars, and they turned it over to the retired men in two payments, five hundred dollars in 1994 and five hundred dollars will be given in 1997.

Another concern of the union is safety. Safety has a very important role in mining. Safety should come first. Mr. Maki had a partner who was killed by getting on what they call an ore train for his first time. "He shouldn't have got on," said Mr. Maki. Cleveland-Cliffs Iron Company has improved safety for miners. Mr. Maki thinks "They have really, really changed the safety standards. Once the union is organized, they go after a lot of safety demands."

"My job was once all underground work and now is all open pit," explained Mr. Maki. "On the job training always started with breaking in the young miners," he said with a chuckle. The company very seldom put two experienced miners together. Veteran workers enjoyed "picking on" the guys who were training.

In underground mining there was a threat of fires, so Mr. Maki was trained by a company for a fire prevention class. This class taught workers how to put out a fire and learn things about fires in general.

After all of these events had happened to Mr. Maki, he went through another time that was very rough for him. He got out of the mine and joined the Merchant Marines. "During World War II, I made four trips across the Atlantic Ocean which is very treacherous when you have one-hundred to two-hundred ships in a convoy. One of our ships was full of bombs, and if we got hit there that would be..." He returned to mining just before

the big strike of 1946.

In 1975 Mr. Maki had open-heart surgery, and he had to leave his job at the mine. He had a difficult time recovering his health. He spent thirty-five days in the hospital in Marshfield, Wisconsin, twenty days in intensive care. After thirteen more years, he had to be operated on for a second time. He was then sent to the Mayo Clinic because the operation was high risk.

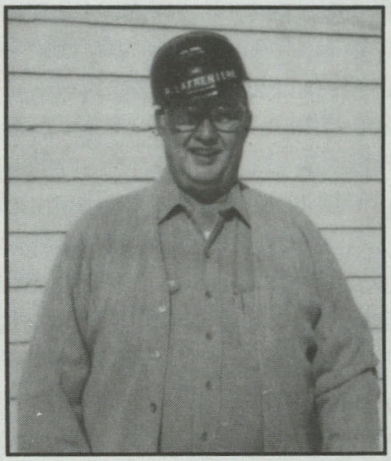
"I've been retired eighteen and a half years now. I feel like right now I can do anything. I bowl twice a week, and I exercise daily. I'm on a low fat diet," stated Mr. Maki reflecting on the improvement in his health.

Mr. Maki has lived a happy and fulfilling life. He has a twelve year old great-grandson who he spends a lot of time with. I have enjoyed spending time with Mr. Maki talking about his life. I hope he has many more wonderful memories that he can share with the people that love him. Once again thank you very much for opening your life to me.

— Kristin Ott

Recent photo of
Ralph and Marion Maki

FROM WORKING IN THE MINES, TO INSPECTING THEM



Rudolph LaFreniere at home

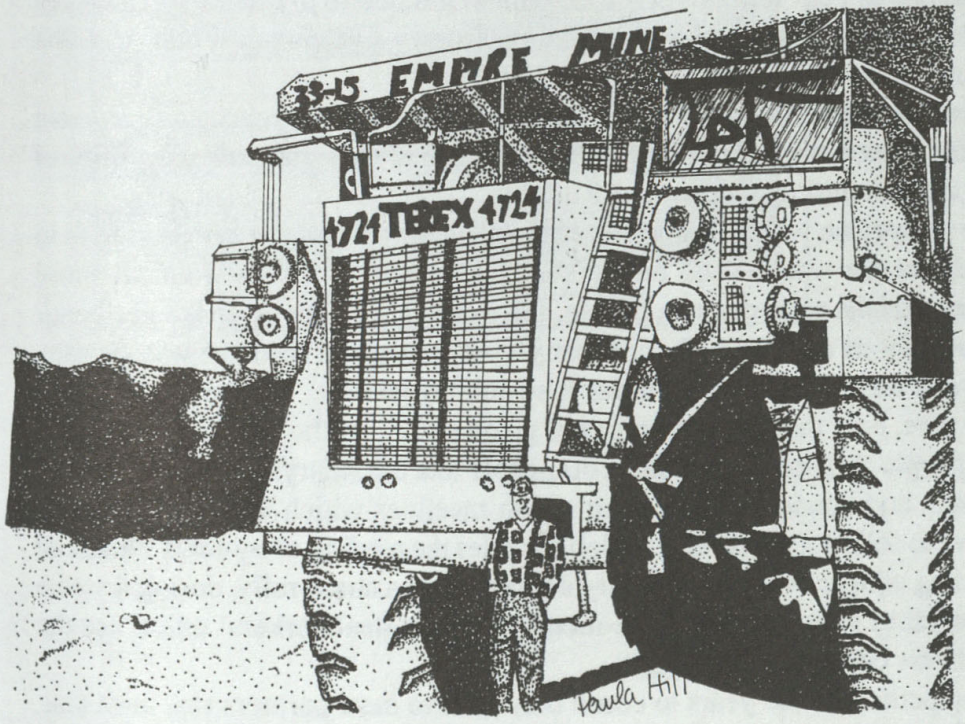
"Well at that time that was the best job around in this area." Those were the words of Rudolph LaFreniere who had many different jobs as the technology of the mine industry improved.

Rudolph, an only child, was born in Ishpeming, Michigan on August 9, 1931. His father, Clarence, worked for Cleveland-Cliffs Iron Company for forty years. His mother, Limpi, worked at the H.W. Gossard Company. Rudolph married Patricia, and they had three children: Peter, Karen, and Bradley.

At the age of eighteen and a half, Rudolph began working in the iron industry. Rudolph chose this job because there were few jobs available in the area, and it was the best paying job.

When Rudolph first started out in the mining industry, he worked underground at the Mather A Mine. He had three jobs: a motorman, a scraperman, and then a timber hoister. As a motorman, he would fill up five to eight ore cars with ore and bring them to the shaft. The ore would be dumped into skips and then the hoisting engineer on the surface would hoist the skips up. "So we were moving the ore from the mining contracts to the shaft," explained Rudolph.

Over the years Rudolph went to the Empire Mine, where he worked as an automotive mechanic and as a conveyor repairman. "Well, the most important job was the conveyor repairman," stated Rudolph. As a conveyor repairman he had to repair belts, rollers, head pulleys, and tail pulleys. It was also very important to keep the belt on the head or tail pulleys, for if the belt came off the pulleys production halted. Rudolph's biggest responsibility was to keep the conveyor belts and the ore moving. "You had to keep the belts and ore moving or else the plant would go down," stated Rudolph.



Rudolph's job required a certain amount of training. In order to advance from a starting position to intermediate and then on to a repairman took 1,040 hours. For instance, a starter would have to work 1,040 hours which is six months at forty hours a week.

There were dangers that came with this job. The possibility of losing a finger, hand, or even an arm was present because there are pinch points on the conveyors and

rollers had to keep it moving, and that is where a worker could lose a finger.

Rudolph was not involved in any accidents in his years of mining, but he had a friend that was. He was a conveyor repairman just like Rudolph, and at that time they worked at the Humboldt Mine. A chunk of rock was stuck in the head pulley on one of the conveyors, and his friend tried to get it out with a hook. The hook got caught and his arm went over the head pulley and it was cut right off.

In Rudolph's opinion, the working conditions are good at the Empire Mine. With good ventilation and guards protecting the equipment and the area around the equipment, it lessens the chances that workers can get hurt. The safety committee takes good care of keeping the Empire Mine a safe place to work.

Safety standards in the mining business are constantly changing as Rudolph told me in the interview. Like right now, the federal government requires safety meetings once a month and annual refresher meetings. Also the company has a policy that they have all the workers come in for a meeting that is held once a month to discuss safety factors. "The standards are always being improved, like dust, and air, chemicals and other things like that," explained Rudolph.

During the years that Rudolph has been mining, he has also been involved in some work that helped out the community. As a union officer and representative, Rudolph and others collected money for hospitals and other special funds. Rudolph also worked for the United Way four or five times during his career. "We had to get donations and that is quite a chore talking to them and trying to get money from them to donate," explained Rudolph.

While Rudolph was working in the mine, he never thought of changing his job. When he went from working underground to working on the surface at the Empire Mine as a conveyor repairman, he enjoyed that new job very much.

As a member of the United Steelworkers Union, Rudolph was a member of the local union number 4950, and he was a union officer for about thirty years. While Rudolph was in the steelworkers union he had been involved in a few strikes. During the strikes the workers were looking for more money and to upgrade their benefits. In 1977 the workers were looking for the incentives clause. "We got the incentives, and it made a difference in our pay, which was a hard one to get," replied Rudolph. The wages before the strike were eleven dollars an hour and when the workers got the incentives clause it went up seventy-five cents. When Rudolph left in 1992, it was $1.25 to $1.40 that they made on the incentive clause.

How a strike actually begins is when the company and the union negotiators are unable to reach an agreement when the contract has expired. That is where everything really begins. "You always start off with a lot of issues, but only end up with a few of them in the end," remarked Rudolph.

Rudolph was also involved in the picket line when he was on strike. The purpose of the picket line is to show that there is no agreement and that the workers are on strike. The people on strike want all those members to honor the picket line because if the mine cannot operate, the workers who are on strike get better bargaining power. The picket line is usually set up outside the company's property at the entrance way or gate. Hourly employees run the picket line and want everybody to honor it so nobody goes in. The people who are salary workers stay working all of the time, only the hourly employees go on strike. At the Empire Mine there are about 1000 people working, 800 people that are hourly, and 200 people that are salary.

The union president is the chairman and conducts the regular union meetings which take place once a month. At the meetings the people have to follow a procedure, which includes the reading of by-laws, financial statements and committee reports dealing with grievance and safety concerns. At a union rally, during a strike the members show the negotiating team they have backing. The members of the steelworkers' union are the ones that do the business and the members control the meeting.

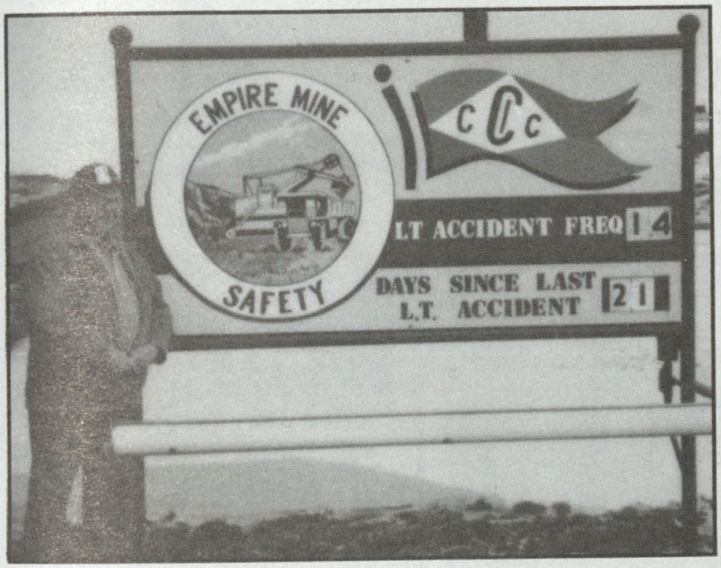
For Cleveland-Cliffs to remain competitive in the years to come they have to have partners that are using

steel. CCI, right now, is an independent company. "They don't have their own foundries like a lot of steel companies do, and so they have to sell on open market. If they can get companies that come in and are partners in these mines that have foundries, well then I think they can stay real competitive if they can get everything done on it," explained Rudolph.

The major reason for the success for CCI is that they own the land. There are only so many places that have iron ore and CCI was smart enough years ago to get engineers and geologists that knew where the iron ore was. Consequently, CCI bought the land and now own the mineral rights.

A reason why people will remember CCI is that if it was not for CCI and the iron ore, there would not be much around the Ishpeming, Negaunee, Republic, National Mine areas. "So everyone has been making a fair living and it hasn't been a good living, but it is a very comfortable one," says Rudolph. People that are planning to go and work for CCI need to get all the information they can get, like information on welding and repair work. The mine is looking for the people who finished twelve grades and graduated from high school. Now, most of the work is done by computers, so it would be wise to get some knowledge in that kind of field.

I asked Rudolph about what kind of impressions stand out in his mind concerning the association with Cleveland-Cliffs and he responded, "When I look back over the years the impressions that would stand out mostly is that I saw a great change in the mining industry and making it a lot safer working place."



Rudolph LaFreniere, Empire Mine

Rudolph is the Marquette County Mine Inspector. It takes between six to eight hours a day, forty hours a week to do his job. Rudolph tries to get out and inspect the mine's property and the fences to see if they're secure. He goes and inspects the Empire Mine, the Tilden Mine, and the General Shops. There is an inspection at both mines twice a year. It only takes Rudolph six days to inspect the Empire Mine, five to six days to inspect the Tilden Mine, and Rudolph can usually get the general shops and the Republic Mine in two to three days. If Rudolph has any spare time he likes to play cribbage and go bowling.

I am glad that Rudolph was willing to take his time with me and share all the stories and memories that he did. Because of him I have a greater understanding on the history of mining, unions, and how important safety is.

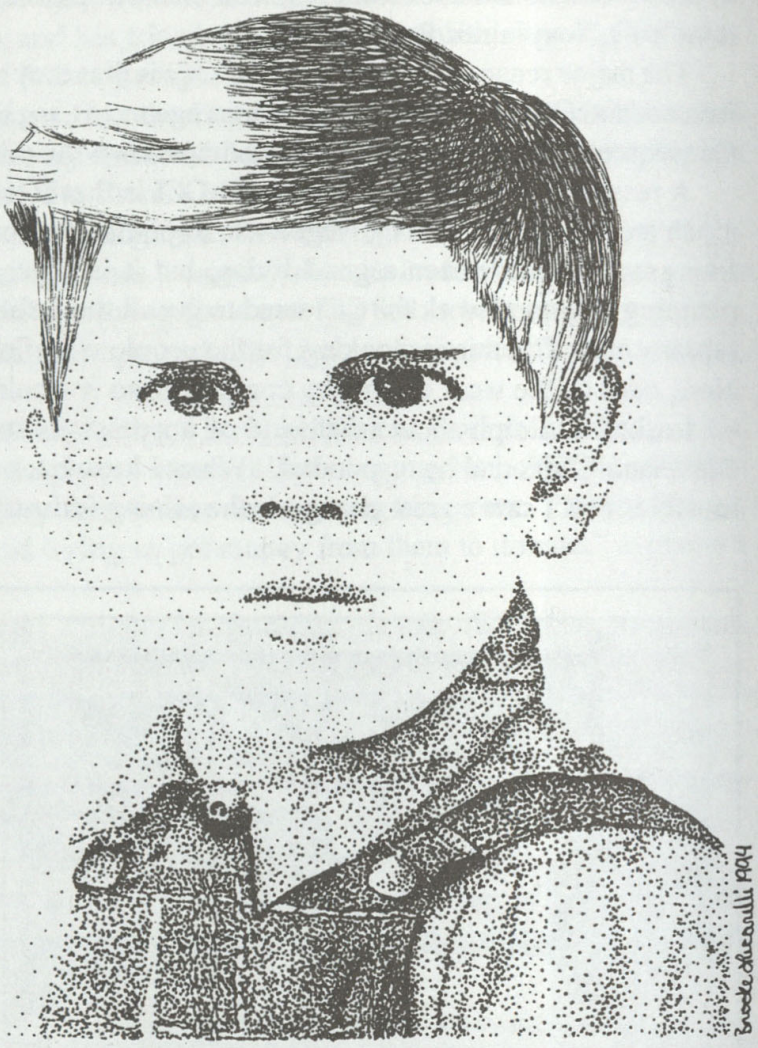
— Andy G. Hill

IRON WORKER

"I've worked through most of the mines on the mining range here in Michigan, and I've worked on construction and helped build most all . . . of the open pit mines in Michigan," said Roger Marcotte while telling me about his connection with the mining industry, even though he was not a miner himself.

Roger Marcotte was born in 1931. He was born in McFarland, Michigan, and his family included seven brothers and seven sisters.

The most interesting thing about him is he was always working on a different project. He has been an iron worker for forty-two years. During those years he was assigned many dangerous projects. "I think the precipitator blow-up job was one of the most dangerous and difficult jobs. When it blew up, iron was torn apart. Some of the roof trusses were blown apart, the columns were bent. Iron was hanging all over, and we had to remove it and be underneath it at the time we were removing it. So we had to support it from the roof trusses by cables and then remove it from the bottom," explained Roger. Roger was in charge of the whole project. He had to make sure that it was completed on time, and that everyone worked in a safe manor. Roger was recognized and received an award for his astonishing efforts on the precipitator blow-up, for how well he worked on getting the job done on time and not having any injuries while repairing it.



Mr. Marcottte as a young child

Roger and his first wife, Marlene, c. 1952. Their children are Viki, Janet and Jill. Marlene died April 19, 1985.

He also witnessed an accident where a young man was pulled into a large mortar mixer and died. Roger had the unfortunate job of cutting the mixer open to remove the body. He also rescued a man when he was landing iron on the roof. The man was working too close to it, and the bundle of iron rolled on top of his leg and crushed it. They saved his leg by realigning it at the hospital. Not only did he witness an accident and help save a man, but he was in

an accident himself. He was working with some machinery when he got three fingers cut off.

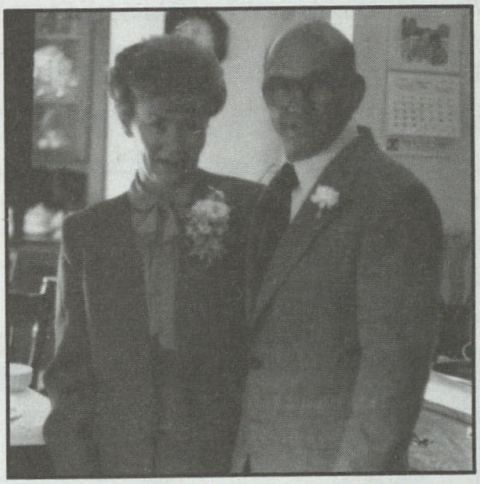
When Roger first started as an iron worker, they had no special training. He learned how to do his job by his surroundings and watching other older men do their jobs. Previously men were allowed to ride on headache balls, large hooks connected to a ball and cable, which would carry them to the ground. Now workers are not permitted to do that; they must be tied off in a skip box and then carried to the ground. They never had hard hats or safety glasses either. Besides the safety equipment the workers did have to wear, they also had to be on the look out at all times. Iron connected to big cranes would swing above their heads, so the men working under it would have to be very alert. Many times people were careless and tools fell out of their hands, landing on the men below them which could cause serious injuries.

The special equipment that he used on some of his jobs were welding machines and heavy cranes to set iron. One special project Roger worked on was installing a crusher room at the Cliff Shaft Mine. He also helped build the Republic Mine, Tilden Mine and Empire Mine. The years that Roger was not working for the mines he still did iron work. He took part in the building of the Soo Locks and the Houghton Bridge, also a nuclear plant in Two Creeks, Wisconsin.

When I asked Roger how the future looked for the iron and steel industry, he replied saying "I'd have to say that . . . looks good as long as they keep their cost down and keep competitive." From his point of view it sounds like the iron and steel industry have a good future.

From what Roger told me about his life, it sounds as though it was a very exciting and fulfilling time. He told me if he had a chance to do it all over again he would not change a thing.

— Brooke Lucarelli



Roger and his current wife, Audrey, who also was employed by CCI.

THE FIRST WOMAN MINER

Linda LaFond, June 20, 1976, Humboldt Mine

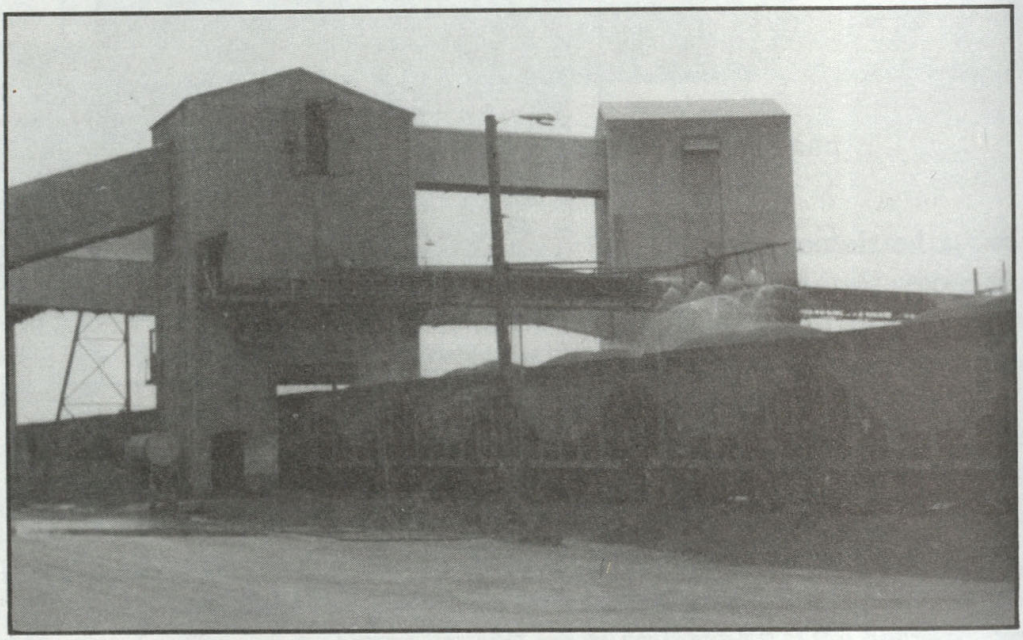
" I think being employed in what they call a man's job is probably the only place where a woman can work and get the same benefits and the same pay that a man does," stated Mrs. Linda LaFond, the first woman to be hired on the Marquette Iron Range in the early 1970's. She originally applied for office work with CCI, but when she heard they were going to hire women in the mining industry, she changed her application. She really did not know anything about what the work would involve, but she felt confident that she could be successful at any job they gave her.

Mrs. LaFond, born in Manistique, Michigan in 1950, is currently married to Mr. Leo LaFond. They have one child, Jason LaFond. She worked in the iron industry for three and a half years at the Humboldt Mine. She quit because she wanted to start a family.

As the first woman to work on the Marquette Iron Range, Mrs. LaFond worked in the pellet plant and was trained on mostly everything such as the balling mill, the kilns, and the mill itself. But her main duty was to work in the mill where she would charge the mills that rotated which had large steel balls in them that crushed the ore. To charge them she would put the iron balls into them. Another of her main duties was to direct filtering of the water out of the ore after it was crushed.

Working in the mill was not pleasant, because "during the winter in sub zero temperatures the train cars containing hot pellets would freeze up, requiring the person working in the mill to take a front end loader and push the cars with a bucket along one of the train cars or get behind the whole stream of cars and push to get the cars to go!," explained Mrs. LaFond.

When working in the mill, the biggest responsibility was to make sure that the mills were charged when they needed to be. "If you didn't pay attention to that and not get them recharged they would stop and then all the ore and what not inside would come out and it



Humboldt Mine 1975

would really make a big mess," Mrs. LaFond laughingly explained.

Working in the mill was dangerous for Mrs. LaFond. She told me that she considered pushing the train cars as dangerous. Because she could not always push them from the back, she would have to hook on with a bucket down the line between a couple of cars. If she could not get the bucket unhooked from where she was pushing, and the trains started, she would have been dragged down the track.

When telling me about the train cars, Mrs. LaFond also recalled an accident that happened to a gentlemen she worked with. When she first started working, he showed her where the ore would come in on belts from the cars. He explained to her that sometimes the belts would shift and the ore would go onto the floor. When that happened, the ore would have to be shoveled up. "He said to make sure that I never got my hands around the belts because my hand could get caught in the belt . . . and after I quit, I heard that had happened to him and it had pulled his arm off," said Mrs. LaFond.

Although there have been accidents in the mine, Mrs. LaFond considered the working conditions good as a miner. She said there were times when they would shut down everything, so they could repair something. But an area that she did not look forward to was cleaning off the belts that were full of ice during the winter.

I asked Mrs. LaFond if she had ever been involved in a strike. She told me the only strike she had been involved in was in 1974, the year she married Leo. The strike took place while Mr. and Mrs. LaFond were on their honeymoon. Mrs. LaFond told me that they returned early from their honeymoon because they thought the strike would be over, but as it turned out they could have stayed on their honeymoon for another week!

Since Mrs. LaFond was the first woman to work on the Marquette Iron Range. I wondered how she felt about that distinction. She replied by saying, "I really didn't give it much thought as far as being the first. It was just something that happened because I was hired first as far as seniority went. But I pretty much just focused on one thing, that I had a really good job with really good pay."

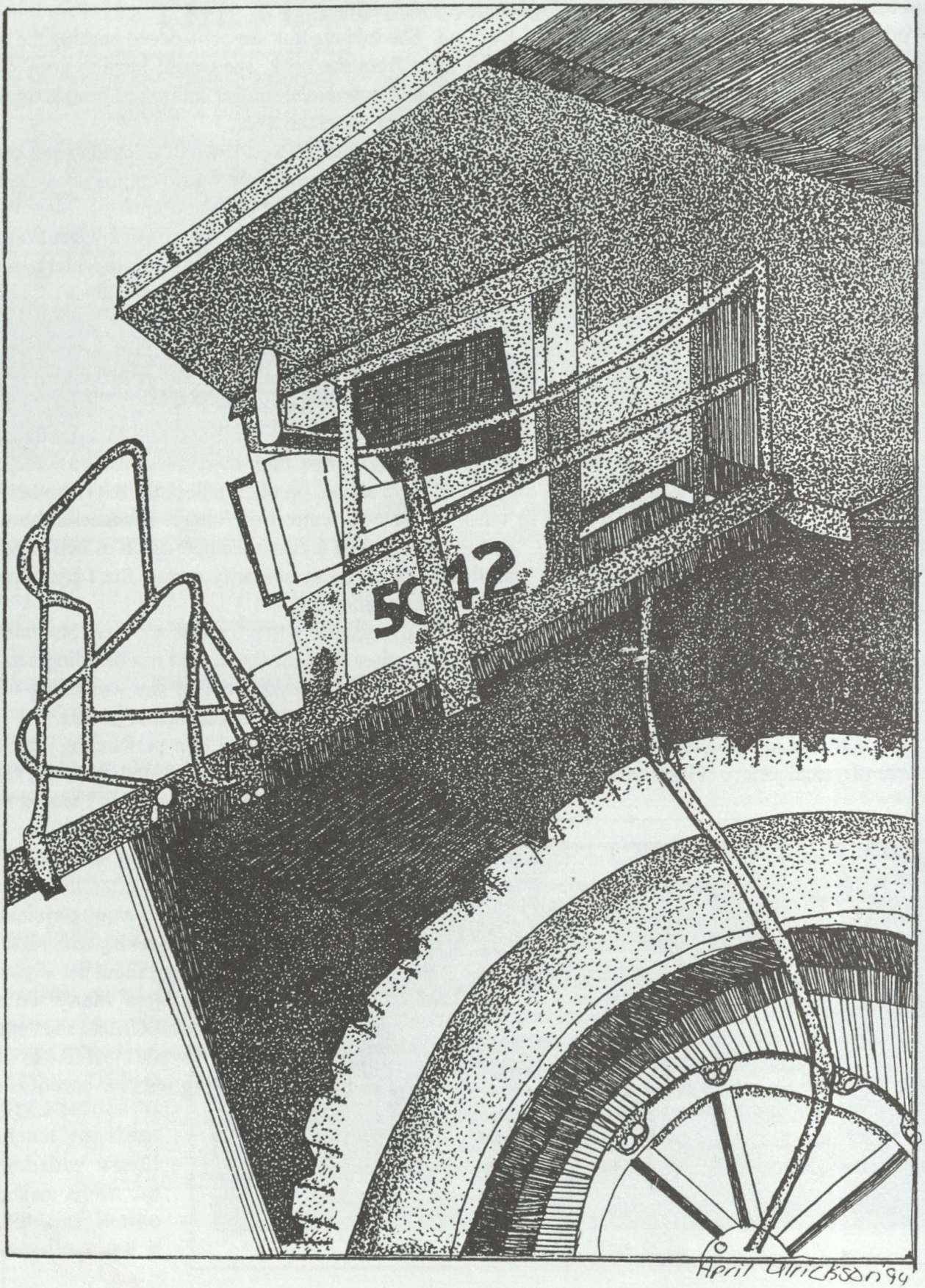
I also wondered if people treated or acted differently towards her when she was a miner. She told me that some of her male co-workers would not talk to her because they thought she should not be doing a man's job. She also told me that some of the people in the community were surprised that she was doing what they considered a man's job. But after awhile her co-workers got used to it and so did other people.

Over all Mrs. LaFond enjoyed her job, "I like working with the people. I like performing jobs, because they were physical jobs . . . Humboldt was a nice environment to work in." Mrs. LaFond also said, "If I could do it all over again I would make the same career choice, because its not in the traditional women's job its something that is totally different, and for myself I do enjoy physical work."

I enjoyed taking with Mrs. LaFond and learning about her experience as a miner. Now many women are employed at CCI, and she "opened the doors". I would just like to thank her for sharing with me part of her life.

— Lisa Maki

Linda and Leo LaFond at the mine 1975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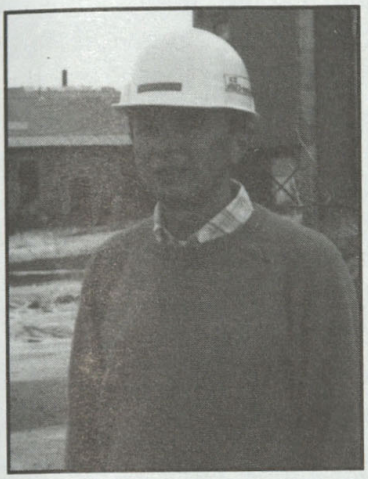
A CHALLENGING AND DIFFICULT JOB



May 1993, John Meier at Cliffs Shaft Mine

John Meier chose to work with Cleveland-Cliffs Iron Company because while he was a student at Michigan Technological University, he was doing a project on the tailings basin. He visited the Republic Mine and said, "It looked like a pretty exciting and interesting place to work." When he was about to graduate, he contacted CCI, and he started to work soon after.

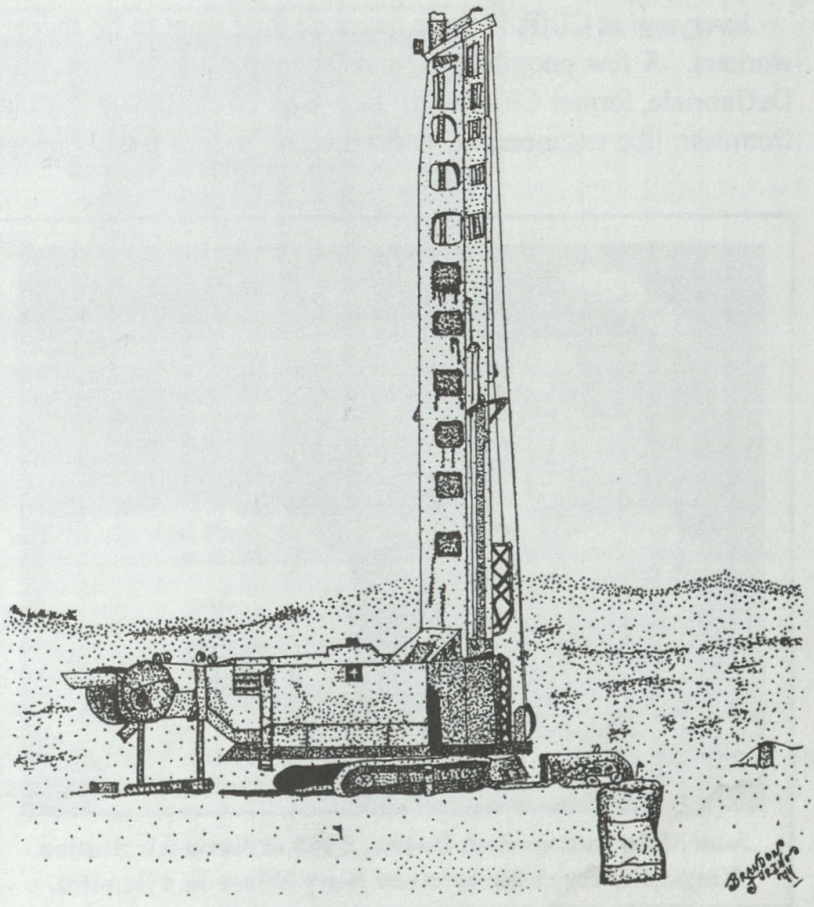
Mr. Meier started to work for CCI in June 1970. He said, "My first big project was the planning, designing, and construction of the Greenwood Reservoir." He was the engineer on the project, which was the most challenging duty that he had ever performed. The Greenwood Reservoir was six and a half miles long. It covered fourteen hundred acres. He was new to the real world of work; he was just out of college. There were many surprises during the construction, for like on any big project, decisions needed to be made in the field in order to keep the job going. Following completion of the Greenwood Reservoir, he was mostly involved with building dams, roads, pipelines, and water wells.

Most of John Meier's work with CCI was on special projects. He said, "Being part of construction at Tilden Mine was real special to everybody because it was a new opportunity." It was a challenging opportunity for Mr. Meier to be involved with the construction of such a major project. Also, John Meier supervised the construction of the Tilden tailings basin or the Gribben Basin.

People question the boredom of such jobs, but John Meier said, "There are humorous situations every day." There was a unique situation that happened in 1976. It happened while Mr. Meier was supervising the construction of the Gribben tailing basin dikes. He was watching scrapers for large earth-moving equipment, dig out sand and gravel for the dikes. The scrapers got down to about ten feet underground, when they started to cut off trees and found a log sticking up out of the sand. They investigated and found those trees grew there before the last glacier, about 10,000 years ago! The trees were Black Spruce or Tamarack, he said, "That was pretty interesting."

In 1983, John Meier left Cleveland-Cliffs to attend Thomas M. Cooley Law School in Lansing. At that time he did not know if he would return. Fortunately, it worked out and he was able to.

When he returned to CCI after completing law school in 1987, he had a different job. He



was the Director of Environmental Affairs. In this position, he has to keep up-to-date on all the environmental laws. His job is difficult because he has to make sure that all the facilities and all the people of the facilities are in compliance with both federal and state environmental laws. He has to make sure that the company has the right permits, and do what they are supposed to do. He explained it was like good housekeeping environmentally.

John Meier says that there are penalties for non-compliance with environmental laws just like other laws. He explained, "Like if you go too fast on the highway, you get a ticket. It is the same way with environmental laws." If companies do not have a needed permit, they can get a ticket, pay a fine and maybe spend some time in jail. CCI personnel have never spent any time in jail. Mr. Meier said, "We're doing a pretty good job, so, we don't get into trouble." John Meier thinks that the most difficult part of the job is keeping up with all the changes in the environmental laws to avoid these situations of non-compliance.

Mr. Meier's working conditions are pretty comfortable. He works in an office most of the time and occasionally gets to the plants or pits, "And that is a real treat for me," he stated. Mr. Meier prefers working outside instead of in the office.

As Environmental Director John Meier has to make sure that CCI's water discharge in streams is clean and in compliance with the law. Standards are also needed with air quality, companies must have permits and emissions must fall within stated guidelines. He said, "We have waste materials just like everyone else." Waste materials are a challenge. As an example, mines have paint and need to find a special landfill to dump them just like you or me.

Despite the challenge and difficult work, there are three main reasons why John Meier has stayed with CCI. The first reason is because of the excitement, and the next is the diversity in jobs. The last major reason is all the good people.

Everyone at Cliffs is there because they want to be there. John Meier found out that the people are hard workers. A few people stand out in John Meier's mind as, "special people." One of those people is Bob DeGabriele, former Chief Engineer. Bob is retired and lives in Ishpeming Township. John Meier learned a lot from him like engineering, construction, working with people, and a lot more about life. Bob was a very demanding person, but he was very fair. Another person who stands out to a lot of people not just Mr. Meier, was an "old timer." He worked as an engineer and was like a grandfather to the young engineer. Robbie Spencer is his name, and he was in his late sixties when he retired. He was the oldest person that John Meier can remember working there. Robbie wore one of those old-time mining hats when nobody wore those hats anymore. Whenever Robbie was late, he would tell everyone he had been checking the pumps all morning which was sort of a joke with Robbie. Helen Wallberg, secretary for Project Engineering Department and Sandy Thomas, Human Resources Department were people that would go out of their way to help John Meier and other people. John Meier said, "It is the

John Meier and mother, Donna, 1963 at Naval Air Station Kingsville, Texas. He received Navy Wings as a jet pilot.

people that actually do the work. They are the big success of the leaders."

Cliffs has done a lot of things over its total existence. It started in the late 1800's, and one of the first things they did was buy a lot of land, thousands and thousands of acres throughout the Upper Peninsula, much of that in Marquette County. Perhaps other companies did not do that and that is why many have failed. When the Tilden Mine was being planned in the 1960's and 70's, the ore body belonged to Cliffs which was a major factor in the its construction.

John Meier was born in Flint, Michigan, on June 14, 1940. His parents were Donna and Harold Meier. His mother was a homemaker who raised four children. His father was a Personnel Director for a manufacturing company in Owosso, Michigan. He grew up with his brother Michael, and two sisters, Mary and Beth.

Mr. Meier has five children. Three are grown up; their names are John, Kaye, and Amy. He also has two younger children Jennie and Paul.

While interviewing John Meier, I learned many things about him and his way of life. I will remember how he emphasized to stay in school and to work hard. I hope that everybody looks at living in Upper Michigan as he did. He remembers Upper Michigan for the good people, the outdoors, not much traffic, and the great seasons. He said, " In March you get ready for spring. The rest of the year is so nice." I hope National Mine continues this tradition of oral interviews because it gives the chance for young people, like me, to learn about life from interesting and intelligent people, like John Meier.

— Jessica Nault

John, Jennie, wife Sheila and Paul Meier

TRULY A HARD WORKER

"At the time I thought it would by a pretty good job, a good paying job, with good benefits," said Mr. William Heavyside recalling his decision to work for Cleveland-Cliffs Iron Company.

Mr. Heavyside was born February 2, 1954. He has three older sisters in his family. When he was a teen, he spent a few summers in Chicago with his older sister and her husband.

Mr. Heavyside went to Ishpeming High School for four years. After he graduated, he went to Northern Michigan University for a year and a half. While he was there, he had a part-time job at Acock's Medical Facility where he met Bernadette Frustaglio his future wife. Eight months before he got married, he started working for CCI. His first job was at the Republic Mine as a laborer, working as a truck driver. He did that for about six months until he got into the shovel mechanics' training program which took over three years to complete. At the time Mr. Heavyside believed that he would have a lifetime job in the iron industry. However, he grew skeptical around the late 1970's and early 80's when he spent six months on the job and six months on layoff for four years. At this time he was working back and forth between the Tilden, Empire and the Republic Mines. He worked twelve years as a shovel mechanic standard. When working on the shovel crew, he had to work in below zero weather. He sometimes thought it was pretty abnormal to be pounding a pin in with sixteen pound sledge hammers, lifting one hundred pound shovel teeth and whatever also they did in those kinds of conditions. Next, he became a plant repairman for a change of pace. He worked as a plant repairman for a couple of years where he welded and lined motors and couplings. While he was a plant repairman, he took classes on electronics for about a year until he took an electrician test which he passed. He then successfully applied for an electrical posting at the mine which is his current job. He has been in the electrical department for about four years.

He is responsible for all the power distribution at the mine, all the lighting and makes sure the proper motor starts or stops and the proper sequence of events happens. He also has to make sure the control wiring is correct for a motor that does not run properly or at all. When asked about the biggest responsibilities of his job, he answered "Mainly just to keep things running."

Mr. Heavyside works in anything from nice air-conditioned control rooms to working next to the kiln where it is well over one hundred degrees. Sometimes he is working out in the elements.

Working at various parts of the mine, he notices the safety standards involved at all the different jobs. He states, "The priority is on safety now. Back when I first started twenty years ago it was more on production." Years ago as long as it got done, they did not care how the job was done. Currently, when the boss gives the workers a job to do, they do not want to see the workers taking any quick and dangerous ways to finish a job.

When the United Steelworkers Union negotiates a contract with CCI, they strive for higher safety standards at the mine. They also push for more benefits like better insurance coverage, higher wages, bonuses, and pension plans.

Mr. Heavyside has been in many strikes in his twenty years working for CCI. Mainly what he had to say was that nobody wins in long strikes. The workers cannot put food on the table, and CCI loses money because

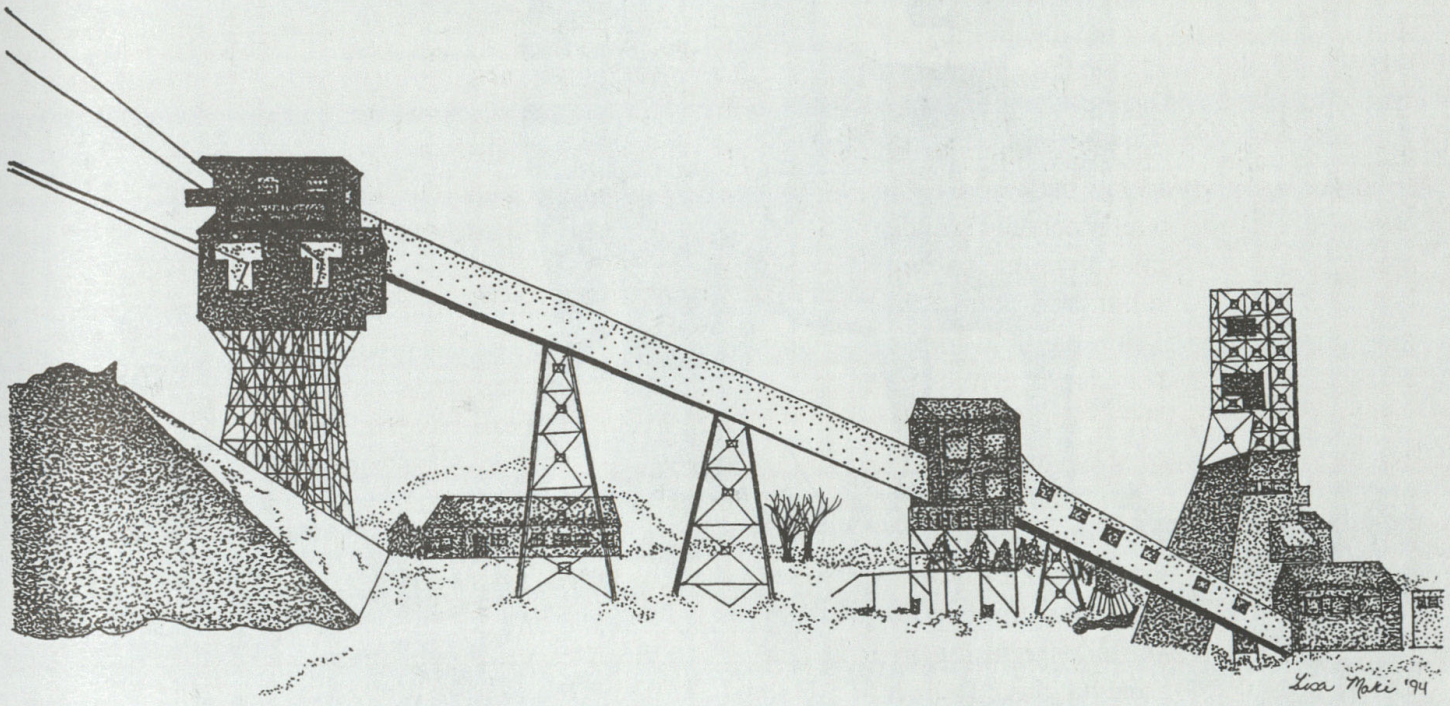
they cannot produce iron.

At one time Mr. Heavyside thought he would have to change careers to put food on the table for his wife and two kids. The iron industry was very unstable in the late 70's and early 80's; many people were being laid off. He did not change his career in the hope that it would get better in a few years. He is still glad he held on to his job because it did get better, and now he has a very good high paying job with good benefits.

Mr. Heavyside is very happy at the Tilden Mine. If he could go back in time and change his decision, he would still make the same decision. He has made a lot of good friends at the mine, many that he will have for his whole life.

Outside of work Mr. Heavyside is a busy person. He also is very interested in sports. He likes to go downhill skiing which he has not been able to do for awhile. He also plays racquetball once a week at NMU. He loves to watch the Green Bay Packers play football. In addition, about a year or two ago he took a medical first responder class which took up a lot of time after work. He took it so that if somebody was injured at work or wherever he was, he could help the person until the ambulance arrives. He is a very interesting person, and I do not know if I would have known any of what he told me if I had not interviewed him. I am very proud of my dad for all the hard work he has done to get a good job to support his family.

— Jason Heavyside



Peterson Mine, Bessemer
Headframe, conveyor galleries and loading terminal. Similar mining structures were found in our area.

RED DUST *is a publication written and illustrated by 8th grade students at National Mine School, Ishpeming, Michigan. Begun in 1984, it continues to weave a strong bind between school and community. The* RED DUST *staff would like to thank all who helped in the production of this book.*

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