

# A MINING TRAIL ON THE EASTERN MENOMINEE RANGE

*By William J. Cummings and David Curtis, 1981 Festival of the Arts Tour Booklet*

The trail linking the mining communities of the Eastern Menominee Range spans only about fifty road miles today, ranging from Waucedah at the eastern end to Florence. Of course, there were literally dozens of mines dotting the rich, iron bearing ridges of our area. Most of the mines have been closed for almost half a century, but their presence can still strongly be felt in the communities in which they played an integral role during the Range's early years.

Most residents native to the area have someone directly or indirectly associated with our mining heritage in their ancestry, from trammers to mining captains, from blacksmiths to diamond drillers, from cashiers to the men with the pick in their hands and the candle on their hat. Others came to serve those connected with the mines: the doctors and lawyers, the livery stable operators and grocers, the dressmakers and the saloon keepers. Mining brought them here, and they, in turn, brought their families, their customs and their religion.

The sites enumerated in this booklet were selected for their importance in relation to the area's mining history and the safety with which they may be viewed today. Unfortunately, the booklet's scope does not allow us to present a description of every remaining mining relic in the area.

With each passing year, fewer and fewer of these mining relics remain to remind us of our heritage. The deteriorating condition of some of these relics will be evident to those traveling this mining trail. Hopefully, at least some of these sites will be preserved and restored for future generations by interested Range residents, such as is currently being done with the Cornish Pumping Engine.

The majority of the information was gathered from the archives of the Menominee Range Historical Foundation Museum. For the third consecutive year,

the Mid-Peninsula Library Cooperative has contributed the paper and printing for this project.

Many of these sites are privately-owned and are therefore not open to the public for inspection.

A special thanks goes to the Dickinson County Festival of the Arts for its promotion of the tour, to Beatrice Blomquist for consultation on the Cornish Pumping Engine and other sites, to Renee Augustine for manuscript preparation, and to Frank Marsden for printing the booklets.

Bill Cummings, manger, Menominee Range Historical Foundation Museum

David Curtis, librarian, Dickinson County Library

July, 1981

EDITOR'S NOTE: Unfortunately few relics of the mining heritage of Waucedah, Quinnesec and the Florence-Commonwealth area have survived. Thus, only a short history of their important roles in the mining history of the Eastern Menominee Range has been included.

The sites in Vulcan, Norway and Iron Mountain are numbered and listed at the end of their respective histories. Some sites are mentioned in the narrative, and are also referred to by number there. Maps showing the location of the mining relics in these areas have been included.

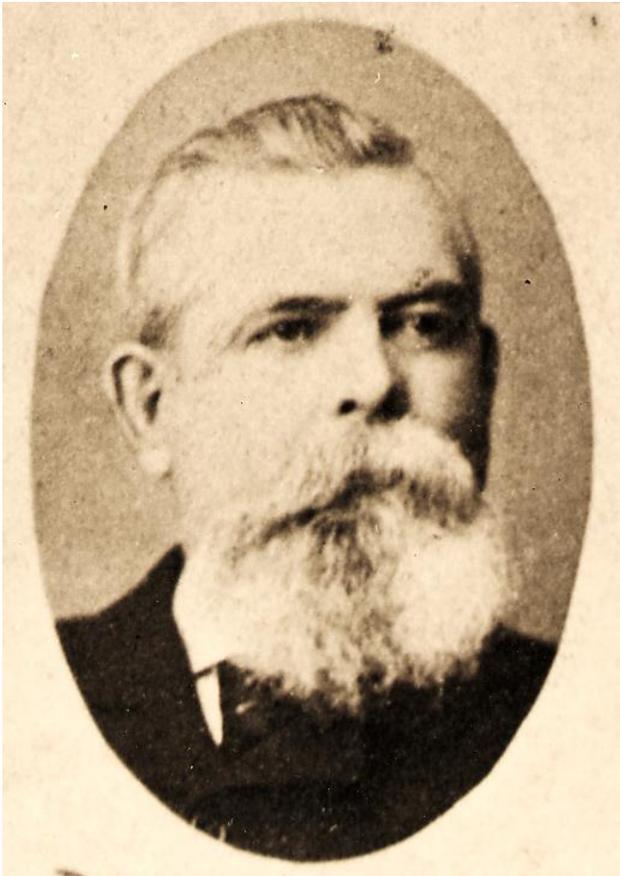
## WAUCEDAH

**Thomas and Bartley Breen** discovered iron ore near Waucedah in **1866**, the first ore discovery on the Menominee Range. In about **1870**, four years after their discovery, the **Breen brothers** with **Judge Eleazer S. Ingalls** and **S.P. Saxton** of **Menominee** obtained title for the land on which they had found ore. Shortly afterward, a man names **James John Hagerman**, an official of the

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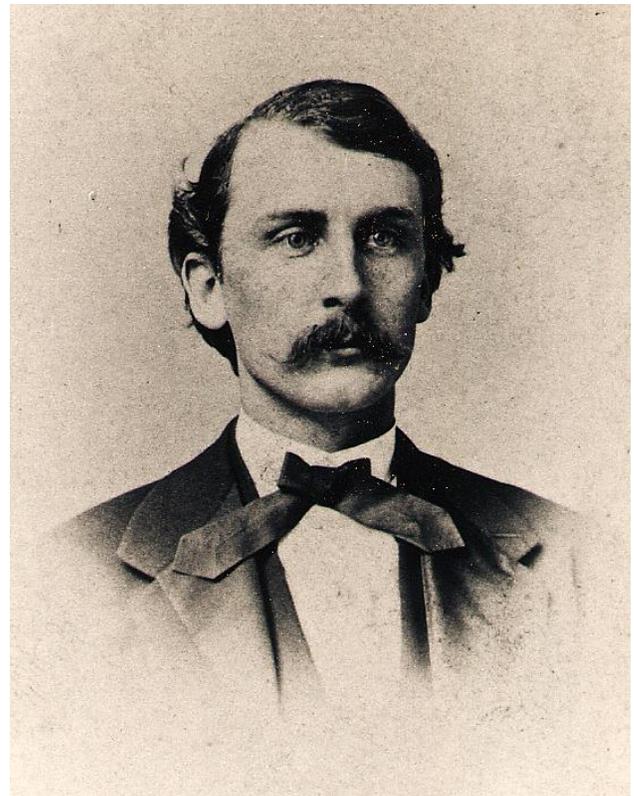
**Milwaukee Iron Company**, was returning to the Midwest from a business trip out East. He was reading a pamphlet describing the mineral and timber lands owned by the **Portage Lake and Lake Superior Ship Canal Company** in which the Breen brothers' discovery was mentioned.



**Bartley Breen**

Hagerman's company manufactured new iron rails out of work out iron rails and other wrought scrap iron for the railroads which had been rampantly expanding throughout the United States since the end of the Civil War. England was producing a new type of rail, a rail made of Bessemer steel instead of iron. These Bessemer steel rails were far superior to iron rails, but had to be imported, as nobody in the United States at the time knew how to build a

Bessemer steel works. The Milwaukee Iron Company's president had succeeded in getting Congress to put a \$28 per ton tariff on Bessemer steel rails. After the tariff was passed, he and two other businessmen brought English technicians to **Wyandotte, Michigan**, where they built the first Bessemer steel works in America in 1864. Attempts to roll steel ingots into rails at the Wyandotte mill failed, as did the company, but many valuable lessons were learned. Hagerman was aware that the days of iron rails were numbered, and that the soft, phosphorus-free iron ore necessary for Bessemer steel production was scarce. Realizing that the future of the Milwaukee Iron Company depended on extensive supplies of this high grade iron ore, Hagerman and the company president decided extensive explorations should be undertaken to secure the necessary raw materials.



**Dr. Nelson Powell Hulst**

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**Hagerman** was impressed with the pamphlet's description of mineral wealth in the western portion of Michigan's Upper Peninsula. He sent **Dr. Nelson Powell Hulst**, a recent graduate of Yale College and the Sheffield Scientific School, to explore the area for iron ore of Bessemer quality. Hulst made his first trip to the Menominee Range in **June of 1872**, with **Thomas Breen** serving as guide. He found ore at what became the **Breen Mine**, the **Vulcan Mine** and the **Quinnesec Mine**, and he found nothing but indications of ore on the Canal Company's land. The **Milwaukee Iron Company** soon secured leases on the promising properties, and Dr. Hulst was on his way to becoming the father of the Menominee Range.



**Lewis Young Whitehead**

**Hulst** engaged **Lewis Whitehead** of **Negaunee** as chief of his party of explorers when he returned to the Range in the fall of the same year. Leaving Negaunee on **September 18** with his twelve man crew, the party went by tugboat from **Escanaba** to **Menominee**, and then followed the river road for sixty miles to the **Breen Mine**, arriving on the **23<sup>rd</sup>**. Today Whitehead's six-day trip takes an hour and a quarter by car.

Few traces of Waucedah's mining heritage remain today. The **Breen Mine** proved unprofitable, and by **1878** the **Menominee Mining Company** had dropped its lease on the property. The **Emmett Mining Company** operated it for about six years, when it was renamed the **Maryland Mine** for another new operator. The mine closed for a time and reopened as an openpit mine in **1905**.

## VULCAN

Within a month of his arrival at Waucedah, **Whitehead** began the **erection of a camp for forty men** on the spot where the **Vulcan Depot** later stood. At the same time, a **supply road** was cut through **from Menominee directly to Vulcan**, which was at that time known as **Breitung**. Supplies, mail and the doctor could now come directly to Vulcan. Teams of horses were allowed seven days to make the round trip.

The **Milwaukee Iron Company** contracted with the **Northwestern Railway Company** for a forty-mile strip of railroad from **Powers Station to Quinnesec**. In **1872**, the railway was deflected from a planned construction between **Marinette and Escanaba** to accommodate the new iron fields. Six miles of right of way were cut from **Powers westward to the Breen Mine**.

By **January 1, 1873**, just a few months after arriving at the **Breen Mine**, **Whitehead** wrote in his diary that the

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buildings at the Vulcan Mine consisted of a dining camp, sleeping shanty, blacksmith shop, supply shed and a ten by twelve foot office, built of logs and situated in the midst of dense forest and swampland with tormenting flies. The camp was covered with “shakes” – cedar slabs four feet long and as wide as the cut would permit – caulked with moss.

In March of 1873, a sawmill was erected where the lumber was cut for the first frame structure built on the Menominee Range (**Vulcan Site #1**). It served as the company store and Hulst’s office, and still stands in Vulcan today.

During that same summer, Hulst sent parties of five to ten men throughout the Menominee Range to explore and dig test pits. Hundreds of them dot the countryside today.

A wagon road, known as the **Iron Road**, was surveyed and cut out to **Felch Mountain from Vulcan**, a distance of twenty-three miles, at a cost of \$1,300.

Later in the same year, Hulst tested property at **Iron Mountain (then Section 30)**, at **Dickey’s homestead west of Quinnesec**, and near **Norway on what became the Curry Mine property**.

Only the **Breen**, the **West Vulcan** and the **Metropolitan** operations showed shipping ore at this time.

In **September of 1873** came the financial panic, sounding the death knell to the iron rail business in the United States. Hulst’s exploration crews were disbanded the following spring. Investors in the **Milwaukee Iron Company** were withdrawing their support. Hagerman worked desperately to save the company, but in **September of 1876** it was sold in bankruptcy court.

**Hagerman and John H. Van Dyke** chartered what became the famed **Menominee Mining Company** shortly thereafter. Hagerman picked up leases to properties which the **Milwaukee Iron**

**Company** had allowed to expire. Having been manager of that company, he knew all of the internal business and played his cards well.

The two men gambled on the railway company still being willing to build a branch to the mines. They were successful in their negotiations and during the **winter and summer of 1877** the **railroad was again under construction**, assuring the future of the new mining company, as well as that of the Menominee Range.

The **Menominee Mining Company** used **Vulcan as their headquarters**, locating their buildings on the north shore of **Lake Hanbury**.

The **East, Central and West Vulcan Mines (Vulcan Sites #2 and #3)** played important roles in Vulcan’s mining history. The **East Vulcan** first shipped ore, 7,000 tons, in **1877**, a month after the first carload of freight, consisting mainly of hay and bar iron, arrived in Vulcan. Within ten years of Hulst’s first visit to the Vulcan area, 500 men were working in the Vulcan mines. **The first mules used for tramping on the Menominee Range arrived in Vulcan on November 7, 1895, and were sent down the shaft at the West Vulcan Mine.** Men were used for tramping, or hauling ore cars underground in early mining, until replaced by mules or underground locomotives.

The **Penn Mining Company** began operating several of the mines in the **Waucedah, Loretto, Vulcan and Quinnesec area in 1881**. The Penn was a subsidiary of the **Cambria Iron Company** which had purchased the **Cyclops, Vulcan, Norway and Quinnesec mines** from the **Menominee Mining Company**. **The Penn Mining Company had eight double-dwelling house constructed for mining officials and their families at the West Vulcan location in 1887. (Vulcan Site #4)** The houses still all stand today in what is known locally as “**Redtown**.”

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## VULCAN SITES:

May, 1886

1. **Menominee Mining Company Store/Penn Store:** Located at the south end of Mission Street, southeast of the Vulcan Middle School. This building has two basement levels. The lower basement, due to the slope of the site, allowed freight from the **Menominee River Railroad**, the spur track built from Powers by the **Chicago and Northwestern Railway**, to be moved directly into the basement. An elevator brought the supplies to the upper basement for storage. There also were three vaults in this building. There were two smaller vaults, one for the store and one in the company offices, and there was a large vault in the basement where payroll money was stored, since the miners were paid in cash.
2. **Central Vulcan Mine Buildings:** Located near the Penn Store. Following Mission Street east about 2/10 of a mile and take the first road to the left. The **engine house** has bricked-in areas where the cables once passed to operate the mining machinery. The **dry** is located closer to the mine shaft entrance, and the **mining captain's office** was located at the northern end of the building. Today these buildings are used as warehouses.

3. **East Vulcan Mine:** Located on U.S. 2, this mine now operates as a tourist attraction and is called the **Iron Mountain Iron Mine**.
4. **Redtown Double Dwelling Houses:** When proceeding east on U.S. 2, turn right just past the green "Vulcan" sign and follow the road up the hill into Redtown. You will want to turn around in Redtown and return to U.S. 2 unless you want to enter southeastern Norway by following the Redtown road.
5. **Silk Stocking Row Residences:** Just after entering Main Street from U.S. 2 near St. Barbara's Church, make a sharp right turn onto Central Boulevard. Follow Central Boulevard. The five houses on the right side of the street which overlook **Lake Hanbury** just past the Reath house at the top of the hill were mining officials' homes, and were referred to as **Silk Stocking Row** due to the status of the occupants.



Vulcan Mine, Looking Northeast – 1886



Silk Stocking Row, Vulcan, with Lake Hanbury in Foreground, ca. 1880-1885

The third of these five homes, a large, gray-painted structure with a screened porch on the east and south, was built by the **Menominee Mining Company** for **Dr. Nelson Powell Hulst** in **1878**. When this and the other homes on **Silk Stocking Row** were built, there was a road which ran from the **Menominee Mining Company Store** in front of these homes, between

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the home sites and the lake. When additional homes were built on the other side of what is now Central Boulevard, the alley became the street to accommodate the newer houses.

Mrs. Hulst, in an article entitled "Pioneer Life on the Menominee Range," described her home and what life was like in early Vulcan:

*In the **spring of 1878** he [Hulst], moved his family to **Escanaba** (from **Milwaukee**), where they lived until the completion of a house at the Vulcan mine location made it possible to have a home at his place of business. The house, built by the company, was situated in a clearing in the pine forest, with giant trees of the first growth on three sides of us, and on the fourth a little lake below the slope on which the building was erected. Between the house and the lake was the railroad, a branch of the Chicago and Northwestern, recently built for the transportation of ore to **Escanaba**, the port whence a large proportion of the ore was shipped by the lakes to the various iron foundries and blast furnaces of the Middle West. About **December 1, 1878**, with the fall of snow, we moved and settled with our two little boys in this home at the Vulcan mine. Our household goods had preceded us, and Mr. Hulst with the assistance of one or two of his men had got the new house in sufficient order so that we could begin to live comfortably from the first arrival.*

*An express office at Vulcan, opened almost immediately upon our arrival, made it possible to obtain provisions from **Milwaukee**, and a **supply store** near by managed by the company [Vulcan Site #1] furnished us with the necessities of life.*

*In that northern country there is a short season of very hot weather, the*

*thermometer registering occasionally a temperature of one hundred degrees. The mosquitoes arrive before the snow is gone and make life in the woods uncomfortable until August, when they entirely disappear. Even withal doors and windows screened it is impossible to keep a house free from the pests; one morning I counted twenty-seven of them under the netting of my bed.*

*In spite of long hours and arduous duties Mr. Hulst found time to do much work at home to keep his family comfortable. We had no furnace in the house and he assumed the care of the stoves and fireplaces, clearing out ashes and bringing in fuel, considering such work too hard for a woman's strength. In the spring he planted quite an extensive vegetable garden, and many of the summer evenings he weeded and watered it, carrying the water by hand from a pump near the house.*

*Occasionally the president and vice-president of the company came up to inspect the work of their manager, and generally stayed at our house. This gave us the only bit of intercourse with friends which we had in the first year or more of our residence at Vulcan. Mr. Hulst felt the isolation keenly and it was a delightful event when **Mr. and Mrs. Day** (**Jefferson D. Day**, a mining man from **Ishpeming** engaged as an **assistant to Hulst**) moved into a house near ours, built for them by the company. At about the same time the mine doctor built a little home and brought his bride to Vulcan.*

*The house to the left of the Hulst residence, when facing **Lake Hanbury**, was built in **1879** for **James J. Hagerman**. Mrs. Hulst also described this event briefly:*

*The following **summer (1879)** **J.J. Hagerman**, **president of the***

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*Menominee Mining Company, had a house erected next to ours and often came up with his family or friends to spend a week or so. The bookkeeper and his family lived in this house, which was consequently always ready for the owner and his friends. The advent of these neighbors made life much more natural and we realized after they came how necessary friendly companionship is.*



**James John Hagerman-Franklin Copeland House, Silk Stocking Row, ca. 1880-1885**

When in Vulcan, the Hagermans occupied the west wing. **Franklin Copeland**, the bookkeeper, and his family resided in the east wing. The house was later the girlhood home of **Charlotte Armstrong**, an internationally recognized suspense novelist. The setting of her novel, *The Trouble in Thor*, is based on Vulcan, and deals with events in a small, company-owned mining town. Much of the action takes place in this house.

6. **The Penn Inn:** Located on Mission Street across from the Vulcan Middle School. **Lewis Whitehead** opened his **Vulcan Hotel**, the first on the Menominee Range, **between 1878 and 1879**. This white structure replaced the

Vulcan Hotel and was built by the Penn Mining Company to house visiting company representatives. The Whiteheads managed the **Penn Inn**, now a private residence, which was built in about 1904.



**Lewis Whitehead's Vulcan Hotel, October 1, 1880**



**Penn Inn, ca. 1910-1920**

7. **Miner's Cottage:** Located at 132 Main Street, this house is a well-preserved miner's cottage, typical of the workingman's home in early Vulcan. Much of the Victorian gingerbread still decorates the structure which has been painted iron ore red. The mining company used to mix ore dust with

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linseed oil for painting its buildings, and this color resulted.

## NORWAY

One Sunday in **July of 1878**, **Dr. Belknap**, company doctor for the **Menominee Mining Company**, showed **Hagerman** some pieces of iron ore he had found on **Section Five**, about three miles from Vulcan. Hagerman went to investigate and found the ground under a thick carpet of pine needles covered with ore. As **Hulst** was gone, Hagerman couldn't confirm the young doctor's find. He gave the doctor \$2,500 to keep his mouth absolutely shut for two months, and obtained a lease for the land from the Canal company. When **Hulst** and **Hagerman** began digging under the pine needles, they knew another great mine had been discovered. They named it the **Norway Mine** from which the town of Norway took its name. **On October 26, 1878**, the first ore shipped from Norway, **12,000 tons**, left the Norway Mine. The Norway was an open pit mine, and was so productive that electric lights were installed in **January of 1880**, the first on the Range, so work could continue day and night. However, shortly thereafter, these lights were moved to the **Chapin Mine in Iron Mountain**.



Norway Mine, Looking East – May, 1886

While **Hagerman** and **Hulst** were hurrying down a steep hill covered with white sand in **January of 1879**, Hagerman noted a red coloration in the tracks of **Hulst**, who was preceding him down the hill. Hagerman pointed this out to **Hulst**, and after quickly clearing away the sand, excellent ore was discovered on this hillside site only inches from the surface. Located about a mile west of the **Norway Mine**, the **Cyclops Mine** also was situated in **Section Five**. In 1879, Hagerman noted in his memoirs that the **Menominee Mining Company** made **\$240,000 net** from the **Norway and Cyclops Mines** besides paying for machinery, buildings and a lot of other equipment.

The **Menominee Mining Company** opened **Miners' Hall** on **Norway Hill** in **December of 1881** as a place for social gatherings and a reading room for the Norway miners.

The **Penn Mining Company Store** at the **Norway Mine** location burned in **1883**, two years after the **Cyclops** and the **Norway** mines had been sold by the **Menominee Mining Company**, with the loss estimated at \$25,000. In **1884**, the **Penn Mining Company** ordered a \$40,000 plant for the new **Norway mine shaft** and also began working on a **tunnel from the swamp level** where the original **Norway business district** was located to the **Norway Mine**, a distance of **14,000 feet** vented with two air shafts. By **1885**, the **Norway Mine** employed **325 men**.

On **June 9, 1888**, forty-three business places were lost when **Norway's commercial district** was destroyed by fire. At the time of the fire, many Norway residents were attending a circus in **Iron Mountain**.

**Solomon Curry** discovered the **Curry Mine** in **1879 (Norway Site #1)** on land he leased from the Canal company. Within four years, the main deposit was already exhausted and the original shaft

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abandoned. Diamond drilling revealed another deposit which was opened as shaft number 2, the remains of which can still be seen today.

Explorations on the **Brier Hill site** were being conducted **early in 1880**. This mine also became part of the **Penn Mining Company** operations. The concrete shaft of this mine is one of the most visible of the mining relics in Norway today (**Norway Site #2**).

When the water pumps were removed following the mining era in Norway, the underground workings were flooded, the water consequently reaching the surface formed **Strawberry Lake**. Four of the Aragon Mine's five shafts bordered what is now the southern shore of this lake. (**Norway Site #3**) **The first ore was raised at the Aragon in July of 1889**. While the first shaft was being sunk, the fossil remains of an animal thought to have been an elk were found at a depth of twenty feet. In **1896**, the **Number One shaft housing** was placed on rollers and moved to **Number Three shaft**. In that same year, the Aragon was the first mine on the Range to adopt an eight hour work day.

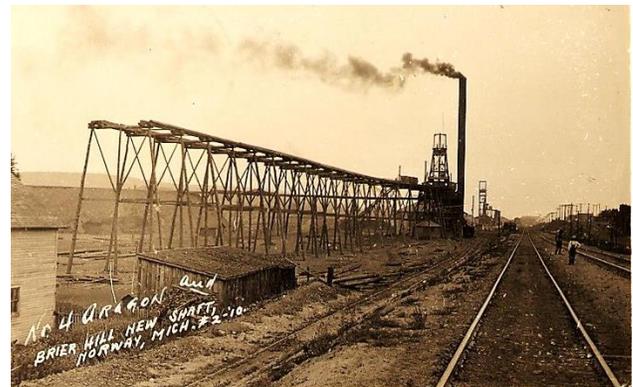


**Aragon Mine #3 Shaft, Looking West;  
Women Walking Along Railroad Street  
1908**

**Number Two shaft at the Aragon Mine hoisted 612 cars of ore in ten hours, more than a car a minute, on October 23, 1897**. A year later, miners at the Aragon and Penn Mining Company mines received a **ten-cent per day increase in wages**, and the Aragon Mine received **nine mules to do underground tram work** during the same month. By **December of 1898**, the Aragon employed **520 men**.

A **pneumatic locomotive** was installed for underground tramping in the Aragon Mine in 1899, the first such locomotive used in the area mines. The locomotive could haul **14 to 15 cars at a time**, while mules only pulled three cars at once.

The steel shaft erected at **Number Four shaft of the Aragon in June of 1899** was the first of its kind in the district. The first skip load of ore was hoisted through this shaft on **July 20**.



**Aragon Mine Shaft #4 and New Shaft at  
Brier Hill Mine, Looking East – 1910**

**Number Five shaft**, locally referred to as the **Swamp Mine**, was the last Aragon shaft to cease operations, **closing in 1931**. (**Norway Site #4**)

## **NORWAY SITES:**

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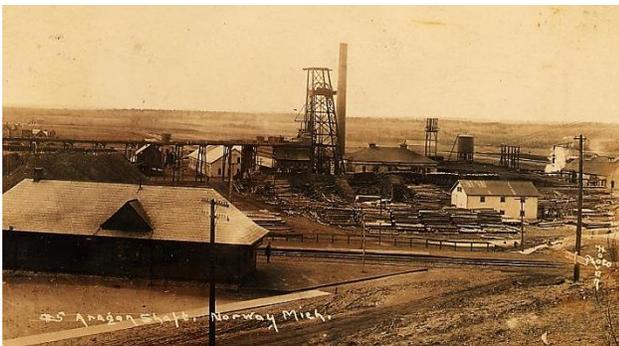
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1. **Curry Mine Ruins:** Located 1/10 of a mile north of U.S. 2 on the left side of Curry Road.
2. **Brier Hill Shaft Housing:** Located near the intersection of Railroad Avenue and Walnut Street, but visible from many points in the city.



**Brier Hill Mine, ca. 1910-1920**

3. **Strawberry Lake:** Located north of the viaduct on the right side of Main Street.
4. **Aragon Mine Shaft Five:** Follow West Eleventh Street until it ends, having turned left off of Main Street just before the viaduct. The site of the shaft is enclosed by chain link fencing near the Hosking Tire building. The Aragon dry now houses Lofholm Lumber Company's warehouse.



**Aragon Mine Shaft #5, Looking South from Summit (Norway) Hill – The Swamp Mine – with Railroad Depot in Lower Left Corner**

Postmarked August 27, 1912



**Aragon Mine Shaft #5 – The Swamp Mine ca. 1918-1930**

5. **Penn Mining Company Buildings:** Visible from U.S. 2 between Norway and Vulcan. For a closer view, when turning onto Curry Road from U.S. 2, take the dirt road which veers to the right when the Curry Road goes to the left just off of U.S. 2.
6. **Captain John Perkins Residence:** Located at the corner of Sixteenth Street and Pearney Road. Captain John Perkins was superintendent of the old Saginaw Mine which opened in the winter of 1878-1879, and adjoined the Norway Mine to the east. By 1879, the Saginaw Mine had been renamed for Captain Perkins, who resided in this house.

## QUINNESEC

Quinnesec's history largely centers around one man, **John Lane Buell**. In the **early 1870's**, explorations were going on all over the Range, and these explorations were not confined to the **Milwaukee Iron Company** by any means. In **1871**, **Buell and John Armstrong** were camped at a spring on the site of what became the **Village of Quinnesec**. While Armstrong took his turn at cooking supper, Buell

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strolled over the western bluff and found an outcropping of iron ore. Legal entanglements regarding the land had to be straightened out before further exploration could be done. By 1873, Buell was back with a fifteen-man crew. Desirable blue iron ore was discovered later than same year. **During the spring and early summer of 1874, 55 tons of ore were hauled to Menominee by sled and wagon to be smelted by the Menominee Furnace Company.** At about that time, the **Milwaukee Iron Company** picked up the lease on the property which later was worked by the **Menominee Mining Company.**



**John Lane Buell**

With the discovery of the **Quinnesec Mine**, today more generally known as the

**Devil's Icebox**, the area boomed. The **railroad was extended to Quinnesec in the winter of 1877-1878**, and the first shipment of ore was made the following spring. Quinnesec soon became the metropolis of the Menominee Range. The train stopped there.



**Entrance to the Quinnesec Mine, ca. 1906**



**Trammers at the Entrance to the Quinnesec Mine, ca. 1908**

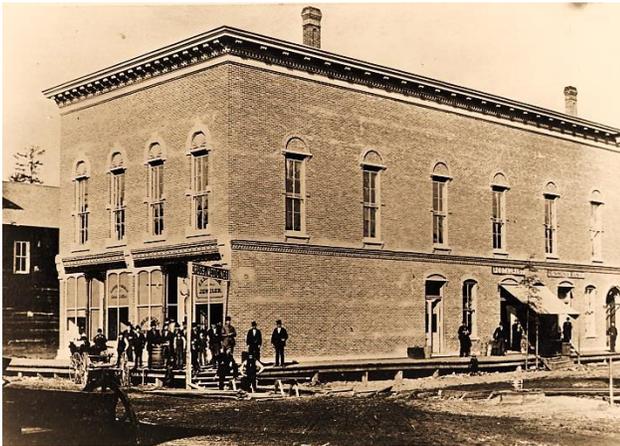


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## Quinnesec Mine – The Devil’s Ice Box ca. 1940-1950

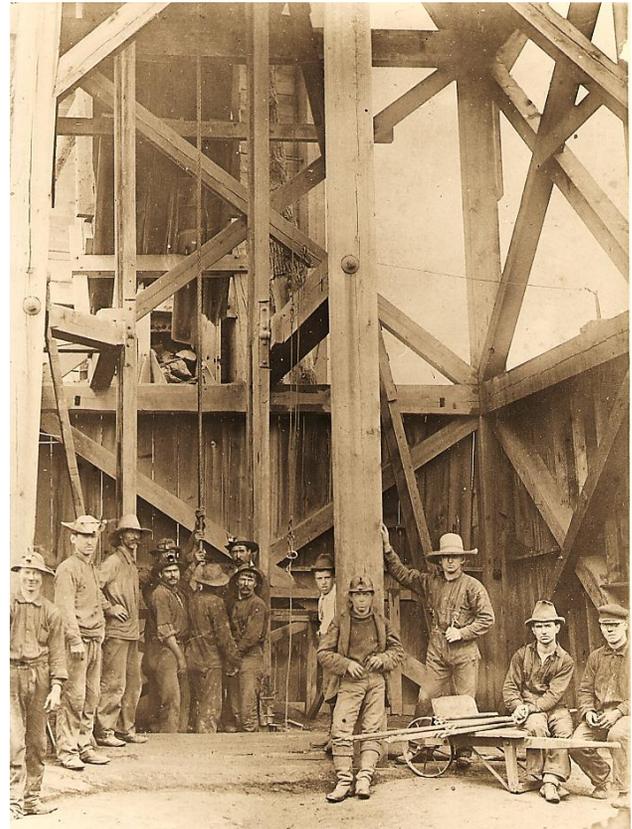
In the fall of 1879, the **Menominee Mining Company** built an opera house at **Quinnesec** where the miners and their families could gather for dancing, social events and to view occasional performances. Since no saloons were permitted in Quinnesec at this time, Hulst felt it the duty of the company to provide some gathering place for the men to spend their evenings. During the summer of 1880, the annual banquet for the **American Institute of Mining Engineers** was held at the opera house. A caterer from **Milwaukee** provided the meals for the guests, bringing not only the food and refreshments from Milwaukee, but also the table furnishings and several waiters.



**Buell's Opera House, ca. 1880-1885**

Buell's original discovery began to play out in about twelve years, and the mine was then temporarily abandoned. By then the **Iron Mountain mines** were nearing their zenith, and merchants and miners alike began moving to the thriving city to the west. The **Quinnesec Mine** reopened. **The last ore was shipped in 1935, but that ore had been mined years earlier and stockpiled.**

After **Buell** abandoned the **Quinnesec Mine**, he found the **Cundy Mine**. **Dr. J. Addison Crowell** and **John T. Jones**, both of **Iron Mountain**, along with Buell, sank a two-cage working shaft known as the **Gray Shaft** in **1891**. Another shaft, the **Foote Shaft**, was sunk a little farther west. The **Oliver Iron Mining Company** took over this operation in later years.



**Cundy Mine Shaft, ca. 1896**

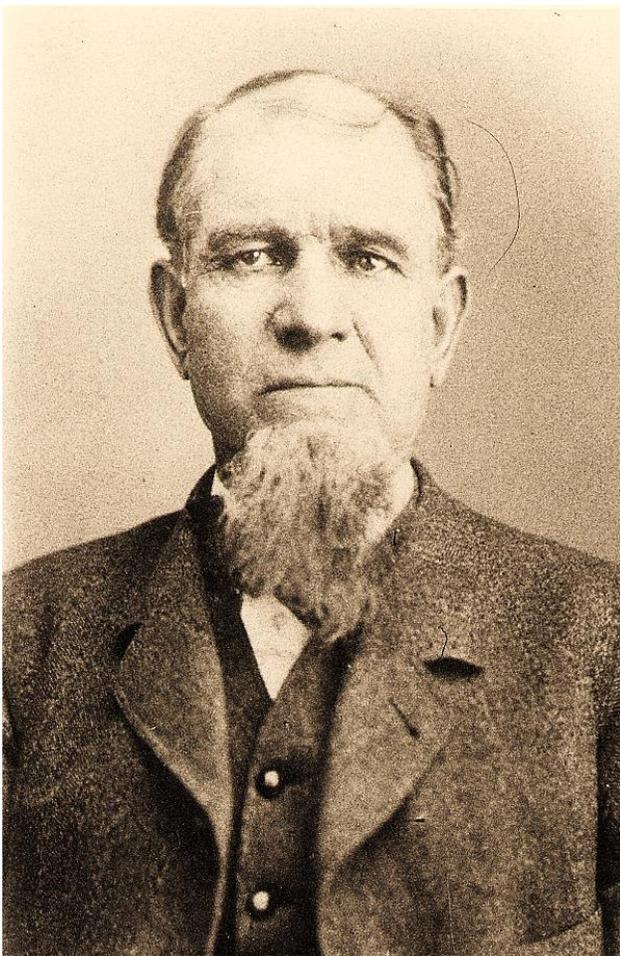
The **Vivian Mine** was basically an **open pit mine in west Quinnesec**, although a shaft known as **Number 2**, the **Wymer Shaft**, and eight other shafts were in the immediate area of the mine. The mine opened in **1900**, and, when it closed, most of the homes and some mining buildings were moved to Iron Mountain.

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## IRON MOUNTAIN

The **Chapin Mine** at Iron Mountain has long been considered one of the world's greatest iron mines. However, without the determination of **Hagerman and Hulst**, this immense deposit may have remained long undiscovered. Hulst had long been aware of the rock outcropping six miles west of Quinnesec at a place known as Iron Mountain. **(Iron Mountain Site #1)** Some said this outcropping was iron ore, but Hulst maintained it was only a pointer to where the ore ought to be. Hagerman, trusting in Hulst's scientific expertise, first attempted to buy, and finally succeeded in leasing the land from **Henry Chapin of Niles, Michigan**.



**Captain John Wicks**

Once Hagerman had secured the lease, Hulst began sinking shafts in the sand on the slope of a hill which ran down to a swamp, a hill today known as **Millie Hill**. On **July 5, 1879**, Hulst sent **Captain John Wicks** and a crew of seven men from **Quinnesec** with a wagon loaded with tools, provisions, tents and lumber pulled by four mules to set up camp on what is now the east side of the **Chapin Pit**. Several unsuccessful shafts were sunk, and some officials of the **Menominee Mining Company** wanted to cease operations due to the expense involved. But Hagerman's faith in Hulst prevailed, and Hagerman made an agreement with these officials, saying operations on **Section 30** would cease if, after one last shaft was sunk two hundred feet west of the previous shaft, no ore was found. This last shaft was ninety feet deep in the sand, took months to sink and was very costly, but, it landed in the very heart of the great Chapin ore body.



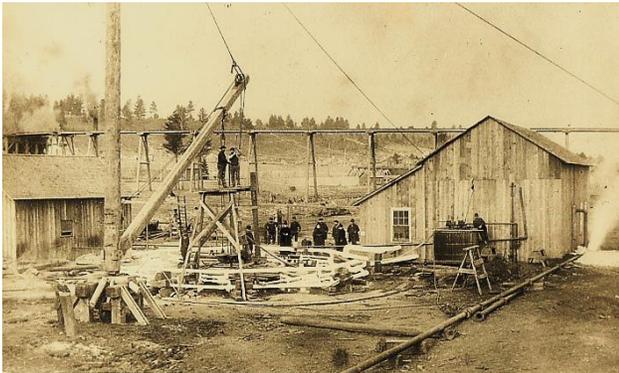
**Earliest View of the Chapin Mine,  
Fall of 1879 or Spring of 1880**

Due to swampy conditions and the quicksand that existed at **D Shaft of the Chapin Mine**, a **freezing process** was used to enable the miners to sink a shaft down to the ore-bearing rock. A cooling solution was circulated through 8-inch pipes three and a half feet apart to freeze the ground. After fifteen days of freezing,

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excavation was begun, and, in 135 days the shaft had reached the ledge of rock. The cylinder of frozen ground in the center of which was the shaft was found to be more than fifty feet in diameter. The shaft was then lined with a water tight cast iron circular shell made in sections. This work was done in **1888**, and the process, used here for the first time in the United States, has since been used successfully in other mining operations.



**Freezing Process Used in 1888 to Sink D Shaft of the Chapin Mine**

By 1890, the Chapin Mine was employing 2,400 men. Other mines in Iron Mountain employed an additional 1,500 men, for a total mining force of almost 4,000 men, making Iron Mountain “the payroll city of the north.” In that same year, the Chapin Mining Company contracted with the E.P. Allis Company to build a gigantic plunger type pump capable of taking all the water from the half mile long mine. Today the famed **Cornish Pumping Engine (Iron Mountain Site #2)** can still be seen at “C” Shaft of the **Ludington Mine**. (See back cover for additional information on the Cornish Pumping Engine.)

In June of 1901, the Oliver Iron Mining Company, a subsidiary of the U.S. Steel Corporation, acquired the Chapin property.

Iron Mountain’s first hospital was constructed in 1882 by the Menominee Mining Company for the employees of the Chapin Mine and their families. That same year **Dr. John D. Cameron** arrived as the settlement’s first doctor, followed later that year by **Dr. J. Addison Crowell**, who came to assist him. **Miners had one dollar deducted from their monthly pay for medical care which covered all medicines and doctor’s fees.**

The Chapin Mining Company built a home for the general manager in 1898-1899. **(Iron Mountain Site #3) James MacNaughton**, who later became president of U.S. Steel [sic – later became president of the Calumet & Hecla Mining Company, Houghton, Michigan, first occupied this house. After 1901, it served as the residence of the superintendent of the Oliver Iron Mining Company.

In 1883, **John T. Jones**, while prospecting for the **Hamilton Ore Company of Sharon, Pennsylvania**, discovered the **Hamilton Mine** in Iron Mountain by diamond drilling. Jones was superintendent when the mine shipped its first ore in **1888**, a soft blue hematite of the same quality as the Chapin ore. **By 1891, 300 men were working the Hamilton. (Iron Mountain Site #4)**



**Hamilton Mine, ca. October, 1883**

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George E. Stockbridge discovered the Ludington Mine in 1880. The Ludington and the Hamilton were both flooded in 1893, and remained idle until they were the property of the Chapin Mining Company.



Hamilton Mine and Ludington Mine Officials, ca. 1886-1887



Ludington Mine Shaft and Buildings, ca. 1893-1894

Both Hagerman and Hulst became seriously ill in 1881. Hulst had worked himself to exhaustion, and on orders from his doctor took a year off of work. At the end of the same year, the Menominee Mining Company sold all but the Chapin and Florence mines. Hagerman was

finally forced to liquidate his holdings in the company near the close of 1886, due to continued ill health, and the Chapin and Florence mines were sold at that time. With Hagerman's retirement and settlement with the company, the stockholders were left with considerable holdings in land, chiefly on the Menominee Range, and little cash assets. Hulst had recuperated by this time, and he firmly believed that there was more iron ore east of the Chapin Mine, either an extension of the Chapin deposit or another lode. The stockholders of the Menominee Mining Company formed the Pewabic Mining Company and agreed to finance Hulst for two years of prospecting.

The Carnegie Brothers [*sic* – Andrew Carnegie], of Pittsburgh, Pennsylvania, put \$100,000 into the new exploring venture after Hulst had been diamond drilling for three months. They stipulated that they would participate equally with the Pewabic Mining Company in any favorable results. This agreement marked the entrance of the Carnegies into Upper Michigan. Hulst's explorations were unsuccessful for twenty-three months, until high quality soft red and blue hematite was found on the south side of the hill known today as Pewabic Hill on Iron Mountain's East Side. (Iron Mountain Site #5)



Pewabic Mine, ca. 1890-1900

The Pewabic Mining Company operated a boarding house for some of its employees northeast of the workings on Pewabic Hill. About three houses were

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located in this immediate area, but the buildings were moved into Iron Mountain after the mine closed in 1918.



**Pewabic Mine Boarding House,  
ca. 1900-1910**

The mining technique known as block caving was used at the **Pewabic Mine**, as well as many other Menominee Range mines. When a vein of ore was discovered, the ore was pursued and mined until exhausted. This often resulted in huge, cavern-like tunnels which became hazardous to both miners and anyone who might walk on the surface above these hollows. It became necessary to block cave these areas to prevent accidental cave-ins, and the **Pewabic Pit** is the result of such an operation.

Like the **Menominee Mining Company**, the **Pewabic Mining Company** built a **hospital** for its employees. This building,

built in **1893** at 837 East B Street, served as the hospital on the left side, and the residence of **Dr. James Ashley Bangs**, company physician, on the right. **(Iron Mountain Site #6)**



**Pewabic Mine Hospital and Home of Dr. James Ashley Bangs, 837 East B Street, ca. 1893-1900**

Area iron miners had organized into the **Iron Ore Mine Workers' Union No. 2** on **August 11, 1895**. They were affiliated with the **Northern Mineral Mine Workers' Progressive Union** and the **American Federation of Labor**. By-law booklets were usually published in numerous languages. Miners applied for admission to the union and were elected by ballot by the membership. **Dues were 25 cents per month, beginning April 1, 1896.** Eventually the union occupied a building known as **Miners' Hall**. The building had originally been a boarding house, and was located on the site of the present **East Chapin Pit**. When the ground began to settle, it was moved to its present location near the Hamilton Mine buildings. **(Iron Mountain Site #7)**

**John T. Jones**, a native of Pittsburgh, Pennsylvania, must be considered among the most innovative of the mining men who established themselves on the Menominee Range. Under the guidance of his father,

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Jones became a skilled mechanic. Residing in the heart of America's iron and steel industry, Jones' mechanical skills were soon put to use at **Sharon, Pennsylvania**, where he set up the machinery for the **Keel Ridge Furnace**. He worked there and at other furnaces until 1881, when he came to the Upper Peninsula and Iron Mountain to supervise the mining properties of **P.L. Kimberly**, who at that time had mining properties at **Keel Ridge, Iron Mountain and Iron River**.



**John Tyler Jones in the Conservatory at His Home on Lake Antoine, ca. 1905**

**Jones** was superintendent of the **Keel Ridge Mine**, located between **Quinnesec and Iron Mountain**, in 1883 when Dickinson County's worst mining accident occurred there. The mine began producing in 1880, but the ore supply appeared to be exhausted, and the ground had been cracking and settling in the area. Jones ordered that no more mining and hoisting be done, and the pumps were taken out and all machinery removed to allow the mine to fill with water. Removal of all the property had been completed by noon on **April 10, 1883**, and miners were forbidden to enter the mine.

**Suddenly, shortly after one o'clock, there was a loud rumble from the shaft, and the ground under thirteen men**

**standing on the surface between the shaft and the boiler house gave way. Only four were able to reach firm ground as they rushed for safety.** The survivors rushed to the hillside tunnel leading to the mine, and heard the groans of **Edward Hicks**, one of the nine men who were buried alive. The falling mass had thrust him to one side, and he was brought to the surface, mangled, but alive.

Although a crew of about two hundred area miners attempted to rescue the eight remaining men, their efforts were futile. The men were probably dead before the mass of rock and earth was through falling, entombing them for eternity. The eight men were: **Richard Williams**, timekeeper; **Patrick Egan**, engineer; **John Morris**, **Thomas James**, **William Pollard**, **Axel Helman**, **William Jeffery** and **N.W. Henderson**.

The **Keel Ridge Mine** was reopened and worked by the **Antoine Ore Company** and the **Pewabic Mining Company**.



**John Tyler Jones and His Family with Their Sleigh in Front of Their Home at 703 Grand Boulevard, 1908**

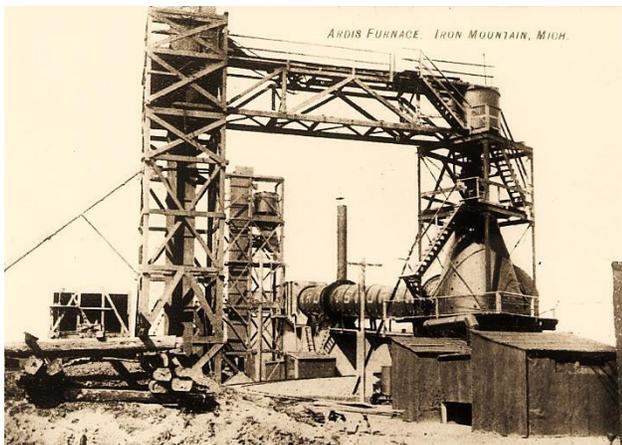
**Jones' residence** at 703 Grand Boulevard was built in 1890. **(Iron Mountain Site #8)** A friend of the mining superintendent described Jones' home on Lake Antoine as "a large house full of little rooms – and moose heads." The Jones

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estate originally consisted of 140 acres. More than one thousand fruit trees comprised the orchard, and native trees of all sorts graced the grounds near the house. In addition to the main house, the complex coasted a greenhouse or conservatory built from glass used in the gondola cars from the original Ferris Wheel which was exhibited at the 1893 Columbian Exposition in Chicago. A tunnel connected the main house with his son's home next door.

One of Jones' experimental furnaces, the **Galena Furnace**, still stands behind his home. Little was known about this furnace, other than the fact that it was used to process lead.



**Ardis Furnace, ca. 1908-1910**

However, Jones' other experimental furnace, the **Ardis Furnace**, named for his daughter, exemplified Jones' innovative genius. He recognized the economic potential of the low-grade iron ore of the Upper Peninsula, developed a method for processing this ore, and built an experimental furnace in 1908 to test his theory.

The furnace, a huge metal tube lined with fire-brick, was placed on an incline and charged with ore. The whole device was rotated by electric motors, with iron suitable for mill use discharged from the lower end

of the tube. The experiment was plagued with financial and mechanical problems, and by the end of World War I, the **Ardis Furnace** was dismantled. Elements of the Jones method were later incorporated into successful processing operations for low-grade iron ore. The Ardis Furnace ruins have been placed on the Michigan State and the National Registers of Historic Sites. **(Iron Mountain Site #9)**

## IRON MOUNTAIN SITES:

1. **Chapin Pit and Outcroppings on Millie Hill:** Located on both sides of North Stephenson Avenue (U.S. 2), just past the main business district.



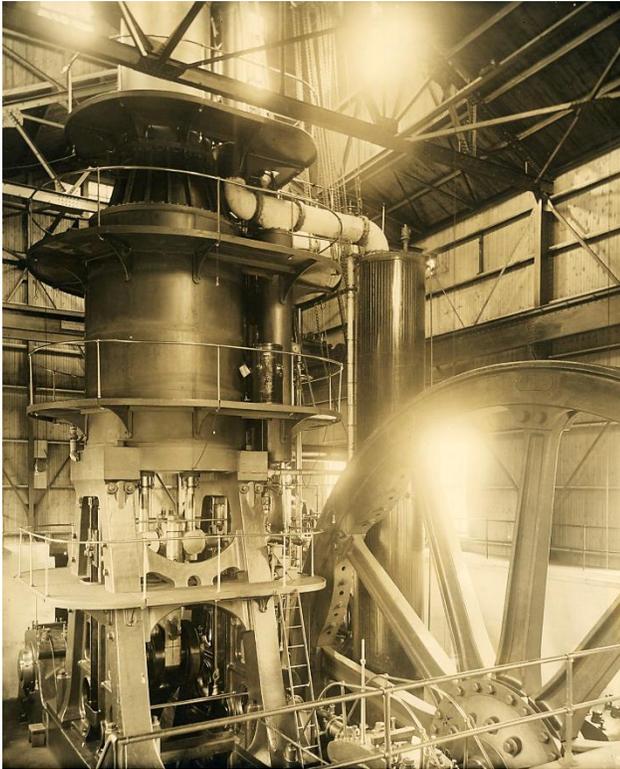
**Chapin Pit with Hamilton Shaft Buildings, ca. 1910**

2. **Cornish Pumping Engine at "C" Shaft of the Ludington Mine and the Ludington Dry:** Located on Kent Street above the West Chapin Pit. Turn left onto Kent Street when going north on Stephenson Avenue and go up the hill. The Ludington Dry is the building constructed of native sandstone with a metal roof southwest of the Cornish Pumping Engine. Many area residents remember going to the Ludington Dry as youngsters for a Saturday night bath, supervised by Nurse Mary Beer, Iron Mountain's first nurse. The dry was the

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building in which the miners changed their clothing and showered.



**Cornish Pumping Engine, C Ludington Shaft of the Chapin Mine, 1912**

3. **Chapin Mining Company Superintendent's Residence:** Located at 106 North Carpenter Avenue. Today this building houses the Chippewa Club, a private dining club.

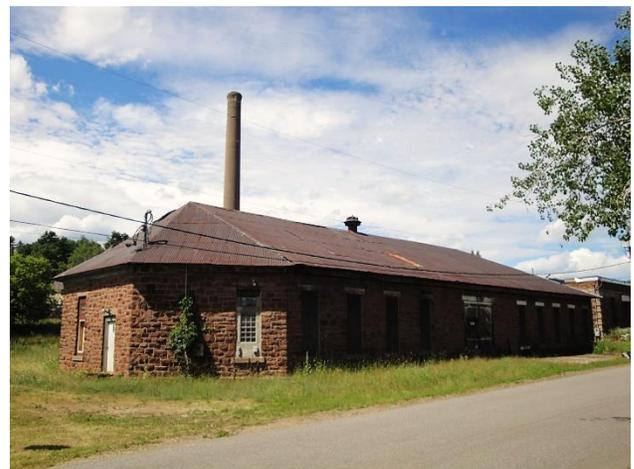


## **Chippewa Club, ca. 1945-1950**

4. **Hamilton Mine Buildings:** Located just behind the Curiosity Shop antique store which is on the west side of North Stephenson Avenue, just past the Chapin Pit. Follow the road to the right past the antique store. These buildings and the smokestack on the North Side are the remains of No. 2 shaft of the Hamilton Mine. The shaft itself is covered by the small block building, and the larger sandstone building was the engine house.



**Hamilton Mine Sandstone Buildings, ca. 1900-1910**



**Hamilton Mine Sandstone Buildings, July of 2013**

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5. **Pewabic Mining Company Superintendent's Residence, Pewabic Mine Engine House, Pewabic Mine Shop Ruins:** Take the left fork at the end of East "B" Street and follow the gravel road up the hill until you reach the large, white house, built in about 1890 for the Pewabic Mining Company superintendent. E.F. Brown lived in this house for many years. Across from the house, the engine house still stands. Its galvanized metal walls and roof are typical of later mining construction. South of the engine house are the ruins of various shop buildings.
6. **Pewabic Mining Company Hospital:** Locate at 837 East "B" Street. Now a private residence.
7. **Miners' Hall:** Located on the west side of North Stephenson Avenue, just past the Chapin Pit. Now the Curiosity Shop.



**Miners' Hall, July of 2013**

8. **John T. Jones Residence and the Galena Furnace:** Located at 703 Grand Boulevard.
9. **Ardis Furnace Ruins:** Follow U.S. 2 north, and then turn right at the Iron Mountain Filtration Plant. The ruins are just east of the parking area, and are easily seen.



**Ardis Furnace Enclosed in Building, ca. 1910**

## FLORENCE AND COMMONWEALTH



**Florence Mine, ca. 1880**

For eight years, **Hiram D. Fisher**, of Menasha, Wisconsin, spent his summer months prospecting for iron ore in northeastern Wisconsin. His first exploration party reached the **Menominee Range** on about **May 10, 1871**. Two years later, on **October 25, 1873**, while his men were setting up camp, Fisher climbed a hill for a smoke and rest. He struck a little hillock with his exploring pick and found an almost solid ledge of red ore which came to be the **Florence Mine**. Due to the lack of shipping facilities, little was done until **1879**, when **Hagerman and Van Dyke** purchased a  $\frac{3}{4}$  interest in the mine and arranged for the railroad to be

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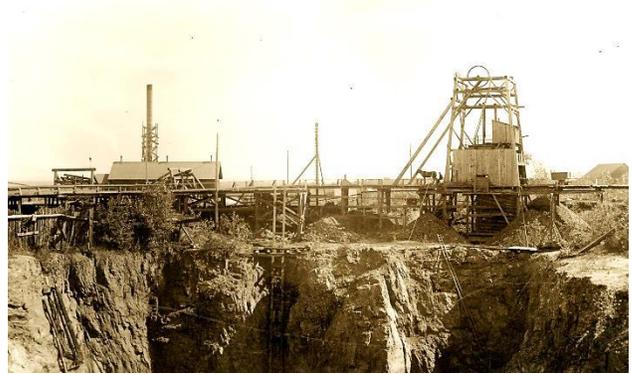
extended to Florence. At the request of the **Menominee Mining Company**, Fisher's mine was officially named the **Florence Mine to honor Dr. Hulst's wife, Florence Terry Hulst**, for her courage as a pioneer woman on the Menominee Range during the early 1870's in Vulcan.

The **Florence Mine** was first worked as an open pit, and stripping started during the **winter of 1879-1880**. As the mining activity increased, the method of extracting ore changed from open pit to shaft mining. By 1915, the majority of the miners were laid off because the mine's ore had such a high sulfur content that sales were not good. The large stockpiles of ore could not be sold, and much of the ore was crushed and used in road construction within the town. The pumps were removed from the mine in 1931.



**Florence (Terry) Hulst, Wife of Dr. Nelson Powell Hulst, for Whom the**

## **Florence Mine, Florence and Florence County Were Named**



### **Commonwealth Mine, ca. 1880-1885**

In his reminiscences, **Fisher** also claimed to have discovered the **Commonwealth Mine** early in **1876**. **The Commonwealth Iron Company laid out the town in March of 1880**. During that same year, the stripping of topsoil was done with 17 teams of horses, a wheel scraper and a large force of men. The Commonwealth Mine operated for eleven years.

Large and beautiful homes were built for the mining personnel at what was known as the **Badger Location near Commonwealth**. Stores, a doctor's office, a lumber company and a large mining office were all located here.



**Commonwealth Mine Superintendent's Residence at the Badger Location, ca. 1881-1885**

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The Commonwealth Iron Company's superintendent lived at the Badger Location. W.E. Dickinson lived here. The kidnapping of Dickinson's son, Willie, as the six-year-old walked home from school on **November 1, 1881**, has become a part of the lore of the Menominee Range.



**Otto Conrad Davidson**

**Otto C. Davidson**, superintendent of the **Oliver Iron Mining Company's** properties on the Menominee Range following the company's purchase of the **Chapin Mine** in **1901**, was first superintendent of the **Florence Mining Company's** properties, in **1887 and 1888**, and was superintendent of the **Commonwealth Mine** from **January of 1889** until he went to Iron Mountain. He began working on the Range in **1882** as a

bookkeeper at the **Brier Hill Mine** in **Norway**.

## CORNISH PUMPING ENGINE FACT SHEET

The famed **Chapin Mine** in **Iron Mountain**, discovered in **1879**, was one of the **wettest iron mines ever to be worked**. During its first ten years of production, ground pumps were able to take care of the constant accumulation of seeping water, but when mining was attempted at deeper levels, the problem became impossible for the ground pumps to handle.

The kind of extensive dewatering was known to be done only in the deep tin mines of **Cornwall, England**. The **Cornish Pumping Engine** was so named because it was patterned after the engines used in Cornwall's mines.

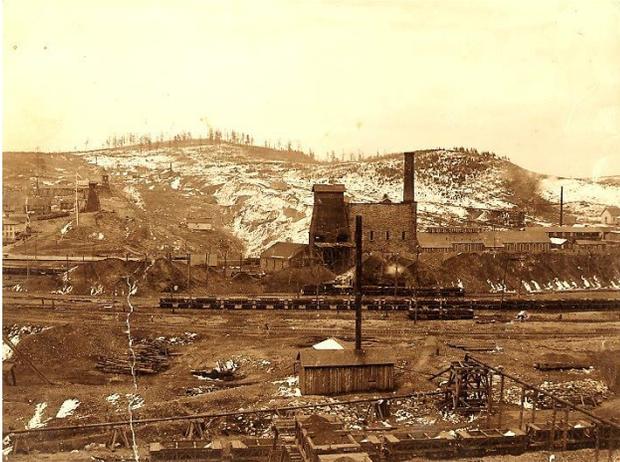


**Edwin Reynolds**

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**Edwin Reynolds**, chief engineer for the **E.P. Allis Company** (now the Allis Chalmers Company) of Milwaukee, Wisconsin, designed the steeple compound condensing steam engine in **1890**.



**Sandstone Engine House and D Shaft of the Chapin Mine – Original Site of the Cornish Pumping Engine – 1892-1898**

The engine's high pressure cylinder has a 50-inch bore, and the low pressure cylinder is 100 inches in diameter. The stroke of the pistons is 10 feet. The flywheel alone is 40 feet in diameter, weighs 160 tons and had an average normal speed of only ten revolutions per minute.

The "slot" for the flywheel is about 20 feet in depth below the bed of the engine and the big shaft which drove the wheel is 24 inches in diameter. The engine itself extends 54 feet above the floor of the engine room. The designer estimated the weight to be 725 tons over all.

The engine had been placed on the surface close to the boilers so that there was comparatively little loss of steam by condensation, nor could the engine be damaged or stopped by a sudden flow of water into the mine. In an emergency of any kind, the mine could be completely shut

down and allowed to fill with water without damage to the pumping equipment. The engine's boilers required 11,000 tons of coal annually to operate.



**C Ludington Shaft of the Chapin Mine – Second Site of the Cornish Pumping Engine – Steel Shaft, Metal Building Housing Engine, Metal Boiler House, 1912**

The pumping equipment utilized a reciprocating motion to a line of steel rods extending 1,500 feet down into the mine, with eight pumps attached at intervals of 170 to 190 feet along the rods. Each of the pumps forced the water to the next higher pump and finally out of the surface of the mine.

*[NOTE: At D Shaft there were four sets of pumps in the water column, lifting the water 600 feet. At C Ludington Shaft there were eight sets of pumps in the water column installed at intervals of 170 to 192 feet, lifting the water 1,522 feet.]*

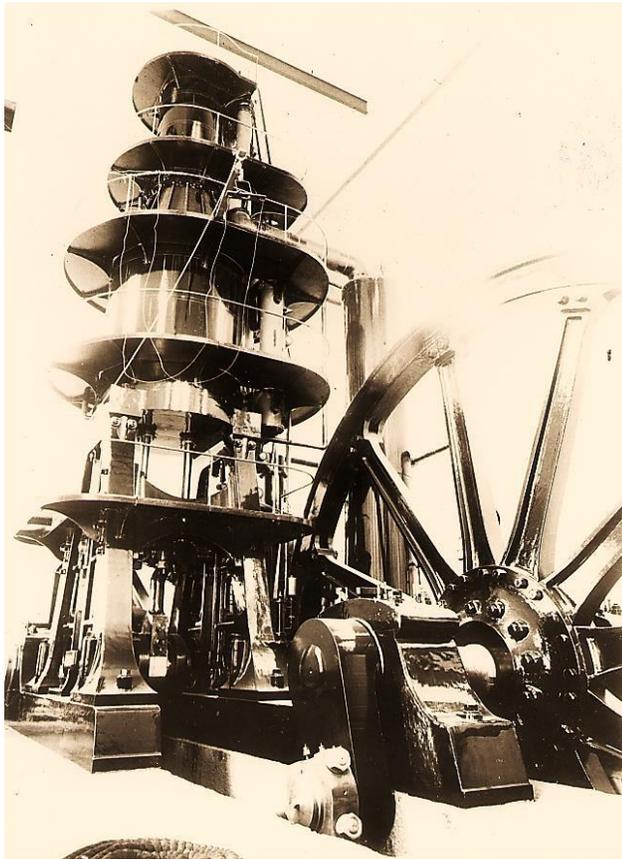
As the engine was designed to run slowly, the pumps had a capacity of over 300 gallons per stroke of the pistons. At ten revolutions per minute, this meant that over 3,000 gallons of water could pour out every minute through the pipe line, which was 28 inches in diameter. A total of

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5,000,000 gallons of water could be removed from the mines each day.

The engine began operation at "D" shaft of the Chapin Mine on **January 4, 1893**. The engine alone cost \$82,500 in **1890**. The portion of the pumping system located in the shaft cost much more, and the installation added brought the total expenditure to an estimated \$250,000 for the entire pumping plant. Some estimates were much higher.



**Cornish Pumping Engine at C Ludington Shaft of the Chapin Mine, 1912**

A crew of 60 men divided into three shifts was employed to operate the plant, including the men in the boiler house, engine house and shaft.

The pump worked well at "D" shaft until underground conditions caused it to shift and the equipment was forced out of alignment. In **1896** [*sic* – **1898**] it was

dismantled and stored at a site known as the "sandbanks" which was halfway between its original location and its present site at "C" shaft. The pumping engine went back into operation in 1908 at "C" shaft, where it dewatered the combined Chapin, Ludington and Hamilton mines, each of which had been operating in close proximity to the others.

The Cornish Pumping Engine and equipment were highly efficient at this site until, in 1914, the Oliver Iron Mining Company put into operation at the Chapin the largest electrically driven centrifugal pumps in mine service in America at the time. Unable to adapt to the drive of the electric motors beneath her, the magnificent Cornish Pump, world famous as one of the wonders of the mechanical and steam age, stood idle and was kept only for use in case of accident to the other pumps.

*Researched by Beatrice Blomquist,  
Historian  
Menominee Range Historical Foundation*

## SAVE THE PUMP CAMPAIGN

Spurred on by Jimmy and Ida Goulette, the Menominee Range Historical Foundation has assumed the responsibility for establishing and maintaining a museum and interpretive center at the site of the Cornish Pump, with the pump restored to enable simulated operation as the primary artifact of Menominee Range mining history. The engine, one of the greatest achievements in the history of iron ore mining, symbolizes the enormous efforts made by industry and pioneers of the area in the pursuit of iron ore.

Major renovation at the site has been in progress since September of 1980. The enthusiasm generated by the Cornish Pump Project has come from all parts of the Menominee Range. Through individual donations, donations from companies and monies raised through various drives

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spearheaded by local organizations, approximately one fourth of the \$175,000 needed for the first phase of the project has been raised. Additional contributions are necessary, and are tax deductible. Your support and contribution is most welcome.

Checks should be made payable to the "Cornish Pump Project" and may be sent to: The Menominee Range Historical Foundation Museum, P.O. Box 669, Iron Mountain, Michigan 49801, whose tax-free number is Det:70:349:440:208:EMW.

*[NOTE: This booklet, reformatted in March, 2014, includes historic photographs added to enhance the written material.]*