It has been an interesting few months in the Tintic Mining District. Just as we were getting out of winter the world was struck by COVID-19 virus. Following Governor Herbert's advice to enact social distancing measures, the museum is closed temporarily until we manage the spread. Amid the COVID-19 outbreak it's important to remember this isn't Eureka's first pandemic. The 1918 flu pandemic has dramatic affects on the Tintic District. Influenza spread like “wild fire” through Tintic's towns in 1918.

Dr. Steele Baily, Jr., Mammoth City physician, issued orders in October for residents to stop traveling from camp to camp; whenever the disease made its appearance, Bailey instituted a strict quarantine. Eureka affected stringent regulations in closing all “soft drink” parlors (saloons); removing tables, ets. From ice-cream stores; and prohibiting the congregation of citizens. Cemetery grave sites, and oral testimony verify that hundreds died. One informant recalled that in the A. N. Wallace Furniture Store and Mortuary, bodies were so numerous that the undertaker was force to place bodies in dresser drawers, on table tops, or wherever room could be found. The epidemic was especially devastating on infants.

We hope that you and your family stay safe during this time and come to visit us once this crisis has subsided. This summer we'll be opening the historic Eureka City hall tours. The Eureka City Hall was built in 1899 and constructed for $4,400 ($136,300.00 in 2020). This building served the needs of the City Court, Treasurer, Volunteer Fire Department and the City Council. We look forward to giving you a tour of this new addition, and all the other great sites around Eureka, Utah. Until then, stay safe and be sure to follow us on Facebook for museum updates.
Current State of Mining History Preservation in Utah

By Russell Hartill JD

Mining—the word conjures up images of weathered wooden head frames silhouetted against an azure blue desert sky; grizzly old prospectors with burros; the sparkle of gold in a pan; dusty mill tailings and rusting machinery; gold, glory holes, and ghost towns. To some, mining is a picturesque past, while to others it is a meager livelihood, and to a few it holds a promising future—maybe. Whatever mining is to you or me, it can safely be said that it is rich in history. The subfield of western history known as the mining west has grown tremendously in the past forty years. From a dozen well-written books by 1940 to a figure well over 200 today, mining history has begun to take its rightful place in the field of American historical writing. Eighty years ago, mining history was dominated by one subject: the California Gold Rush of 1849. Since then, there has been a noticeable shift away from the study of the romantic gold rushes of the 1850s and 1860s. Attention is being concentrated on later developments, and twentieth century mining is even being considered as a subject for historical scholarship. An understanding of the implications and consequences of past public policy concerning the mining industry will help us better plan for the future and avoid repeating our past mistakes. Twentieth century mining is a topic that needs careful study, especially in today’s insecure energy and strategic minerals world. Specialized techniques, skills, methods and processes no longer in use should be studied. Descriptions of them need to be obtained from people who practice them. The feelings and viewpoints of those people who were present during the mining booms of each decade of this century should be captured. Oral History methods are most useful for these types of topics. Miners, prospectors, and “desert-rats” may soon prove to be gold mines of their own in terms of historical and practical knowledge. They can greatly increase our own understanding of the subject, if we but tap into this dwindling resource now.
The need for preserving and interpreting the history of mining in Utah is great. There is a serious lack of representation within Utah parks of sites and districts with mining themes. In spite of the important role mining played in the development of the American West, one has to look hard to find a public place in the West where the story of mining is vividly told, although many private individuals and groups are doing a commendable job. At the same time, there is a great deal of public interest in this subject. In Utah, what is left of mining sites is hardly enough to provide the visitors with a clear idea of what it was really like and what went on. In many cases where buildings and structures at a site are preserved (and in all cases where they are not) dynamic interpretive programs are needed and in some instances reconstructions will be required in order to adequately present story of mining. A marvelous opportunity exists here for “living” history demonstrations where the public can experience history.

If the public had a place or places to go where they would be able to see and feel history through meaningful experiences at visitor centers or demonstration areas, vandalism and relic hunting would be reduced. Having a place to go that allowed one to see and feel relics or reproductions in use (and even be involved in prospecting, mining and milling activities) would serve to educate the public, preserve history and encourage conservation of historic resources.

**Historical Marketing**

In addition to the experiences and demonstrations, it is necessary to provide the public an opportunity to take a piece of history home with them in the form of creative and dynamic booklets, books, audio sound “tour,” reproductions of relics, samples, photographs, posters, videotape, ephemera, etc. It is common and healthy desire of the public to want to feel and heft history rather than look at it through a glass case. The visitor to a historical site should be encourage to make history a part of his/her life. Historical marketing products and ideas can allow a visitor to do this.
Reproductions of museum display pieces, relics, maps, photographs, scholarly historical volumes, and other products should be designed to make history come alive at affordable price. Through research, oral history, historical archaeology, living history and historical marketing the romance, dynamism and importance of mining can be captured, magnified, and disseminated to the public. The preceding concepts can be used by anyone, from individuals, companies, organizations, to governments in presenting the story of mining to any audience. Failure to utilize these methods will result in the loss of a valuable heritage to a generation whose awareness of and appreciation for mining is already nearly extinct. The story of mining in Utah is colorful, romantic, and stirs the imagination of every visitor. The preservation and interpretation of this subject should be designed to bring the story to life for the visitor.

**Research Questions**

Mining is an exciting subject. The public has always displayed a great deal of interest in it and that interest has steadily grown. Yet surprisingly little is really known about the story of mining. Most people will admit that they know there’s a lot of abandoned mines throughout the west, but that’s as far as their knowledge of mining goes. How was it done? What were the technological processes and techniques used? What was the business of mining like and how was it conducted? How was capital raised and invested? How did the towns develop economically and how and why did the die? And the people—what were the like? Why did they have such incurable optimism and what made them so willing to take chances? Those abandoned mines—why were they abandoned? Will there be a future for them? More research into this fascinating topic is needed, research that explores the relationships and interplay among man, society, and the minerals extraction industry.
**Living History: An Introduction**

Research, however, is not enough. An exciting subject should be dynamically presented. As a tool to help people better understand mining, demonstrations could allow the public to see how things were done. Like what it was like to look for follow float to an outcrop; examining an outcrop; filing a claim; eating a prospector's breakfast; performing an assay; sinking a shaft; using an air drill; seeing the vein at depth; drilling, breaking, and mucking the ore to the surface; crushing it and running ore through a mill; pouring the gold bar; and obtaining a genuine feel for life in a mining camp. Reenactments should also be offered to reenact significant events in the history of the mining west, and could be commissioned to commemorate anniversaries and could be held by themselves or in conjunction with a package tour or convention/fair. They could be videotaped for media airing.

Demonstration and reenactments should be researched by scholars and the dialogue should be as historically accurate as possible. Costumes and artifacts would bar originals or authentic reproductions. These living history tours and experiences could last from a few hours to a day, weekend, or all summer long—depending on the wishes and schedule of the visitor or agency. Students of American history, geography, geology, and scouting groups would especially benefit from this multidisciplinary learning experiences. Photographers, vacationers, desert users, youngsters, everyone would find this living museum an interesting and exciting experience. Such experiences, demonstrations, and reenactments would awaken the senses and give the visitor a historical perspective no book could ever provide.

The author welcomes and encourages all amateur and professional mining enthusiasts and/or mining historians to provide comments, suggestions, and questions to begin discussion and implementation of any of the concepts mentioned.

Mines literally are windows to the earth below us and can provide insights to our future making their existence today a priceless heritage. Public safety can be satisfied without pouring a mine dump back down its shaft. Mines, dumps and sites may teach us much that we have yet to learn. Backfilling them will create lost opportunities for generations to study, research, and yes, explore. The story of mining in Utah could be a valuable and exciting historical experience for the American people. It is a story that needs to be interpreted and carefully and creatively presented.

**TINTIC MINERAL STATISTICS**

The Tintic district is well known throughout the world for its substantial production values of lead, silver, gold, copper and zinc. This production came mainly from an estimated 120 large and small mines. From 1869 to 1987, the district produced 19.1 million tons of ore containing 2.77 million ounces of gold, 272 million ounces of silver, 22.8 billion pounds of lead, 450 million pound of zinc and 254 million pounds of copper (Morris, 1990).
With these totals, the Tintic mining district is the second-leading non-ferrous metal producer in the state behind the Bingham mining district.

All recent production has been from the North Lily mine dump and the Trixie and Burgin mines, in the eastern part of the district.

The combined production from the greater Tintic district constitutes the second largest metal districts in Utah.

The main Tintic district, encompassing the town of Eureka, is the largest of the four Tintic subdistricts and is the largest district in the state. Historical production from the Main Tintic district totaled 13.8 million tons of ore with a recovered grade of 488 ppm Ag, 5.38 ppm Au, 4.63% Pb, and local contributions of Cu and Zn. The Main Tintic district is the second largest Cu and the third largest Pb, Au, and Ag producing district in Utah. Total district metal production at modern metal prices is estimated at $7.3 billion. The larges mines in the Main Tintic district are the Chief Consolidated and Mammoth underground mines. (Morris 1990; Krabulee and Briggs, 2006).
The Main Tintic district forms a lynchpin in the Deep Creek-Tintic mineral belt of the Basin and Range Province in central Utah. Geologically, the Main Tintic district is underlain by a thick section of Paleozoic strata, which have been strongly folded into large, north-south trending, asymmetrical anticlines and synclines cut by northeast-trending, right-lateral strike-slip faults. These sedimentary rocks were uplifted, eroded, and covered by early Oligocene calc-alkaline volcanic rocks emanating from a large caldera just to the south of the district. Continuing magmatism resulted in the intrusion of monzonite stocks, plugs, dikes, and sills with associated hydrothermal alteration and mineralization.

The area was uplifted on the west during Basin and Range extension, resulting in a slight, post-mineral, eastward rotation of the range and continued erosion of the East Tintic Mountains. (Krabhulee and Briggs, 2006). Most of the production from the Main Tintic district has been derived from sub-vertical Cu-Au-Ag chimneys and sub-horizontal, carbonate-hosted, Pb-Zn-Ag replacement deposits (USGS Model 19a).

Spatial relationships of metals in the Main Tintic district exhibits an overall donation from higher temperature Cu-Au-Ag ores in the south adjacent to the contact of the Silver City stock, through a Pb-Zn zone, to a distal, cooler Zn-Pb-Ag zone at the northern periphery of the district (Krabulle and Briggs, 2006).

The Mammoth mine in the southwest part of the district is a large, sub vertical, Cu-Au-Ag chimney that essentially marks the southern beginning of the Mammoth-Chief ore run. The Mammoth mine produced 1,280,000 tons of ore averaging 370 ppm Ag, 1.4% Cu, and 1.6% Pb. The Chief orebody marks the distal northern manto. The Chief Consolidated is the largest of the replacement deposits in the Main Tintic district and produced nearly 3.5 million tons averaging roughly 515 ppm Ag, 2 ppm Au, 5.9% Pb and 2.4% Zn (Morris, 1990).


The primary ore-bearing minerals found at Tintic are enargite, tetrahedrite, galena; sphalerite, pyrite, marcasite, gold, silver, and copper. Visible native gold was found at the Centennial Eureka, Mammoth, Grand Central, and Gold Chain (Ajax) mines. The largest amount of gold ore was recovered at then Apex shoot of the Mammoth mine. Visible silver wires were found at the Chief Consolidated mine. Secondary oxidized ore minerals include smithsonite, hemimorphite, aurichalcite, malachite, azurite, cuprite, cerussite,
anglesite, and hematite. Associated minerals include quartz, calcite, aragonite, dolomite, barite, and gypsum. Early mining and recent mineral collecting in the Tintic district uncovered rare mineral specimens of olivernite, clinoclase, mixite, tyrolite, conichalcite, linarite, scorodite, adamite, mimetite, carmine, cornwallite, jarosite, plumbbojarosite, and Northern Spy mines produced many of these minerals. The district is also the type locality (where the mineral was first identified and described) for the minerals argentojarosite, arsenobismite, billingsleyite, crandallite, and tinticite. The Centennial Eureka mine dumps were reworked for gold, during which micro-size specimens of previously unknown copper tellurites were found, including frankhawthorneite, unknown copper tellurites were found, including frankhawthorneite, utahite, juabbite, jesonite, leisingite, an calpineite (Marty, J., Jensen, M.C., and Robberts, A.C., 1993, *Minerals of the Centennial Eureka mine, Tintic district, Eureka, Utah; Rocks & Minerals*, v. 68, no. 6, p. 46-56).

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**UTAH MINING BIBLIOGRAPHY**

Selected Mining District of Utah by Carl Age

Utah Mining Districts/ by Ken Krahulec

(Maps and detailed summary of all districts)

pp. 107  Geology and Ore Deposits of the Tintic District. On our [archive.org](http://archive.org) website

Minerals and Mineral Locations of Utah by Kenneth Bullock

Mining Districts of Utah (map) by Kenneth Bullock

In determining the overall significance of a mining site or area, we suggest that the following points be considered, which comprises the life cycle of a mine.

1. Discovery-Production figures or the richness of ore
2. Daring-Mining-milling processes used, including any outstanding adaptations, uniqueness.
3. Deals-Personalities. To what extent did owners achieve notoriety or prominence through their mining activities.
4. Dividends-Pioneering. How far reaching was the mine in influencing the first water.
5. Disruption-Uniqueness, Firsts of their kind, outstanding example of architecture, outstanding degrees of preservation.
From the Archives

By Josuah Bernhard

If the introduction of this quarterly newsletter was not sign enough, great changes are being made within the society. Many of our members are aware of the archival collections housed in the depot. Most may not be aware of just how important this treasures is. Unfortunately, the depot space has become inadequate for storage—the collection has grown to the point where, in spite of previous cataloging efforts by June McNulty and others, it is just too big for its storage space. Many great photographs and documents have been donated to the society that have not been recorded, such as the Chief Consolidated log books.

Since November 2019 we have been working on a new cataloging system based on my experience in archives across the Rocky Mountain area. We are creating a document with physical descriptions and location identifiers for every item in the archive. Once documented, we will organize everything into individual collections (examples: The Chief Consolidated Mining Company Log Book Collections, the Unidentified Portrait Collection, or the William H. Palmer Commercial photography Collection) and every individual item within the collection will receive its own call number, just like books in a library. Sensitive, delicate and important images will be digitized so that we do not have to handle the originals in the future. This way, if somebody wants to research our collections, they will be able to do a digital search by keyword, identify exactly where it is kept, and if it has been scanned already, will have quick access to the digital copy so that we will not have to be rummaging through the filing cabinets.

Speaking of digital materials, the Tintic Historical Society now has an archive.org account. For those not familiar with archive.org, it is an online library curated by hundreds of libraries and archives across the world. Our society is rubbing shoulders with such world renowned institutions as the Library of Congress, the California State railroad Museum, and the LDS Church History Library. We are gradually uploading materials from our library to this site so that it can bee preserved; we have the originals backed up on a hard drive, archive.org backs up their site on at least two separate servers on opposite ends of the country so our collections will be preserved in triplicate. Russell Hartill also donated materials from his collection to bee hosted there. You can see what we have so far at this link:

https://archive.org/details/@tintic_historical_society

We will need a number of items to assist with the new library and archives space. If you have anything on this list to donate, or would like to donate money to purchase these materials, please contact any mumbler of the presidency to arrange it.

(Bookshelves, Form book rests, Archival quality boxes and folders, Heavy curtains for the windows).
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