



# Historical Review

## Of Former United Keno Hill Mines Limited Quartz Claims

**Bellekeno, Onek and Ruby Sites  
Volume 2**

Prepared for  
Assessment and Abandoned  
Mines Branch  
Energy Mines and Resources  
Government of Yukon

By  
McQuesten Lake Enterprises

**March 2008**

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# Acknowledgements

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## Executive Summary

This report is the second volume documenting historical resources on the former United Keno Hill Mines Limited (UKHM) quartz claims. The report is produced for the Assessment and Abandoned Mines Branch, Department of Energy Mines and Resources, Government of Yukon and has been accomplished in conjunction with the Historical Sites Unit, Cultural Services Branch, Department of Tourism and Culture, Government of Yukon.

The focus of the project is to document historic sites, determine safety issues, and to create a historical record of buildings, features and artifacts located on the former UKHM mining properties before they are lost by development or the elements.

## Background

This project stems from a local initiative which began in 2003 with the Silver Trail Tourism Association, Department of Indian and Northern Affairs Canada, Waste Management Program and McQuesten Lake Enterprises. Since mining has played a significant roll in the regions history, the Silver Trail Tourism Association along with local individuals wanted to be involved in the assessment process for preservation of historical landmarks and potential tourism opportunities prior to the sites being remediated.

From the positive response to the initiative project, it was evident there was a need to document the heritage sites in the area using Heritage Sites Unit methods. This in-depth recording and focused research would assist in creating a record of historical data of the area.

The second year project was a tri-venture with the involvement of the First Nation of Na Cho Nyak Dunn (NND) Lands Department, Historical Sites Unit, Yukon Government and the Dept. of Indian and Northern Affairs Waste Management Program. An NND elder and student worked with McQuesten Lake Enterprises during the field work and conducted interviews with elders in Mayo. The data and recommendations for the sites included the involvement of the local First Nation people along with the Heritage and Lands Dept NND.

## United Keno Hill Mines Limited Quartz Claims

The United Keno Hill Mines Limited properties fell under receivership with the Yukon Government responsible for the care and maintenance of the sites. In 2006 Alexco Resource Corporation was chosen from eleven bids to purchase the assets.

The need to remediate many safety issues throughout the properties led to the requirement for further investigation and documentation of historical resources.

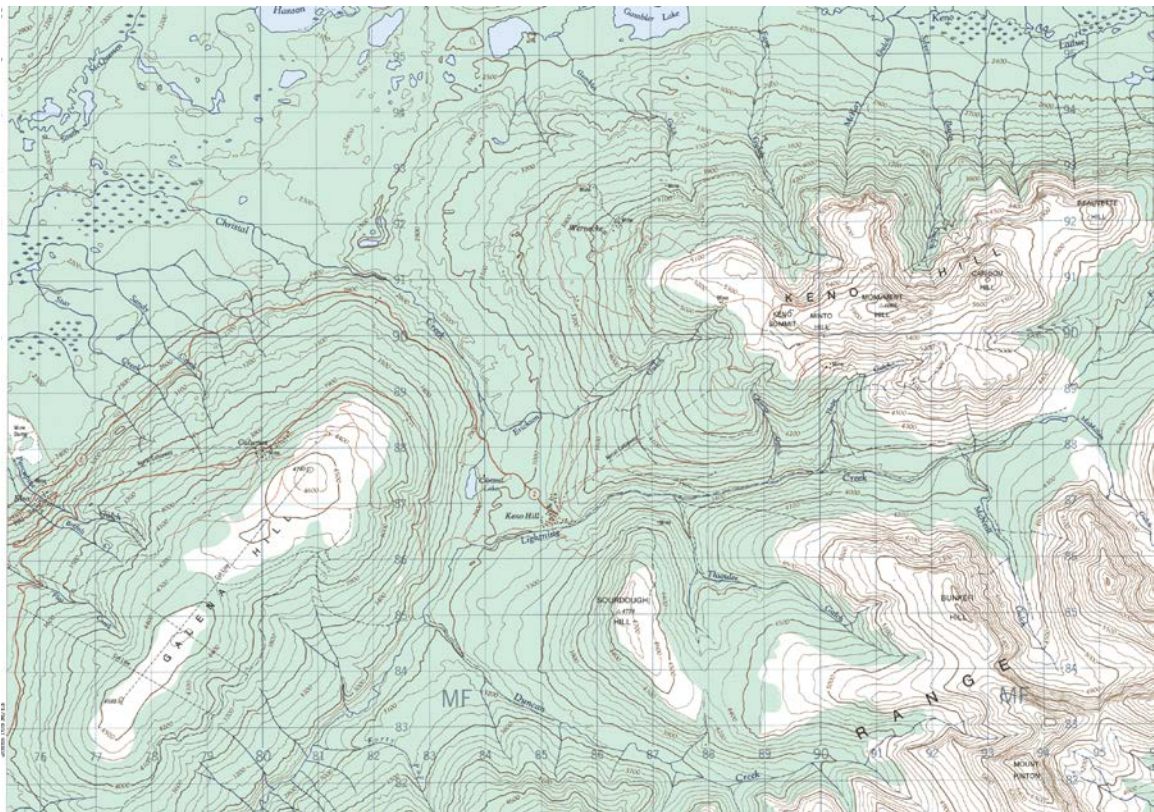
McQuesten Lake Enterprises was awarded a contract to continue research on the former United Keno Hill Mines quartz claims.

Volume one, 2007 covers mainly the Keno Hill group of claims consisting of; Top of the Hill Camp, Shamrock Site, Wernecke Camp and Sadie Ladue, Lucky Queen, Black Cap/Shepherd and Lucky Queen 500 and the Keno 700 Camp.

This volume covers the Onek Site on Keno Hill, the Bellekeno Site on Sourdough Hill and the Ruby Skip and Ruby 400 Site on Galena Hill.

### Study areas

The study areas are located in the central Yukon encompassing Keno Hill, Sourdough Hill and Galena Hill.



*Keno Hill, Yukon Territory. Map 105 M/14. Energy, Mines and Resources Edition 2*

## Field Work

The field season is short and weather can be problematic. Sites that are below tree line require more time to investigate. Additional buildings/features were discovered during our field work that were not included in The Keno Valley/Dublin Gulch Environmental Baseline Assessment, March 2000; however, many buildings/features are well hidden amongst dense spruce and willow and can be very easily overlooked.

While investigating the Bellekeno Site on Sourdough Hill, we discovered reopened shafts from previous reclamation the year before and an additional shaft concealed under dense willows. Because of safety concerns, the field work was postponed at the site until the leaves had fallen from the trees so the contours of the ground could be easily seen.

## Project Team

Sonia Stange and Keith Hepner make up the project team of McQuesten Lake Ent. Both are long term Yukon residents with extensive experience working in an isolated environment. Both have successfully completed the University of Victoria Cultural Resource Management course “Inventory and Evaluation of Historic Resources” in 2004. Both have also undergone field training on the identification, mapping and documentation of heritage sites, with Barbara Hogan, Historic Sites Registrar, of the Heritage Sites Unit, Yukon Government. Keith and Sonia are familiar with Yukon and national standards when recording and documenting historical sites.

## Methodology

The Keno Valley/Dublin Gulch Environmental Baseline Assessment, March 2000 report was used during the field season to correlate the data and to update any new information found.

Sites in this report were chosen by Alexco Resource Corporation, the Assessment and Abandoned Mines Branch, Energy, Mines and Resources, and Historical Sites Unit, Cultural Services Branch, Department of Tourism and Culture, Yukon Government due to the remediation plans which were scheduled for the 2007 field season.

Archival research was done at the Yukon Archives and via the internet during the fall and winter. The local mining recorder’s office served as an excellent source for past ownership of claims in conjunction with publications as noted in the reference. Alexco Resource Corporation supplied copies of underground workings and photos taken during the reclamation of the sites.

Each site was recorded with documentation of all historic features and buildings. The site elements were described along with conditions, photographs and safety issues. Sites were established with a Garmin, Global Positioning System (GPS); buildings and features were

measured and site maps were drawn to scale showing orientation and size of the buildings and features.

Records of buildings and features were created with each file containing site maps, 8-20 labeled photographs, copies of mining records and historical underground workings. This information was then entered into the Yukon Historic Sites Inventory database along with thematic and functional information. A paper copy of the database information is included in each file.

The public will have access to the gathered information through the Yukon Historic Sites inventory which is held and maintained at Heritage Resources Unit, Yukon Government and through a written report of selected mine sites which is produced for the Waste Management Program, Indian and Northern Affairs Canada and the Assessment and Abandoned Mines Branch, Energy, Mines and Resources, Yukon Government

### Conclusions

Since 2003 approximately 175 buildings and features have been documented on Keno Hill, Sourdough Hill and Galena Hill.

The records of these sites provide important historical and cultural information to the people in the Yukon. This information assists in illustrating the larger picture of the individuals who first pioneered the area and thus provides the current owners and others the information needed for land use planning, possible tourism ventures and most importantly, assists in teaching and preserving Yukon history.

There remain sites in the area which have yet to be documented and it is essential that the history be recorded before the elements or development removes this opportunity.

We would like to thank all the people who were involved in this project.

### Dawson News

The following pages are copies of microfilm located at Yukon Archives from the Dawson News. Dates from 1926-29. Newspaper articles have been cropped and modified from the original pages to outline the specific mine sites associated with this report.

In several other parts of the Keno district important development work is being done this winter. Martin Malessich, who has been placer mining on Thunder Gulch, a tributary of Lightning, at the foot of Sourdough Hill, for the last twenty years, has done considerable quartz mining adjoining Thunder Gulch, on the right limit. In his last shaft, in which he is now working, he is down thirty feet, and is running into what promises to be a very rich find. He is finding quite a few specimens of very high-grade galena, with large lead percentage, and is very enthusiastic and fully expects before long to open a good producing lead. On the extreme top of Sourdough Hill, Andy Johnson has a group of claims on which he has done extensive prospecting work the last six years. He has discovered two veins carrying high values and intends doing extensive work on the hill the coming summer. Mr. Johnson also

has located a remarkable find of galena on the Fox claim, on the ridge between Silver Basin and Faro Gulch. This winter he is operating his alluvial lead claims on Lookout Mountain, and is taking out high-grade galena, which will help add to the district tonnage. Alex Gordon and others have found heavy galena float on Sourdough Hill, and are preparing to develop the same next summer.

Hargraves and Williamson, on the Fisher claim, of the Onek Company group, have one of the best showings in the camp. They are working eight to ten men, and will get out at least 750 to 1,000 tons of high-grade ore this winter. This ground is ideally situated on the edge of Keno City. The ore body seems to be proving up continuous with depth, and the properties are free from water. They are operating with a gasoline hoist.

the ore. John Kinman is prospecting on the Galena Farm claim, adjoining the Onek property. He has one shaft down fifty feet on the vein. Plans are ready for extensive prospecting on other properties as soon as the snow disappears.

On the top of Galena Hill, Settlemier and Birmingham have been carrying on steadily since last March and have taken out in the meantime about 1,000 tons of high-grade galena ore and are now mining an average of about ten tons a day. They are mining now on the 100-foot level, after extensive development work having shown up two parallel seams of ore in the vein. The vein is thirty-five feet wide in places, with varying width to the ore and milling ores throughout. Much work, however, has been involved in sinking their shaft the 100 feet in water, drifting, cross-cutting and running raises, and in stoping. Their equipment includes a gasoline hoist, gasoline compressor, together with jack hammer and stoper, steam boiler and pump. Seventeen men, including the two operators, are on the job. Charles Stone, with three teams, is hauling the ore. Jimmy O'Brien and J. McLennan are driving for Stone. The ore is hauled on sleighs and rawhides to Discovery on Duncan creek, where it is yarded on a long log landing, and transferred to the Treadwell "cat" trains.

Galena Hill is expected to be very active this coming summer. More than twenty ditches, each from a few hundred to two miles long, were dug on Galena Hill last summer and fall, and will be operating this spring with aid of automatic gates and dams, to cut the overburden and expose the surface in quest of new veins.

Several other new veins were located on Galena Hill last fall. Neils Jones located a good bearing of high-grade ore on the Ruby fraction, adjoining the Settlemier and Birmingham ground on the north, and has two shafts started on the same from which he has taken high-grade galena and gray copper ore. Clem Slayard has

## Greenfield & Pickering Are Handling Big Contracts

MAYO CITY.—(Special Dawson News.)—Greenfield & Pickering, the leading contractors in freighting and teaming in the Mayo district, are engaged chiefly this winter in hauling silver ore from Keno Hill to Mayo for the Keno Hill, Limited, with the largest outfit of the kind in the Yukon. They recently made preparations for handling their business with more facility and dispatch. Last year they hauled 2,200 tons of silver ore from Keno Hill, and this winter will have 2,500 to 4,000 tons to haul



J. E. Pickering

for the same people. With this outfit in view they have brought into the camp 250 tons of hay and oats, and have engaged in their work about 35 men and 75 horses.

The company maintains a series of barns and stations every ten to fifteen miles along the route between Mayo and Keno Hill. It also has its own blacksmith shop, harness shop and offices at Mayo. The work is thoroughly systematized, and conducted under the personal direction of John E. Pickering and James Greenfield, the proprietors. Angus McIndyre is the foreman in charge of the loading of the teams at Keno City in winter, and in summer is engaged with the company at Mayo City. Gordon Lee is the accountant in charge of the detailed office work at Mayo.

The company this year manifested its faith in the district by buying three lots and building thereon one of the finest barns in the Yukon. It is 30 by 60 feet, and built of fine large logs, and accommodates many horses. It also is provided with large doors, so that a six-horse team and sleigh can drive into the barn in cold weather, and the horses be unhitched right in the barn. The doors also are large enough for the

largest type of auto truck and caterpillar to drive into the establishment with loads. The building is one of the largest and most attractive in Mayo, and a credit to the enterprising firm which has erected it and to the town. In one corner of the building is a well and pump. Water was obtained by sloping in the gravel directly under the barn, and this proves a great advantage to the establishment. The lots on which the barn is erected have a total frontage of 90 feet and are 150 feet deep, thus affording ample yard room for storage of sleighs and other material needed in the business.

Greenfield & Pickering, in addition to freight for the Keno Hill Limited, have done much freighting in the camp for the Treadwell Yukon Company, Limited; the Onak Company, Limited; the various sawmills and merchants, and others engaged in general business. They also have handled the mail under contract between Mayo and Keno City and between Mayo and Minto-on-the-Yukon, giving steady service with horses and



James Greenfield

sleighs or other vehicles as the season required.

In hauling the ore from Keno Hill, the Greenfield & Pickering handle two full loads daily when in full swing. The ore first is relayed from the top of the hill to Keno City, a distance of three miles. Rigs going down the hill not only haul ore on the sleighs proper but also on rawhides which are drawn behind the sleighs. The hauling continues every day, excepting when heavy storms cause snowdrifts and blinding snows which make the work temporarily impossible. From Keno City to Mayo the hauling is done down Duncan

Creek valley and along the road paralleling the Mayo River, and is sheltered all the way, so that freighting on that section is continuous from day to day through practically all kinds of weather. Each of the sleighs used in the hauling of the ore handles ten to thirteen tons per load. The runners on these large sleighs are five feet apart, and the base of each runner is four inches wide. No trailers are used on the sleighs. Some of the heavier loads are drawn by six horses, and others by two to four horses. The company has barns at Keno City, Huffman's and Mayo, and stations also at Fields Creek and Minto Bridge, each being approximately ten miles apart. The barn at Huffman's, now the roadhouse station of Charles E. Van Cleave, is one of the largest in the country, and has accommodations for thirty horses. Warehouses also are located there for temporary transfer of the freight in summer, when conditions of the road require the lightening of loads.

Messrs. Greenfield and Pickering not only are engaged in contracting as freighters and mail carriers in the district, but also are heavily interested in the mining properties of Keno Hill, and were among the original stakers of claims on that hill. Both were among the very first stakers on Keno Hill, and claims which they were fortunate enough to get are included among those now comprising the original central group which is now being developed and operated by the Keno Hill, Limited.

Messrs. Greenfield & Pickering both came into the Yukon in the early Klondike rush days, and for years were in the livery and freighting and mail contract business in and about Dawson, and long have been among the Yukon's most substantial business men. Mr. Pickering last summer visited London, England, and his old home in Wales. The previous winter Mr. Greenfield and family also visited London and Mr. Greenfield's old home in England. Both, however, were satisfied to return to Yukon and to renew their activities in the Mayo district, and intend to remain here and share its increasing prosperity and to contribute to its growth and development.

## SHOWING NOW

**KENO HILL PRODUCTION OF SILVER-LEAD ORE IN 1920, 1,140 TONS**

## SOME NEW FINDS MADE

**GALENA LOCATED ON WEST SIDE AND ON DUNCAN—BUDGET OF NEWS**

MAYO, Jan. 15. — (Special correspondence to Dawson Daily News.)—Keno Hill production of high grade silver-lead shipping ore for 1920 amounts to 1,140 tons—a nice Christmas present to the Yukon.

Some well known prospectors are now hauling out their outfits to Keno and vicinity and many others are getting ready for summer work on their claims. Everyone is convinced he has something better than Keno, and will ship ore before the end of the year.

### Two New Galena Finds

Tom Morvach has uncovered galena near discovery on Duncan, and Tom Keating has some fine galena from the western slope of Keno.

All along the line business is good and men are preparing for the year's work. JIM M'DONALD.

### Hauling Progresses

MAYO, Jan. 12.—The ore is coming in to Mayo every day. Greenfield & Pickering have over fifty head of horses on the job, under the able management of Angus McIntyre, and if Angus lands the ore the way he handled the square dances at Mayo on Christmas and New Year's there need be no fear of the banks of the Stewart not being well lined with the ore by the opening of navigation.

### Busy on Stand-to

Forbes is busy on Stand-to and things are looking up fine. I think you can look for things to be on the move here next summer. We are taking old Father Time by the forelock and have formed a board of trade. You will receive all the dope on it from Stanley White, the secretary, who is a hustler, and, believe me, he has the boys behind him, for we are going to let the people know what we have and what we need.

### Labor Question

On New Year's morning the miners, after requesting an eight-hour day, quit work. Some underground workers remained on the understanding if the men's demands were not granted they would quit in two weeks.

On the same date a union of miners was organized here, to be known as the Laborers' Union. Over seventy paid up members were initiated. Since then practically every workman between Mayo and Keno Hill has joined.

J. O. Greenan, superintendent at Keno, after conferring with the men, left hurriedly for Dawson, to communicate with headquarters. While in Mayo the utmost good feeling prevailed between him and the men, and he played several friendly games of pool with them during the evening.

The general impression here is that as soon as New York is made acquainted with the facts the men will resume work. They say: "Had we the benefit of wireless or telegraph

no cessation of work would occur, and it would save the company and men the price of installation several times over."

JIM M'DONALD.

### Union Formed

MAYO, Y. T., Jan. 3.—The first meeting of the Yukon Labor Union No. 1 was held at Mayo, in the Royal Alexandra, on January 1. The meeting was called to order by Archie N. Martin. A deep interest was taken in the discussion of the problems that are confronting the labor men of this particular district.

It was the opinion that strong resolutions should be framed and forwarded to the Yukon council for the next session requesting them to bring down the necessary legislation that will change the conditions that exist today.

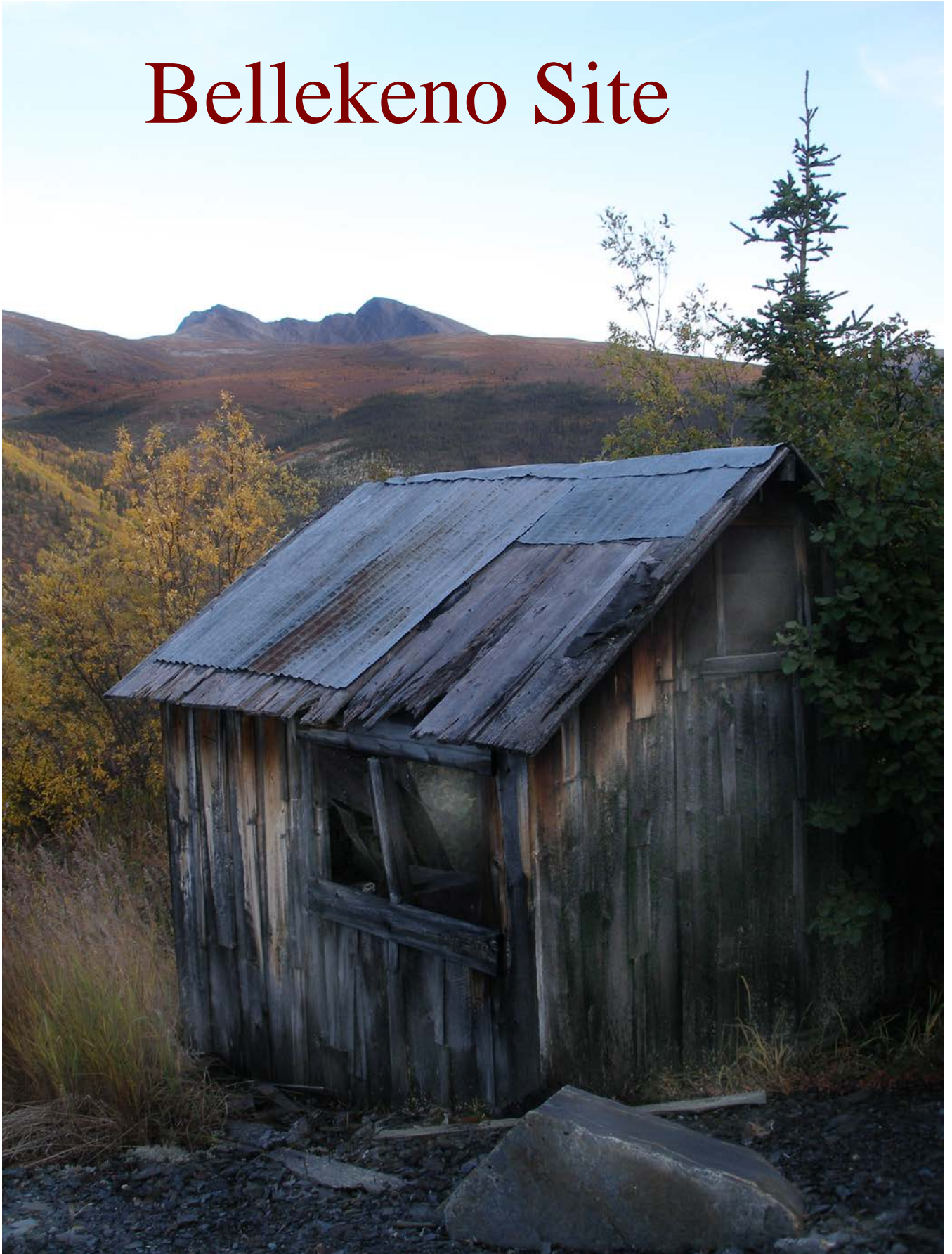
A large attendance was present. Practically 95 per cent. of the miners and workers have joined the union.

Officers were elected as follows: President, M. S. McCown; secretary, treasurer, Jos. Haynes; executive committee, Archie N. Martin, J. Maloney and Charles Brefalt.

### Ladies Organize

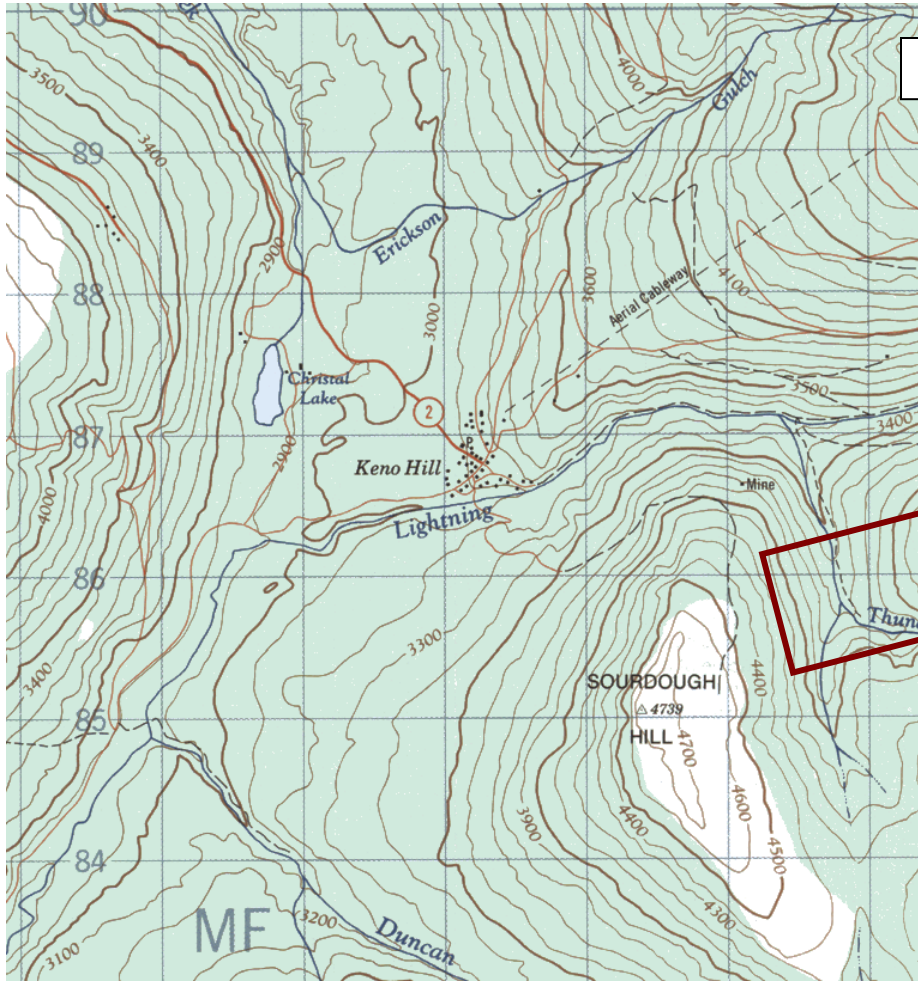
Some time ago the Mayo ladies formed a welfare society. They had several meetings. The menfolks have little information of the ladies' aims, and the bachelors are fearful of the future.

# Bellekeno Site



### Location and Access

The Bellekeno site is located on the north and northeast slope of Sourdough Hill and can be accessed via the Sourdough trail from Keno City. The Bellekeno 200 level can be accessed along a road branching off to the left at approximately 3800ft. Further along the Sourdough Trail are the Bellekeno 100 level and the Eureka buildings and workings.



Keno Hill, Yukon Territory. Part

### Historical backgrou nd

The Bellekeno Site located on Sourdough Hill consists of a group of 16 claims. Of this group the primary claims developed were the Whipsaw, Eureka, Extension, Tundra and Ram claims.

Belle

### Whipsaw claim

The Whipsaw claim was first staked by Samuel Moreau in 1921 with Samuel and Alexander 'Scotty' Gordon doing the actual hand mining on Sourdough Hill as reported by the Mayo Chronicle newspaper (March 13, 1926). The ore was reported to be of very high grade.

Samuel sold a ¼ interest to Amede Dubois in 1926 and in June 1928 a writ of summons was granted to Clara Negreau who transferred the claim and a statement of claim to Alexander Nicol and Samuel Moreau. The Territorial Court of Yukon Territory passed judgment and the claim was granted to Samuel Moreau.

Mr. Moreau then held the claim until 1933, when at that time the Crown granted through an Order of Council to Don Morrison and Malcolm S. McCown rights to the claim good through to July 1<sup>st</sup> 1934.

In May 1934 Alexander Gordon was issued ½ interests from Samuel Moreau and ¼ interests from Amede Dubois. Alexander Gordon held the claim in good standing until the death of Samuel Moreau, where upon the estate of Mr. Moreau allowed the transfer of the remaining ¼ percent interest in the claim to Gordon in 1946.

‘Scotty’ Gordon held the Whipsaw until 1948 when it was optioned by John R. O’Neill. During 1948 the claim was optioned and transferred to Irving J. Isbell, Murmac Lake Athabaska Mines Ltd., Clara Negreau and William S. Kennedy.

With an assignment of agreement. Irving J. Isbell, Murmac Lake Athabaska Mines Ltd., Clara Negreau and William S. Kennedy and Alexander Gordon transferred their shares in the claim in whole to Bellekeno Mines Limited which was later renamed Consolidated Bellekeno Mines Limited and was finally transferred in whole to United Keno Hills Mines Limited

### *Eureka and Extension Claims*

The Eureka and Extension Claims followed a similar pattern in owners as the Whipsaw claim except that the claims were initially staked by Alexander Gordon. Gordon staked the Eureka claim in 1921 and the Extension in 1925.

### *The Workings at Bellekeno site*

Bellekeno Mines Limited began operations on the claims in November of 1950 with a crew of ten men who set out following a vein that had been previously exposed. This previous work was likely the work that was done in the 1920s by Samuel Moreau and Alexander ‘Scotty’ Gordon as these thirty feet of drifting existed prior to Bellekeno Mines Limited having taken over the claims. This later work (Nov. 1950) was done with the objective of producing sufficient ore in order that milling could start in the spring. This was the start of the 100 foot level adit which we believe to be situated on the Tundra claim. By November of 1951 there was now a twelve man crew. They drifted 1,060 feet and completed 585 feet of crosscut. During 1951 although ore was found no ore was sacked or milled.

In 1951 during an extensive surface program, bulldozers moved approximately 2000 yards of material over various sections of the Bellekeno Mines Holdings. Bellekeno Mines made plans to drift a second adit 110 feet vertically down slope and directly below the 100 foot level adit. Through 1952 work was carried on, both at the 100 and 200 foot level. This work consisted of 1,750 feet of drifting, 451 feet of raises and 102 feet of crosscut. A substantial ore body was found on the 200 level with the discovery of two ore shoots. The first shoot was 105 feet long and averaged 52.5 ounces of silver to the ton across a 4.5 foot width. The second shoot extended 170 feet and graded 122 ounces of silver per ton, 13% lead over a 4.5 foot width.

The Company collared a winze below this second shoot. S. A. Percy, President of Bellekeno Mines Limited was under the watchful eye of General Manager, Glen Campbell. They focused on the development of the two ore shoots. The company operated steadily through 1953 with an average of sixty men on the payroll. The company did not focus on further surface exploration but turned all its interests to getting into production. The internal shafts from the second to third levels were deepened to a fourth level as the ore shoots proved to be two of the strongest in the area at that time.

Bellekeno Mines limited milled 6,020 tons of ore at the Mackeno Mill from which 814.67 tons of concentrate containing 310.09 ounces per ton of silver, 67% lead and 5% zinc were produced. The company also high graded any veins that were worthy of this. As a result, when the shipment went out 266 tons of high grade ore which ran 195.0 ounces to the ton was also shipped to the smelter. The ore figures for Bellekeno Mines Limited for the year was 304,509 ounces of silver, and 1,490,420 pounds of lead recovered from the concentrate and high grade that was shipped to the smelter.

In 1954 the company curtailed its operations to a crew of twelve men as the two ore shoots had dwindled. The company suspended operations on September 30, 1954 after running out of ore. During that year (1954) there were 4,062 tons of ore milled from which 564.0 ounces of silver, and 507,338 pounds of lead were produced.

In 1955 Bellekeno Mines changed its name to Consolidated Bellekeno Mines Limited, but remained inactive through out that year. Between 1956 - 1959 Consolidated Bellekeno Mines Limited held sixteen leases and one claim on Sourdough Hill, but no work was done. The Sourdough Hill area was inactive until 1963 when the groupings of a number of claims in the area were taken over by United Keno Hill Mines Limited.

### *Tundra and Ram Claims*

The Ram claim was originally staked by Frank Chasni on June 24, 1920. Frank held the claims until 1927 when at that time they were transferred to Andrew Johnson. Upon his

passing away in 1931, the claim was maintained in probate with the Territorial Court of the Yukon.

The Ram claim was held in probate until 1948, at which time a settlement allowed John R. O'Neil to acquire title in whole. In the same year the title was transferred to Mayo Mines Ltd. Mayo Mines held and worked the property until it was transferred to Maybrun Mines Limited in 1953.

The Tundra claim was first staked by Andrew Johnson in 1919, who sold the claim the next year to Martin Malesich. Mr. Malesich held the Tundra claim until 1926, at which time it is noted that a mortgage and lease agreement was established by William Hargraves. The claim passed through numerous hands over the next ten years, starting with W.F. Cernik in 1929, Marten Malesich in 1930, Livingstone Wernecke in 1931, and then to Don Morrison and Malcolm S. McCown in 1933. Mr. Morrison and Mr. Malcolm held the claim until 1942 were it was again transferred back to Marten Malesich who sold it the same year to A. J. Hall. Mr. Hall passed away in 1947 and the claim was held in probate until 1950 when John R O'Neil acquired it and immediately made an agreement with Mayo Mines (subsidiary of Noranda Mines) for an option on the property.

The first written records that we could find of Mayo Mines Limited were dated 1946/47, when the company initiated an extensive prospecting program over the "Rio" group of claims. The company was formed under Noranda Mines to prospect certain properties that were originally held by J.R. O'Neill. Mr. O'Neill then disposed of his options to Noranda, and the Mayo Mines was the outcome.

The properties involved in this initial start of the Mayo Mines, included the Wigwam and Coral group owned by Mrs. A.J. Kinsey, Alex Gordon's Sourdough Hill group and W. C. Sime's Rio group of claims.

During 1946 the company drove some eighty feet of tunnel; the last fifteen feet were reported to be in milling grade ore, but were a disappointment to the company as they returned their option to J.R. O'Neill.

During the summer months of 1947, the company was only interested in the "Ram" mineral claim on Sourdough Hill which they owned outright. There was said to be a fair showing at the bottom of the shaft, so Roy Martin, who was field man for both Mayo Mines and Noranda, worked on the property to prepare it for a lessee.

In 1948 Mayo Mines which still held the option on all the properties mentioned above closed down its Mayo operation and either sold its equipment to United Keno Hill Mines Limited or the East Bay Gold Company. The Ram claim was turned over to its parent company Noranda Mines.

In 1949 little work was carried out by Mayo Mines Ltd, but by 1950 it had reacquired the Ram claim on Sourdough Hill and a group of nine claims on Cobalt Hill. Preparations for

the 1950 season consisted of a small high-grade development cut on the “Ram” claim which produced 76 tons to average 250 ounces silver to the ton and 40% lead. In 1951 The Company employed up to seven men working on the Ram claim. An adit was opened to the Tundra claim and driven 300 feet until a cross cut was started so as to intersect a second parallel vein approximately fifty feet from the first vein. They also sunk three exploratory shafts during this season.

In 1952 Mayo Mines Limited ceased its work in the area and offered for sale all of its mining equipment. In 1953 Mayo Mines changed its name to Maybrun Mines Ltd, this company held onto the Ram and Tundra claims, which they leased to private operators over the next few years.

After this period we found no further reference to Mayo Mines although the Tundra and Ram claims were kept in good standing by Maybrun Mines Ltd. In 1979 Maybrun Mines changed its name to Consolidated Maybrun Mines Limited, then in August of 1981 Consolidated Maybrun Mines signed a letter of assessment giving J.R. O’Neil control of both the Ram and Tundra claims.

Mr. O’Neil held the Ram and Tundra claims until 1984 when the claims were transferred to United Keno Hill Mines.

### *Further Exploration of Bellekeno Site*

In 1984 there was an intensive push for new prospects with the use of a small Atlas Copco rotary percussion drill. By the time the exploration ceased in 1988 15,000 holes had been drilled over the districts more promising areas. Due to this exploration and the use of the percussion drill the Bellekeno Site proved to have considerable potential for greater high grade reserves. With this in mind U.K.H.M developed the 625 foot level from 1986 through 1989.

In July 1990, Falconbridge sold its 32% to a new junior company by the name of “The Dominion Mineral Resources and Sterling Frontier Properties Company of Canada Limited”. The Dominion was headed by Stephen Powell, and who raised \$30 million

between 1990 and 1997 to keep the Bellekeno Site workings rehabilitated in preparation for a feasibility study done by Rescan Engineering of Vancouver.

Dominion received a class “A” water license in January 1998 and drove a decline on the Bellekeno Site in anticipation of developing a newer method of underground ore extraction. After development of the decline Dominion could not secure funding to put the Site into operation. At this point Dominion abandoned all its rights to the workings.

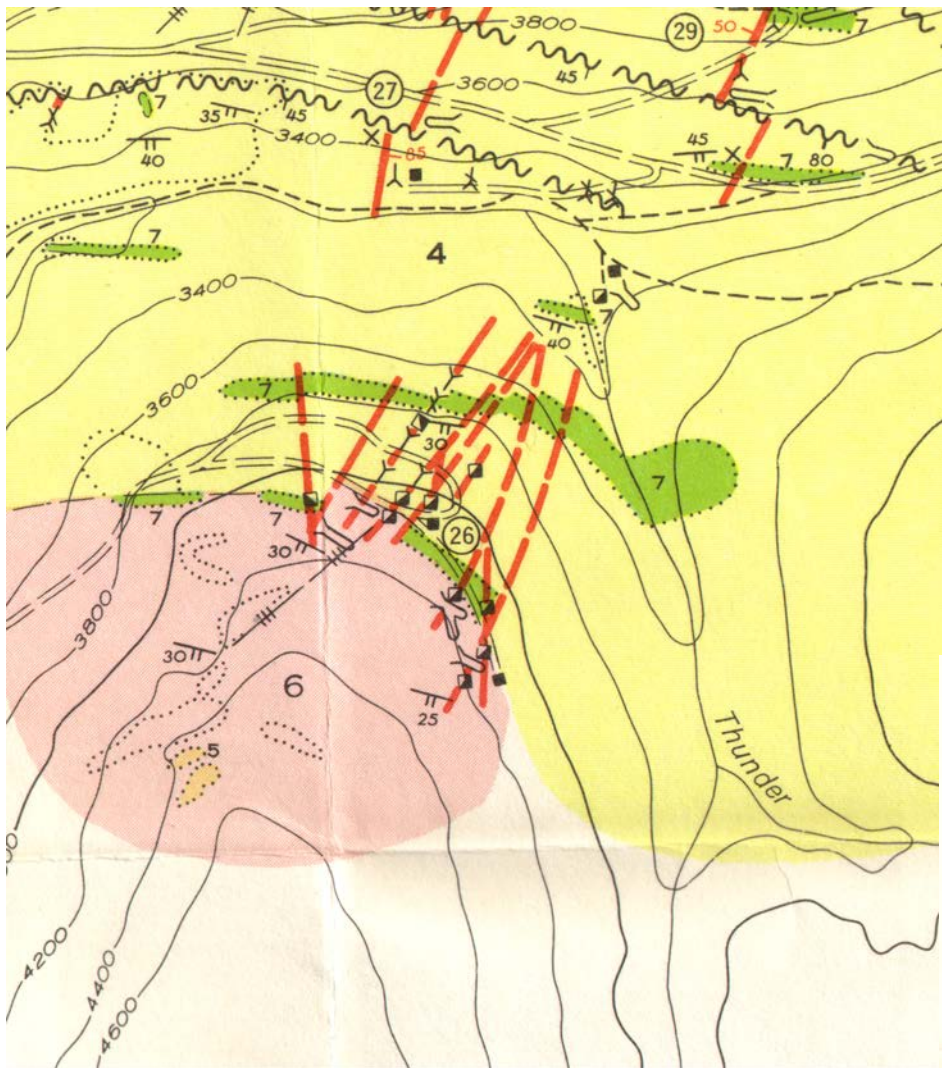
The surface workings and the environmental maintenance of the Site reverted to UKHM. United Keno Hill Mines Limited was driven into bankruptcy upon which time the assets were turned over to the Yukon Government.

Several smaller companies such as AMT Canada Inc. and Nevada Pacific Gold Limited proceeded with agreements with the Yukon Government to acquire the various properties. With both tenures collapsing due to historical concern and liability of the properties being the main issues the Yukon Government continued with the care and maintenance of the properties.

In 2006 Alexco Resource Corporation, a junior company was chosen from eleven other bidders, to purchase the assets. The claims are maintained by a subsidiary Elsa Reclamation and Development Corporation, who purchased the assets for \$410,000.00 and other considerations, which includes a \$10,000,000 environmental bond. The major share holders of Alexco are Nova Gold Resources (19.3%) and Quest Capital Corporation (9.9%), and ALM Group ULC. ERDC said it would possibly amalgamate with ARCADIS G&M Inc. which is described as a global firm with extensive knowledge of remediation. Alexco has done extensive drilling over the Bellekeno Site with news releases that are favorable to extending the historical tonnage levels as of 2007.

Further drilling has been announced for 2008, along with possible underground activities at the Bellekeno Site.

*Map below shows workings 26 at the Bellekeno Site*



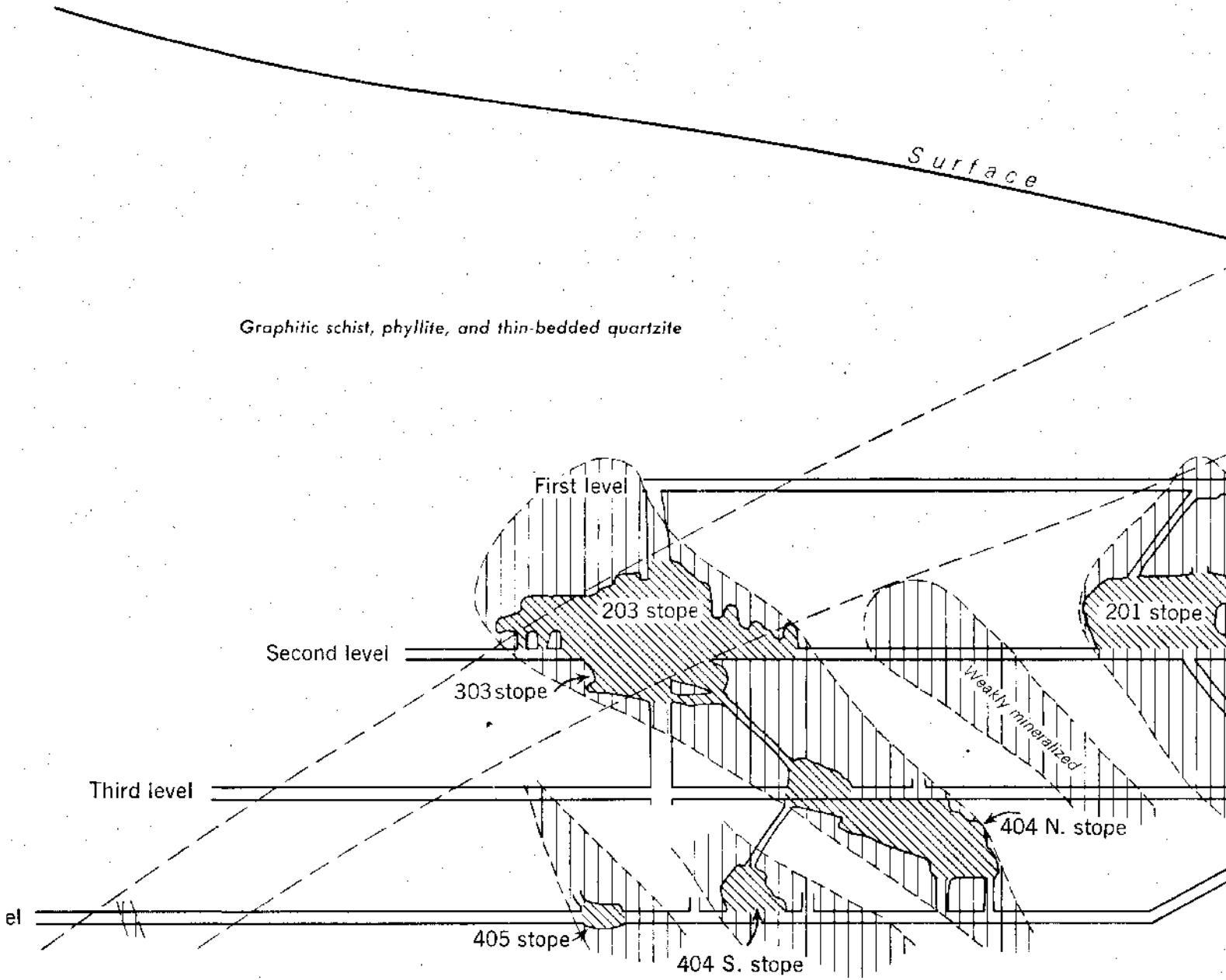
Geological Survey of Canada

Bellekeno Long Section shows

LEGEND


MESOZOIC	9	Quartz-feldspar porphyry, rhyolite
	8	Biotite lamprophyre
	7	Dionite, gabbro (greenstone)
PRECAMBRIAN OR PALAEOZOIC	YUKON GROUP	
	UPPER SCHIST FORMATION (5,6)	
	6	Graphitic schist, graphitic phyllite, thin-bedded quartzite, argillite, quartz-mica schist, limestone
	5	Quartz-sericite schist
	CENTRAL QUARTZITE FORMATION (3,4)	
	3 4	3. White to pale grey, thick-bedded cherty quartzite 4. Thick-bedded quartzite, thin-bedded quartzite, graphitic phyllite, graphitic schist, argillite
	LOWER SCHIST FORMATION (1,2)	
2	Quartz-sericite schist	
	1a 1b	1a. Graphitic schist, graphitic phyllite, thin-bedded quartzite, argillite, calcareous schist, slate (includes some quartz-sericite schist (2) on Galena Hill) 1b. Thick-bedded quartzite, thin-bedded quartzite, phyllite, graphitic schist


Plans of first and second levels








**LEGEND**


 *Thick-bedded quartzite, thin-bedded quartzite and graphitic schist*


 *Graphitic schist, phyllite, and thin-bedded quartzite*

*Galena-siderite-limonite lodes* . . . . . 

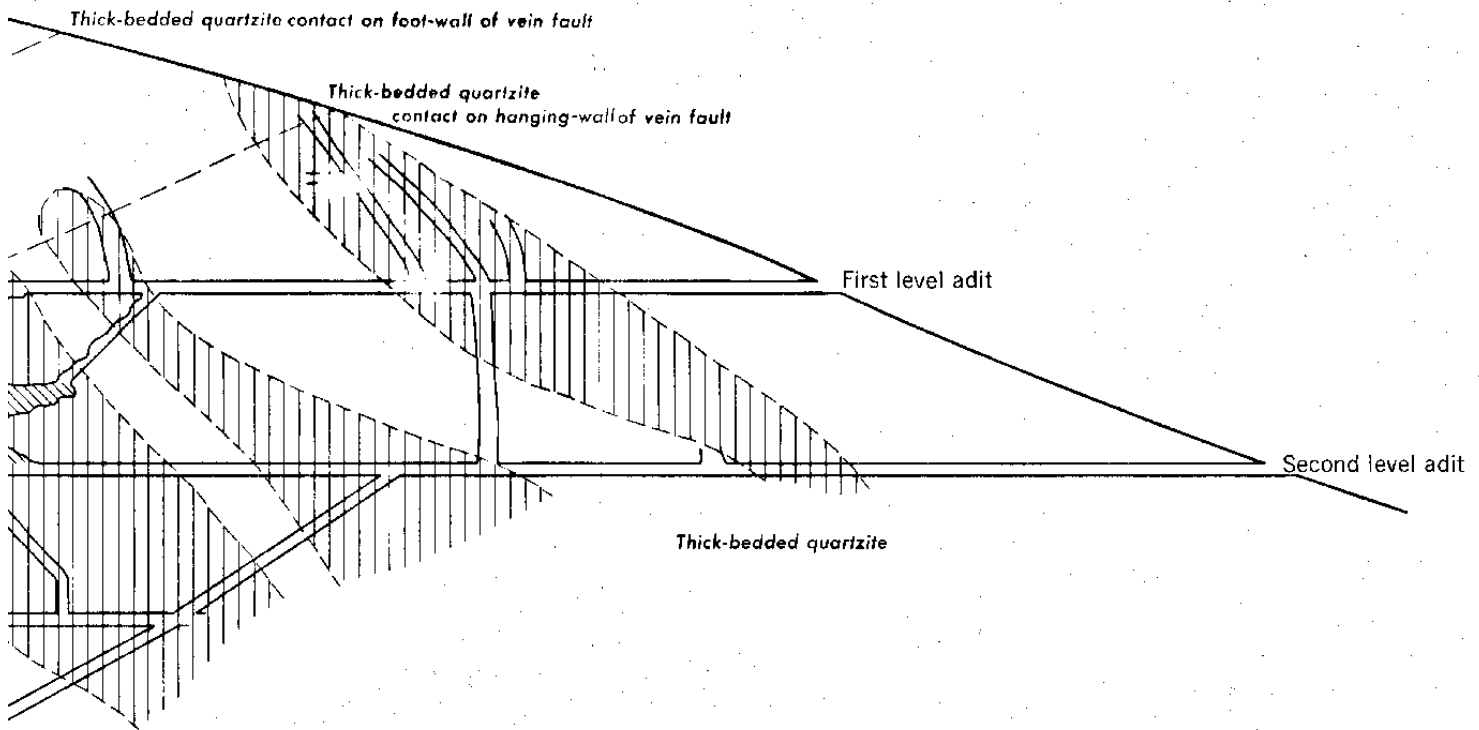
*Mineralized zone, mainly siderite and limonite* . . . . . 

*Vein fault* . . . . . 

*Stope* . . . . . 

*Strike and dip of bedding* . . . . . 

*To accompany G.S.C. Bulletin 111, by R. W. Boyle*



*Sources of Information  
Bellekeno mine plans. Geological investigation by R. W. Boyle, 1953-54*



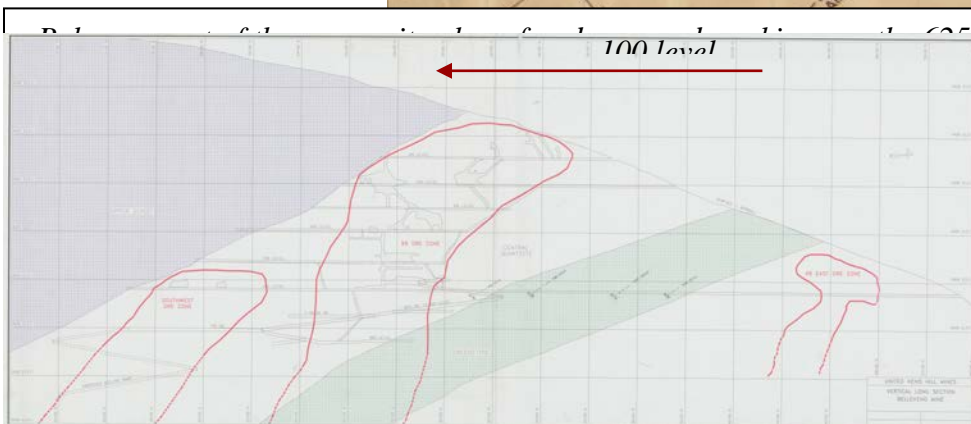
Below, a plan view of the composition of the ore which intersects the

Bellekeno Long Section

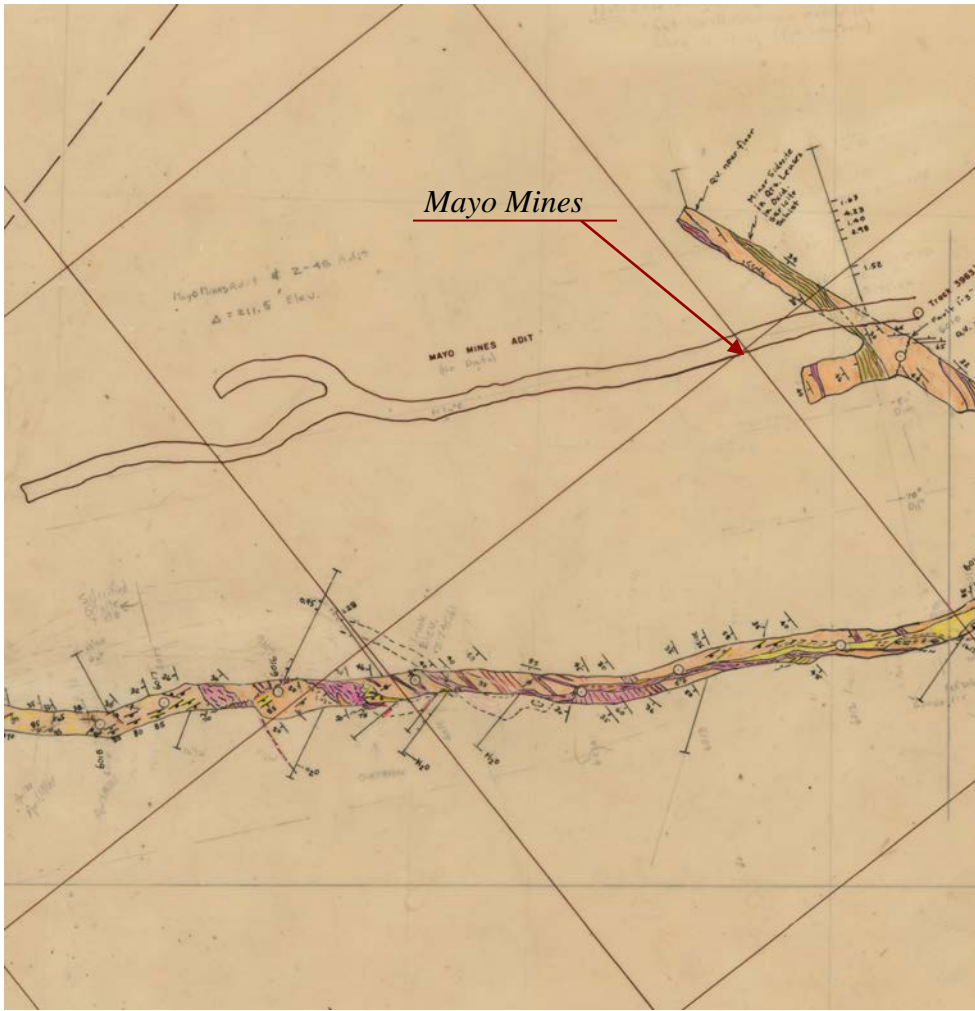


UNITED KENO HILL MINES  
 VERTICAL LONG SECTION  
 BELLEKENO MINE

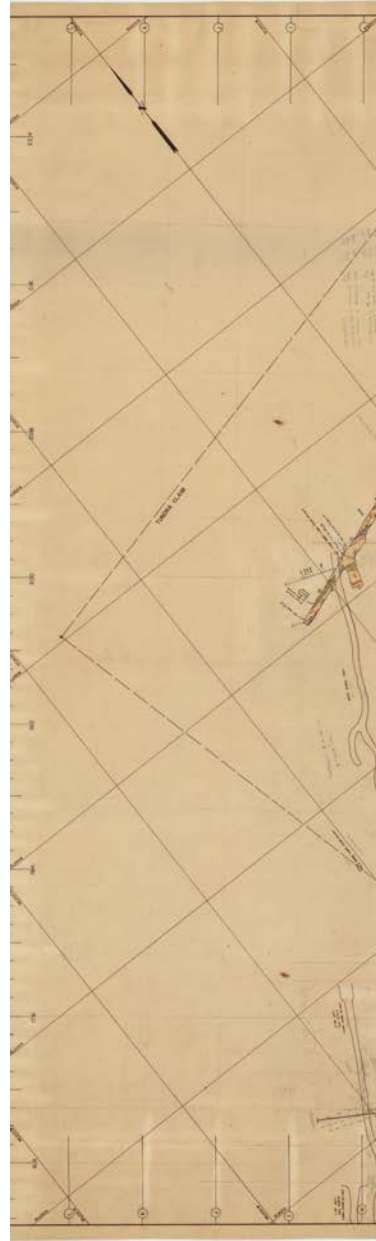
United Keno Hill Mines Limited, part of 01979- Bellekeno  
 Geology Composite Plan Courtesy of Alexco Resource Corp.



United Keno Hill Mines Limited  
 Geology Plan Courtesy of Alexco Resource Corp.



United Keno Hill Mines  
Geology Composite Plan  
Below, a composite plan  
adit which intersect with t



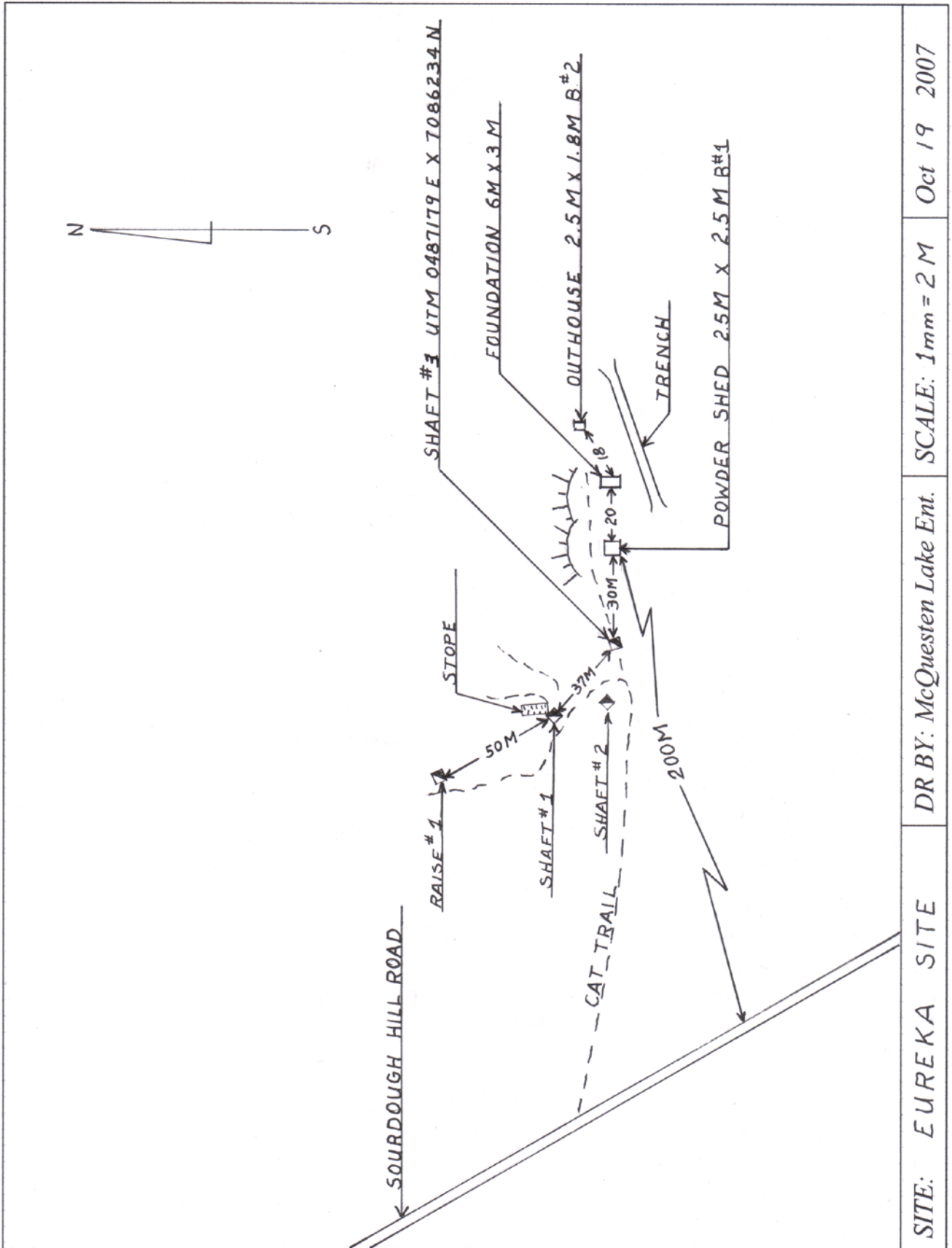
Mayo Mines  
→

200 level  
→

←  
100 level

*United Keno Hill Mines Limited 01979- Bellekeno 625A  
Geology Composite Plan, Courtesy of Alexco Resource Corporation*

**Eureka Site Layout**



SITE: EUREKA SITE

DR BY: McQuesten Lake Ent.

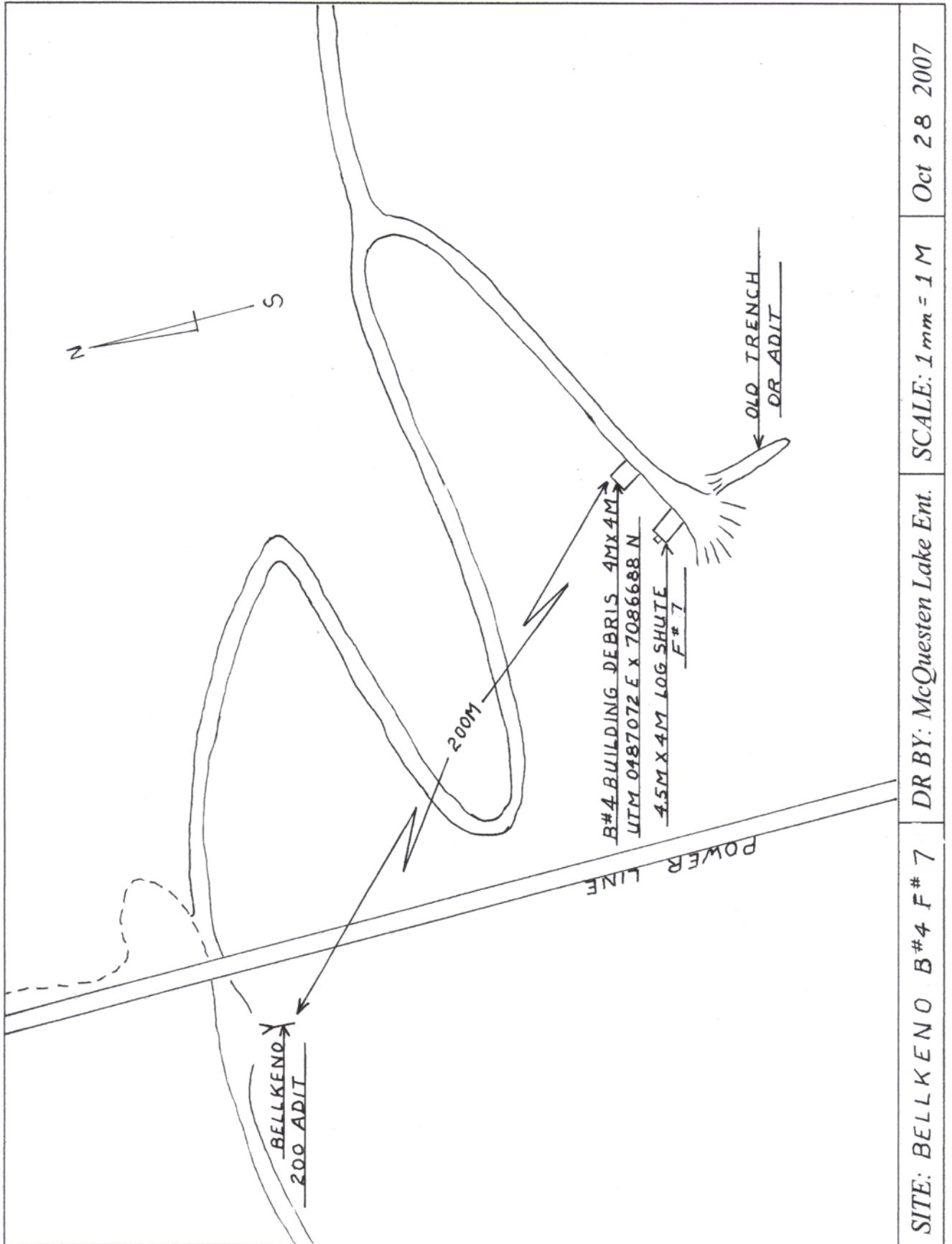
SCALE: 1mm = 2M

Oct 19 2007

**Bellekeno Site- 200 Level Layout**



**Bellekeno Site- Building 4 and Log Shute F7 Layout**



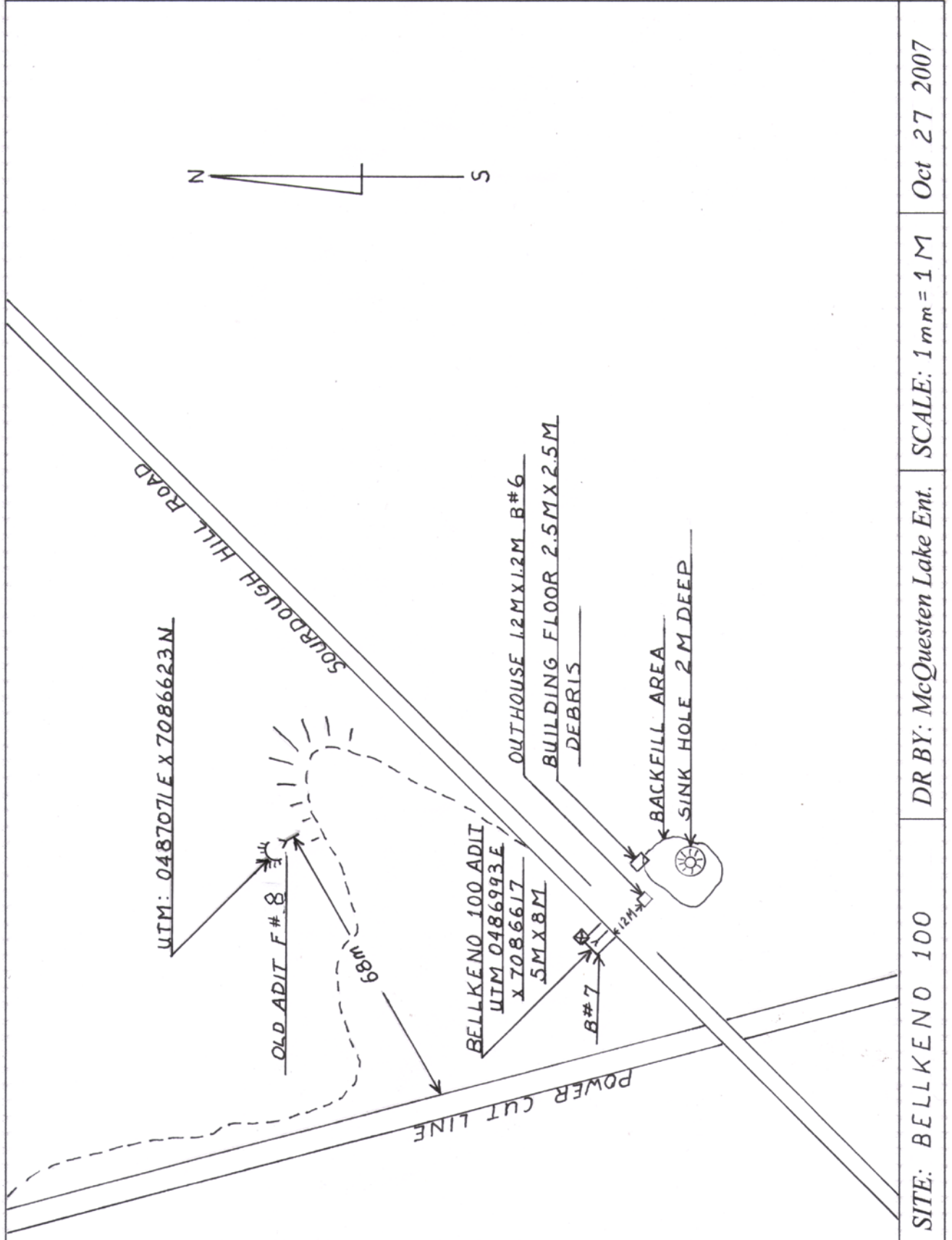
Oct 28 2007

SCALE: 1 mm = 1 M

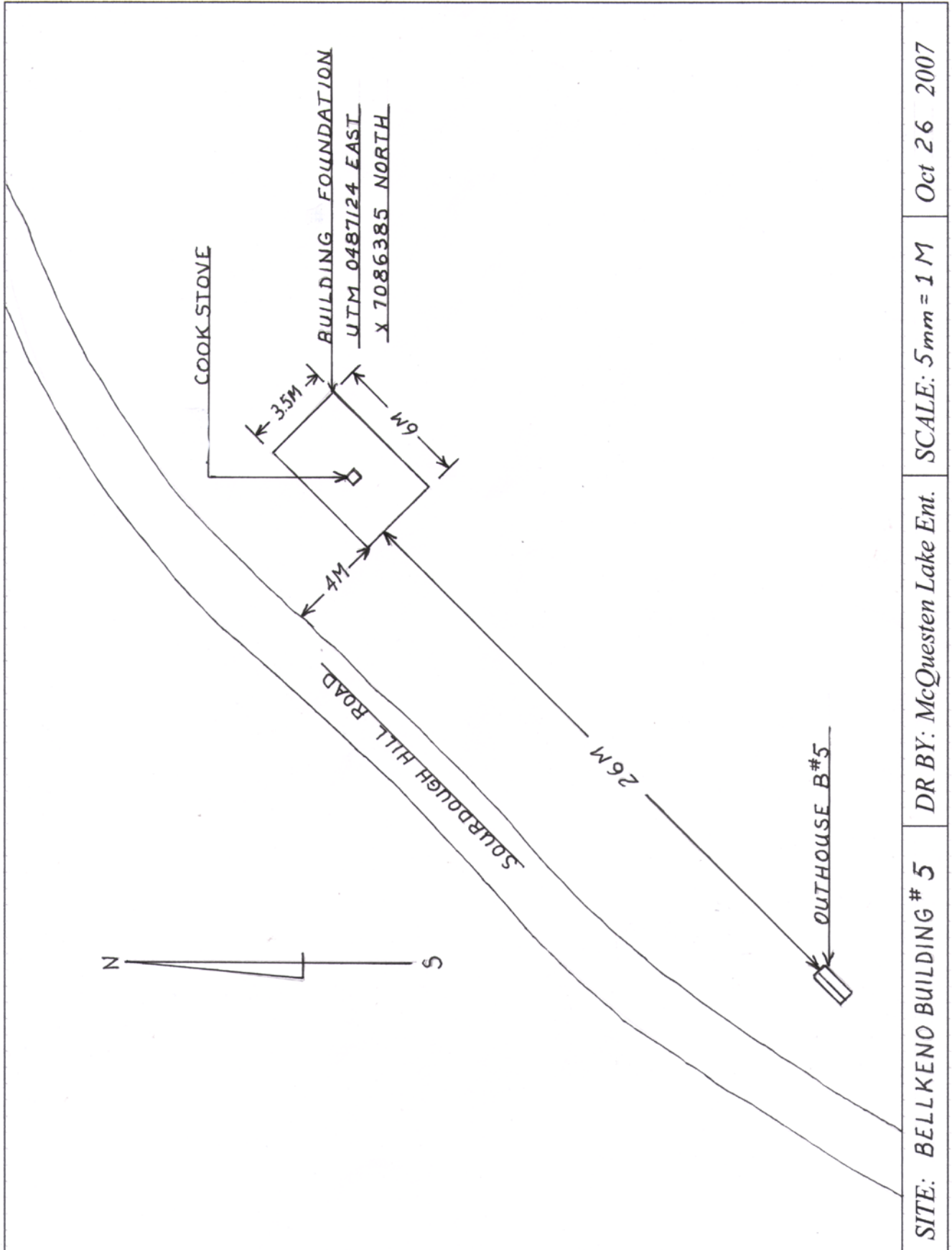
DR BY: McQuesten Lake Ent.

SITE: BELLKENO B#4 F# 7

**Bellekeno Site- 100 Level Layout**



**Bellekeno Site- Building 5 and Foundation Layout**



SITE: BELLKENO BUILDING # 5	DR BY: McQuesten Lake Ent.	SCALE: 5mm = 1M	Oct 26 2007
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**Review of existing studies, confirmation and/ or update of current  
Bellekeno site conditions**

During our Site investigation additional buildings/features and artifacts were found that was not documented in the previous Keno Valley/ Dublin Gulch Environmental Baseline Assessment, March 2000.

Reclamation work was done at the Site during 2006; however 4 of the 6 shafts/stopes are reopening and pose safety concerns. Alexco Resource Corporation has been notified of the conditions and plans to refill the sink holes in 2008.

Bellekeno 200 level;

- Tool Shed B #1 has deteriorated since the last inspection in 2000. The roof has collapsed and the foundation and floor is rotting. Interior has 4x8 asbestos paneling. To the east along the road is a pile of mesh that has been partially covered over.
- Lunch Room B #2 is in fair condition. Inside is a partial sheet of asbestos and a metal stretcher.
- Mine Dry B #3 is in poor condition; roofing material is gone and the northeast corner is exposed and rotting. Most of the fiber board on the ceiling has pulled away from the trusses. The tarpaper is gone from the east wall, and sections of the exterior and the foundation 8x8 beams are rotting
- Adit F #1 has collapsed and there is not much remaining of the portal; only a few logs and milled boards. The ground behind the adit is stable.
- Adit F #2 is in fair to poor condition. The adit entrance is closed with boards and plywood. The log walls are rotting near the adit and along the bottom of the portal walls and the structure is beginning to have a bit of a slant. Above the Adit is a large sink hole. Large hydrocarbon stains are present to the west of the adit.
- Grizzly F #3 has deteriorated significantly since the last inspection in 2000. The loadout is fully collapsed and the remaining structure is rotting.
- Shaft F #4 was found to the east of the grizzly well hidden by the willows. The shaft is in poor condition. Log cribbing is rotten. It was frozen over at the time of inspection; depth is unknown.
- Mayo Mines Adit F#5 located below the 200 Level is fully collapsed and rotten. A barrel stove and a fabricated barrel most likely used to thaw the ground and a wooden box with Blazo printed on the side. Most likely it was a dynamite box .

Above the 200 Level;

- Mine Dry B-4 is in poor condition and has sloughed over the bank. The section of roof covers a sink a metal shower stall and a mine bucket. A refuse dump with old parts and tin cans are below the building.
- Log Chute F-8 is an interesting structure that is located to the west of B-4. The structure is stable though the bottom logs and chute are rotting.
- Adit F-6 has fully collapsed and is rotten. Ground is stable and is revegetating.

Bellekeno 100 Level;

- Bellekeno100 Level Adit/cookhouse B-7 is in poor condition; most of the building material has been salvaged with sections of walls pushed over the north end of the floor. The adit structure has collapsed though the pyramid roof is still in tact. The adit opening is found at the north end of the building, timbers are rotting and the ground has sloughed in a bit.
- Bellekeno 100 Level Outhouse B-6 is in fair condition and stable. Of the southwest corner is a shaft that is reopening.
- Adit F-10 has fully collapsed with only a few timbers sticking out from the stone. An old steel gear remaining at the entrance. A stone retaining wall was hand stacked running from the entrance to the north.

Above the 100 Level;

- Bellekeno Outhouse B-5 is in poor condition and is mainly rotten.
- Bellekeno Foundation is also in poor condition and rotting. On the foundation is an old metal cook stove.

Eureka Site;

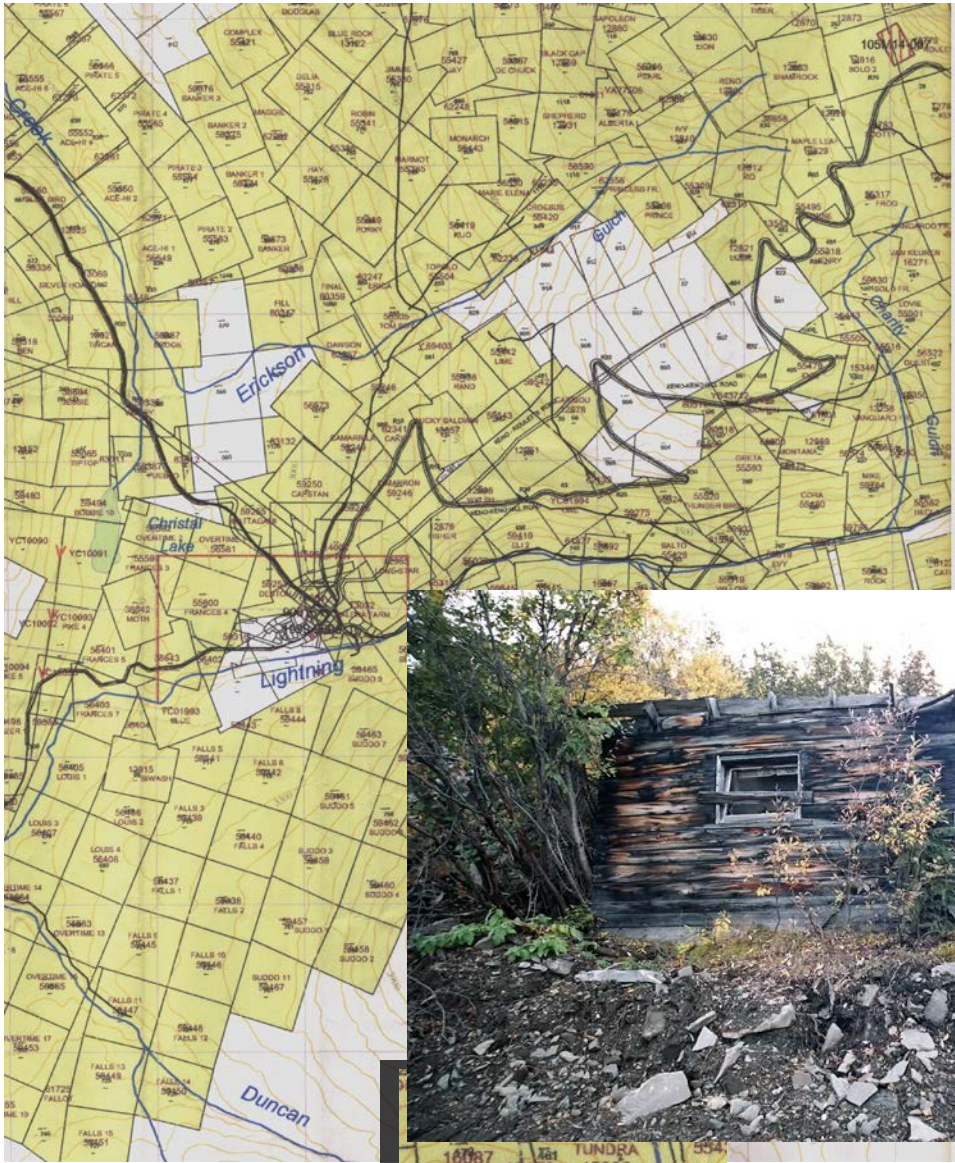
- A small building B#1 is in fair condition though is rotting in some sections.
- Eureka Foundation is to the east and is rotten. Building material was salvaged. A few old liquor bottles and tin cans are scattered around in the bush.
- Eureka Outhouse B-3 is to the east of the a foundation and is also in poor condition and is mainly rotten throughout.

**Past and Current Site Tenure/ Owners**

The Whipsaw Claim was staked in 1921 by Samuel Moreau. Other Owners and interest holders of the claim were; Amede Dubois, Clara Negreau, Alexander Nicol, Don Morrison, Malcolm S. McCown, Alexander Gordon, G.A. Jeckell Controller, John R. O'Neill, Irving J. Isbell, Murmac Lake Athabaska Mines Ltd, William S. Kennedy, Bellekeno Mines Limited, Consolidated Bellekeno Mines Limited and United Keno Hill Mines Limited.

The Eureka Claim was staked in 1921 by Alexander Gordon, other owners and interest holders were; Clara Negreau, Alexander Nicol, John R. O'Neill, Irving J. Isbell, Murmac Lake Athabaska Mines Ltd, Bellekeno Mines Limited, Consolidated Bellekeno Mines Limited, William S. Kennedy and United Keno Hill Mines Limited and AMT Canada.

The Tundra Claim was staked in 1919 by Andrew Johnson, other owners or interest holders were; Marten Malesich, Wm. Hargraves, W.F.Cernick, Livingston Wernecke, H.S. Dickson, Don Morrison, Malcolm S. McCown, G.A. Jeckell Controller, A.J. Hall, John R. O'Neill, Mayo Mines Limited, Maybrun Mines Limited, Consolidated Maybrun Mines Limited, United Keno Hill Mines Limited and AMT Canada. The above claims are now owned by Alexco Resource Corporation and are free and clear of any liens previously associated with UKHM.



*Keno Hill claims. Part of Mo*

**B**

200 Level  
Tool Shed  
Building  
#1

Building #1 is located at the



200 Level and is in poor condition and the foundation and floor is rotting; the northwest corner is

rotting and the foundation and floor is rotting and the northwest corner is crumbling and collapsing outward.

The building site has been excavated and the flat rocks are stacked approximately .5m from the building. The one story frame building has a single entrance and is divided into a porch and work room.

excavated and the flat rocks are stacked approximately .5m from the building. The one story frame building has a single entrance and is divided into a porch and work room.



Bellekeno





The building's foundation is constructed with 2x6 floor joists placed directly on the ground with 1x6 flooring. Walls are 2x4 and clad on the exterior with 2x6 shiplap boards.

The shed roof is constructed with 2x6 rafters and clad with 1x6 boards and black tar paper.

The interior walls and ceiling of the work shop are layered with aluminum foil and ridged asbestos sheets.

The interior porch walls and ceiling are finished with aluminum foil and unfinished fiber board.



Along the north wall of the workshop is a long wooden workbench covered with old parts and fuses. A second wooden workbench is against the east wall of the porch



Immediately to the west of building #1 is collapsed adit F #1. There is

not much remaining of the portal; only a few logs and milled boards. The ground behind the adit is stable.

Bellekeno 200 Level  
Building #2

Building #2 is located to the west of building #1 and adit F #1 and was previously used



as a first aid and lunch room. The building

was most likely skidded onto the site during the later stages/phase of mining at the 200 Level.

The building is in fair condition with no signs of rot. The tarpaper on the roof is deteriorating and water is getting into the building, the window is broken and porcupines have been chewing at the plywood.



The buildings foundation is constructed on 6x8 skids that have been cross braced with 4x6 rough timbers. The floor is 2x6 joists nailed to the skids and sheeted with 3/4" plywood.

The 2x4 walls are sheeted on the interior and exterior with 1/4" stained plywood.



The low pitched shed roof has 2x6 rafters clad with ¾” plywood and rolled asphalt roofing. The ceiling is sheeted with 3/8” unfinished plywood.



Inside is an electrical box and outlet, first aid cabinet, two wooden benches, a metal stretcher and a broken partial sheet of asbestos remaining in the building.

On the exterior west wall a wrist watch has been screwed to the plywood.

*Bellekeno 200 Mine Dry Building #3*

The building is in poor condition; roofing material is gone and the northeast corner is exposed and rotting. Most of the fiber board on the ceiling has pulled away from the trusses. The tarpaper is gone from the east wall, and sections of the exterior and the foundation 8x8 beams are rotting



*Historical Review of Former United Keno Hill Mines Ltd. Quartz Claims  
Bellekeno Site, Keno Hill. Volume 2*



The walls are 2x6 and clad on the exterior with layers of black tar paper, 1x8 horizontal shiplap boards and asphalt rolled roofing.

The roof is constructed with 2x6 trusses on 2' centers and clad with 1x10 boards and rolled asphalt roofing. The interior walls and ceiling are layered with aluminum foil/paper insulation and 3/8" unfinished press board.

Windows are located in the west and east walls and a single entrance door in the north wall.







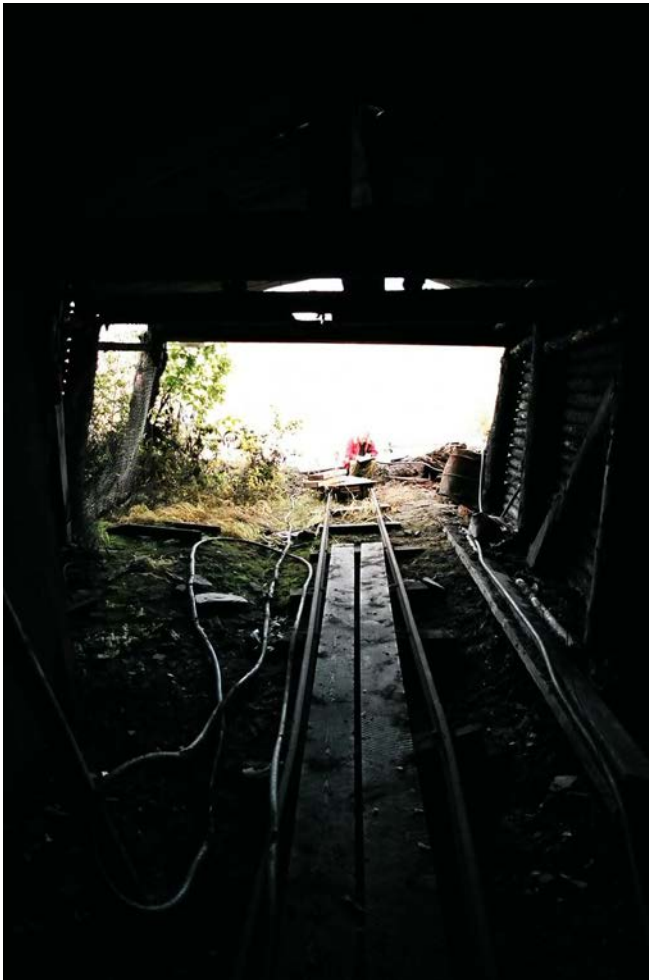
*Bellekeno 200 Level Adit F# 2*

The exterior portal is constructed with log post and beam and frame material which extend 8.9m from the rock face. The adit entrance is closed with boards and plywood. The structure is in fair to poor condition. The log walls are rotting near the adit and the portal is beginning to have a bit of a slant.



is beginning to have a slant.

The portal is constructed with larger than normal timber sets. The portal size is 4.7m wide x 2m high x 8.9m length. The portal's vertical logs sits directly on the ground and smaller logs are nailed horizontally to the exterior and covered with heavy black plastic strapped with 2" plywood strips. Milled lumber is nailed to the underside of the caps and 8x8s are used as cross bracing between the second and third timber sets.



The low pitched gable roof is constructed with a 6x8 ridge pole and supported at every 8' round with a vertical .5m 8x8 and sheathed with rough 2x6 planks.

The rails from the adit that most likely extended out to the grizzly have been cut off at the portal entrance. Scrap metal, wood and electrical cable are scattered around the entrance.

*Bellekeno 200 Level Grizzly F# 3*

The grizzly is constructed of log cribbing saddle notched at the corners. Upright logs are placed behind the cribbing and backfilled with rock. 2x8 planks are nailed to the top of the upright logs. A large piece of flat steel is centered at the north end of the cribbing. This was for assisting the ore to slide into the grizzly load out chute.



The load out section has deteriorated significantly and is in poor condition.

Logs extend 8m from the cribbing to a support structure of two vertical logs cross braced with smaller logs and capped with an 8x8.



Two additional braces run from the top and down the hill to stabilize the load out from shifting side to side and forward.

Scrap wood and metal scattered along the slope and downhill of the waste dump.

#### Shaft F#4

during our field shaft opening is 1.2meter located to the east of the loadout road.

The shaft is built with log notched at the corners. The have rotted away causing slough into the shaft which water to approximately 1 surface.



An additional shaft was found investigation. The by 1.8 m and is grizzly along the

cribbing saddle top couple rounds the edges to has filled with meter from the



The shaft is covered by dense undergrowth of aspen and willow making observation difficult.



A mine bucket is located directly west of shaft F#4 by three meters. It is also in heavy overgrowth and held in place by the toe of the dump which is sloughing down slope.

### *Mayo Mines Adit F#5*



Mayo Mine Adit is located approximately 250 meters northwest and down slope of the Bellekeno 200 adit.

The adit and building is fully collapsed and most of the material at the site is rotten.

The adit has caved in approximately 3m from the entrance with log timbers and beams protruding. The site has revegetated with alder and willow.

A 4m x 5.5m building constructed of log and frame materials extend to the north of the adit.

The bottom rounds of the walls are placed directly on the ground and constructed of small logs saddle notched at the corners. Canvas is used to cover the openings at the back cabin at the entrance of the adit.



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The gable roof is clad with 1x10 boards and a small window in the wall which was also trimmed 1x10 boards.



A large barrel wood

heater is located in the south east corner along with some old springs that possibly were the remnants of a bed. The



roof has fully collapsed over the interior of the building making it difficult to further determine the layout of the cabin.

Judging by the construction style, it was more than likely used as living quarters for the men who first worked the adit, along with it serving as a portal for the adit.



Above the adit is a barrel the top cut off and a solid running through the center that has been brazed at the connections barrel. It could have been for hot water or steam to the ground.

A substantial ore dump located below the adit started to revegetate.



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thaw

has

#### *Mine Dry Building #4*

The building has been pushed down slope and most of the building material is rotten. Under the collapsed roof in the northeast corner is a mine bucket.



Walls are constructed with 2x4 studs and



2x8s and 2x4s for the shower stall and sink. There are a few sheets of ¼” plywood that was possibly used around the shower stall. A section of wall indicates that 1x6 boards were probably used on the exterior.



The shed roof is constructed with 2x6 rafters and clad with 1x6 boards. Because of the poor condition of the building we were not able to determine what the foundation was constructed from.



Under the roof is wooden sink lined with metal and a sheet metal shower stall. Nails were used to secure the shower drain.

Wood, metal and a refuse dump are scattered below the building's remains.

*Log Chute Feature # 8*

To the west of Building #4 is a log chute constructed with small 3 to 4" poles spiked to larger 6 to 8" vertical logs that are sunk in the ground and capped with a log.



The structure is in fair to poor condition. The caps have rotted on the sides of the structure along with rotten sections along the bottom walls.



The log structure is built on the hillside with an approximate angle of 45 degree angle. The chute is 4m x 4.5m square.

In the center of the north wall at the bottom is located a 1 meter by 1 meter square frame chute comprised of 2x4 and 2x6 planks.

The bottom of the chute extends downhill approximately 3.5m, and is built from 2x6.

### *Collapsed Adit F#6*

Collapsed Adit F#6 is located approximately 200 meters northwest and upslope of the Bellekeno 200 Adit. An overgrown road connects the Adit to B #4 and the Log Chute.



The Adit is  
fully

collapsed but still shows remnants of a log trestle system used for moving and dumping ore and waste rock.

The dump is approximately 10m in width by 35m in length.

### *Outhouse Building #5*

The dimensions of the outhouse are 1m x 2.4m. The outhouse is constructed with poles and frame material. The foundation is 3 logs running east to west and capped at the ends. The outhouse has two pole triangular sides that are cross braced at the back.



A log is notched half way up the

angled poles for the seat and 1x4 boards are nailed for the splash guard and the front section for a floor. There is no roof or walls.

*Bellekeno foundation*

The foundation is constructed with 4 logs saddle notched at the corners; 2x6 floor joists are notched into the logs on 2' centers and sheeted with 1x3 tongue and groove flooring. The dimension of the foundation is 6m x 3.5m.



*Cook stove*



A cast-iron wood cook stove is located on the foundation along with some old cat parts.

Many parts of the cook stove have been removed and what remains has rusted through.

Shaft/adit cribbing are scattered to the east of the foundation and across the road.



To the east of the foundation was a shaft/adit which has been remediated by Alexco Resource Corporation for safety purposes. We would like to thank Alexco Resource Corporation for the use of the following 5 photos taken during the remediation of the adit; they are invaluable to the history of the local area.



The cribbing was built approx 3.5m below the surface and an adit was drifted to the south.

The cribbing was dug out and has exposed the adit entrance.



A close up of the adit entrance.



A galena vein is exposed during the reclamation

of the



adit.

*Bellekeno 100 Level Outhouse Building #6*



The natural slope of the hillside was utilized in the construction of the foundation of the outhouse as was a green spruce tree used to hold the building in place on the south end of the foundation.



At the rear of the outhouse, logs are cut at approximately 1 meter in height and then boxed in with 1x6 boards to form the hole of the outhouse.

The interior floor joists are framed with 2x4s and sheeted with 1x 10 planks.

The walls were framed with 2 x 4 and clad on the exterior with 1x 10 planking. The shed roof is covered with 1x6 and 1x 10 boards.



The exterior dimensions are 1.2 m by 1.2 m with remnants of black tarpaper still attached here and there over the building walls and roof.



*Above photo courtesy of Alexco Resource*

Immediately to the south of the  
are the remains of the shaft  
that was moved during  
reclamation work done at the  
shaft was backfilled in 2006.

Discovered during the inspection  
the shaft is reopening.

Alexco Resources Corporation  
notified and plans to refill the  
2008.



outhouse  
building  
site. The

in 2007

has been  
shaft in

### *Bellekeno 100 Level Adit Building #7*

The building has collapsed and most of the material is rotting. The building is comprised of an adit and a kitchen. There is a large floor with cupboards and remnants of a table and benches.



The adit is  
located



directly beside the north wall and there is a large cribbed opening that is mostly covered by the square roof and collapsed timbers.

We believe the construction of the adit first started as a shaft with cribbing and then an adit was drifted in on the vein. A similar construction method was found by Alexco during the remediation of a shaft/adit further up the road.

4x6 beams are placed on top of upright logs to establish the foundation of what is left of the kitchen floor. The floor joists are constructed of 2x6 milled boards and 1 x 10 flooring and the walls are made from rough 2x4 and 1x10 planks. The adit/shaft cribbing and support logs are mainly rotten.



The pyramid style roof that covers most of the adit structure has slid off the building to the east and remains loosely intact. The roof is framed with rough 2x4s and clad with 1x10 planks and a heavy layer of rolled asphalt roofing.

The waste dump is immediately downhill to the



north.

Scrap wood and metal are scattered around the building.

*Adit Feature #10*

The collapsed adit is located 68m to the east of the power line and below the Bellekeno 100 Level Adit. A hand stacked stone wall is located to the northeast.



Very little is left at the adit in terms of building materials though there are a few timbers protruding from the rock face and an old

steel gear most likely from a mucking machine.

*Eureka Powder Shed Building #1*



The building is located on the Eureka

claim and is in fair condition though the log foundation and lower sections of the building are rotting.



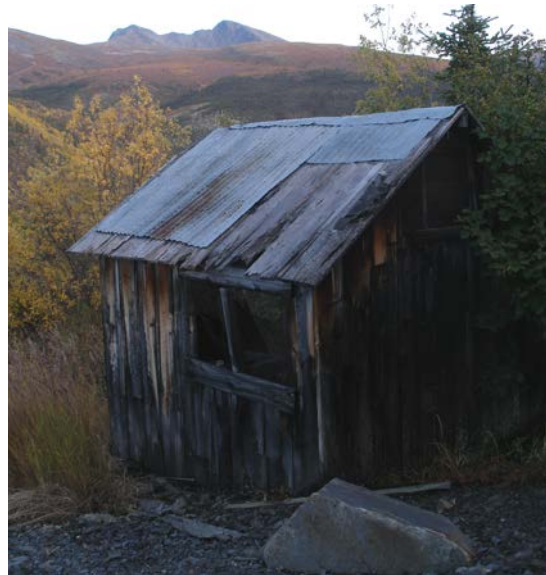


The building is constructed with frame material and is 2.5m x square.

The foundation is 4-6" logs directly on the ground with logs nailed vertically in each and capped with rough 1x4s to rudimentary frame.

The floor is sheeted with 1x10 boards.

The walls are board and batten with 1x10s nailed to the exterior and various sized boards used as the batten. The window openings are cut into the 1x10s and 2x6 boards have been nailed to the top and bottom of the exterior to keep the wall boards from falling out. Screen is held to the window openings with strips of wood.



log and  
2.5m

placed  
smaller  
corner  
form

rough



Two gable ends support a 2x4 ridge beam; 1x10 boards run from the ridge to the top of the walls and are clad with corrugated metal.

Three 2x6 are run across the width of the building holding the walls together; one runs in the center of the building and two are close together at the south wall.

Boards from shipping boxes are nailed to the top for a shelf.

Remains of cardboard are nailed to the interior east wall, along with strips of wool long johns and a denim jacket chinked between the cracks in the ceiling and walls.





A wooden table along with a few wooden dynamite boxes and drill steel are inside the building.

A piece of a butter box is used to repair a

### Foundation

The foundation is 20m to the east of powder shed and 3m in diameter. The foundation is constructed of 3x6 timbers north to south



### Eureka

located the is 6m x The

rough running with a



### Eureka Outhouse Building #2

The outhouse is located 18m east of the foundation and is 1.5m x 1.7m in

diameter. The building is constructed with log and frame material. The foundation is logs placed directly on the ground with the floor section covered with small peeled logs.



The outhouse frame is constructed with small logs and sheeted on the exterior with 1x10 rough boards.

The shed roof has a

center horizontal support log and is sheeted with 1x10 rough boards.

Remnants of tarpaper and burlap are on roof and exterior walls.

The outhouse is a two seater constructed small logs for the frame and 1x10 for the skirting and seating.



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east of the outhouse along with some liquor bottles and tins scattered around the foundation.



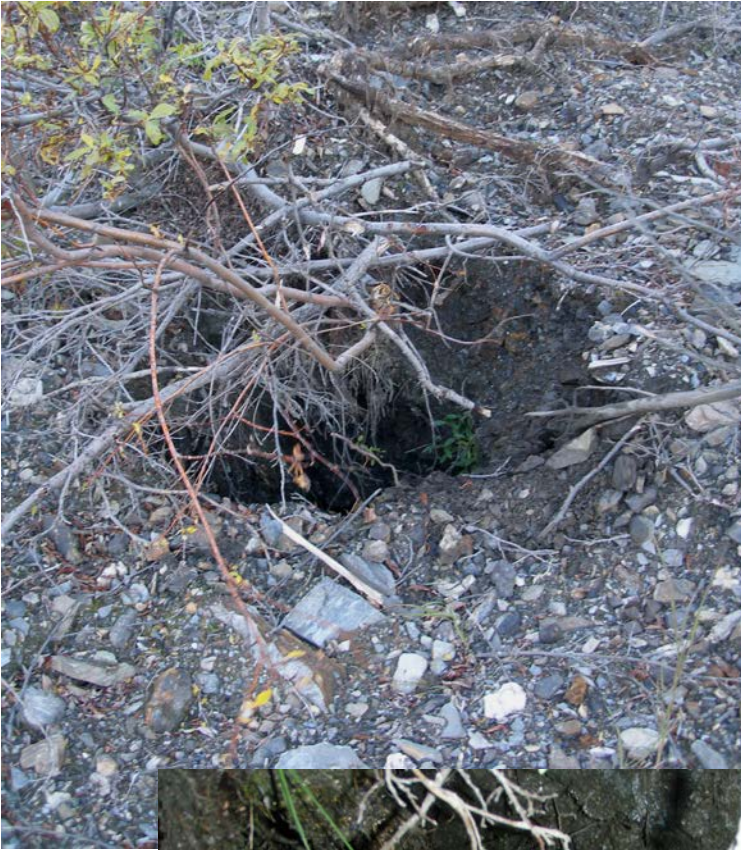


Behind the outhouse and foundation is a large trench that begins just south of the powder shed and extends a fair distance downhill to the east.

### *Eureka Shafts #3 #2 #1 and Raise #1*

During 2006 the shafts and stope at the Eureka site were filled in, however during our site investigation we found that shaft #3, #1, and raise #1 have reopened.

- *Shaft #3* is located 30m west of the powder shed. During excavation a large area was stripped and used as backfill for the shaft. The shaft has reopened to an unknown depth and poses a serious safety concern.



- Shaft #2  
has no  
sign of  
reopening

- Shaft #1 and stope

The shaft and stope was dug out and backfilled by Alexco Resource Corporation during the 2006 reclamation work at the Bellekeno site

Left photo courtesy of Alexco Resource Corporation.



During the time of our investigation the ground covering the backfilled area seems to be sloughing.

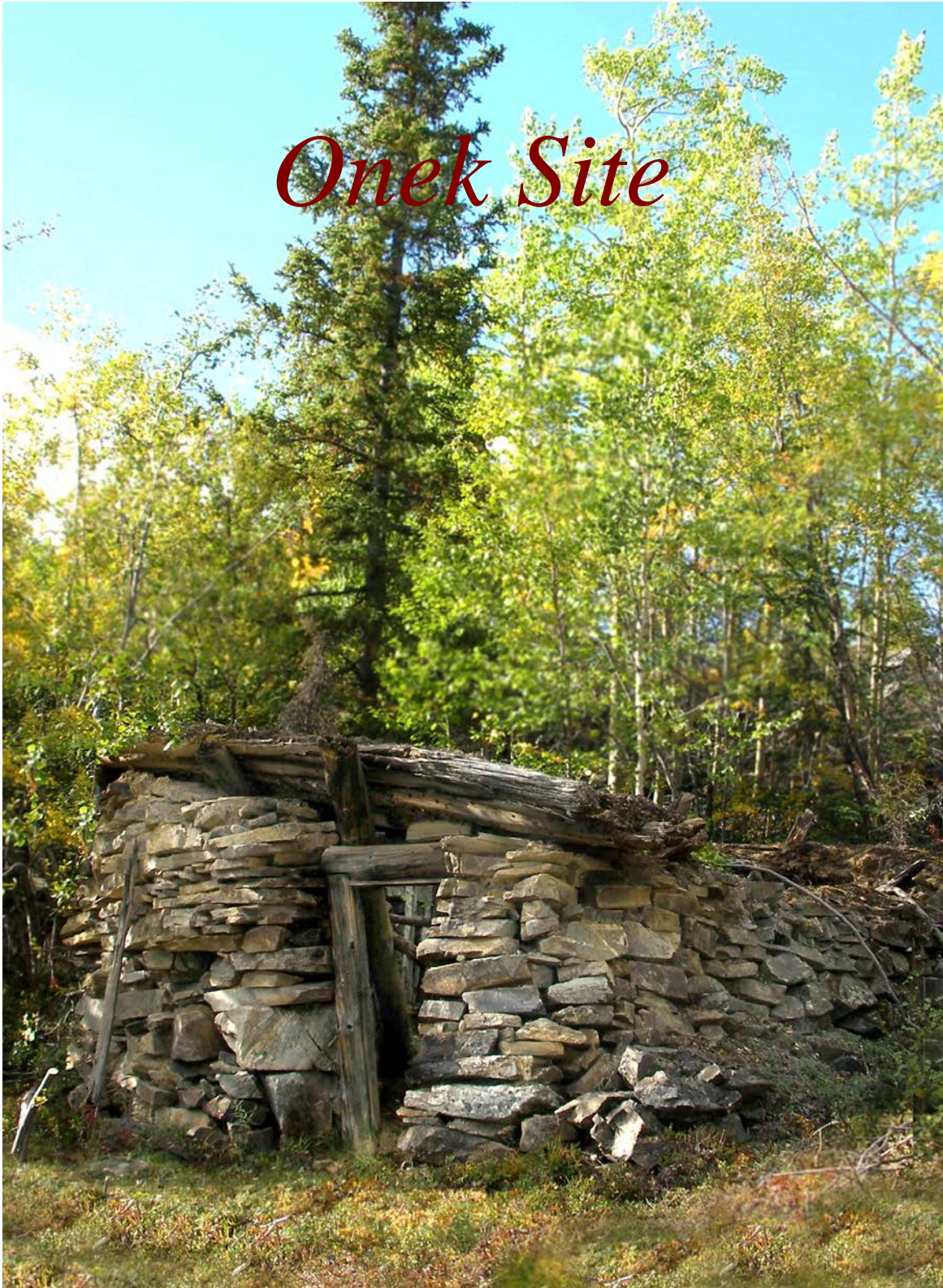
- Raise #1

The raise was filled in during the reclamation work in 2006. Below photo courtesy of Alexco Resource Corporation.



Discovered during our investigation, raise #1 is reopening.

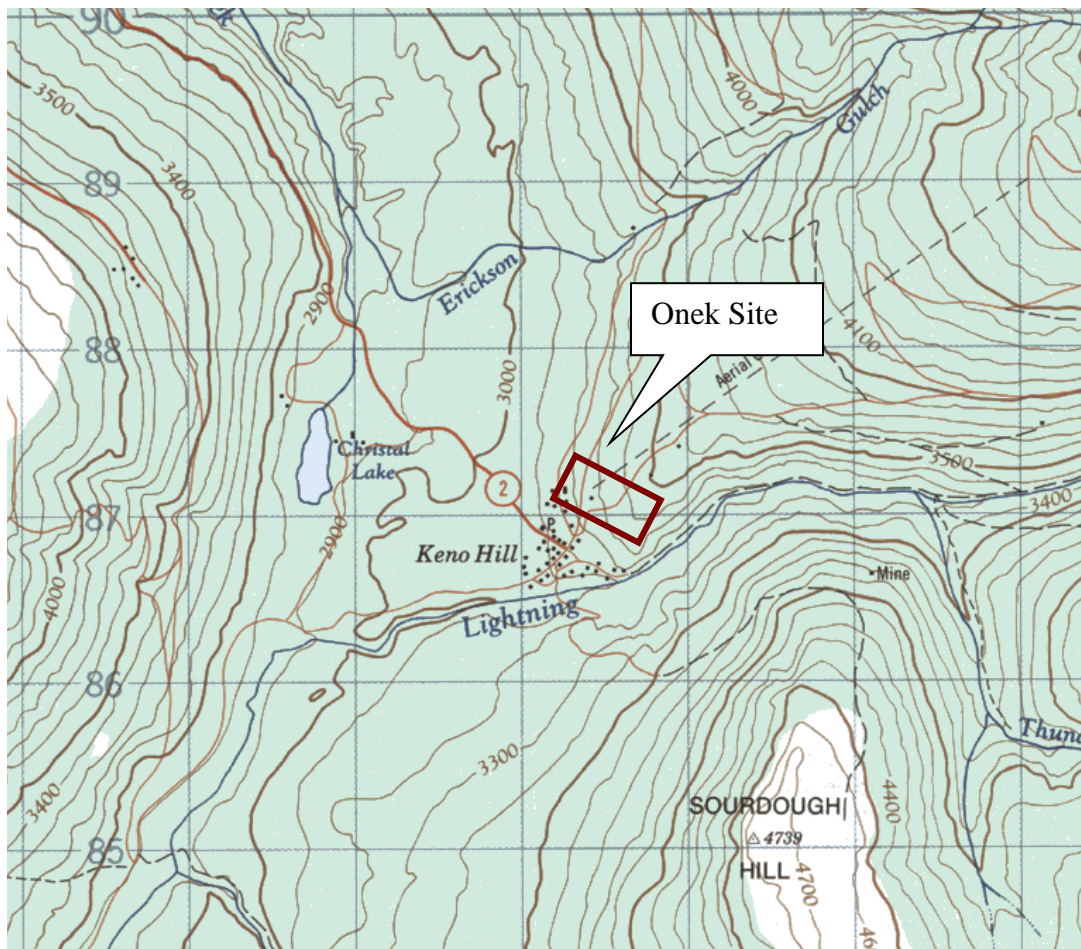




### **Location and Site Access**

The Onek Site is divided into two sections by the Sign Post Road. The lower section is assessed by following the residential road called Friendship Lane that branches off at the beginning of the Sign Post Road in Keno City. The Onek 400 portal is located approximately 300 meters down this road and 55 meters to the right, at an elevation of 1050 m. A concrete foundation, the remains of a compressor house and an outhouse are also found at this location along with scrap metal and wood that has been pushed into a heap. Some of the old site buildings are occupied by town residents (these are not included in this assessment).

The upper portion of the Onek Site can be accessed by two separate roads; the lower road departs the Sign Post road approximately 1.5 km from the main junction in Keno City. The second access Road enters the pit from the top end and is approximately 5km along the Sign Post Road. There is a fairly large clearing with an out of service dynamite shack situated near the top gate. A stone building, dynamite shed, steel wagon, three mine buildings and an Atco trailer are located around the pit.



*Keno Hill, Yukon Territory. Map 105 M/14. Energy, Mines and Resources Edition 2*

## **Historical Background**

### **Onek Workings**

The historical records of the Onek system was first recorded and staked in 1919 by Joseph Walsh when he staked the Fisher claim, the second to follow it this area was the Lonestar claim in 1920 by a fellow named David Sparks.

Archie Martin staked the Upton claim in 1921, and Rudolph Rasmussen staked the Rando claim in 1922. These were the primary claims other than a small portion the Galena Farm claim that established the workings round the “Onek vein system”.

The following paragraphs are a description by Cockfield (1924).

“The Onek Mining Company Limited was organized in 1922 to secure options on a number of claims in the Keno Hill Area.

This company was under the control of Slate Creek Mining Company. A number of claims were prospected, but the chief work was done on a group of claims; the Fisher, Lone Star, Galena Farm and Rando, situated on the southern and western slope of the hill close to Keno Hill town site. Operations were discontinued in 1922 and have not since been resumed.

A vein was traced by a number of open cuts across the face of the Fisher, Lone Star, and part of Galena Farms claims. On the Lone Star claim it is faulted about 100 feet to the north as shown by the line of open cuts. The underground workings consist of a vertical shaft 135 feet deep and two levels at 50 and 100 feet, which are 30 and 97 feet long respectively.

The vein gives evidence of continuity on the surface, and there is no change in mineralization to depth. The mineralization consists of siderite, galena, and lead carbonate. A fairly persistent streak of galena varying from 2 to 20 inches in thickness is exposed in the workings. On the 50 foot level the galena averaged 80 ounces of silver; on the 100 foot level, across a face of 12 inches, it yielded as high as 140 ounces. In the bottom of the shaft across an 8 inch face it assayed as high as 165 ounces. On the 50 foot level the galena averages 20 inches in thickness; on the 100 foot level it varies from 3 inches up to 20 inches, and between the 100-foot level and the bottom of the shaft the veins flattens somewhat, and splits into two branches; the northern branch gave the assay referred to above, were as the south branch has 4 to 5 inches of galena assaying 6 to 10 ounces. The values contained in the galena on this property are considerably lower than the average of the shipping ore from the other properties which are shipping. “

### *The Fisher Claim*

The Fisher claim was staked by Joseph Walsh in 1919 with a 1/3 interest transferred to Archie McVicar the same year. Joe Walsh came north in 1904, and was the same Joe Walsh who walked the keystone drill from Dawson City to Duncan Creek in 1912. He and his wife Lenore had a small cabin on Duncan creek and Joe was the chief prospector when working for Livingstone Wernecke during the 1920s. He travelled vast areas of the Yukon when Treadwell Yukon started prospecting with air born supported camps. In regards to Archie McVicar and his wife Barbara, there is no reference to their activities other than they are listed in the “Polk’s Directory” in 1923.

The claim was grouped in 1920 with the 2/3 remainder of the Fisher claim being sold to Louis H. Titus in 1921. Louis first entered the area and operated the “Titus Dredge Co” on Hight Creek in 1919. He meet Elizabeth McDougall who was head Matron at the hospital in 1923 and the two were soon wed. For many years Louis was in charge of transport and warehouse supplies for the Treadwell Yukon Co. and operated the Mayo power plant in the 1930s. He worked for Treadwell Yukon until they closed. He then worked in Mervyn’s store until his death in 1945, and is buried in the Mayo cemetery.

Louis H Titus and Archie McVicar had signed an agreement for sale to the Slade Creek Mining Co which was good until 1922, Cockfield noted it was short lived and the claim was soon back in Joseph Walsh’s hands. When the company shut down, the 1/3 portions returned to the original holders.

In 1924 and 1925, Joseph Walsh and Archie McVicar, each sold their 1/3 interest to D. Roger Englar with Louis H. Titus selling his 1/3 to Livingstone Wernecke. At this point in the claim’s history the two 1/3 shares that were transferred into Roger Englar’s name, got transferred to the Estate of William Schofield in 1927. During that same year the Fisher claim was transferred to the Reserve Mining Company Limited who held the claim in good standing along with Livingstone Wernecke until 1930.

From 1930 until the death of Livingstone Wernecke in 1946 the claim was held in good standing by Mr. Wernecke and Reserve Mining Company Limited.

In 1946 the 1/3 interest went to Louis H. Titus and in 1947 R. Steele Executor Estate of L.H. Titus transferred 1/3 Int. to Catherine Fisher. The next year Catherine Fisher optioned her 1/3 interest to United Keno Hill Mines Limited.

In 1950 the Reserve Mining Company Limited gave a bill of Sale to United Keno Hill Mines Limited for the other 2/3 interest in the claim.

In 1952 Catherine also sold her 1/3 interest to UKHM Limited. As a note, Catherine (Katie) Fisher was Bud Fishers second wife. Her maiden name was Catherine McDougall of Mayo (formerly of Calgary).

In 1952 the Fisher claim became involved in the estate of Will H. Williamson, who spent a good many years in the mining district. "Billy" Williamson was born in Scotland and came into the country during the 1902 stampede and in 1903 staked Cascade Creek. He was one of the miners to go overseas to fight in the war and when he returned spent his time working for Treadwell Yukon. In the late 1940s he optioned the Lucky Queen and made a few high grade ore shipments. After his Estate settled, the claim was returned to United Keno Hill Mines Limited and its history is the same as has been previously noted in Bellekeno Site History.

### Lone Star Claim

This pretty much covers the early history of the Fisher claim, but there are a few more claims which helped establish the history of the Onek Site.

The Lone Star was first registered on September 2, 1919 by David Sparks, an Irishman who had done some placer mining on Duncan Creek between 1903 and 1920. Apparently after the major rush was over on Duncan Creek, David Sparks tried his hand on the Duncan above the falls with the surprising results of a clean up that was said to be around \$14,000 dollars. With enthusiasm and a bigger crew he proceeded to go broke the following season. After this, he turned to prospecting some of the hard rock areas on Keno Hill. There were a few other early miners combing Keno Hill and it was noted that Davie Sparks was found prospecting one day by lowering himself down a 300 foot rope over the edge of the Silver Basin cliffs to get a better look at the rocks. It was also noted that he was a notorious pack rat who had a cabin filled with all sorts of plumbing and mining fittings that often saved the day for other workers on the creek.

David Sparks held the Lone Star claim until 1921 where upon he issued a ½ interest to both Joseph Walsh and George Fulton. These gentlemen held the claim until July 24, 1924 when they sold their interest to D. Roger Englar. Mr. Englar held the claim until 1926 when a memorandum of agreement was signed with Joe Walsh. A bill of sale was then established from the estate of William Schofield and D. Roger Englar turning all interest in the Lone Star claim to the Reserve Mining Company Limited.

"The Reserve Mining Company was originally started in the early 1920s by James W. Gerrard, the wealthy son-in-law of Marcus Daly who developed the huge copper deposits of Butte Montana." (Page235 in "Hills of Silver" by Dr. Aaro E. Aho)

This Company held the claim until April 10<sup>th</sup> 1933. It was noted by the Department of Mines Summary Report 1930, Part A, written by W. E. Cockfield "That no work had been done on this property and it has lain idle throughout the year."

In 1933 the Crown granted an extension to Don Morrison and Malcolm S McCown, this extension being good through until 1934. We are not really sure if the Reserve Mining Company maintained an interest in the claim during the period of 1933 until 1936 but in the Abstract of Records it shows the Reserve Mining Company again having a major interest in the ownership of the claim in 1936.

Don Morrison was a well known miner in the Mayo-Keno area, and was the nephew to Louis Bouvette. He married Jean Wolsey and they had one daughter named Mary Jean Morrison. Don was originally from Oban Scotland and came into the Yukon around 1922. He worked many years with his partner Harry Colley and they were the first to stake the Calumet claim. Some people say it was the richest claim in the area. Don passed away when he was only 46 years old.

Malcolm Sunshine McCown was another one of the earlier characters to reside in Dawson City, where he worked at collecting the local laundry. This earned him the nickname of "Soapy".

McCown was also a 1/3 owner in a log building on First Ave. in Mayo. This is where the Bank of Montreal conducted business up until May of 1942.

McCown also managed his own taxi service with an old Model T Ford which he ran between Mayo and the Minto Bridge. It was said he charged \$1.00 a mile; the trip cost \$10 dollars. McCown prospected and financed Clement Sinyard for many years on the Hector claim. For this backing, he obtained a half interest. When he passed away he left all his claims and holdings to his sister, but once his divorced wife heard about the will she filed a lawsuit against the estate that tied everything up for many years.

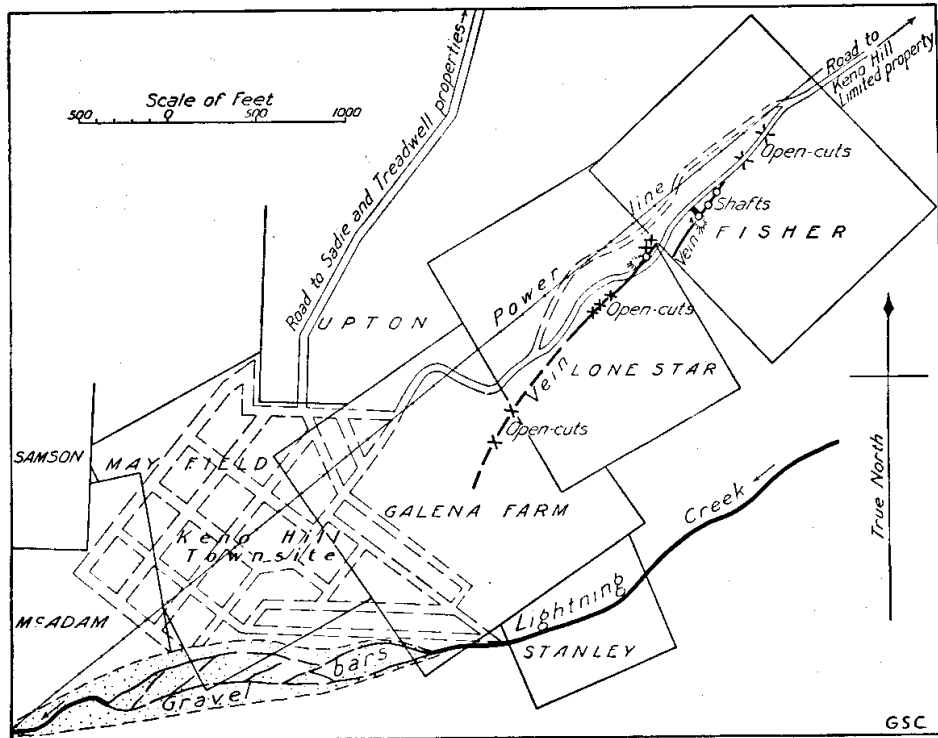


FIGURE 7. Claims of Onek Mining Company, Limited, and adjoining claims.

We could not find any records of any ore being shipped from the Lone Star claim other than a mention in the "Hills of Silver" (by Dr. Aaro E. Aho) that Alex Berry and Charlie Nixon had mined eight tons from the claim around 1936.

It was also stated by R. W. Boyle "Some ore has been shipped from both the main vein fault and the northern intersecting vein fault." (Page 29, Geological Survey of Canada, paper 55-30 by R.W. Boyle, Ottawa, 1956).

On the basis of good results with some claims at the top of Keno Hill, Slate Creek Mining optioned the Lone Star and Onek claim and started to drift into the vein but ran out of backing before anything substantial was encountered. The Lone Star and Onek were optioned many times with Jack McLean being said to have taken out 1000 Ton, after an Ambassador stacked Joe Walsh to open the vein up. (Page 140, "Hills of Silver").

It is also noted in the Hills of Silver that Jack Carpenter, Billy Williamson, Ernest Corp and Dave Ryan and Williams Hargreaves all had a turn at taking out some ore.

The Lone Star claim reverted back to the Crown in Feb of 1936 with a lease then shown to be granted in April 1936 back to the Reserve Mining Company. The mining records showing that Reserve Mining Company Limited held the claim in good standing up to 1948 when Slate Creek Mining and J.F.M. Croteau took on an interest. The Reserve Mining Company through a Bill of Sale transferred the claim in whole to United Keno Hill Mines Limited in 1950.

Mining records in May 17, 1950 show the transfer in whole of the Lone Star claim to United Keno Hill Mines Limited.

During the years 1950 to 1952 United Keno Hills Mines increased its exploration and development of the Onek system by driving a new adit that started just north of the town site of Keno. This drift extended eastward and covered a distance of 1,566 feet until it intersected with the with the main vein fault at a depth of 400 feet. Many raises and extensions were done over the next two years with the end result being, according to the Department of Mines 1952 annual report, that the Onek system contained 148,750 tons of ore that averaged approximately 10 ounces of silver per ton. It is noted that 80 to 90 tons of ore were delivered to the Elsa mill as a result of the development work done during this period.

United Keno Hill Mines Limited did not do any further exploration work on this site and mothballed the adit and workings, although they have experienced some freezing and spring blow outs due to the drift being blocked by ice. In later years a drainage line was laid that has kept the drift open, and heat tapes are used to maintain the flow of water.

The claims history, as per the others in the vein system, were transferred to A.M.T. Canada in 2001, transferred to Government of Yukon and then back from the

Government of Yukon to UKHM in 2004. They are currently under the control of Price Water House, waiting for transfer into Alexco Resource's name.

### *Upton Claim*

The Upton claim follows a similar history as the Lone Star in its later years, with the major difference being that the Upton claim was originally staked by Archie Martin in 1921.

Archie Marten was a pioneer out of the Dawson district; he was born in Aylmer Quebec and played on the 1904 Stanley Cup Hockey Team. He worked a few claims in the Keno Hill area, with his partner Agnes Kinsey. He also served on the Yukon council from 1912 to 1917. After staking the claim in 1921 he turned it over in whole to Thomas McKay in 1922.

McKay held the Upton claim in good standing until 1924 when again it changed hands, this time to D. Roger Englar. Mr. Englar held the claim in good standing until 1927 when the claim went into the Estate of William Schofield and then to the Reserve Mining Company Limited that same year.

The only thing we could find on William Schofield, (not to be mistaken with Gordon Scholefield) was that he ran stores at Russell Post and Selkirk with a man named Art Zimmerlee. Schofield and Zimmerlee sold the Selkirk Store in 1938 with the Russell Post being sold a year later to Oscar Erickson.

The Upton claim was held by the Reserve Mining Company Limited from 1927 to 1950. H. S. Dickson did a legal survey of the claim in 1931. This legal survey kept the Upton claim in good standing for 21 years: starting from February 5, 1936.

The Reserve Mining Company through the Crown granted leases and rental on the property until 1950. At that time there was a bill of Sale from the Reserve Mining Company to United Keno Hill Limited transferring the claim in whole.

The Upton claim then followed the same history as the previous claims noted above, with AMT having them for a short while from 2001 to 2004. After 2004 the claim reverted back into receivership, with Alexco Resources being the current bidder on the property.

### *Rando claim*

The last two claims worth mentioning in the Onek Site are the Onek claim and the Rando claim. The Rando claim has a date of registration of November 15, 1922 and then a record under remarks as Payment in Lieu.

On March 15, 1937 the Crown granted a Bill of Sale to Rudolph Rasmussen, which apparently is an incorrect spelling. Taken from his own hand writing, it should be registered as Rosmusen, (apparently the name has been misspelled numerous times).

According to information from the “Gold and Galena” (1903-2003 by the Mayo Historical Society), Rudolph and his partner Adolf Linstrom prospected the South McQuesten River in 1898 and placer mined near the mouth of Rodin Creek. He was also involved with the Guggs Mining Company from 1910 to 1920. He also owned claims in the Silver Basin area which he sold to John R. O’Neill. Although Rudolph sold many of his claims, he held onto the Rando claim until 1950 when he gave a Bill of Sale to the Reserve Mining Company which immediately sold it to U.K.H.M.

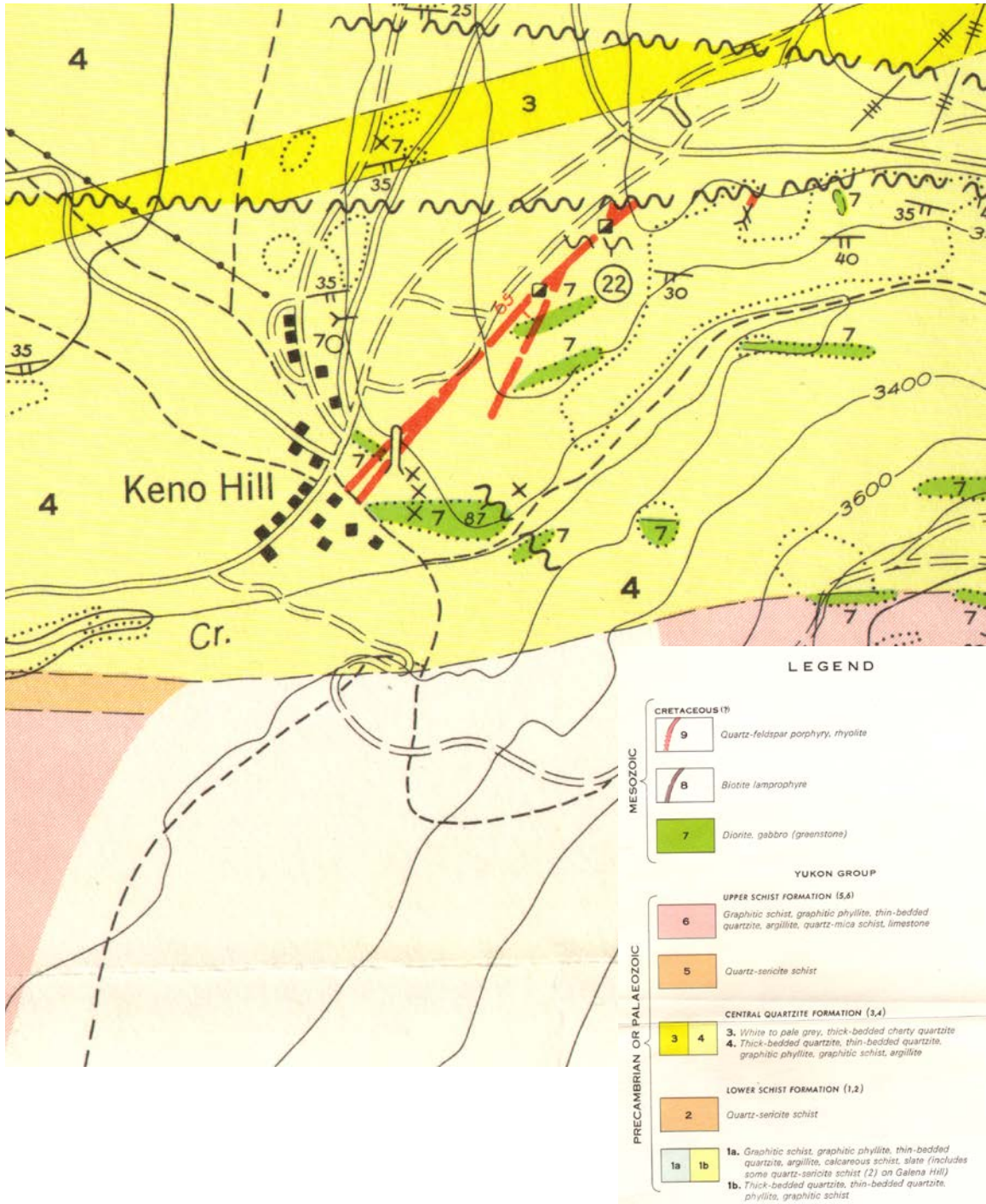
Before U.K.H.M. closed in 1989, they tried reducing costs by bringing in open-pit mining. This was started around 1977, with the Onek pit being one of the larger producers. Older parts of the underground workings were excavated and ore chutes that were too small to drift on were utilized in this manner. This lower grade ore material was then trucked to the mill and mixed with the richer ore coming from the underground working reserves in an attempt to keep the tonnage up and the mill head ore supply at a consistent 30-35 ounces to the ton.

### *Onek Claim*

The last claim is a partial fraction called the Onek. This fraction was first staked in May 1951 by A.G. Mensforth on the basis of getting good results with some claims at the top of Keno Hill.

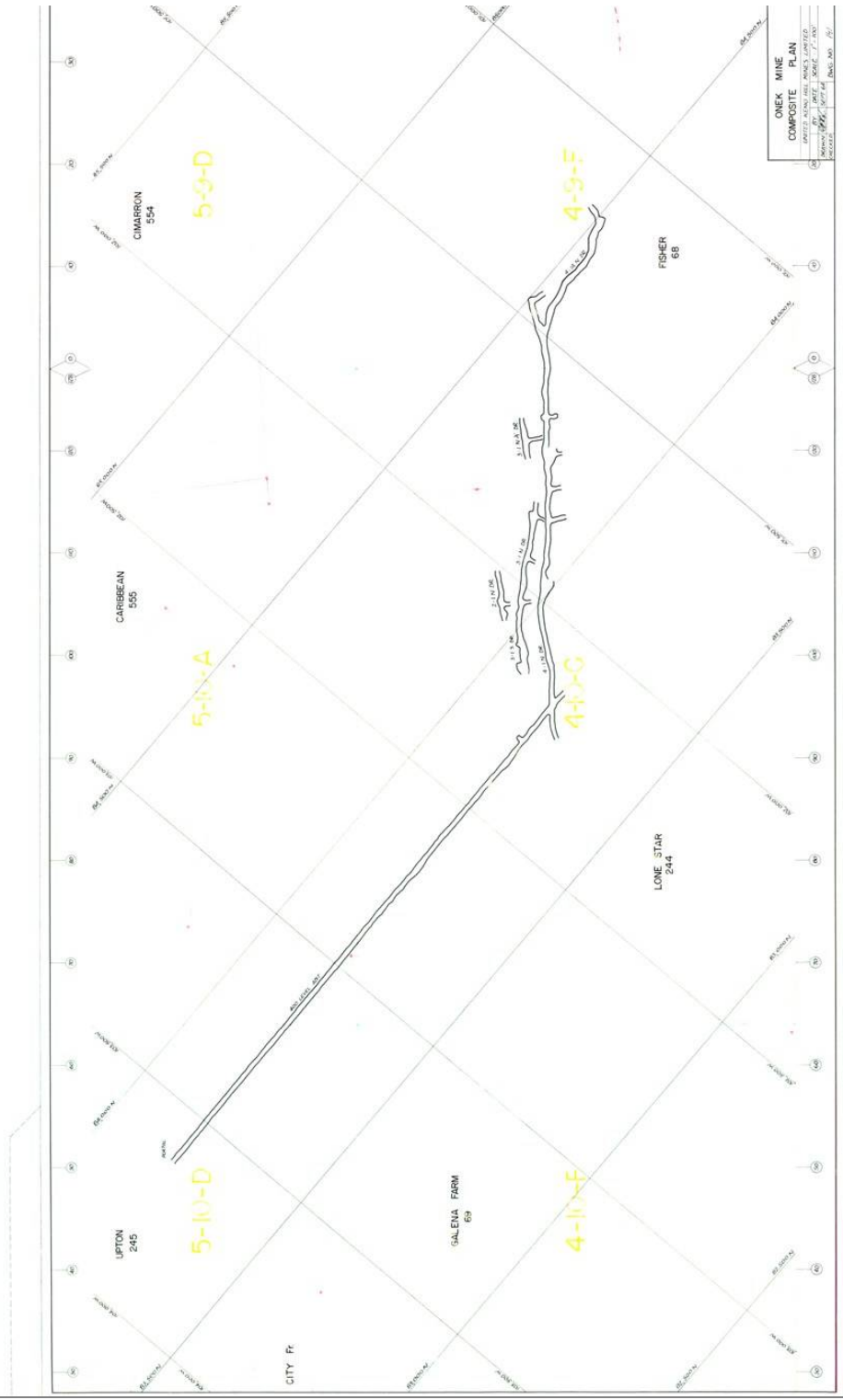
On November 19, 1951 Mr. Mensforth transferred 100% interest of the Onek fraction to U.K.H.M. In this way the history of the Onek claim was linked with the Upton, Fisher, and Lone Star claims.

Map below shows workings 22 at the Onek Site



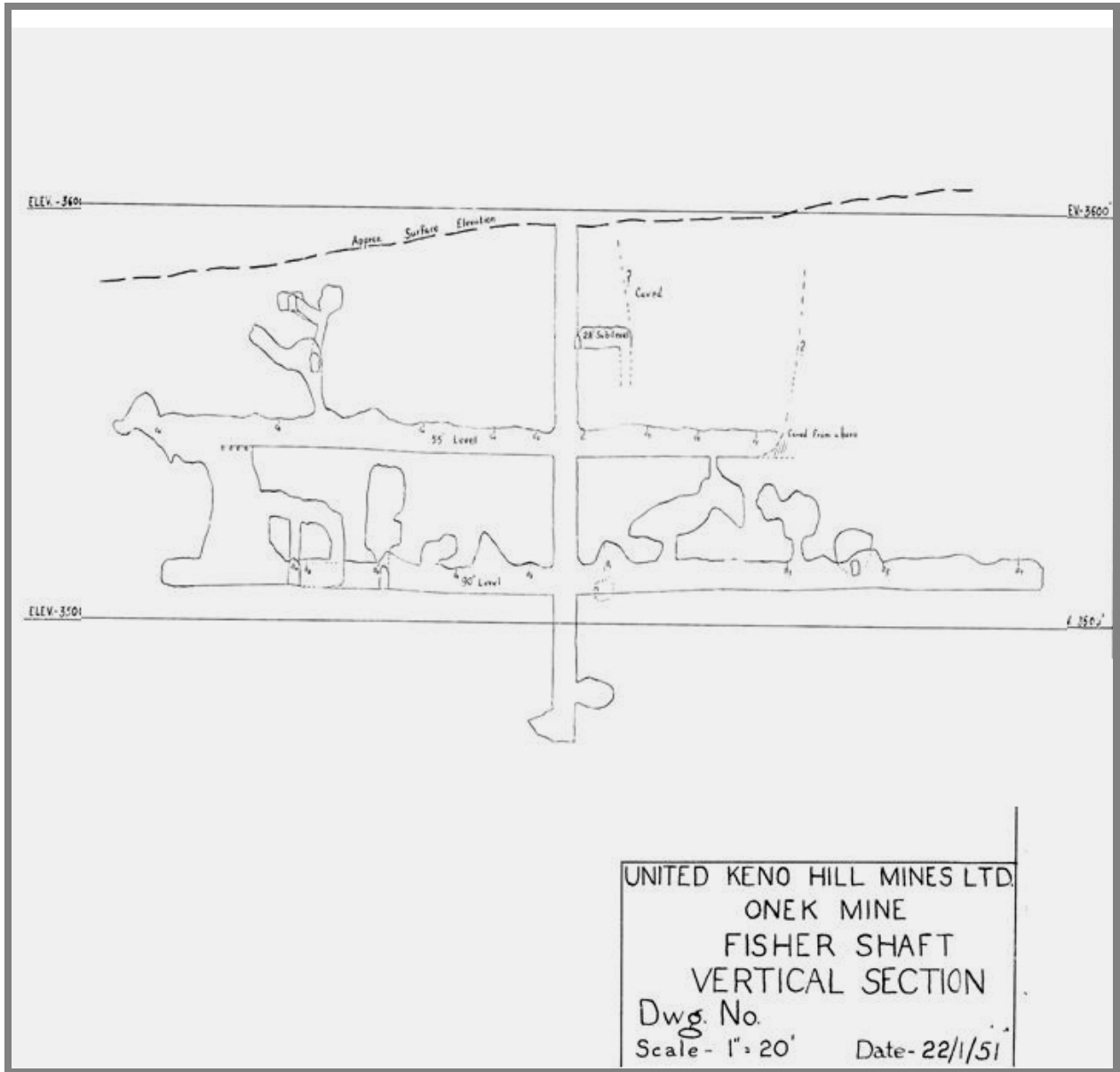
Geological Survey of Canada Paper 55-30 By R. W. Boyle Ottawa 1956 Part of figure 2

Below, a composite plan of the underground workings on the 15089 Onek Mine Adit drifted in on the Upton Claim and the Lonestar and Fisher Shafts



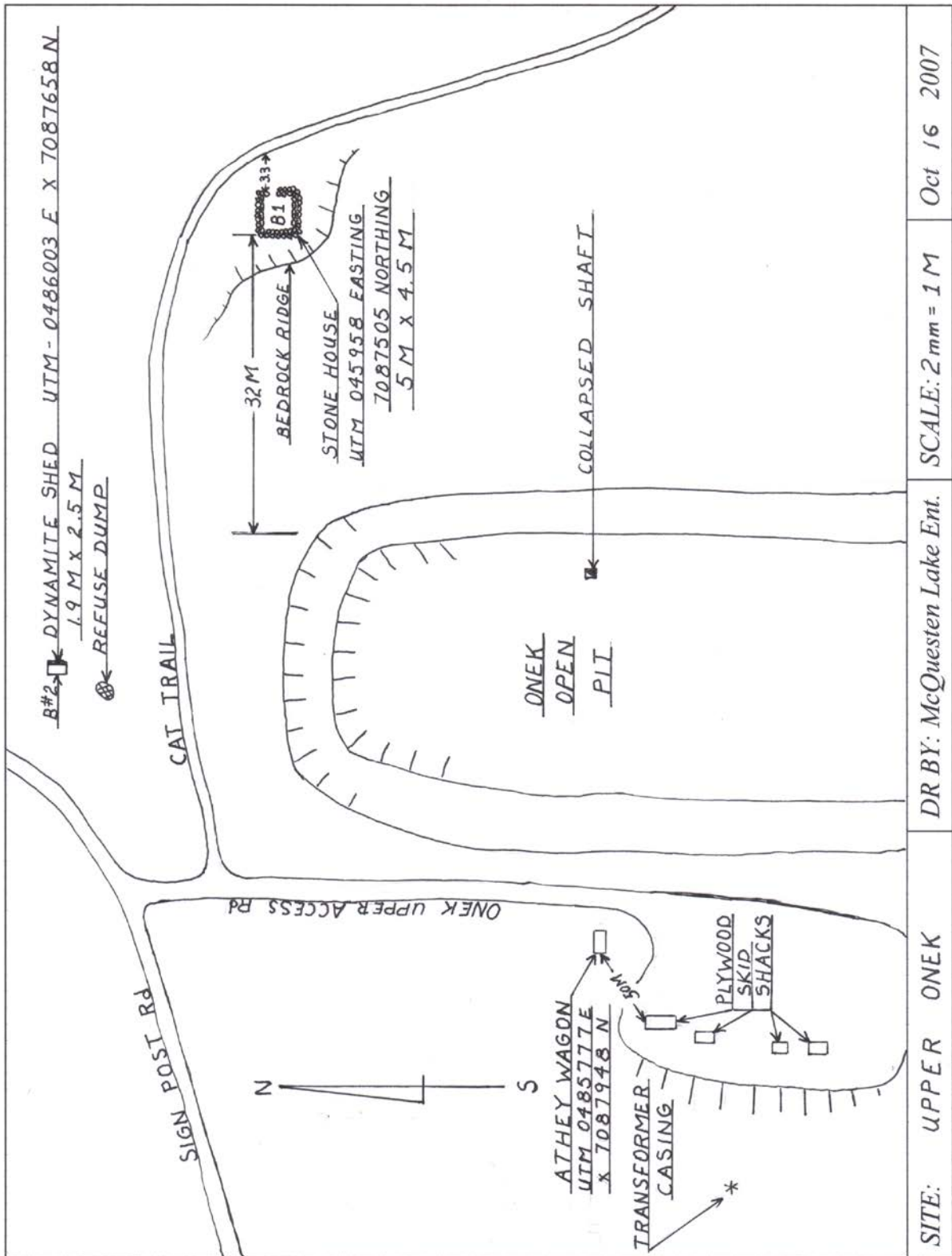
United Keno Hill Mines Limited 15089 Onek Mine  
Geology Composite Plan, Courtesy of Alexco Resource Corporation

*Below, a vertical Section of the underground workings on the Fisher Shaft*



*United Keno Hill Mines Limited 15126 Fisher Vertical Section  
Geology Composite Plan, Courtesy of Alexco Resource Corporation*

Upper Onek Site Layout



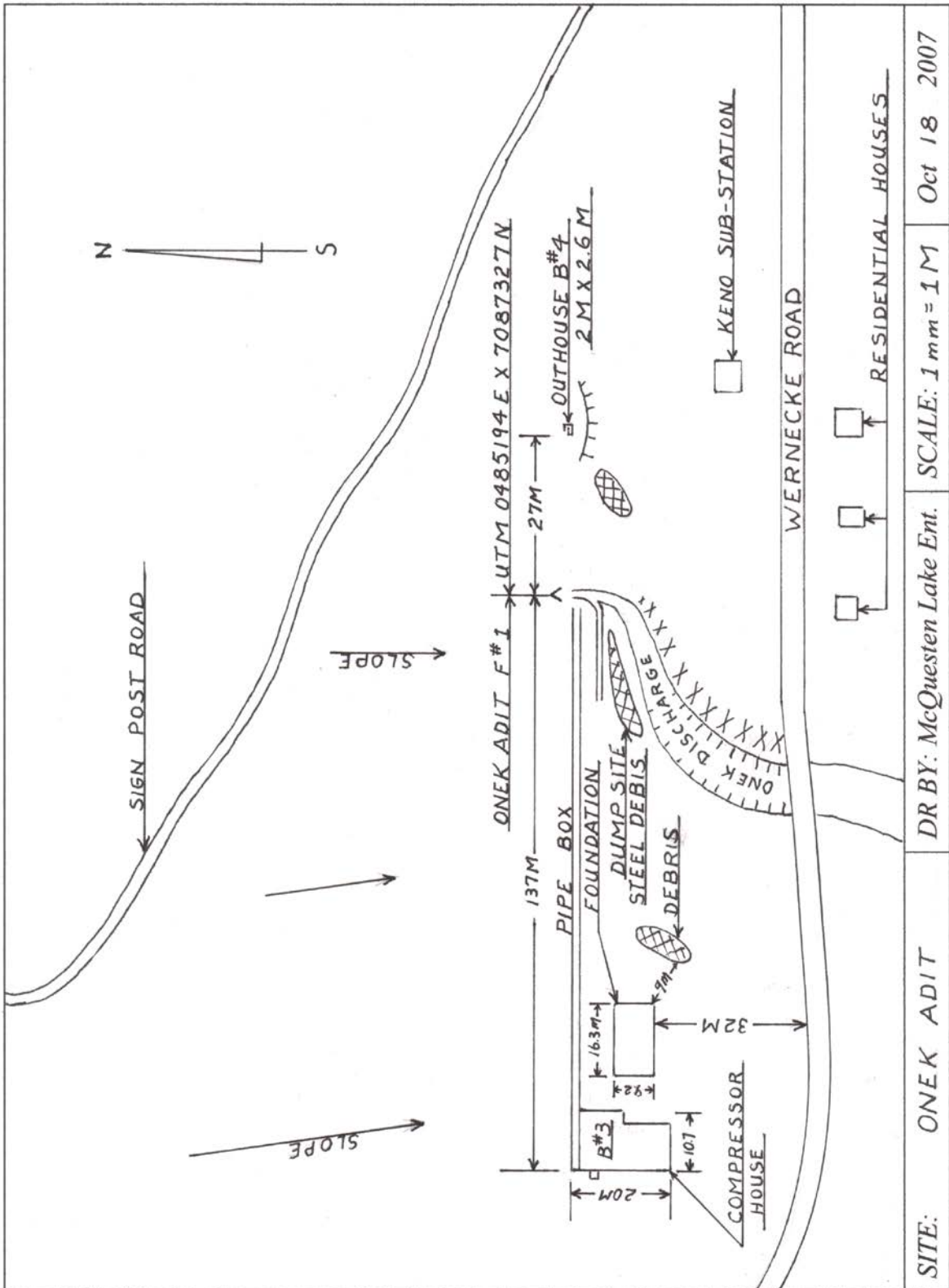
Oct 16 2007

SCALE: 2 mm = 1 M

DR BY: McQuesten Lake Ent.

SITE: UPPER ONEK

Lower Onek Layout



SITE: ONEK ADIT	DR BY: McQuesten Lake Ent.	SCALE: 1 mm = 1 M	Oct 18 2007
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**Review of existing studies, confirmation and/or update of current site conditions**

Site conditions remain relatively the same as the previous Keno Valley/ Dublin Gulch Environmental Baseline Assessment, March 2000 report. Although a stone building was found off the northeast tip of the open pit.

The area around the mine buildings west of the open pit has been cleaned up since the last inspection however there are still oil pails and an empty transformer located downhill west of the buildings and significant hydrocarbon stains around the buildings.

**Past and Current Site Tenure/ Owners**

The Lonestar claim was first staked by David Sparks on March 01, 1920. Other owners and or interest holders of the claim were; Joseph Walsh, George Fulton, D. Roger Englar, William Schofield, Reserve Mining Company Limited, Don Morrison and Malcolm S. McCown, United Keno Hill Mines Limited and AMT Canada. The claim is now owned by Alexco Resource Corporation and is free and clear of any liens previously associated with UKHM.

The Fisher Claim was first staked by Joseph Walsh in 1919. Other owners and or interest holders of the claim were; Archie McVicar, Louis H. Titus, Slade Creek Mining Co, D. Roger Englar, Livingston Wernecke, William Schofield, Reserve Mining Company Limited, Catherine Fisher, Norman A. Murray, J.F.M. Croteau, William H. Williamson (estate), United Keno Hill Mines Limited and AMT Canada. The claim is now owned by Alexco Resource Corporation and is free and clear of any liens previously associated with UKHM.

The Upton Claim was first staked by Archie Martin in 1921. Other owners and or interest holders of the claim were Tomas McKay, D. Roger Englar, Estate of William Schofield, Don Morrison and Malcolm S. McCown. Reserve Mining Company Limited, United Keno Hill Mines Limited and AMT Canada. The claim is now owned by Alexco Resource Corporation and is free and clear of any liens previously associated with UKHM.

*Historical Review of Former United Keno Hill Mines Ltd. Quartz Claims  
Onek Site, Keno Hill. Volume 2*



*Keno Hill claims. Part of Mayo district mining claim map No.105-M14 2003*

*Onek Stone House B# 1*

A stone house is located 32m from the northeast tip of the open pit behind a small bluff in dense willows that had to be removed in order to take suitable photos of the building.



The building is in fair to poor condition. The stone walls are stable though the roof logs have rotted and the roof has collapsed. The door is jammed open from the sod that has collapsed from the roof.





The building has a dirt floor. Flat stones of various sizes are used for the walls and are chinked with a combination of mud, moss and strips of clothing.



The low pitch shed roof is constructed with 4 log purlins running from east to west and sheathed with smaller logs and sod.





A small door is in the east wall. The frame is constructed with logs and 1x3 boards.

The door is rough 2x6 boards braced with two 2x4s and the hinges are nailed to the log frame.

The latch assembly is fabricated from round steel. There are no windows in the building.





It is possible the building was used for storing dynamite. We found no evidence of household belongings in the interior and no refuse dump near by.

To the north of the building there is a large section of burned tree stumps among the trees. This indicates there was a fire that had burned across the ridge some time ago.



*Onek Dynamite Shed Building #2*



To the northwest of the stone house is a small building which was used for dynamite storage.



The building is in fair condition and stable with some rotten sections along the foundation.

The door is fairly secure though the pin has been removed from the top hinge.



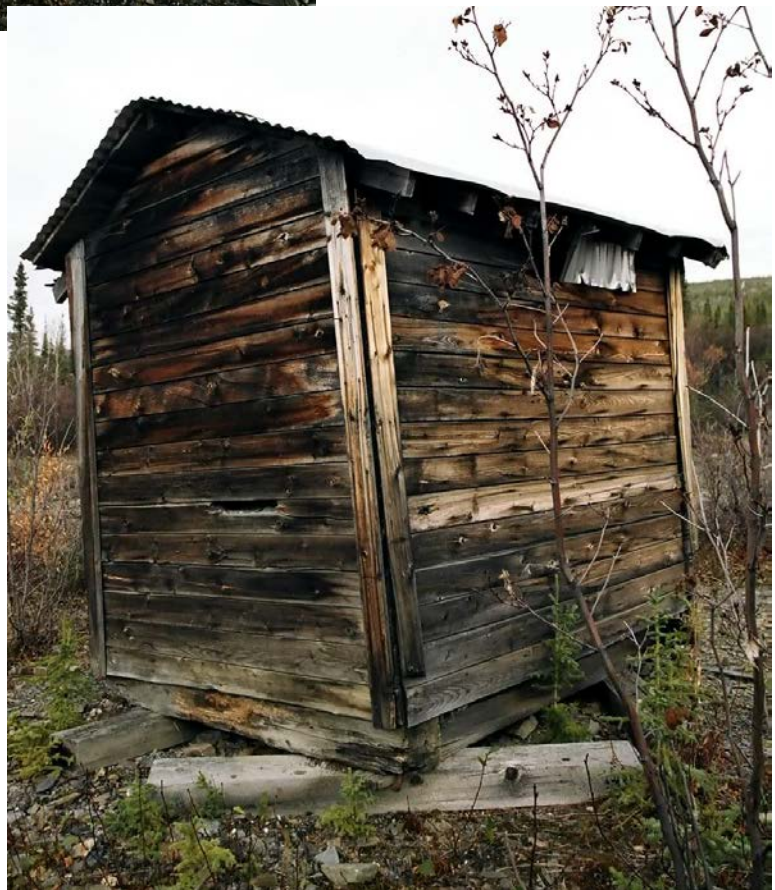


The foundation is constructed of a 6x8 frame and cross braced with additional 6x8s in the center of the frame. The building is set on 6x8s. Floor joists are rough 2x4s sheathed with 1x8 planks.

The walls look to be constructed with 2x4s that are filled with fine dirt and shale rock. The exterior is clad with 1x6 shiplap boards.

There are a few pieces of light corrugated metal still attached to the north and east wall.

The gable roof has 2x4 rafters sheathed with 1x6 shiplap boards and corrugated metal.



*Onek Athey Wagon Feature #1*

To the southwest of the Onek Stone House B#1 and west of the open pit is an Athey Forged-Trak trailer built by Truss Wheel Co. Chicago U.S.A. The steel track, frame and wood deck is in fair condition.



*Onek Mine Buildings*

The buildings are located to the west of the open pit and consist of three plywood sheds used for storage of mine supplies, and an Atco trailer which was used as the lunch room.



The buildings have deteriorated since the previous Keno Valley/ Dublin Gulch Environmental Baseline Assessment, March 2000 report.





The area around the buildings have been cleaned of oil pails, though over the bank to the west of the buildings is an empty transformer and empty oil pails.

Several areas around the buildings are saturated with hydrocarbons.



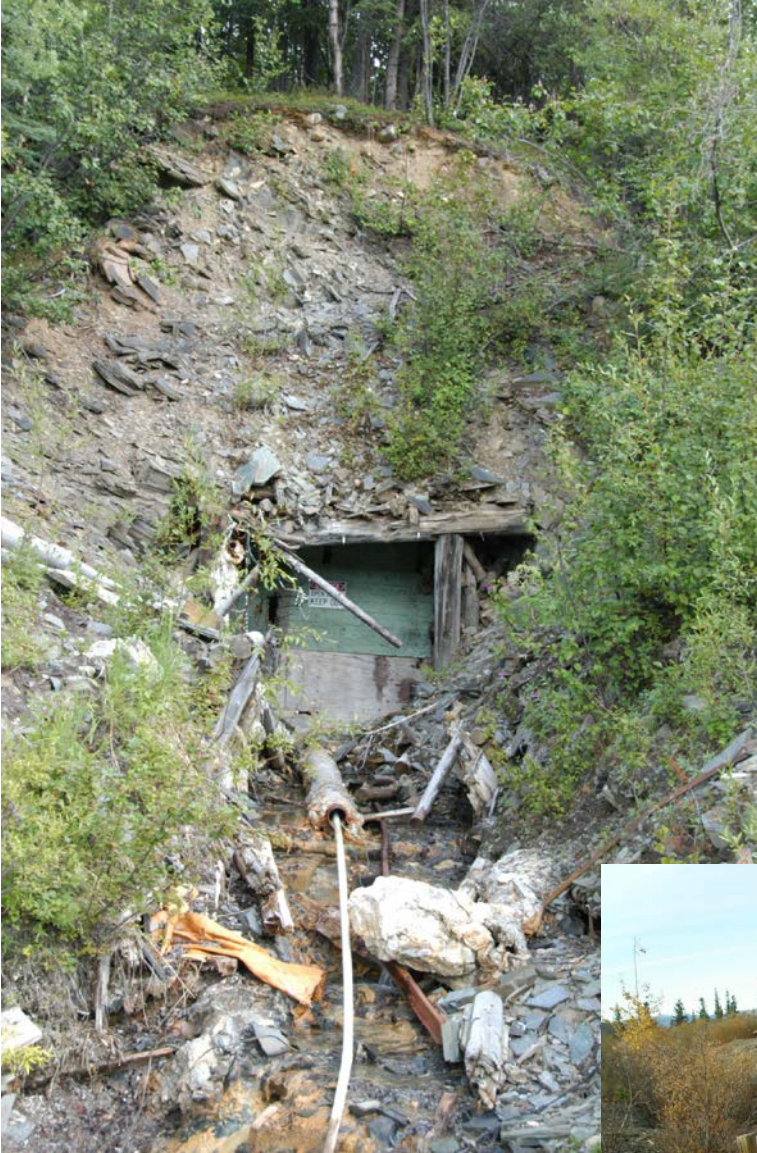
In the storage building nearest the trailer is a steel box fabricated from heavy steel plate. The box was most likely used to store blasting caps.

**Fisher Shaft**

The Fisher Shaft was documented by the Historical Sites Unit prior to remediation. The Lonestar Shaft could not be found. Below; YTG photos.



*Onek Adit*



The Onek Adit is in poor condition. Timbers are giving way and the hillside above is sloughing.

The underground workings extend from the adit under the Sign Post road to the Fisher claims.

Left photo; YTG

The adit discharges year-round to the south along a large drainage ditch that continues across the road.

There is a significant amount of scrap wood and metal surrounding the adit.



### *Onek Compressor Building #3*

The compressor building is located approximately 130 meters west of the Onek Adit. The foundation is comprised of a continuous concrete pad and footings.



Little is remaining of the L shape building. The walls and roof have been salvaged except for the northeast section of walls that are constructed of 2x6s.



The exterior walls are sheathed diagonally with 1x6 shiplap boards and clad on the exterior with white asbestos shingles. The remains of a 2x4 interior wall are near the northeast corner of the building.

In the remaining east wall is a large opening for double doors and a single door entry to the left of the opening. There are two windows; one to the right of the opening and one in the south wall.



The trusses for the gable roof were constructed of heavy laminated 2x8 planks and bolted at all the connection points of the truss.



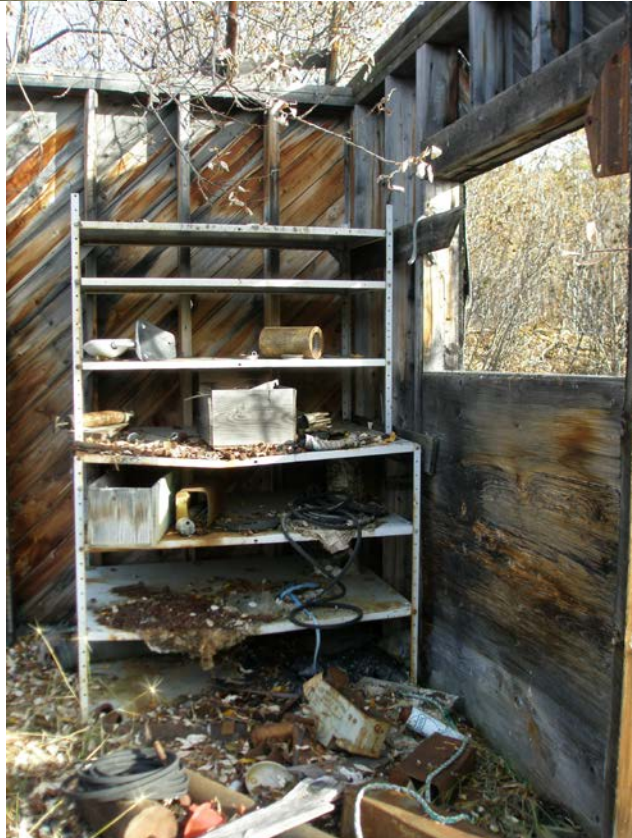


Air compressors are located in the northwest corner of the building, with pipes leading into a plywood conduit that extends east to the Onek Adit.





Two shelf units are along the north wall. Old parts, used filters, extension cords, electrical cable and various other scrap materials are scattered inside and around the exterior of the building



*Onek Concrete Foundation*

To the east of the compressor building is a concrete foundation. Various scrap metal and wood are scattered about. We found several old batteries that are damaged and the acid has drained into the ground.



To the east are a heap of scrap charred metal; 45 gallon drums, bed springs, propane tanks, ore cars, broken battery casings and corrugated metal.



*Onek Outhouse Building #4*

The outhouse is located 27m east of the Onek adit. The building is in poor condition; mainly rotten throughout. The east wall is separating from the south wall and the outhouse is beginning to collapse.



The foundation is constructed with logs laid directly on the ground and sheathed with 2x6 and 2x8 boards for the floor and the front of the seat; the seating area is left open.





The outhouse does not have a door although a small 3x4 extension is built off the northeast corner for privacy so the seating area could not be seen from the outside.



The south wall is constructed with 2 x 4 studs while the other three walls are constructed with 2x6 that run horizontally, these 2 x 6s served a secondary purpose as shelving. The exterior is clad with 1x6 shiplap boards.

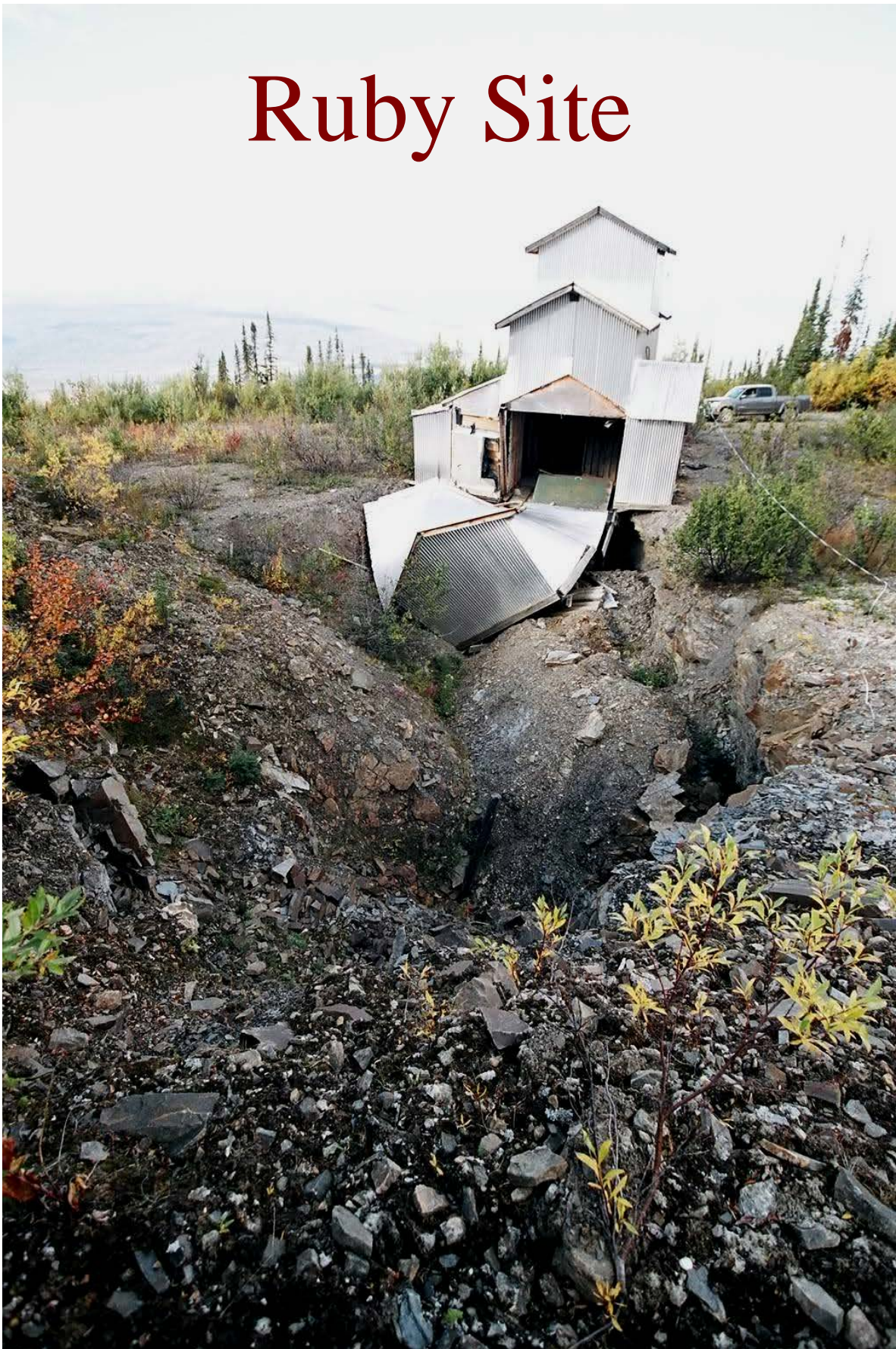


This outhouse has a low pitch shed roof with 2x6 rafters and sheeted with 1x6 shiplap boards.

To the south rail has been pushed into a heap.



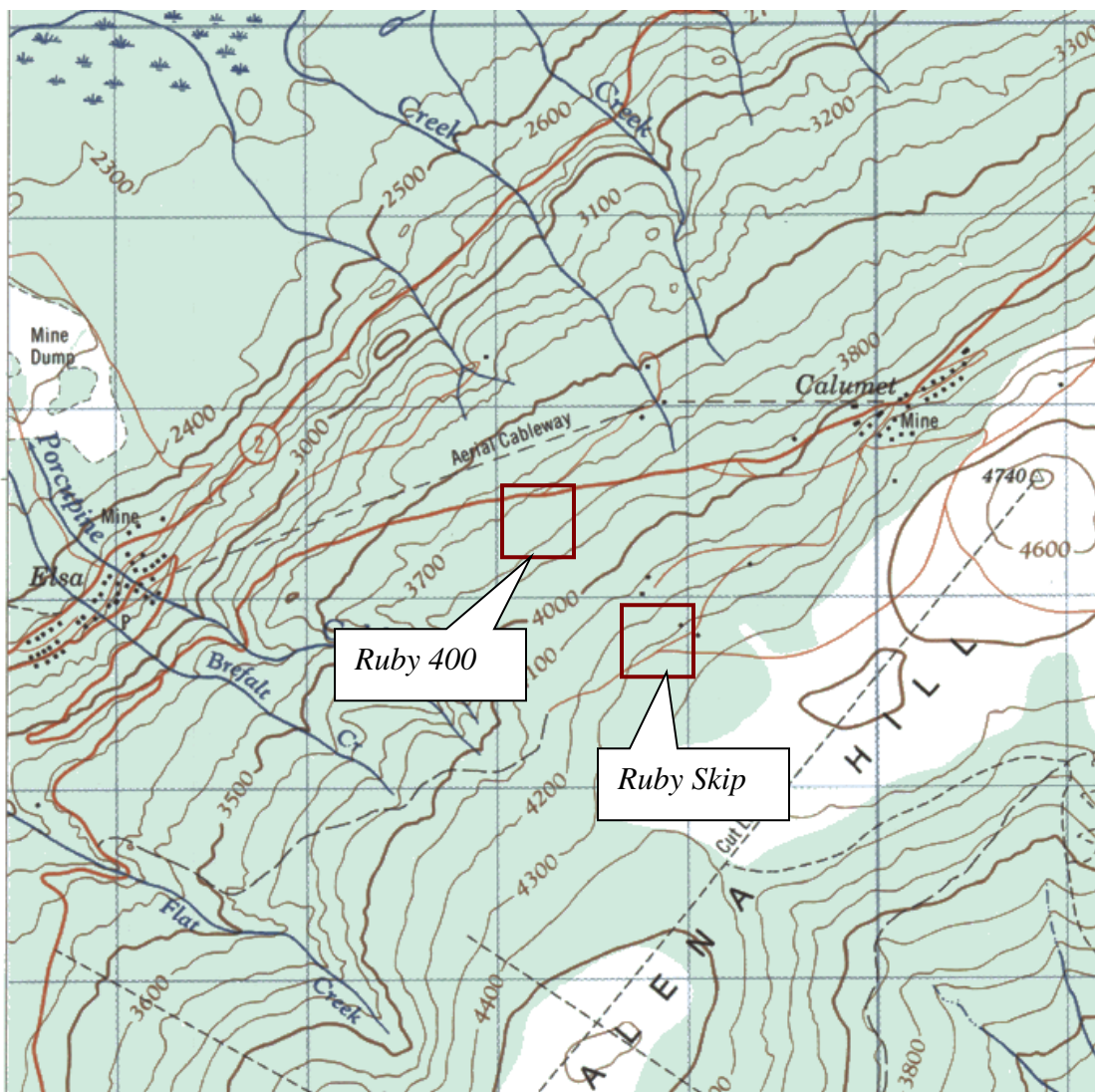
# Ruby Site



*Location and Site Access*

The Ruby Adit and Ruby Skip are accessed by the Calumet Road from Elsa. The Ruby Adit is located immediately to the east of the road at an elevation of 1167 meters. The UTM coordinates for the Ruby 400 Adit and Portal are 0478496E x 7087687N.

The Ruby Skip is also accessed by Calumet Road from Elsa but branches off to the right at the Hector Adit further up the road and continues up hill to a second switchback; this road carries on south to the Ruby Skip.



*Keno Hill, Yukon Territory. Map 105 M/14. Energy, Mines and Resources Edition 2*

## **Historical Background**

### **Ruby Skip**

The Ruby skip is situated just below the Birmingham pit waste dump on the Mastiff claim. The Mastiff claim was originally staked in 1921, by E. K. Jones.

Not much further history was to be found on this gentleman other than he was a good prospector and that he was also the first person to stake the Wigwam claim. Edward Jones sold  $\frac{3}{4}$  of his claim in 1923 to Alfred Ransley, Andre Hart, and estate of Charles R. Settlemier, Claude Hubert Bermingham and Stillman M. Dorr.

The history of this claim is very convoluted as percentages were sold and then resold within a group of local miners who did maintenance and assessment work.

In May of 1924 the mining records show that Estate of Andrew Hart sold  $\frac{3}{20}$  interest of the claim to Annie Stoner and Charles R. Settlemier. In June of 1924 E. K. Jones made a sales agreement with Samuel Moreau which was soon abandoned in September of that year.

In September of that same year Edward Jones finally sold his final  $\frac{1}{4}$  interest of the Mastiff claim to Charles Settlemier and Claude Bermingham who, intern with all the other share holders, entered into a lease agreement for one year with Edward Ervine and John H. Carpenter.

From the time of the initial stampede to the area until 1923, very little high grade ore was uncovered, as reported in the book "Hills of Silver".

"Within two weeks enthusiasm died because assays showed the discovery to be mainly antimony with only eight ounces of silver per ton." (Hills of Silver by Dr. Aaro E. Aho page 141).

Activity settled down some what and Charley Settlemier convinced Sam Marrow and Henry Dubois to do assessment shafts on the more promising areas of the overburden. Apparently they just kept hitting schist on numerous shafts so they eventually quit. Settlemier, who was not working and would walk over the claims decided he, was going to try his hand at taking a round at the one of the shafts that Sam and Henry had quit on. Charlie picked a shaft and with some hand steel and a hammer started driving holes in the ground that was the easiest to work. Schellinger, who had come by later that day, reported that he had worked on the round most of the day and it was loaded and set to blow. After the round went off and the smoke had cleared, Settlemier scrambled down the shaft to find a 3 foot wide vein of Galena. He ran most of the way back to Keno to have it assayed and report on his discovery. As it turned out the samples ran a reasonable 160 ounces to the ton.

This discovery also coincides with the records done by H. S. Bostock's Memoirs #284.

By 1924, 26 tons had been sacked and hauled down the trail for shipping. In 1925 350 tons had been dug and sacked, along with a small camp having been built.

A Ruby Fraction that is situated on the northeast side of the Mastiff claim was explored in 1925 by two large surface cuts showed a vein that is a mixture of siderite, galena, and freibergite.

Ellef Bjonnes, the owner of the Ruby Fraction stated that the galena ran as high as 385 ounces to the ton and that the earthier material ran up to 700 ounces to the ton. "Nels" Bjonnes spent a good portion of his life high grading off the Ruby Fraction and a lease he had on the No Cash property for a few years. He spent his final days at the Hudson Hope Hotel in Vancouver in the late 1950s. (Reference "Hills of Silver" page 158 by Dr. A. Aho)

In 1926 a lease agreement was signed with Alex F. Berry. (We noted a number of discrepancies in the spelling of his first name; in some books he is referred to as Alec and in others it is Alex. He is recorded in the mining records as Alex, so we will use that as precedent). Alex first entered the Yukon in 1924, under the request of Mr. Livingstone Wernecke to demonstrate the operation of the new "wet drilling machine". It was shortly after this that he worked on the Mastiff claim where he mined 600 tons of ore, but with the prices being low he lost money on the operation and so quit.

He then went to work for Wernecke until Mr. Wernecke's untimely death. Alex carried on working with different companies that came and went over the next while. In 1927 Charley Settlemier sold 1/12 of his interest in the Mastiff claim to Alfred Ransley. In September of 1927 Alex Berry signed a release to the lease on the Mastiff only to turn around and renew the lease but this time with Ellef Bjonnes as partner. In May of 1928 Ellef Bjonnes applied a lien against the claim. In 1929 letters of Probate were filed in the estate of Charles Settlemier.

In 1930 Stillman M. Dorr sold his 3/20 interest to Alfred Ransley and in August of 1930 the lien that was placed on the claim was discharged by Ellef Bjonnes. In 1931 the Crown granted a 21 year lease to the owners, who were A. Ransley, Annie Stoner, C. R. Settlemier and Claude H. Bermingham with Alfred Ransley transferring all his interest to Settlemier.

In 1948 Annie Stoner allowed an assignment of the claim to Claude Bermingham which amounted to 12/100 of the claim.

On August 15, 1948 Royal Trust Co., the administrator of the Estate of C.R. Settlemier, and Claude Bermingham optioned the claim for 4 years to United Keno Hill Mines Limited. When the option on the claim expired, the Settlemier Estate and Claude Bermingham sold the claim outright to United Keno Hill Mines Limited in 1952.

During the first years of the option, UKHM did extensive drifting and exploration on the Mastiff claim in hopes of proving Wernecke wrong (that there was not any substantial ore). It is noted in the "Hills of Silver" that the U.K.H.M. had spent over \$160,000 dollars drifting and rehabilitating the earlier workings. This is probably why the Ruby shaft house is in such a stable frame condition with newer milled timbers and plastic for interior covering. A crew was kept working through the early eighties doing reinforcement and solid blocking of the Ruby shaft in an attempt to save it as a vent raise.

“In 1982 , 45 diamond drill holes totaling 135.6 m were completed on the Ruby and Townsite vein system” (Page 154 in Yukon Exploration and Geology by Indian and Northern Affairs).

This pretty well covers the owner ship and production up to the time Keno Hill shut down in 1989 and the claim was turned over to AMT Inc. in October of 2001. Although if taken in reference to the development of other claims in the near vicinity, we are sure there is a greater depth of history to be documented. The development of Hector and Birmingham claims have yet to be overlaid with these few claims.

### Ruby 400

The Ruby 400 Site is located on the Extension Claim which was first staked on August 25, 1925 by Alexander Gordon.

Alex Gordon was originally a placer miner out of Dawson, who in the 1920s came over to Keno Hill to try his hand at hard rock mining.

Little else was noted on this gentleman other than in the 1950s he still owned claims on Galena Hill, which he sold when the price was up in the 1950s expansion.

Don Morrison and Malcolm McCown both were involved with the claim from 1933 to 1934, but at all times Alex Gordon held the claim until entering into an agreement for Sale with U.K.H.M. 1955.

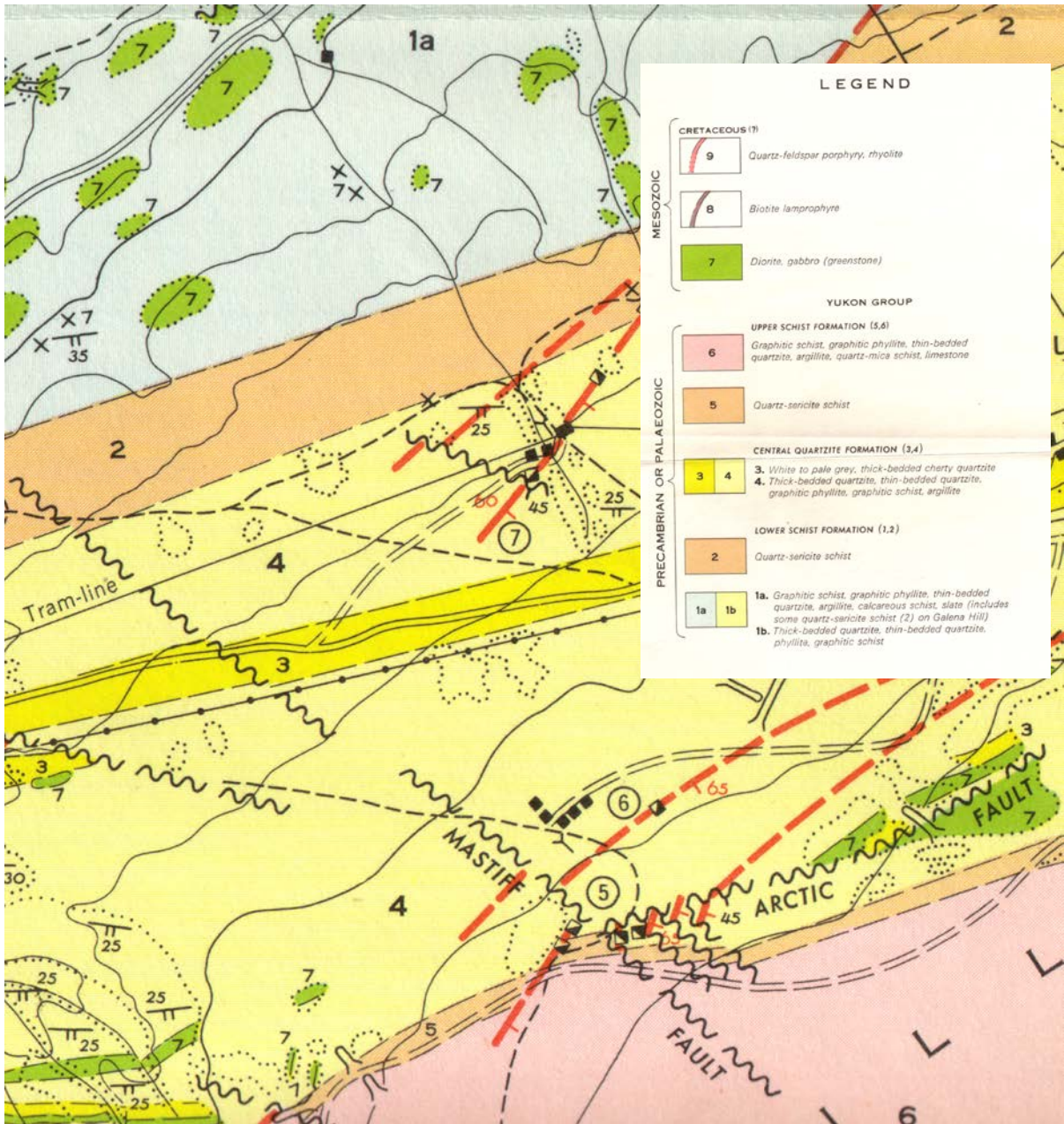
This Sale was not made good until the year 1958, when Alex transferred 100% interest over to U.K.H.M.

The history of the Extension Claim follows the same transfer path as previous claims outlined in the prior site lineage.

The Ruby 400 drift connects to the Ruby shaft and has an estimated ore production of 36.879 tons over the years it was in production.

“The vein on the Ruby (Darwin) Fraction strikes NE 50 degrees, dips 65 degrees SE, and varies from 1 foot to 3 feet. According to Stockwell (1926) the vein is mineralized with siderite, galena, freibergite, and pyrite. Alteration products on the dumps include limonite, manganese oxide, and cerusite. The galena is said to carry from 250 to 385 ounces of silver to the ton, and earthy cerusite, anglesite nodules, oxidized freibergite, etc. carry as high as 700 ounces to the ton. No orebody of workable size was found during the early prospecting, and as far as is known no work has been done since 1935. The northeast extension of the Ruby vein has not been definitely established by mapping. The southwest extension may be represented in the Birmingham crosscut by a crushed zone containing small amounts of siderite and galena, some 500 feet from the portal”. (Reference page 62 in Bulletin 111 of “Geology, Geochemistry, and Origin of the Lead-Zinc Deposits of the Keno Hill-Galena Hill Area” by R. W. Boyle.

Map below shows workings 6 at the Ruby site

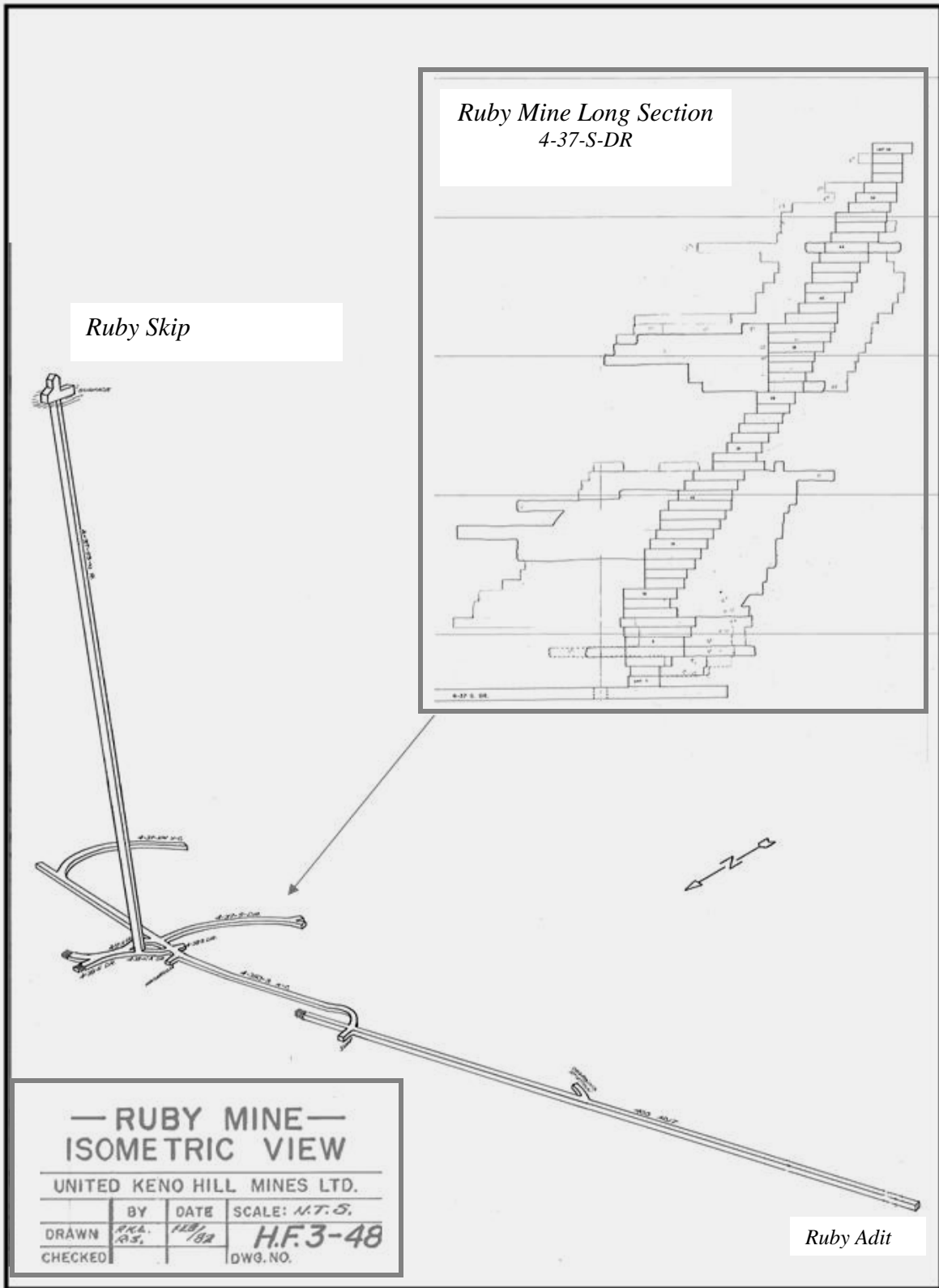


Geological Survey of Canada Paper 55-30 By R. W. Boyle Ottawa 1956 Part of figure 2

Map below shows workings at the Ruby site

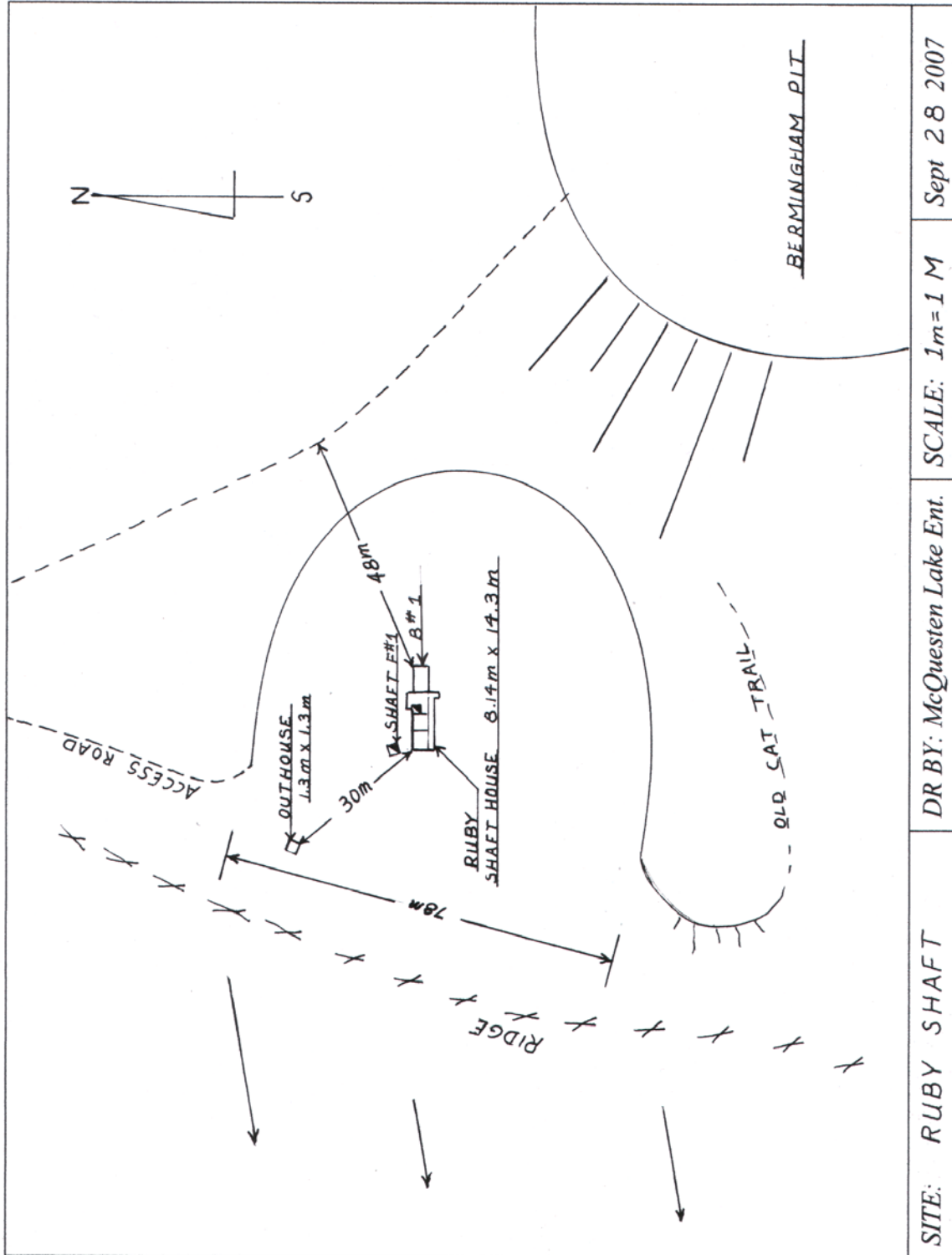


Courtesy of Alexco Resource Corporation



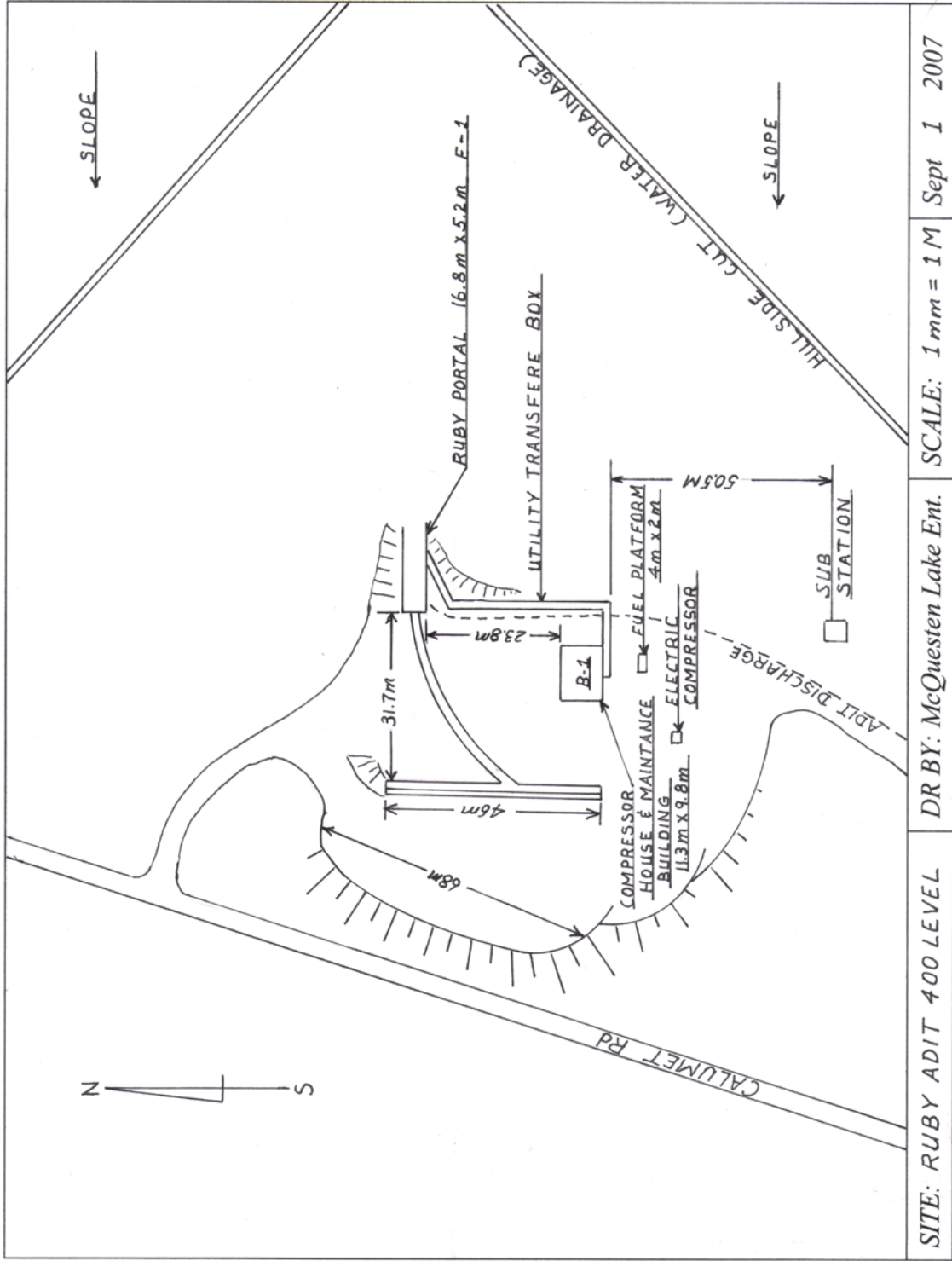
Courtesy of Alexco Resource Corporation

**Ruby Skip Site Layout**



SITE: RUBY SHAFT	DR BY: McQuesten Lake Ent.	SCALE: 1m = 1 M	Sept 28 2007
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**Ruby 400 Site Layout**



SITE: RUBY ADIT 400 LEVEL      DR BY: McQuesten Lake Ent.      SCALE: 1 mm = 1 M      Sept 1 2007

**Review of existing studies, confirmation and/or update of current site conditions**

The Ruby Skip building has deteriorated significantly since the previous inspection conducted by Environmental Services Public Works and Government Services Canada Keno Valley/ Dublin Gulch Environmental Baseline Assessment, March 2000. The east addition has pulled away from the main building and has fully collapsed into the sunken shaft.

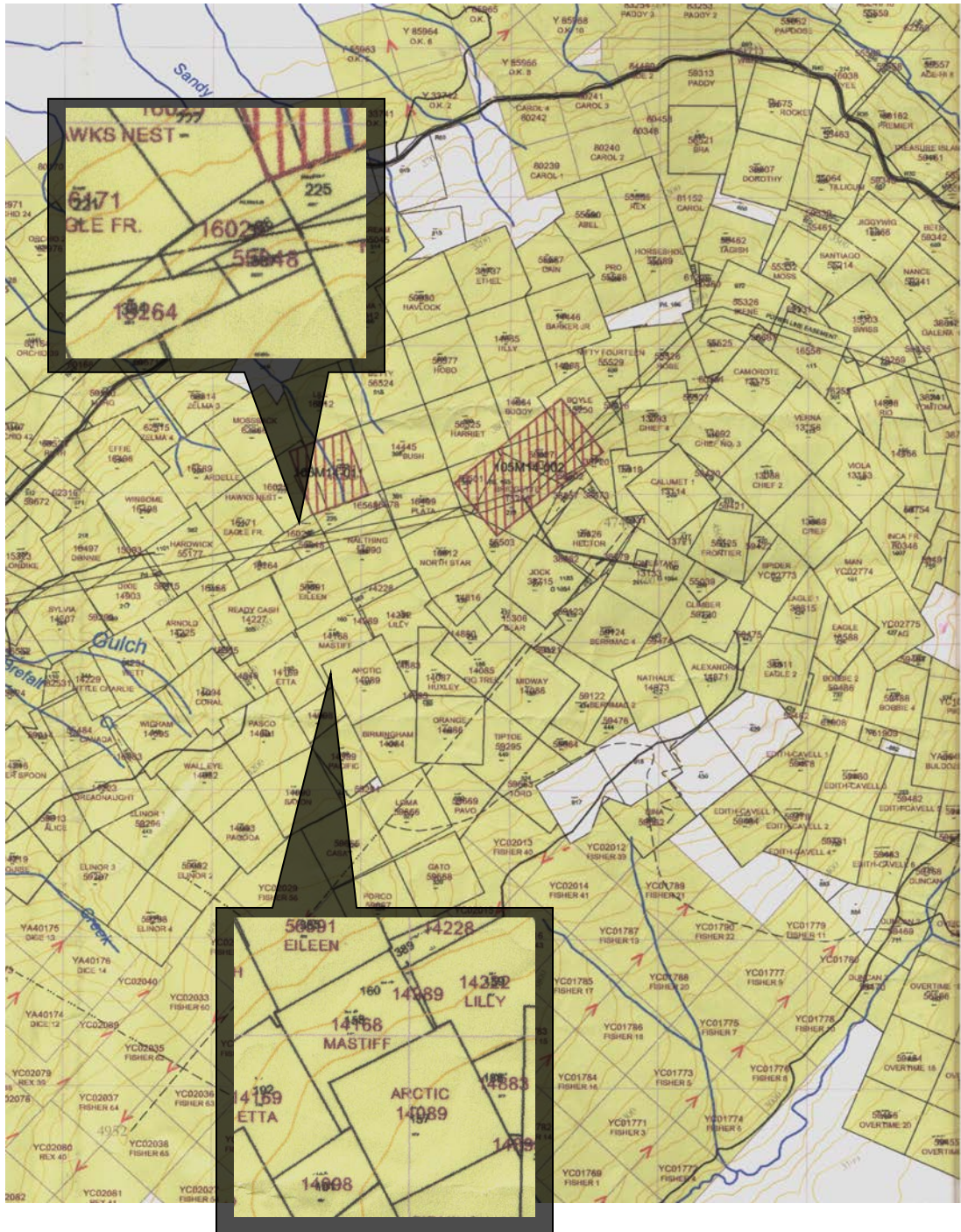
The Ruby 400 site remains roughly in the same condition as the previous Keno Valley/ Dublin Gulch Environmental Baseline Assessment, March 2000.

**Past and Current Site Tenure/ Owners**

The Mastiff Claim was first staked by E.K. Jones in 1921. Other owners of the claim and or share holders were Alfred Ransley, Andrew Hart, and Estate of Charles R. Settlemier, Claude Hubert Bermingham, Stillman M. Dorr, Annie Stoner, Samuel Moreau, Edward Irvine, John H Carpenter, Alex F. Berry, Ellef Bjonnes, John P. Smith, United Keno Hill Mines Limited and AMT Canada.

The Extension Claim was staked by Alexander Gordon in 1925. Other owners and or interest holders of the claim were Don Morrison, Malcolm McCown, United Keno Hill Mines Limited and AMT Canada. The above claims are now owned by Alexco Resource Corporation and are free and clear of any liens previously associated with UKHM.

*Historical Review of Former United Keno Hill Mines Ltd. Quartz Claims  
Ruby Site, Keno Hill. Volume 2*



*Keno Hill claims. Part of Mayo district mining claim map No.105-M14 2003*

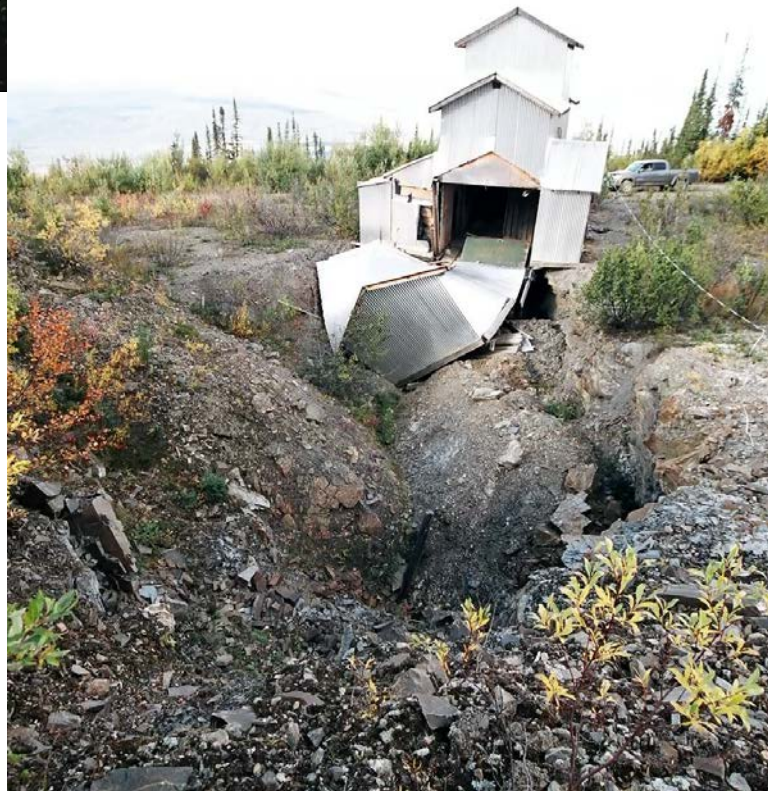
*Ruby Skip Building #1*



During the time of our inspection, the south and west walls of the building seem to be in a relatively stable condition. However the east wall and northeast corner is being undermined by the caving shaft.

The east addition of the building has collapsed onto the cave-in and a large area of ground to the east is sloughing in.

The interior, east section of the floor has sunken and the northeast corner is giving way.





The building has two rooms; a small lunch room on the south side of the building and the headframe containing the skip and electrical panels.

The headframe assembly is constructed with 4 large logs. The bases of the logs are wrapped with flat heavy steel to secure the structure and were possibly sunk into concrete. This was difficult to determine though we could see concrete through the floor boards.

The top of the headframe is reinforced with 1/2" steel plate and I- beam. The structure is cross braced with 2x8s that are bolted to the logs. The skip is constructed with rough 4x6 and 2x6 boards.





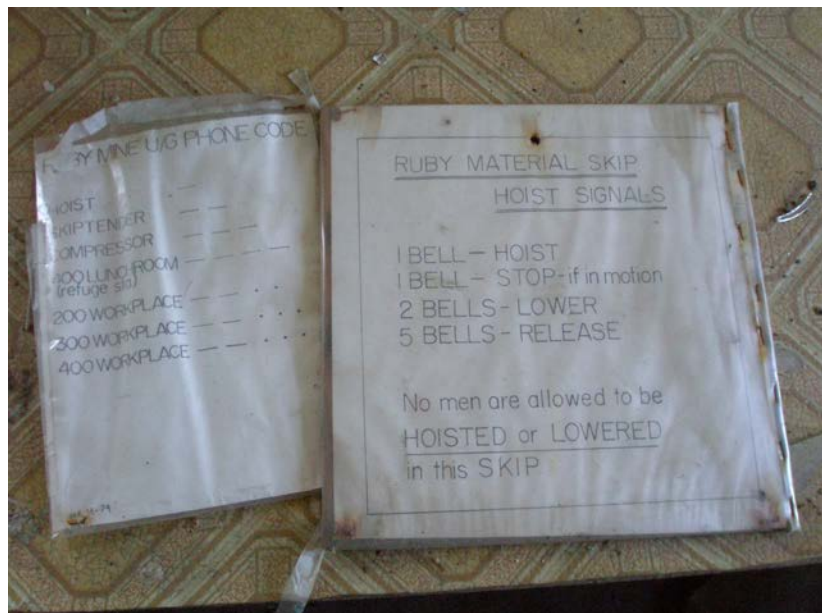
The foundation is constructed of 8x8 timbers placed directly on the ground and sheeted with 4x6 timbers for the floor.

The walls are constructed with 2x6s. The walls are insulated and the interior is sheeted with 3/8 unfinished plywood along the lower half of the building. The upper half is covered with black plastic and strapped with 1x3 boards.



The lunch room is situated on the south side of the building and is clad with 3/8 finished plywood.

There are two windows in the south and west walls along with two wooden benches and tables. The floor and table tops are covered with linoleum.





The roof of the building is constructed in multi tiers to accommodate the skip assembly. The exterior of the building is clad with 3/8 plywood and corrugated metal.

*Ruby Shaft F #1*

Adjacent to the northwest corner is an open shaft. The shaft has collapsed approximately 4m from the surface. The shaft is constructed with logs and saddle notched in the corners



Remediation at the site took place shortly after the inspection and documentation of the building and shaft.

We would like to thank Alexco Resources Corporation for the use of the following 3 photos taken during the remediation of the Ruby Skip. The photos are invaluable to the history of the area.



Photo shows the manway and skip.





*Ruby 400 B # 1*

This building is located 23.8 meters south of the 400 Adit at an elevation of 1167 meters and is in fair condition. This building is a prefabricated “Butler” building and has been modified to accommodate the various types of equipment needed to operate the underground operation.



The building is comprised of four rooms. The first or west section housed all of the electrical panels and large voltage switches, the second section housed the large compressors that supplied the underground with ventilation and compressed air, the east section was comprised of a tool room for maintenance and, a separate lunch room is located in the south section.





The foundation of this building is constructed with 8x8 beams that are supported and leveled with 8x8 blocking, wood shims and wedges.

The southwest corner has a partial floor built by laying 2x8 planks flat on the ground and sheeted with 5/8 unfinished plywood. Mill rejects are spread over the remaining area.

Large sections soaked with hydrocarbons.

The walls are constructed with 2x4 studs. The interior walls and ceiling are insulated with fiberglass and clad with 3/8 inch unfinished plywood. The interior support wall is unfinished and has a doorway into the compressor room to the east.

An electrical union box is situated in the southeast corner with several electrical cables running to the adjacent compressor room and out the top of the south wall into a plywood conduit that connects to the adit for power supply underground.





The second; middle section housed the compressors.

A work bench is along the south wall below a window with sliding plywood shutters. Double doors take up the north wall.

A heavy sliding metal door is on the east wall separating the compressor room from the tool room.

Walls are clad with 3/8 unfinished plywood and asbestos paneling along the south and east walls.

The vaulted ceiling has 1x6 tongue and groove and an opening for the exhaust from the compressors.

The entire floor of this section is covered with mill rejects. The area is littered with plastic, oil pails, parts and a tire.



The tool room has a single door entry on the north wall. The floor is constructed with 2x6 floor joists and sheeted with rough 2x6 boards. Walls are unfinished 3/8 plywood.



The ceiling is clad with asbestos paneling.

A wooden work bench is in the southeast corner and an oil heater by the door on the north wall.

Various parts, chain, and debris are scattered throughout the section.





The lunch room/ first aid room has a single entry and a small broken window on the east wall. The floor is sheeted with unfinished plywood. Walls are painted plywood and the ceiling is asbestos paneling.





A plywood conduit and trestle runs from the middle of the south wall (compressor section) and extends to the east and along the bank to the adit.

An overturned plywood outhouse, an underground skip and compressor lie to the south of the building along with various scrap wood and metal.



**Ruby 400 Adit**

The adit and portal are built using the traditional log post and beam structure and is in fair condition. At the time of inspection the portal doors were securely locked so we can not give an interior description of the portal construction.



The exterior walls are clad horizontally with 2x8 and 2x10 planks, black rolled roofing and 3 inch wide strips of plywood. The flat roof of the portal is also clad with 2x8 and 2x10 planks, black rolled roofing and held down with 3/8 unfinished plywood sheets.



Old log timbers are visible at the rock face where the adit extends underground. At this point we could tell that three sets of log cribbing were used to support the flat portal roof. This then tapered to two sets as the adit entered the hillside.



The Portal dimensions are 5.8 m wide by 16.8m in length and 2.8 m tall. A large “A” Frame steel hoist structure is at the entrance to the portal. It was more than likely used to off load or pick up Lokies or heavy Granby ore carts.



A plywood conduit and trestle runs from the south wall of the compressor building to the south wall of the portal supplying compressed air and electricity underground.



Rail extends 31.7m from the adit to the load out.



The load out is constructed with log cribbing notched at the corners and consecutively along the width of structure, and sheathed with rough 2x6.





Mine water is discharging from the adit and running south into a ditch.

To the south is the remains of an electrical substation. The transformer has been removed though there is still a fair bit of hardware remaining.

Many hydrocarbon stains are inside the building and the surrounding area.



## Public Safety Issues

### Ruby Skip

- At the time of documentation the building and shaft had been noted for its obvious safety concerns and was scheduled for remediation. As we had noted the building was severely collapsing into the sinking shaft.
- The second shaft adjacent to the shaft house was also scheduled to be backfilled.
- There was a small refuse dump that was immediately over the dump edge southwest of the shaft house and a small amount of electrical wire strewn to and from the shaft house.

### Ruby 400 Adit

- The north end of the loadout is breaking loose and sloughing on to the lower dump.
- Transformers have been removed but platform and timbers could still pose a hazard, lots of electrical hardware at site.

### Bellekeno 200

- Water filled shaft is located 29 meters north east of grizzly on lower road at the 200 Level.
- In building the access road for the new drill pads, waste rock was inadvertently pushed over a stack of underground screening mesh. Approximately a two foot section of the 4 X 8 foot mesh sheets were left exposed.
- A large sink hole has developed above the 200 Adit. At the time of inspection it was approximately 35 meters in width and 45 meters in depth.
- The grizzly loadout is in a very unstable condition.
- There is a large amount of wood and steel debris off the northwest corner of the main 200 dump.

### Eureka Raise and shafts

- Shaft 1 and 3 are reopening at the Eureka Site along with the shaft at the 100 Level

### Recommendation

We would recommend that all remediated sites be frequently monitored.

### Other

- Asbestos is used at the Ruby 400 Compressor Building-1, the Tool Shed B-1 at the Bellekeno 200 Level and shingles on the Onek Compressor Building-3
- There was a heavy amount of oil and or fuel contamination west of the 200 level portal, along with some 45 gallon drums that contained used motor oil.
- The main fuel tank at the Ruby 400 Level has been removed from behind compressor house but has left a substantial oil spill over the years.
- Hydrocarbon stains and battery acid have leaches into the ground at the lower Onek Site. The upper Onek Site also has large staining around the mine buildings located to the west of the open pit..

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