CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
416 W. Congress St., Suite 100
Tucson, Arizona 85701
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the Doug K. Martin Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

Concentrates

A Concentrated Summary of the Mining Activities of the Southwest

COCHISE COUNTY

Swissahelm Gold-Silver Company, recently shipped a carload of ore Calumet & Arizona smelter at which showed a silica content of cent and the gold-silver content to $31.80, of which $8.60 was $23.20 was in silver.

ments of silver, gold and lead ore Tombstone district both by lease the Bunker Hill company continue rage in the neighborhood of 100 cars a month, according to the port at the local depot. With silver $1.30 an ounce this means a tion of at least $100,000 per month.

reported that a rich body of ore struck on the properties of the Arizona Mining company, at Dragmays on the body running $75 to in silver and lead.

Calumet & Arizona Mining company have declared a quarterly dividend per share, payable March 22nd. an increase of 50 per cent over the arter.

strike of sulphide copper ore is by the Middlemarch mine, situ miles from Pearce. Ore carry values of silver and gold was in the main shaft at the 800-vel.

L. Fuffner of Paradise reports veral mining properties in the aus in which he is interested are ing favorably, the Cochise Min es company has recently installed engine which is driving a de t tunnel. Also the Ajax prop start work soon, as well as the Extension Co.

Shattuck Arizona, in the last two months has shown signs of a recovery in operations, after a of partial suspension of the mines of fire.

GILA

production of the Miami Copper is being kept down awaiting a market. Production is averaging the same as 1914 production.

ing of the main shaft of the Iron the Globe district from the 1300 1500 foot level was started re Progress on the building for concentrator is rapid. Ore re are being steadily increased.

Old Dominion at Globe is doing eep sinking. The main operating as been sunk from the 18th to the evel; K shaft from the 19th to he Grey from the 14th to the 16th

the report for the quarter end ecember, 1919, more than 120 feet ting has been added to the Foot in of the Superior and Boston com Globe. Several small stopes are pened on the 400 level. Drifting 600 level is also reported to be sing.

Van Dyke Copepr company of Mi established the world's record in aking, having sunk 10 feet a day for one month of 31 days, or a total of 308 feet.

It is reported that a rich strike has been made on the 140-level of the Irene mine which is situated in the Globe district, about one mile north of the Old Dominion.

The Porphyry Mining company of Globe has successfully completed the underraeming of the drill hole for the 12½-in. casing at the old Barney shaft and the casing lowered to a depth of 500 feet.

The Gila Copper Sulphide company at Christmas has emerged from its trouble with formal action by Judge Sawtelle, in the U. S. Court of Arizona, in dismissing the receivership and turning the property back to the owners.

GREENLEE

The Stargo mine, located one mile out of Morenci, has been shipping to the C. & A. Smelter. The silica content has been as high as 82 per cent and the net return on a carload after paying all freight and smelter charges was between $1100 and $1200.

The $150,000 mill of the Duncan Mining & Milling company has been completed and is now ready for operations. As soon as the mine is unwatered, which will take about 15 days more, active mining operation will be commenced.

MOHAVE

W. D. Grannis has made preparations for the resumption of work on the Great Republic mine of the Arizona Bullion company in the Cedar District. The Great Republic is one of the old producers of the Cedar district and they claim to have gold opening running better than 50 ounces of silver.

President Wold, of the Tom Reed company, Oatman, reports conditions better at Oatman than at any time in the last three years. Oatman is said to be paying the highest wages of any gold camp in the world.

The Potosi mine, formerly the Bella Union, situated at Chloride, is reported to have been taken over by Chas. Schoenmehl, who is planning a campaign of development.

The shaft of the Kingman Silver-Gold Mines company, situated about eighteen miles from Kingman, in what is known as Hardy's Butte, has reached a depth of 30 feet and a big hoist and compressor installed. The work from now on is to be carried on with machine drill and big progress is expected.

Considerable excitement has been caused in Oatman by the opening of an ore body in a crosscut from the tunnel level of the Alexander mine of the Oatman Southern Mining company. Four feet of the vein are reported to have given assays of more than $2,000 to the ton.

The Combination Silver Mines company of Hackberry, which took over the Combination properties recently, is getting shaped up for a busy season of mining is the report coming from that section.

The crosscut from the 540-level of the Telluride mine at Oatman, has been carried over 40 feet and is close to the ore shoot that was encountered on the 330-level.

Leasers of the Rainbow mines at Chloride have entered an ore body three feet in width that gives average samples of from $50 to $75 per ton. This ore body was encountered close to the lower level and gives backs of 250 feet for stoping.

Recently the Chloride Queen Mining company shipepd a small car of ore to the smelter at Humboldt which netted $1270 or $35 per ton.

It is rumored that the Senate Silver Mines company and the Hackberry will consolidate.

It is understood that the Elkhart mine is to undergo thorough development after which the main shaft will be actively extended in depth, crosscuts will be carried to both walls and into the paralleled veins.

Operators of the Antler and Copper World claims, east of Yucca,, are sinking a winze below the 100-level of the Antler. Ore taken from this winze is said to carry values of 24 ounces silver, 30 per cent copper and a small amount of gold.

A good body of ore is reported 390 feet from the portal of the tunnel being driven by the Gates Ajar, Kingman. The ore shows silver-lead values.

The Goldroad Annex Mines company at Kingman is being financed to the extent of $50,000 for development work, according to report.

The Copper Age mine at Chloride which is owned by the Arizona Ore Reduction company, is driving its tunnel towards a cross vein, and at a depth of 2800 feet from the portal has struck a flow of water that is said to indicate proximity to the vein.

The mines and holdings of the Arizona Butte Mines company have been examined recently by eastern men and it is announced that they recommend the financing of the properties on a large scale. New equipment will have to be installed to carry on this work.

The Diana at Chloride is making good headway according to recent reports from that section. On the 300 the drift has been cut 70 feet west and 18 feet east. Fifty feet west of the main shaft a crosscut is being run to tap the foot wall. An eighty-foot ore shoot is encountered which shows to be a very good milling ore.

The shaft of the United American at Kingman has reached a depth of 450 feet. The vein now being entered is unexplored, no work having been done on it at any point, although the outcrop looks good.

Drifting is being carried on to the east of the shaft on the 650 level of the Gold Ore mine.

It is reported in Kingman that the Diamond Joe mine has just made a shipment of concentrates.

A new lease has been made on the Rainbow at Chloride. A strike of high grade was recently made and the ore is being hauled down for shipping.

Chloride and the Wallapai Mining District

(By PROF. F. C. SMITH, Chloride, Ariz.)

Despite the great war; despite the frivolity of metal prices; despite the countless burdens of cost laid upon the shoulders of the everyday man by the political gymnastics of the most remarkable administration with which this country has ever been—blessed; despite the chronic pessimism of omnipresent homunculi, whose sum-total of aspiration and vision may be limited by the portentious functions of the next pay-day; despite all these handicaps, and "the flu," and woman suffrage, and national prohibition (with no caps) and all of the eevryday trials and tribulations, Chloride keeps moving. She has a continually increasing number of mines in process of development in the immediate and tributary districts, with many indications today of a more solid and business-like procedure than ever before; this condition doubtless being caused not only by the fortunate development of good ore chutes, but also by a more comprehensive knowledge of the value of the ores mined. In the past, aside from the wasteful operations of a number of old-style concentrating mills, all ores from this district were shipped; sometimes to very great distances and even to Europe; and this fact had, to a certain extent, fixed the idea in the minds of the population that no different or less costly procedure would ever be possible. That the small gleanings of the "chlorider" as well as the larger tonnage of the deep mines must all be shipped—somewhere outside—and must thus stand the constantly increasing tares of freight and immoderate smelter deductions and treatment charges. Today, glimmerings of the possibility of other and less expensive procedure pierce "the brick wall of prejudice," and the vast advantage attendant upon the erection of local mills—and mills erected in strict compliance with the startling advances in metallurgical knowledge—will serve as a sound basis for a system of operations which will very profitably replace that of the old days.

For these favorable conditions, and for the ultimate importance of Chloride—on a big scale—it may be as truly said of this mining area as of a certain notorious coffee-substitute—"there's a reason!" and this reason (supplemented by the certain promise of sensible milling) is becoming firmly fixed in the minds of a number of men who are both mentally and financially equipped to profit by it. The "reason" is this: That the Cerbat Range has the ore, and in vast amount! Only during the past week this reason has been enthusiastically expressed by two different mining operators of wide experience, and independently of each other; each of whom made substantially the following statement: "I have loked over practically all of the mining districts in North America, and I have come here to stay, for I have never seen a section of the earth of similar size so well mineralized." "Why man! even if you want to cut out the properties offered for sale, there are thousands of prospects which are opened to location which have been superficially opened twenty years ago and abandoned, which show conditions and values which, if they were—say in Tonopah, would be gobbled up at big prices." "The ore-chutes, as found in the main veins at least, go down; as shown in the only two deep mines you have, the Tennessee and the Golconda; what better do you want?" These ideas are not exaggerations; they are facts. If this be the case, the query arises as to just why these conditions have not been more largely exploited to profit. The answer is easy, although it is a function of several varieties:

(1) Strictly local milling of these complex ores (containing lead, zinc, copper, silver and gold in varying percentages) was the only economic procedure thirty years ago, as it is today. A very superficial consideration proves this axiomatic; since it is difficult to conceive a situation warranting the expense of wagon and railroad freights on waste. For many years (we might say even up to a year ago) the milling of complex ores has been in a very weak condition to say the least; the main function of the machinery supply houses being to sell the machinery, and let the buyer take his chances as to its adaptability. As a matter of fact, until the advent of flotation, no milling methods have been available which afforded more than a very rough and incomplete saving on such ores. Hence, many deposits of complex ores have hitherto been of only problematic value; since complete milling was impossible in many cases, and only the richest portions of the ore would pay for shipment.

(2) Minds unacquainted with the recent discoveries in the metallurgy of these ores have no recourse but to base their opinions as to their commercial value (and unfortunately, to broad-cast these opinions) upon past history, which includes the record of some salient mistakes and of higher costs than are necessary today; and it must be confessed that this category includes many visiting engineers, who camouflage a lack of the necessary technical knowledge to cover the situation wisely, bu such deductions from the past; fortifying their adverse conclusions by the use of maximum mining costs for the district (whether logical or not) together with maximum treatment and selling costs, backed up by minimum saving as obtained in some operating mill, whether the latter is properly efficient or not. These conditions unjustly, but quite frequently, befog the situation.

(3) The fallacy of the attempted exploitation of the complex ores of the district by laymen, profoundly ignorant of the enforced nicety of technical detail required, has strewn the district with pitiful wrecks which cannot fail to render observers skeptical of success. A few years ago there was some excuse for this condition; but today there is none.

Here, then, are a few of the reasons for the interrupted progress of Chloride, whereby it has evidenced repeated periods of great activity, with alternate periods of depression; explaining very fully why many promising ore-deposits have been abandoned before fruition, and why many investors have been afraid to proceed, or to properly finish what they have begun. Notwithstanding this limping progress, a real progress is being accomplished, simply as the natural result of the occurrence so many ore-deposits which simply cas be neglected; and there is a practical tainty of the early erection of a stri modern and efficient mill for the tr ment of the ores from the Schuylkill-T nessee mines. The erection of this should absolutely solve the problem Chloride's future; ridding it of the furt incubus of the installations of proc cranks and visionary dreamers, and lording a proper pattern for business-l operators.

The fact must not be omitted that th are already two small flotation mills b in this section; the Washington and Keystone. Neither of these has yet co into active operation, but there is reason to doubt their entire efficie when they do.

Among the mines, the Schuylkill-T nessee carries out a steady improvem and development policy; operating shifts and opening up new ore-reserv against the day of production. Connec has recently been made with the 800-f shaft on the Schuylkill end-line, by raise from the Tennessee 900-foot le north, thus establishing the entity of one vein, draining the Schuylkill and ing better general ventilation.

The Cerbat Silver Mining Company actively operating the old Elkhart pro erty, northward on the same vein; us the Schuylkill shaft and surface plan and continuing the drift on the 800-lev northward into Elkhart ground. This w bring the exploration some 300 feet belo the old Elkhart shaft, and in these ne workings good ore has been already e countered. There are two parallel veins one carrying silver-lead ores, the othe pyritic gold ores.

Still to the northward, the Chlori Queen Company is drifting on the 25 foot level, and producing some very fi ruby silver ore. This property covers th intersection of some East-West silver vein which have produced a quantity of hig grade ore, with the North-South vein upon which are the mines above-men tioned.

A short distance east of the Tennessee an operation has been undertaken whic is of great interest to he whole district It consists of a double-track cross-cut tun nel, opened near the south end of th Payroll claim, which is to be driven about two miles easterly to intersect and drain the many veins at great depths. The en terprise has been started by Colonel Ran kin, and the tunnel has a depth of some thing like 300 feet. It is understood that T. B. Scott, the owner of the Payroll, has become interested, and that the work will proceed without delay.

The Brunswick property, on the Tennessee vein, has recently begun active operations, and promises to take a prominent part in the ore production of the camp. It is located a few hundred feet south of the Tennessee.

In this immediate vicinity and near the old Altata mine, the Rescue or Dorothy claim has recently jumped into prominence having produced and shipped some of the

er ore which the district has
ed.

ports indicate that the three min-
ties recently operated under the
nt of Mr. J. B. Hughes have
olidated, and that active develop-
the entire group will be com-
once.

Emerald Isle Copper Company has
shut down to make alterations in
lytic plant. This company has
dy of oxidized copper ore, occur-
conglomerate, and it has already
the production of two tons of
opper.

of Chloride, in the flat country,
Mohave is installing a heavy duty
pump, with the intention of sink-
the 1000-foot level; their ore as
showing fine values in silver
with much less lead and zinc
found in the ores of the main
it is expected that the Diana will
ume work, as well as the Golden
tals Co. Both of these proper-
fine-grained pyritic gold ores in
matrix, especially well adapted to
entration.

ral and Buckeye mines in Min-
have been purchased by a syn-
presented by Mr. M. B. Dudley,
being rapidly developed. The
an old property which has not
ed in many years, but which has
filled the cabinets of Mohave
with the most magnificent speci-
native silver. After unwatering
conditions have been found of a
ter character than could have
ected, and there is little doubt
two properties will very soon be-
y silver producers.

Washington mine, also in Mineral
being rapidly brought to the pro-
ge, as the mill is practically
and has already passed the ex-
al stage. The property shows sev-
y interesting veins, with certain
carrying high values in ruby
It is being operated by a syndi-
h Mr. F. E. G. Berry in charge.

these properties, many others are
activity with the advent of many
l operators, and new finds are
ly reported. Many of the former
s of Chloride, who left the camp
after the war conditions became
are returning; all expressing their
faction at their ability to resume
the finest mining camp they ever

HE ARIZONA GEM MINES

(Special Correspondence)

ed at Mineral Park, 20. miles
Kingman, Arizona, is perhaps the
producing turquois mines in the
A large percentage of the stone
ever, of the poorer grade consisting
and blended with turquoise and
by the trade "matrix"; while
ractive and has a large sale, it
rated in price with the clear
The prices prevailing up to 1907
from $2.50 to $12.50 per pound
ough, but since that time prices
erially dropped, until for several
these mines have been closed

largest producing company, with
acreage, is that of the Aztec
Company of New York. This
was the pioneer, being followed by the Southwest Turquoise Company of Los Angeles, the Los Angeles Gem Company and the Arizona Turquoise Company of New York.

There is evidence that the mines were worked in the stone age as numerous stone hammers and hand clipping stones were found there. The late Jas. W. Haas was the original discoverer of the turquoise at Mineral Park, operating the old Montezuma mine in the Turquoise mountains southwest of Ithica Peak, but upon finding the later mines in the Ithica Peak country the old Montezuma mine was abandoned.

Another important deposit is that of Chrysophrase in the River range, some 18 miles north of Oatman. These properties are of late discovery and are expected to rival the famous old turquoise output, as it is of more commercial value and very rare. This gem is remindful of the remotest antiquity; a hard semi-transluscent green stone, carrying stripes and colored with nickel. Perhaps the only operating mine of this stone in America today is located at Porterville, California, and owned in New York.

Owing to its high market value, all grades are used, comprising a dozen different grades from common to clear, and values run all the way from a few dollars to around $400 a pound.

STANDARD MINERALS DEVELOPING

A strike of gold and silver ore has been made on one of the claims of the Standard Minerals company, twenty miles east of Kingman. The company had been sinking a shaft on the Standard claim and at a depth of thirty feet ran into ore that gave results of from four to ten ounces gold and 325 ounces silver.

The vein in which the strike was made is about five feet in width, the rich streak having a width of from eighteen inches to thirty inches. The whole width of the ore-bearing streak is pay.

The Standard Minerals company has been operating a mill on its molybdenite properties and have been opening the ore bodies on the deep levels. The mill has been doing good work, a product of about sixty per cent molybdenite being secured. The company is understood to have contracts covering all the concentrates the mill can produce.

The mill is under the direction of S. S. Jones, who is also consulting engineer for the company. Mr. Jones is one of the best mining engineers and metallugists in the country and the Standard Minerals company is to be congratulated on securing his services. George Williston, a young engineer and metallurgist, is assistant to Mr. Jones in the mill work and Gerald Stimpson is general manager.

Through the hospital system the workmen of the Warren district get all medical care and surgical attention necessary for sickness and accident, and the families of the workmen get all medical attention.

The railroad from Cedar Glade to Clarkdale, the smelter town of the United Verde Copper company, runs through a miniature Grand Canyon; this has not been advertised to any extent, but it is a rare scenic attraction.

The Chloride Queen

The Chloride Queen Mining Co. has five claims and two fractions, over one hundred and twenty acres of ground in one block side-lining on the north side of the Cerbat Silver Mines Co. (known as the Elkhart mine) and end-lining the Empire property northeast of Chloride about one and one-half miles.

The equipment consists of one 12-H. P. hoist complete, one 60-H. P. oil burning Bessemer engine, Chicago Pneumatic compressor with capacity of 417 cubic feet, blacksmith shop fully equipped, change room, ore bins, and large galvanized iron building covering all the machinery.

The main shaft is timbered down 260 feet, with manway and working shaft, with a drift run at the forty level, 100-foot drift at 100 level, and at the 200 level the drift is in two hundred feet going under the hill, which when in about 200 feet more will give a depth of about 600 feet. Crosscuts have been run on this level 21 feet to the south and 22 feet to the north without encountering either wall. A good vein of ore at times widening to thirty inches has been continuous for over 100 feet, with values at times running over $150 a ton in silver, besides values in lead and gold. The drift is being pushed to the west on the east and west vein of the property, and well versed mining men say that the company will sure have a very large body of ore under the hill from all indications. One thing noticeable is that the work is being done on the east and west veins, which are so rich, leaving the north and south veins to be opened up later. These north and south veins have given up millions in rich ores, to such well known companies or properties as the Elkhart, Schuylkill, Distaff, Schenectady and Tennessee in this immediate vicinity.

It is the intention of the management to run the drift under the hill and open up the ore and go on a producing basis. In fact, the first car of ore will be shipped to the Selby smelter within a month. The short haul of one mile with a good road from shaft to the railroad at the Tennessee mine is an added feature of low production cost to the company. The Chloride Queen Mining Co. has hundreds of feet of stoping ground from the 200-foot level up carrying rich values in silver ores, besides the hundreds of feet of ground below this level which will be opened up as the property is developed, and which is assured by what the Elkhart and Tennessee properties have proven, and especially the latter, which has a depth of 1400 feet, with valuable ore practically all the way, and a reported production in the past of something like $18,000,000. One must not lose sight of the fact that the Elkhart, which side-lines the Chloride Queen on the south, is reported to have produced over one million dollars with deepest workings 500 feet.

The management of the Chloride Queen Mining Co. is confident that their property with proper development in the next few years will produce its millions in rich silver ores, and with present prices of silver the outlook for the company to go on the dividend-paying basis in the very near future is of the best.

REPORT

ON THE CHLORIDE QUEEN MINING CO.,

By Frank Clemes Smith, E.M.

LOCATION & DESCRIPTION.

The property is located in the Wallpai Mining District, Mohave County, Arizona, about two miles north-easterly from the town of Chloride, and one mile northerly from the Tennessee Mine. It compromises two distinct groups:- (1) The Silver Mountain Group consisting of three, full sized, un-patented claims, and (2) The Sunday School Group, consisting of two full sized and two fractional, un-patented claims. Attention is called to the Sketch-Map here-to attached, for approximate conditions. The names of the claims are as follows:-

SILVER MOUNTAIN GROUP,	(Highland Mary (Highland Chief (Scotland	Sunday School Group	(Sunday School (Sunshine (Dike (fraction (Club (fraction

The Empire (patented) claim adjoins the Sunday School Group on the North; located upon one of the primary veins which extend in a northerly and southernly direction along Tennessee Wash, and is mentioned for the reason that it has some claims to importance; being noted by Schrader (Bulletin 397, U.S.G.S.) as having yielded $70,000 to a depth of 200 feet; principally from rich silver ores. Refering to the sketch-map attached, it will be noticed that while the East-west veins shown in the groups have similar strikes, the claims themselves are not parallel. This is probably due to errors in original location (as the claims should be parallel) and the matter can be properly adjusted in the amended locations, when patent is asked.

EXAMINATION.

Silver Mt. Gr[illegible] the three claims of t[illegible]p are located upon a veil which has only been opened by relatively shallow surface cuts and whose witdth or thickness is difficult to estimate for that reason. The vein strikes almost due East-West (magnetic), and consist (as far as the shallow workings permit examination) of vertical stringers of oxidized ferrginous material in a granite-porphyry matrix; gradually passing into the granite country-rock which constitutes the walls. These ferruginous stringers have been found to be rich in silver, and have been mined to shallow depths in many places along the vein, and an indeterminate tonnage of high-grade ore has been shipped many years ago. As there are no working faces now in shape to afford a sample which would convey valuable information as to the ore values, no sample was taken. As to the probable value of this vein as an ore producer, and as to the probable value of a very important adjunct to both groups--the North South veins--reference is called to that heading below.

Sunday School Group:- The two full-sized claims of this group are located upon another East-West vein, of similar characteristics to that of the Silver Mountain, but (as observable in the workings) much greater thickness. As visible in the 12-foot shaft on the Sunday School claim, the vein is fully 4 feet thick, stands vertically and is well defined and strong. The same condition is observable (but to a less extent, as the shaft is under repair) in the 100 foot shaft on the same claim; noted on sketch as No.(1) and fixed upon as the future working shaft. West-ward from this shaft for a distance of probably 400 feet, there is a series of open cuts, from which ore has been mined to varying depths; and beneath the cuts, there is a drift run westward from No.)1) shaft for about 100 feet, at the bottom; Sunshine Claim, No.(2) shaft is about 140 feet deep, driven high up on the mountain, and connecting at ist bottom with the cross cut driven about 220 feet from the north.

These last worki[illegible] caved, and there-fo[illegible]sible of examination. The posi[illegible]ion of the three shafts indicate a due east-west ore chute of something over 1500 feet in length. Reference to the heading Ore Shipments and Assays will below give evidence as to the character of the ores taken from these old workings. To an extent, the workings on these claims are in the same condition as those of the other group, and I have taken no samples which can be considered as averages of any particular ore-body. There is abundant evidence of very considerable shipments having been made from this property, years ago a but only at the No.(1) shaft has any depth been reached. In this shaft un-altered ore seems to be just coming in and a sample of blue stained porhphyritic material, showing some sporadic sulphides, was taken and assayed. See No.(2) Sample No.(1) consisted of a number of odd pieces of iron-stained material, from various openings; and merely shows the presence of good-grade material. The existence of several other cross-veins is notable; but none of them have been explored to any extent. The Dike and Club fractions are located on such, but afford nothing worthy of sample.

THE NORTH SOUTH VEINS: Extending for long distances both North and South of the Tennessee Mine and cropping on both sides of the Tennessee Wash, are several--probably at least three--strong veins, striking in the approximate direction given above. On these veins are located some of the most important mines of the district; such as the Tennessee, the Schuylkill, the Elkhart, the Schenectady and others. At least two of these veins, or mineralized zones, pass through the Silver Mounatin Group (and probably through the Sunday School group as well) where they are strongly marked by hard, schistose out crops and iron-staind gravel; thus crossing the silver veins of the two groups almost at right angles. This condition has apparently never been given sufficient degree of importance by the former miners; possibly since they felt themselves limited to surface workings; but to-day for several reasons, the presence these veins becomes important. In the first place, they themselves pro-

ably carry valua[illegible]hutes in the 1200 [illegible]ore across the two groups; [illegible]d again, where they are intersected [illegible] two silver veins, there is more than a good probability that a localization of high-grade ore will be found. But one opening has been made on either of these two primary veins:- this consists of a shaft, siad to have been about 30 feet deep, but now filled in,, which is noted on the sketch map by as Shaft No.(4), on the Highland Mary Claim. This shfat scarcely attained sufficient depth to "tell much of a story," but there still remains a small lot of ore at its brink which would be considered of fairly high-grade; although when the shaft was sunk it would not be considered of any value. The approximate location of the two primary veins are noted on the sketch map by the dotted areas -PP-PP., and the Empire ore-deposit may belong to one of them.

ORE SHIPMENTS AND ASSAYS:

Records of a few only of the former ore-shipments from the Sunday School property are available, and are given below.

March 3rd - 1896.

Shipment by Frank Allen to Kingman Sampling Works.

1185 lbs. gross; 1147 lbs. net.
Assay values--Gold 2/10ths, oz., per ton.
With Silver at 68 cts, and gold at $18.00 per oz., and hauling at $6.00 per ton, the net yield per ton was $169.60 and the lot yielded $93.75. This ore was said to have been taken from the No.(1) shaft, to a septh of 35 feet; the pay streake being from two to four inches thick, and the vein filling 6 feet.

July 7th, 1896.

Shipment by Barney McCall to Arizona Sampling Wks.Kingman, Ariz.

5479 lbs. gross 5326 lbs. net.
Assay value--Gold 1/10ths, oz, Silver 239 oz, per ton.
Payment was made for 93% of the silver, at 68 3/4ths, per oz. and gold at $18.00 per oz. With tereatment charge of $20.00 per ton, and wagon freight at $5.50 per ton, and the net yield was $129.11 per ton, and the lot yielded $343.40.

Jan. 24th, 1897.

Lot of ore sold by Barney McCall to F.W.Theiss, Chloride,

1514 lbs. gross, 1461 lbs. net.
Assay value Gold 5/100ths oz, Silver 329.60 pz, per ton.
With silver at 64 3/4ths, cts, per oz, and a treatment charge of $26.00 per ton. this lot brought $126.72. The ore is said to have been taken out of a stope west of shaft, 15 feet from surface of ground.

Oct. 2nd, 1898.
Lot of ore [redacted] Barney McCall to F[redacted]s, Chloride.
--- [redacted] ---
8[redacted] lbs. gr[redacted] lbs. net.
Assay value- Gold 5/100ths, oz; Silver at 263 oz, per ton.
With silver at 61 1/4ths, cents and tereatment charge of $20.00 per ton, the net returns were $129.81 per ton, or $53.20 for the lot. This ore was said to have been taken from the shaft 10 feet below the surface; quartz and ore 4 to 12 inches thick; vein from 6 to 15 feet thick, with well defined foot-wall.

June 24th, 1898. Assay of sample from shaft No.(1) by H.O.Listerude
Silver 32 6/10ths, oz, per ton; $17.60.
Same Date. Assay of sample from shaft No.(2(yielded
Gold 3/100ths, oz. Silver 69 7/10ths, oz, or $38.25 per ton.
Aug 10th, 1908. Assay of sample by Muter & Teale, Kingman, Ariz.
Silver - 45.56 oz,, per ton. Value per ton - $23.67
Aug. 25th, 1908,
Assay of sample by H.O.Listerude, Chlordie.
Jan. 11, 1912.
ASsays by H.O.Listerude, Chloride,
(1) Silver 41.4 oz. Value $20.70 per ton.
(2) Silver 32.15 oz. Value $16.25 per ton.
All of the above from the Sunday School Group.

I have stated that I took no samples in the course of my examination; meaning thereby that no samples were taken which might indicate certain values for a particular tonnage of ore; for reasons which are obvious. I did, however, take a few odd bits of scattered ore-material, and have had them assayed; laragely as a guide toward certain conclusions; the results are appended.

Sample No.(1) Surface material, iron stained, taken about 100 yards east of the 12-foot shaft, on Sunday School.

Assay by Everett yielded Gold 2/100ths, Silver 2.86 oz, or a value of $2.30 per ton.

Sample No.(20) A chunk of blue material, iron stained in fractures and showing scattered pyritic material, apparently taken from the bottom of shaft No.(1(on Sunday School.

Assay by Everett yielded Gold 4/100ths, Silver 44.6 oz. or a value of $32.02 per ton.

Sample No.(3) Chips broken off in new workings on Highland Mary, wheremminers have attacked the junction of the East-west vein with one of the primary veins. No solid materila had been reached and it was scarecely expected that the sample would show values.

Assay by Everett yielded gold 6/100ths, silver 10.4 oz, or a value of $8.48 per ton.

GENERAL CONCLUSIONS;

It should be strongly noticed on the start that all of this property has been absolutely neglected for the least eighteen years; no work of any kind having been done, except such "scratching," as might serve to cover the annual assessments; part of that (so I am Told) consisted in one case of filling up the 30 foot shaft on the Highland Mary claim. This means that practiclally nothing is now in evidence which is in shape to serve as the usual marks for valuation.

It shou[redacted] be noticed, strongl[redacted] such mining as was done by "chloriders," to extract the high grade ores from seams near the sruface; the result being that the property to-day is absolutely un-developed to any extent. This, to a large degree is trure also of the Sunday School Group; the two shafts of 100 and 140 feet respectively having barely reached the un-altered zone, and affording little information as to anything besides the rich surface ores, which do not represent the material upon which large workings must be based.

Another fact should be carefully considered; that the possibility of good (or even greater) values, on the basis of real mining, being found in the North-South veins, or at their junction with the East-west veins, seems to have been entirely neglected. This has been doubtless due to the careless system (or lack of system) of the "chlorider," who was only interested in what might be obtained easily, and probably lacked funds for any real development, tending to greater profits in the future.

This relegates this whole property to the positon of a prospect; but I believe it a good one, and one which may be somewhat easily opened up with good prospect of success. This judgment is reached by the following reasoning:-

In the first place, the East-west veins are undoubtedly well-defined and persistent; crossing, in each case, certain 3000 feet, and probably much more. Their surface values in each case have been high; and there is no reason to believe that any conditon could confine these values to the surface. In the only case where un-oxidized or sulphide ore has been assayed (my sample No.(2) on page (6) very good values are found in a sample of altered granite which could scarcely be identified as ore by its appearance. This predicates the strong probability of good ores being found in the un-altered zone below the present workings. Further good ore undoubtedly came from the 30 foot shaft at the junction of Highland Mary vein with the North South vein; the one

mentioned on page [illegible] ring been filled [illegible] small depth could by no mens give any adequate information as to what might be found along the crossing of silver vein with the older vein and this; in my opinion, is a very important matter in this connection. These primary veins, for a long distance to the South, have been and are very productive, and very large; and the high-grade ore deposit of the Empire--to the north of the groups herein considered--is doubtless connected with them. The evident existence of at least two of these large primary veins upon the Chloride Queen property very materially enhances its probable value.

I am not prepared to put a cash value on this property, but if it can be acquired without too large a cash payment, upon a so-called "working bond," where by a large part of actual chash expended in mining work, I unhesitatingly recommend its acquirement. Despite the fact that there is an evident ore-chute extending west-ward fromthe no.(1) shaft on the Sunday School, I should personally be inclined to sink that shaft another hundred fert, more, and drift east-ward; largely for the purpose of intersecting a primary vein. However, drifting might also proceed west-ward with a good chance of success. On the Silver Mounatin Group I should be inclined to open and sink the 30 foot shaft before mentioned.

Respectively submitted.

Mining Engineer.
Chloride, Arizona.
Jan. 8th, 1917.

Officers

C. C. THOMPSON, PRESIDENT . . . PHOENIX
STATE AGENT GERMANIA LIFE INS. CO.

R. C. SAUFLEY, VICE-PRESIDENT . . PHOENIX
SEC.-TREAS. PAYNE & SAUFLEY RUBBER CO.

W. S. GOLDSWORTHY, TREASURER . PHOENIX
GENERAL AGENT SANTA FE

ROBERT A. JARROTT, SECRETARY . PHOENIX
ATTORNEY-AT-LAW

GENERAL OFFICE: PHOENIX, ARIZONA
MINES AT CHLORIDE, ARIZONA

Directors

J. C. WILSON . . . . . CHLORIDE
DEPUTY STATE MINE INSPECTOR

ISAAC DIAMOND . . . . . PHOENIX
PROPRIETOR BOSTON STORE

J. M. KELLOGG . . . . . PHOENIX
MINING, REAL ESTATE, INSURANCE

Chloride Queen Mining Co.

Phoenix, Arizona

Schedule "B"

The Chloride Queen Mining Co. was incorporated under the laws of the State of Arizona July 20th, 1916, and during the past year has made some very much needed improvements and considerable development work has been done, notably, a good automobile road has been built too, and on the property to the main workings; a tunnel has been driven into the mountain one hundred and five (105) feet, along the main vein on the Sunday School claim, and the old tunnel, which is in two Hundred and twenty (220) feet has been cleaned out and the track put in first class shape; The old 100 foot shaft with a 100 foot drift at the bottom is now being re-timbered, all material being purchased and the work progressing for the past three weeks. Considerable material, tools and amunition, also a blacksmith shop are in evidence, and work is being pushed on getting ready to sink on the main Sunday School vein. Taking it all in and the showings are more than satisfactory to the management, and great hopes are held forth that the company will in the near future have sufficient milling ore to ship to the local custom mills.

CHLORIDE QUEEN MINING CO.,

By C. C. Thompson
Pres.

Officers

C. C. THOMPSON, PRESIDENT . . . PHOENIX
STATE AGENT GERMANIA FIRE INS. CO.

R. C. SAUFLEY, VICE-PRESIDENT . . PHOENIX
SEC.-TREAS. PAYNE & SAUFLEY RUBBER CO.

W. S. GOLDSWORTHY, TREASURER . PHOENIX
GENERAL AGENT SANTA FE

ROBERT A. JARROTT, SECRETARY . PHOENIX
ATTORNEY-AT-LAW

GENERAL OFFICE: PHOENIX, ARIZONA
MINES AT CHLORIDE, ARIZONA

Directors

J. C. WILSON . . . . . CHLORIDE
DEPUTY STATE MINE INSPECTOR

ISAAC DIAMOND . . . . . PHOENIX
PROPRIETOR BOSTON STORE

J. M. KELLOGG . . . . . PHOENIX
MINING, REAL ESTATE, INSURANCE

Chloride Queen Mining Co.

Phoenix, Arizona

6/30/1917.

SCHEUDELS "A"

7,506 shares of stock sold at 15¢ per share	$1,125.90
55,675 " " " " " 5¢ " "	2,783.75
	$ 3,909.65
Commission paid on sale of 7,506 shares....	375.30
	$ 3,534.35

EXPENDITURES

Labor and contracts.....	$ 1,340.00	
Supplies and office expense..	202.74	
Abstract, deeds, etc.....	122.96	
Cash in Valley Bank, Phoenix.	1,376.19	
Cash in Bank, Chloride.....	307.26	
Balance on tunnel contract...	185.20	
		$ 3,534.35

Cash on hand in Valley Bank of Phoenix, and in bank in Chloride..... $ 1,683.45

CHLORIDE QUEEN MINING CO.,

By C. C. Thompson
President.

By W. S. Goldsworthy
Treasurer.

Copy of Engineer's report attached.