WOLFF MILLING & MINING CO.

GEOLOGICAL STUDY OF PRECIOUS METAL OCCURRENCES

on the

SUNSHINE ANNEX AND ELDORADO NUMBER THREE CLAIMS

and the

RATTLESNAKE AND COURBET MINES

Gold Mountain Mining District, Esmeralda County, Nevada

by

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March, 1982

Abstract

Organized in 1868, the Gold Mountain Mining District is located in southern Esmeralda County, Nevada, 140 miles (224 km) northwest of Las Vegas. Gold and silver ore was produced intermittently in the district from 1871 until 1919. Precious metals were extracted from limonitic quartz veins which paralelled faults and geological contacts.

Five limonitic quartz veins have been prospected on the Sunshine Annex and Eldorado No. 3 claims, two of them with short adits. These veins are less than one foot (30 cm) thick, vertical, and relatively low grade, so mining them would not be profitable at today's metal prices. Exploration of the claims for tungsten is being considered because a small tungsten mine exists in similar rocks a half mile to the west.

The Rattlesnake mine dump contains 5000 tons (4500 tonnes) of leachable material with a gross value of $110,600[1]. Most of the steeply dipping brecciated quartz vein on the claim has been mined from the main adit up to the surface. The Courbet claim block includes twelve dumps of varying sizes and grades containing at least 6500 tons (6000 tonnes) of material with a gross value of $139,000[1]. A great deal of the main Courbet vein remains and is oriented favorably for surface mining. In addition, a vein on the northwest corner of the block which outcrops for 30 feet and is at least 60 feet deep assayed at $185.52/ton[1]. Rock in the Rattlesnake and Courbet dumps averages $18 to $42/ton. With 85% recovery, heap leaching them at a cost of $7/ton would result in a net profit of $8 to $29/ton or of $170,000. Mining quartz veins still in the ground would be more expensive but might increase profits dramatically.

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1. Calculated assuming 1.5 tons/yd^3, Au = $400/oz, and Ag = $9/oz

Table of Contents

List of Figures

I. Conclusions and Recommendations

Conclusions

1. Both the Sunshine Annex and Eldorado Number Three claims cover rocks of the same geological environment as the former gold and silver producers of the district as well as tungsten producers of the region.

2. Surface exposures of precious metal bearing veins are thin and range from sub - ore to medium grade. There are no indications that size and grade might increase with depth, although it is possible.

3. Mineralized structures which cross the Courbet claim block may be continuous with those on the Sunshine Annex and Eldorado Number Three claims.

4. The Rattlesnake dump contains 5000 economic tons of material averaging 0.05 oz Au/ton and 0.31 oz Ag/ton.

5. The combined dumps on the Courbet claim group contain 6500 economic tons of material averaging 0.05 oz Au/ton and 0.18 oz Ag/ton.

6. Gold and silver values of dumps on the Rattlesnake and Courbet claim groups are too low to warrant transportation to cyanide vat leaching under present economic circumstances.

7. The dumps are probably amenable to cyanide heap leaching if the cost of obtaining water is not prohibitive.

8. Underground workings at the Rattlesnake mine indicate that the shallow portion of the vein has mostly been mined but the vein continues downward below the workings.

9. At the Courbet mine quite a bit of a good looking vein is still present. The Eva claim hosts a high grade vein at its northwest corner.

10. The relationship between the ground slope and the dip of the vein on the west end of the Eva claim and on the Courbet claim suggests they may

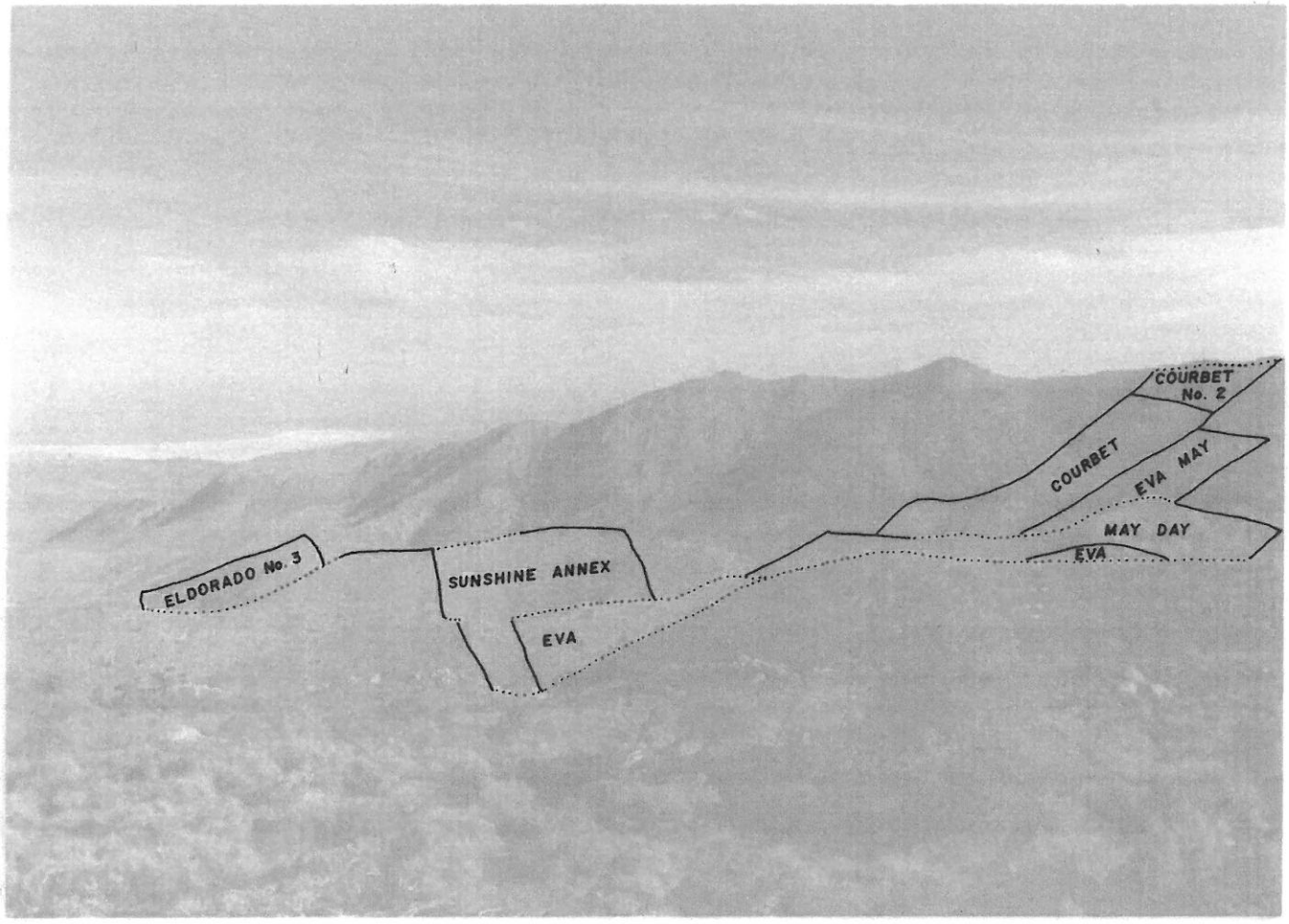


Plate 1. Sunshine Annex, Eldorado No. 3, and adjacent claims of the Courbet claim group, Gold Mountain Mining District, Nevada.

Plate 1. Sunshine Annex, Eldorado No. 3, and adjacent claims of the Courbet claim group, Gold Mountain Mining District, Nevada.

be easily surface mined.

11. Acquisition of the Courbet claim group would enhance the value of the Sunshine Annex and Eldorado Number Three claims.

12. Because all claims being discussed are patented, mining and milling operations are simplified and ownership of the land is fee simple.

Recommendations

1. The Sunshine Annex and Eldorado Number Three claims do not warrant large exploration expenditures. If further exploration is desired, cutting trenches across projected extensions of known veins may be an economic approach.

2. Examination of skarn areas on the Sunshine Annex and Eldorado Number Three claims for the possibility of tungsten mineralization could prove worthwhile.

3. We would recommend purchase of both the Rattlesnake and Courbet claim groups if together they could be acquired for around $100,000. Alone, however, the Courbet claim group is the better property to buy.

List of Plates

List of Tables

II. Introduction

The Sunshine Annex and Eldorado Number Three claims along with the Rattlesnake and Courbet mines are located in Gold Mountain Mining District in southern Esmeralda County, Nevada (Fig. 1). In this report, geology of the district and of the Sunshine Annex and Eldorado Number Three claims is described, their precious metal potential is assessed, and the precious metal content of dumps on the Rattlesnake and Courbet properties is defined.

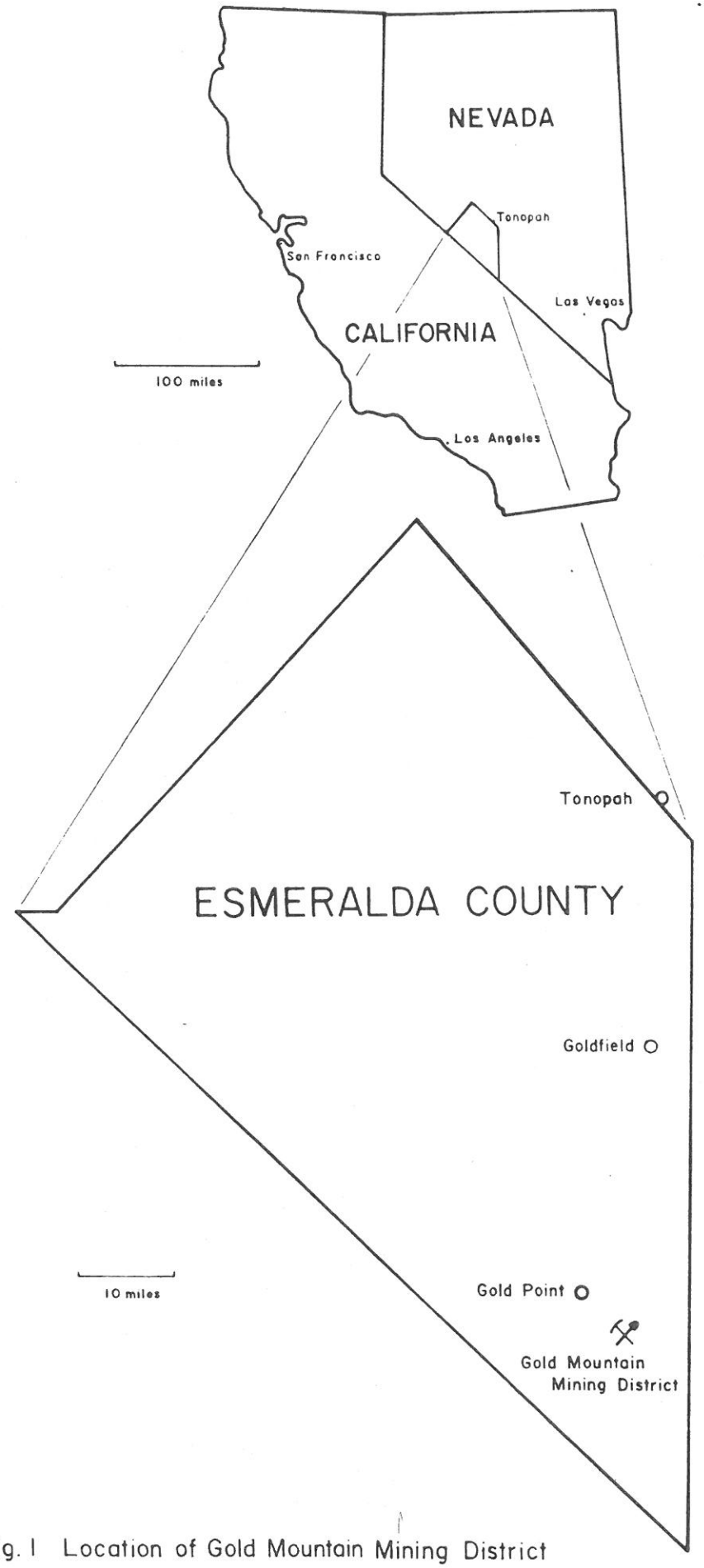


Fig. 1 Location of Gold Mountain Mining District

III. History, Geology, and Mineral Deposits of the Gold Mountain Mining District

History

Gold was discovered in the Gold Mountain Mining District by Thomas Shaw in 1866, during the rush caused by the 1859 discovery of the Comstock Lode at Virginia City (Lincoln, 1923). The district was organized in 1868 (Ball, 1906). The principal mine in the area at that time, the Oriental, was discovered in 1871 and went into production around 1874 (Raymond, 1874). The Oriental Mine is geographically between the Rattlesnake Mine and the Courbet, Sunshine Annex, and Eldorado Number Three properties (Fig. 2). Ore in the district reportedly brought up to $1,370 per ton and averaged around $173 per ton (Raymond, 1974). By the late 1880's mining activity in the district had ceased. Interest was revived by the discoveries of Tonopah and Goldfield in 1900 and 1902 respectively. Mines in the Gold Mountain Mining District were intermittently active from then until 1919 (Lincoln, 1923). No records have been found to suggest activity in the district after 1919.

Geology

There are four distinct ages and lithologic groups in the Gold Mountain Mining District (Albers and Stewart, 1972). The oldest rocks are Precambrian aged (Fig. 2). They include the Wyman Formation, interbedded shales, siltstones, and limestones, and the overlying Reed Dolomite. Locally they are metamorphosed to slate, phyllite, marble, hornfels, and skarn.

Following a period of erosion, the district was intruded by the Tertiary - Jurassic aged quartz monzonite Sylvania Pluton. It was related to the Sierra Nevada Batholith which is found in the gold districts of central

and eastern California. During intrusion of the Sylvania Pluton, major east - west faulting took place and rocks adjacent to the pluton were altered to skarn and hornfels.

Another episode of erosion was followed by Tertiary volcanism in the district. North - northeast trending faults and fractures, common in the eastern part of the district, formed at this time. Volcanic flows and air-fall tuffs covered the old surface of plutonic and sedimentary rocks.

More faulting and tilting occurred during Quaternary time. Basalt flowed out from some of the faults in the district, covering large areas with several tens of feet of rock. Subsequent erosion has left the basalt on hilltops, capping the older, softer rocks.

Mineral Deposits

Gold and silver are the principal metals which have been produced in the Gold Mountain Mining District. They occur in submicroscopic particles in quartz veins. The veins filled preexisting east - west and northeast - southwest trending fissures which cut across the Wyman Formation and the Sylvania Pluton. Producing veins are usually either near the contact between the Wyman Formation and plutonic rocks or near one of the large regional faults (Fig. 2). Veins first formed after the solidification of the Sylvania Pluton. They were repeatedly fractured and filled with more mineralized quartz from then until the late stages of Tertiary volcanism.

Quartz veins were precipitated from hot ascending aqueous solutions which boiled when they reached shallow depths. Metal zonation in the veins was caused by the boiling process. Gold, then silver, then base metals (Pb, Zn, Cu) are found in each vein system as depth is increased. In addition, metal values are usually variable laterally along each vein. A vein with only spotty, uneconomic values in one area could contain several ounces

of gold only a few hundred feet away.

Veins are always surrounded by an alteration halo in the host rock. If they cut quartz monzonite, it has become clayey and pale green. If veins are in the Wyman Formation, it is altered to skarn.

Skarn alteration in the Wyman Formation is very similar to alteration of host rocks found in most of the world's tungsten deposits. Exploration in the 1950's resulted in the discovery of tungsten mineralization immediately north of the Eva claim (Courbet claim block) and of the Sylvania Tungsten Mine on Sylvania Mountain 25 miles northwest of the Courbet claim group. The latter has produced tungsten ore intermittently for more than 30 years.

IV. Sunshine Annex and Eldorado Number Three Claims

Introduction

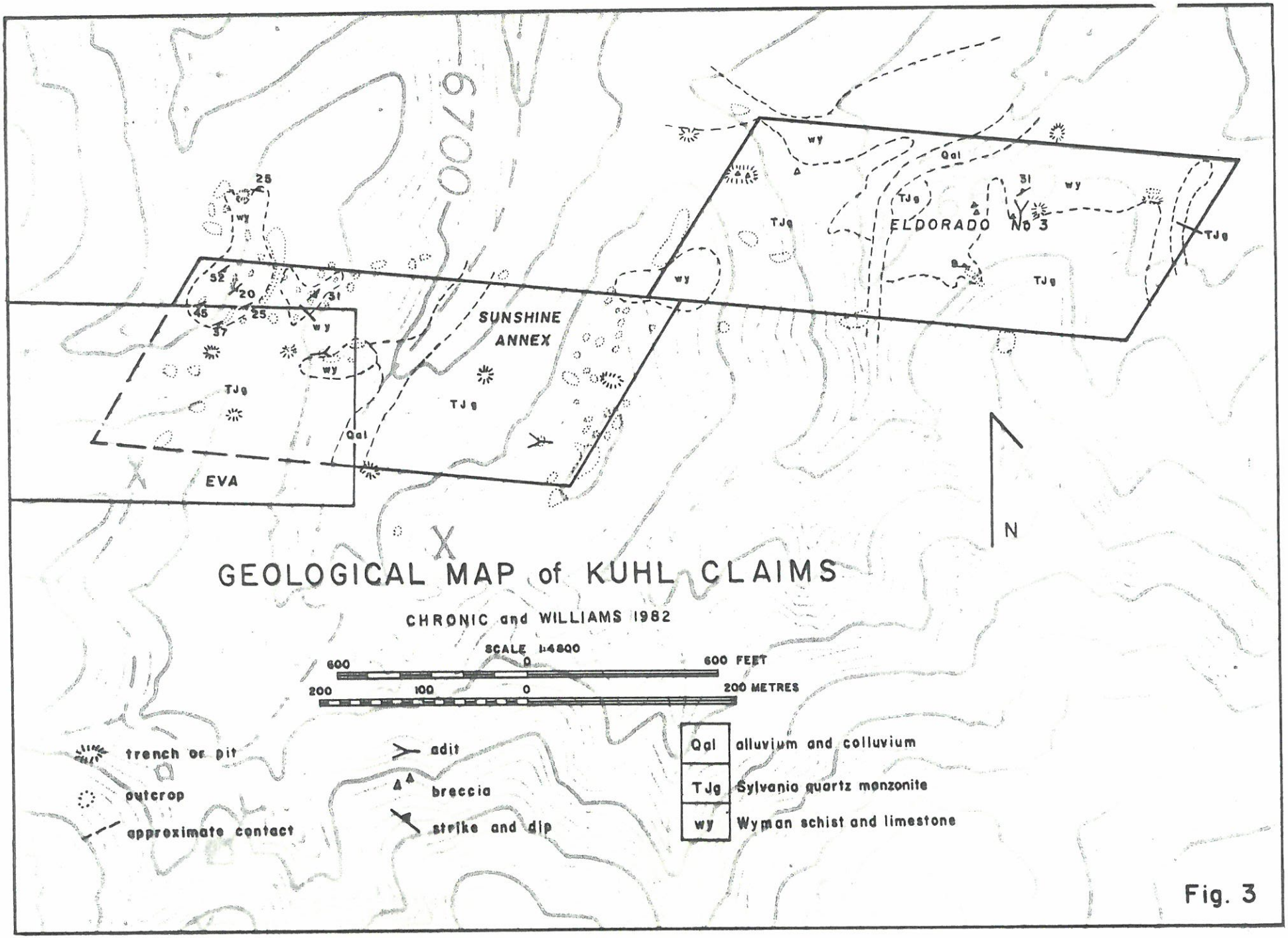
The Sunshine Annex and Eldorado Number Three claims are located in the Gold Mountain Mining District about two and a half miles southwest of the Tokop radio tower (Fig. 2). They trend about N80°W and are overlapped by the Eva claim, of the Courbet claim group. The Sunshine Annex and the Eldorado Number Three include a total of 34.579 acres of patented ground. These claims were mapped and sampled as part of an evaluation of the property. Geology and alteration of the surface were mapped at a scale of 1" = 400'. Six samples of interesting rocks were collected and assayed. Plates 1, 2, and 3 are photographs of the claims and the surrounding area.

Geology

Country rock on the claims consists of roof pendants of limestone and schistose to phyllitic siltstone of the Wyman Formation engulfed by younger quartz monzonite of the Sylvania Pluton (Figs. 3 and 4). Granitic rock - limestone contacts are generally altered to skarn with calc-silicate minerals such as garnet, epidote, and diopside being abundant. Quartz veins, which commonly parallel regional structures, were formed after intrusion of the quartz monzonite. The veins occur near the Sylvania - Wyman contact as well as within the intrusive body. Commonly the veins have been brecciated and rehealed at least once by later quartz mineralization. They are always associated with a zone of altered country rock.

The Sunshine Annex Claim

Workings on the Sunshine Annex claim are all located along quartz veins within the quartz monzonite (Figs. 3 and 4). Near the southeast corner of


6700
EVA
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GEOLOGICAL MAP of KUHL CLAIMS
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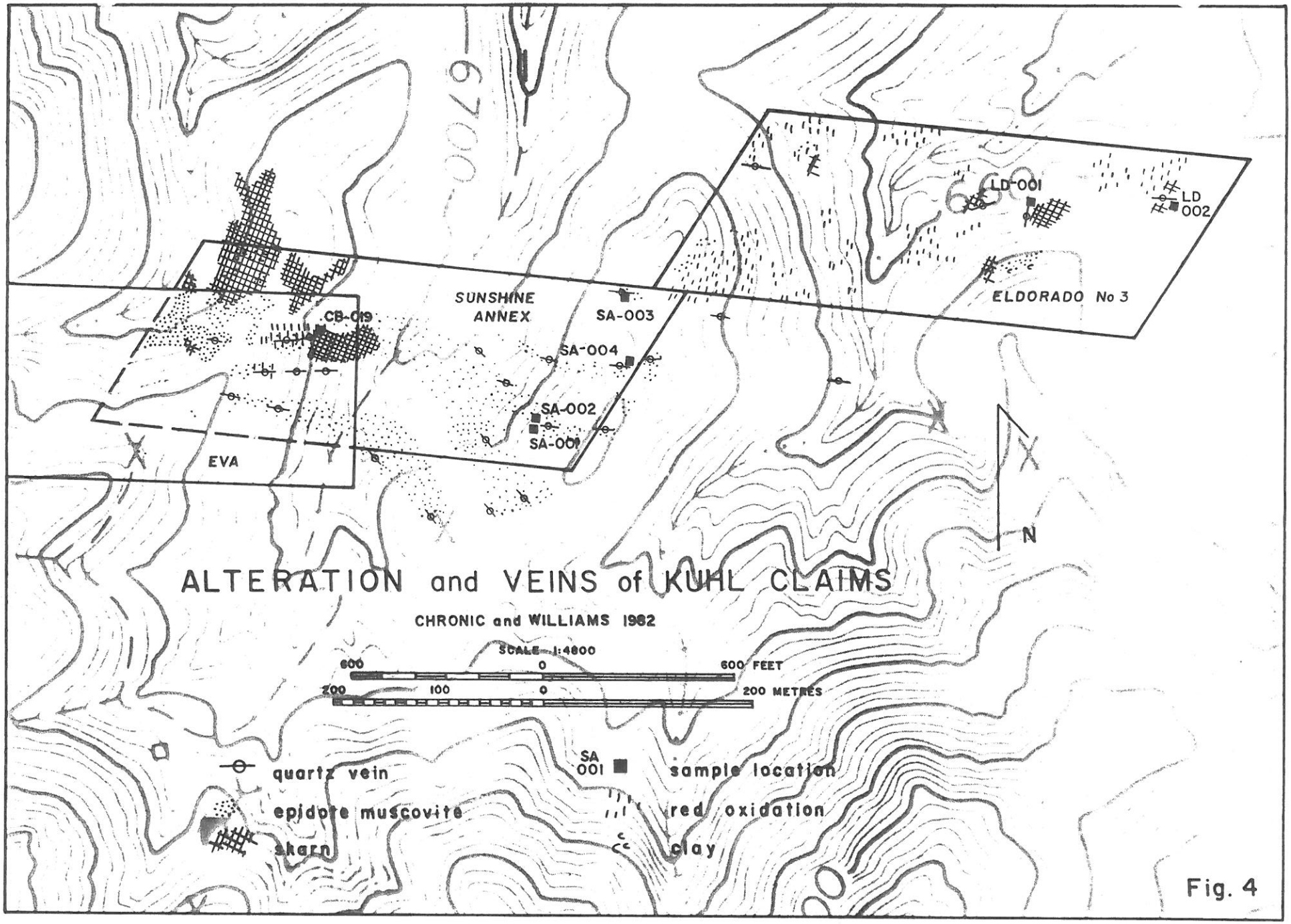
Fig. 3


6700
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LD-001
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SUNSHINE
ANNEX
SA-003
SA-004
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SA-001
CB-019
EVA
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ALTERATION and VEINS of KUHL CLAIMS
CHRONIC and WILLIAMS 1982
SCALE 1:4800
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200 100 0 200 METRES
quartz vein
epidote muscovite
skarn
SA
001
sample location
red oxidation
clay

Fig. 4

the claim an adit follows an east - west trending, near vertical, brecciated quartz vein (Plate 4). The adit is less than 100 feet long. On the dump, vein material has been separated from country rock (Plate 5). One sample was collected for assay from each pile. The vein material (sample SA-001) contained ore grade rock but the bulk of the dump (sample SA-002) contains only negligible silver (Table 1). A shallow trench along a six inch (15 cm) thick vertical vein was discovered on the ridge top on the eastern edge of the claim (Plate 6). Sample SA-004 from the vein again contained ore grade rock, as did sample SA-003, vein quartz float from near the northeast corner of the claim (Plate 7).

Table 1. Precious Metal Content of Samples from the Sunshine Annex and Eldorado Number Three Claims

Sample Number	Troy oz/ton Au	Troy oz/ton Ag	Assay by[1]	Location	Rock Type
SA-001	0.0240	2.65	A	Sunshine A.	limonitic vein quartz
SA-002	nil	0.14	A	Sunshine A.	altered granite
SA-003	0.0188	2.35	A	Sunshine A.	limonitic vein quartz
SA-004	0.1841	5.20	A	Sunshine A.	limonitic vein quartz
LD-001	0.0049	0.63	A	Eldorado #3	limonitic vein quartz
LD-002	0.0043	0.07	A	Eldorado #3	limonitic vein quartz

1. Assayed by Strobeck and Associates of Las Vegas

The Eldorado Number Three Claim

Three prospects were discovered in the northern half of the Eldorado Number Three claim (Figs. 3 and 4). A shallow trench near the northwest corner was located near the Sylvania - Wyman contact. Minor brecciated quartz float was found in the vicinity but no sample was collected. An adit and two shallow trenches were found along the Sylvania - Wyman contact just north of the claim center (Plate 8). The Wyman Formation around them has mostly been altered to skarn. The adit follows a north - south trending, vertical, strongly oxidized and brecciated quartz vein about six inches

(15 cm) wide. Sample LD-001, collected from the vein, assayed below ore grade (Table 1). Another trench was located along an east - west trending brecciated quartz vein of the same thickness near the northwest corner of the claim, again near the Wyman - Sylvania contact. Lample LD-002 from the vein was again well below ore grade.

Conclusions

Based on surface examination and sampling the following conlusions were reached:

1. Both the Sunshine Annex and Eldorado Number Three claims cover rocks of the same geological environment as the former gold and silver producers and the tungsten producers of the district.
2. Surface exposures of veins are thin and range from sub-ore to medium ore grade. There are no indications that size and grade might increase with depth, although it is possible.
3. It is possible that mineralized structures which cross the Courbet claim block may be continuous with those on the Sunshine Annex and Eldorado Number Three claims.

Recommendations

The Sunshine Annex and Eldorado Number Three claims do not warrant large exploration expenditures. If further exploration is desired, cutting trenches across projected extensions of known veins may be an economic approach. This would reveal whether veins are continuous and whether they thicken with depth or laterally. It might also be a good idea to examine skarn areas on the properties for the possibility of tungsten mineralization.

V. The Rattlesnake and Courbet Mines

Introduction

The Courbet and Rattlesnake properties are patented claim groups which are being offered for sale by Mr. W. J. Pinney of 1057 Anza Ave., Vista, California. They are both former producers of gold and silver in the Gold Mountain Mining District. The Courbet group overlaps the Sunshine Annex claim and the Rattlesnake group is about four miles to the northeast (Fig. 2). Both claim groups were originally owned by the Bonnie Claire - Bullfrog Company and the ore was milled at Bonnie Claire, about ten miles south of the Rattlesnake Mine. These two properties were investigated for Wolff Milling and Mining Co. as potential acquisitions for Mr. E. Kühl.

The Rattlesnake Claim Group

The Rattlesnake claim group consists of 122.85 acres of patented property including the Rattlesnake, Spear, Come to Me, Bonnie Claire, Black Hawk, New Century, and Cheketo Claims (Fig. 2). A 1907 bulletin by Ransome reported that intermittent mining between 1897 and 1907 had produced 3500 to 5000 tons of ore which averaged a little over one ounce of gold per ton. Workings in 1907 consisted of two levels 125 vertical feet apart. Since that time, the most productive part of the vein was stoped to the surface and finally trenched. The last record of production dates to 1919 (Lincoln, 1923).

Gold and silver were mined from a shattered two to four foot wide quartz vein which cut across schists and limestone of the Wyman Formation. Much of the limestone was altered to skarn. The vein trended about east - west and dipped 75^{o} to the north.

Our initial investigation consisted of mapping all of the dumps on the

property to determine tonnages and locate samples. Four samples from a dump on the New Century Claim and fifteen samples from the large dump on the Rattlesnake Claim were collected. The samples were tested by fire assay (Table 2). No precious metals were detected in samples from the New Century dump. Samples from the Rattlesnake dump averaged 0.0283 oz Au/ton and 0.20 oz Ag/ton (Fig. 6). The Rattlesnake dump contains about 8100 tons of rock of which 5000 tons is economic to heap leach at $400/oz Au and $9/oz Ag (Plate 9 and Appendix A).

Table 2. Precious Metal Content of Samples from the Rattlesnake Claim Group

Sample Number	Troy oz/ton Au	Troy oz/ton Ag	Assay by[1]	Location	Rock Type
RS-001	0.0276	0.36	A	Rattlesnake	Wyman Fm. siltstone
RS-002	0.0097	0.11	A	Rattlesnake	Wyman Fm. & red clay
RS-003	nil	0.14	A	Rattlesnake	Wyman Fm., green-tan
RS-004	0.0469	0.14	A	Rattlesnake	skarn, calcite, clay
RS-005	nil	0.05	A	Rattlesnake	skarn, calcite, clay
RS-006	0.540	0.26	A	Rattlesnake	skarn, granite, clay
RS-007	0.0246	0.09	A	Rattlesnake	skarn, clay, quartz
RS-007	0.0397	0.06	B	Rattlesnake	same as above
RS-007	0.1020	0.44	C	Rattlesnake	same as above
RS-008	0.0150	0.63	A	Rattlesnake	Wyman Fm. & tan clay
RS-009	0.0622	0.26	A	Rattlesnake	red clay and rocks
RS-010	nil	nil	A	Rattlesnake	tan clay and rocks
RS-011	0.0102	0.16	A	Rattlesnake	red clay and rocks
RS-012	0.1327	0.34	A	Rattlesnake	vein quartz, red clay
RS-013	0.0158	0.27	A	Rattlesnake	vein quartz, red clay
RS-014	nil	nil	A	Rattlesnake	skarn, calcite, quartz
RS-015	0.0262	0.20	A	Rattlesnake	red clay and rocks
RS-016	nil	nil	A	New Century	Wyman Fm. and clay
RS-017	nil	nil	A	New Century	Wyman Fm. and clay
RS-018	nil	nil	A	New Century	Wyman Fm. and clay
RS-019	nil	nil	A	New Century	Wyman Fm. and clay

1. Assayed by: A. Strobeck & Assoc., Las Vegas; B. Gene Gates, Mina; C. Ray Seilheimer, Goldfield

A brief underground examination confirmed that much of the vein was mined out from the main adit level to the surface. However the nearly vertical vein does not have many workings below the main level. Both the Wyman Formation and the vein are intensely sheared.

The Courbet Claim Group

The Courbet claim group includes the Courbet, Courbet No.2, Eva, Eva May, and May Day claims which cover a total of 89.33 acres (Fig. 2). The 1907 U.S. Geological Survey Bulletin by Ransome reported that mining on the Courbet group began around 1904 and that it produced 300 tons of ore in 1907 which was worth an average of $32.50/ton. Minor base metal sulfides were discovered along with the silver and gold. Mineralization on the Courbet claim occurs in a north - south trending, shattered, oxidized quartz fissure vein. The vein was cut by two pits and mined below them from two adits which are 75 vertical feet apart. Underground workings consist of two levels which are connected by an air shaft. Hosted by the Sylvania quartz monzonite, the mineralized vein dips about 30° to the north and varies from 2 to 15 feet in thickness. Although a considerable amount of the vein has been mined, a great deal of it remains in the ground. Four dumps on the Courbet claim were mapped and sampled (Fig. 7 and Plates 11 and 12). Four samples collected from the 3900 ton main dump (dump A) averaged 0.05 oz Au/ton and 0.18 oz Ag/ton (Table 3 and Appendix A). The other three dumps follow the surface trace of the vein to the north. The southernmost of these (dump B) lies in front of the upper adit. This dump contains around 1500 tons of material. Two assays from it averaged 0.02 oz Au/ton and 0.075 oz Ag/ton. Although the southernmost dump (dump D) was small and contained very low values, the middle dump (dump C) contains about 182 tons of 0.06 oz Au/ton and 0.33 oz Ag/ton material.

Workings on the May Day claim consist of several small trenches and a 60 foot deep vertical shaft intersected by an adit from below, all with associated dumps (Fig. 8 and Plate 13). Very little vein material could

be found underground. Samples from the 592 ton dump in front of the adit (dump A) contained very low gold and silver values, but two samples from the 685 ton dump below the shaft (dump B) averaged 0.08 oz Au/ton and 0.64 oz Ag/ton (Table 3 and Appendix A). Two other small dumps further up the hill were sampled. They contain less than 200 tons of material each but it is relatively high grade. Another large trench is located over the ridge top to the west, near the edge of the claim, but its dump was not sampled.

Table 3. Precious Metal Content of Samples from the Courbet Claim Group

Sample Number	Troy oz/ton Au	Troy oz/ton Ag	Assay by[1]	Location	Rock Type
CB-001	0.0343	0.12	A	Courbet dump A	granite, red clay
CB-002	nil	0.04	A	May Day dump A	light green granite
CB-003	0.0598	1.28	A	May Day chute	limonitic vein quartz
CB-004	0.0041	0.14	A	May Day dump A	light green granite
CB-004	0.0032	0.14	B	same	same
CB-004	0.0240	0.40	C	same	same
CB-005	0.0210	0.30	A	May Day dump B	granite and red clay
CB-006	0.1436	0.97	A	May Day dump B	granite and red clay
CB-007	0.1350	0.48	A	May Day dump C	granite and red clay
CB-008	0.0120	0.12	A	May Day dump D	granite and red clay
CB-009	0.0217	0.08	A	Courbet dump B	granite, quartz, clay
CB-010	0.0122	0.07	A	Courbet dump B	granite, quartz, clay
CB-011	0.1123	0.39	A	Courbet dump C	granite, quartz, clay
CB-012	0.0142	0.27	A	Courbet dump C	granite, quartz, clay
CB-013	nil	0.11	A	Courbet dump D	granite, tan clay
CB-014	0.0643	0.28	A	Courbet dump A	granite, red clay
CB-015	0.0409	0.13	A	Courbet dump A	granite, red clay
CB-016	0.0672	0.18	A	Courbet dump A	granite, red clay
CB-017	0.0223	1.84	A	Eva lower dump	limonitic vein quartz
CB-018	0.2820	8.08	A	Eva upper dump	limonitic vein quartz
CB-018	0.4335	14.42	B	same	same
CB-018	0.8260	31.72	C	same	same
CB-019	0.0064	0.47	A	Eva NE corner	vein quartz, red clay

1. Assayed by: A. Strobeck & Assoc., Las Vegas; B. Gene Gates, Mina; C. Ray Seilheimer, Goldfield

Several workings are located on the Eva claim. A small dump outside an adit on its eastern edge was sampled but gold and silver values were

very low. A vein outcrop near the adit has not yet been sampled. On a north facing slope near the northwest corner of the Eva claim a vertical shaft follows a three foot wide oxidized quartz vein down about sixty feet. The vein crops out for about 30 feet along an east - west trend and dips steeply to the south (Plate 14). Eighty feet below and 45 feet to the northwest an adit from the valley bottom intersects a near vertical two foot wide vein, possibly the same vein as the outcropping one to the south. The adit continues south for 285 more feet without cutting another large oxidized vein. Two dumps are associated with these workings, one near the shaft and one near the adit (Fig. 9). High grade samples of quartz veins were collected from small sorted piles on each dump, but samples representative of each dump were not collected. The sample from the upper dump, CB-018, contained by far the greatest quantity of precious metals found during this study, 0.282 oz Au/ton and 8.08 oz Ag/ton. Even higher values were obtained when assays were repeated by other labs (Table 3).

From our investigations we conclude:

1. The Rattlesnake dump contains 5000 economic tons of material averaging 0.05 oz Au/ton and 0.31 oz Ag/ton.
2. The combined dumps on the Courbet claim group contain 6500 economic tons of material averaging 0.05 oz Au/ton and 0.18 oz Ag/ton.
3. Gold and silver values which were obtained from the dumps on the Rattlesnake and Courbet claim groups are too low to warrant transportation to cyanide vat leaching under present economic conditions.
4. The dumps are probably amenable to cyanide heap leaching if the cost for obtaining water is not prohibitive.
5. Underground workings at the Rattlesnake indicate that the shallow portion of the vein has mostly been mined but the vein does continue downward below the workings.

6. At the Courbet mine quite a bit of a good looking vein is still present. The Eva claim hosts a high grade vein at its northwest corner.

7. The relationship between the ground slope and the dip of the vein on the Courbet claim and the west end of the Eva claim suggests they may be easily surface mined.

8. Acquisition of the Courbet claim group would enhance the value of the Sunshine Annex and Eldorado Number Three claims.

9. Because the claims are patented, mining and milling operations are simplified and ownership of the land is fee simple.

We recommend purchase of both the Rattlesnake and Courbet claim groups if together they could be acquired for around $100,000. Alone, however, the Courbet claim group is the better property to buy.

Plate 2. Eastern half of the Sunshine Annex claim viewed from the workings at the May Day claim.

Plate 3. Eldorado No. 3 claim with Rattlesnake mine in the distance.

Plate 4. Adit opening on Sunshine Annex claim showing near vertical quartz vein ten inches (25 cm) thick surrounded by pale green altered Sylvania quartz monzonite.

Plate 5. Sorted dump at the adit near the east end of the Sunshine Annex claim. Pieces of limonitic quartz vein in the foreground and waste rock in the background.

Plate 6. Prospect pit with near vertical six inch (15 cm) thick quartz vein on the eastern ridge of the Sunshine Annex claim.

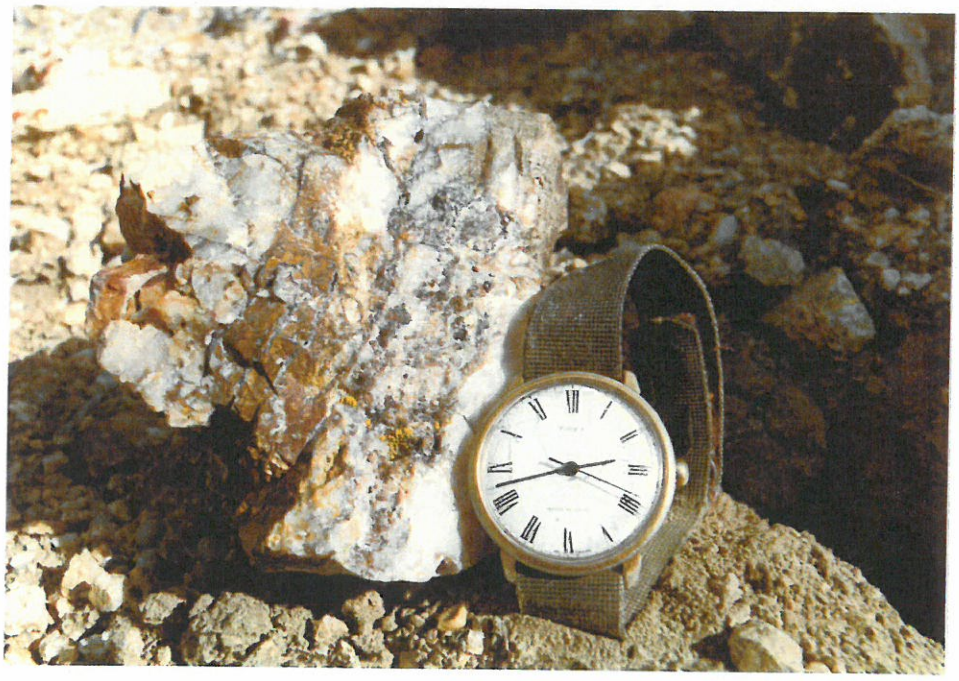

Plate 7. Typical piece of brecciated limonitic quartz vein from Sunshine Annex claim. Wristwatch for scale.

Plate 8. Site of adit on Eldorado No. 3 claim, at contact between Wyman Fm. siltstones and Sylvania quartz monzonite.

Plate 9. Main dump at the Rattlesnake mine. The workings follow the trend of the vein along the surface.

Plate 10. Old ore chute on the Courbet claim, used to load ore from the main adit into carts or trucks for transportation to the mill at Bonnie Claire.

Plate 11. Courbet claim showing three dumps and the ore chute. The dashed line shows the trend of the vein along the surface. Adits cut into the vein from the lower dump and from the main dump which is mostly behind the ridge in this photograph.

Plate 12. Main dump on the Courbet claim. The main adit is just left of the top of the dump.

Plate 13. Dumps and small loading chute on the May Day claim (Courbet claim block). An adit at the top of the lowest, lefthand dump (shielded by trees) connects with a shaft which is at the top of the next dump up the hill.

Plate 14. Quartz vein outcrop near the west end of the Eva claim (Courbet claim block). This vein becomes thicker with depth.

VI. List of References

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VII. Appendix A

Note on Assays by Different Laboratories

All samples were assayed by Strobeck and Associates of Las Vegas. To check Strobeck's values, three of the samples, representing a range in metal contents (sample numbers RS-007, CB-004, and CB-018) were also assayed by Gene Gates of Mina and by Ray Seilheimer of Goldfield. Comparatively, Strobeck's and Gates' values were similar and Seilheimer's were four to five times higher (see Tables 2 and 3). Strobeck's values were used in our calculations. We believe they are an accurate conservative estimate of what is present.

Calculations of Dump Volumes and Values[1]

1. Sunshine Annex Claim, dump near southeast corner

plan area = 1412 ft^2
estimated average depth = 4 ft
volume of material = (1412 ft^2)(4 ft)/(27 ft^3/yd^3) = 209 yd^3
tons of material = (1.5 tons/yd^3)(209 yd^3) = 314 tons

Dump sample SA-002 assayed nil Au and 0.14 oz Ag/ton. This dump is not economic to mill.
High grade sample SA-001 assayed 0.0240 oz Au/ton and 2.65 oz Ag/ton. It represents a small pile of rocks of about 6 tons, which could be milled profitably if other rock in the area were also being milled.

2. Rattlesnake Mine

a. Section A-A' (see Fig. 6)

cross sectional area = 124 ft^2
length of influence = 55 ft
volume of material = (124 ft^2)(55 ft)/(27 ft^3/yd^3) = 253 yd^3
tons of material = (1.5 tons/yd^3)(253 yd^3) = 380 tons

Two samples (RS-014 and RS-015) average 0.013 oz Au/ton and

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1. Assume: a) 1.5 tons/yd^3; b) Au = $400/troy oz; c) Ag = $9/troy oz
d) Cost to heap leach dump material = $7.00/ton

0.1 oz Ag/ton, or $5.20 Au/ton and $0.90 Ag/ton.

Total value of section = ($5.20/ton + $.90/ton)(380 tons) = $2318

b. Section B-B' (see Fig. 6)

cross sectional area = 780 ft^2
length of influence = 50 ft
volume of material = (780 ft^2)(50 ft)/(27 ft^3/yd^3) = 1444 yd^3
tons of material = (1.5 tons/yd^3)(1444 yd^3) = 2166 tons

Three samples (RS-001, RS-012 and RS-013) average 0.06 oz Au/ton and 0.32 oz Ag/ton or $24.00 Au/ton and $2.88 Ag/ton.

Total value of section = ($24.00/ton + $2.88/ton)(2166 tons)
= $58,222

c. Section C-C' (see Fig. 6)

cross sectional area = 788 ft^2
length of influence = 57 ft
volume of material = (788 ft^2)(57 ft)/(27 ft^3/yd^3) = 1664 yd^3
tons of material = (1.5 tons/yd^3)(1664 yd^3) = 2496 tons

Five samples (RS-002, RS-003, RS-004, RS-010, and RS-011) average 0.01 oz Au/ton and 0.11 oz Ag/ton or $4.00 Au/ton and $0.99 Ag/ton. This section is subeconomic.

Total value of section = ($4.00/ton + $0.99/ton)(2496 tons)
= $12,455

d. Section D-D' (see Fig. 6)

cross sectional area = 1116 ft^2
length of influence = 45 ft
volume of material = (1116 ft^2)(45 ft)/(27 ft^3/yd^3) = 1860 yd^3
tons of material = (1.5 tons/yd^3)(1860 yd^3) = 2790 tons

Four samples (RS-006, RS-007, RS-008, and RS-009) average 0.04 oz Au/ton and 0.31 oz Ag/ton, or $16.00 Au/ton and $2.79 Ag/ton.

Total value of section = ($16.00/ton + $2.79/ton)(2790 tons)
= $52,424

e. The southern 25 feet of dump contains about 300 tons of material. The one sample which was assayed contained no gold and 0.05 oz Ag per ton. It is not considered economic to leach.

f. Rattlesnake Mine dump recoverable precious metal values

Cross Section	Economic Tonnage	Dollar Value	Notes
A-A'	-	-	380 tons, subeconomic
B-B'	2166	$58,222	
C-C'	-	-	2496 tons, subeconomic
D-D'	2790	$52,424	
S end	-	-	300 tons, subeconomic
Total	4956	$110,646	

Net profit from heap leaching economic portions of the Rattlesnake Mine dump = $110,646 - (4956 tons x $7.00/ton)
= $75,954

Gross average precious metal value of one ton of economic dump material = $110,646/4956 tons
= $22.53/ton

3. New Century Claim

As no precious metals were found in samples from the New Century Claim, dump volumes were not calculated

4. Courbet Claim

a. Dump A (see Fig. 7)

cross section		A_1-A_1'	A_2-A_2'
area of influence	=	1800 ft^2	7000 ft^2
estimated average depth	=	1.8 ft	9.5 ft
volume of material	=	(7000 ft^2)(9.5 ft)/(27 ft^3/yd^3)	
		+(1800 ft^2)(1.8 ft)/(27 ft^3/yd^3)	
	=	2583 yd^3	
tons of material	=	(2583 yd^3)(1.5 tons/yd^3) = 3875 tons	

Four samples (CB-001, CB-014, CB-015, and CB-016) average 0.05 oz Au/ton and 0.18 oz Ag/ton or $20.00 Au/ton and $1.62 Ag/ton.

Total value of dump A = ($20.00/ton + $1.62/ton)(3875 tons)
= $83,778

b. Dump B (see Fig. 7)

plan area	=	3900 ft^2
estimated average depth	=	7.0 ft
volume of material	=	(3900 ft^2)(7.0 ft)/(27 ft^3/yd^3) = 1011 yd^3
tons of material	=	(1.5 tons/yd^3)(1011 yd^3) = 1517 tons

Two samples (CB-009 and CB-010) average 0.02 oz Au/ton and 0.075 oz Ag/ton or $8.00 Au/ton and $0.68 Ag/ton.

Total value of dump B = ($8.68/ton)(1517 tons) = $13,168

c. Dump C (see Fig. 7)

plan area = 1480 ft^2
estimated average depth = 2.2 ft
volume of material = (1480 ft^2)(2.2 ft)/(27 ft^3/yd^3)
= 121 yd^3
tons of material = (1.5 tons/yd^3)(121 yd^3)
= 182 tons

Two samples (CB-011 and CB-012) average 0.06 oz Au/ton and 0.33 oz Ag/ton or $24.00 Au/ton and $2.97 Ag/ton.

Total value of dump C = ($24.00/ton + $2.97/ton)(182 tons)
= $4909

d. Dump D (see Fig. 7)

Precious metal values in dump D are extremely low, so the dump would not be economic to leach.

e. Courbet Claim dumps recoverable precious metal values

Dump	Economic Tonnage	Dollar Value	Notes
A	3875	$83,778	
B	1517	$13,168	
C	182	$ 4,909	
D			very low grade
Total	5574	$101,855	

Net profit from heap leaching dumps on the Courbet Claim
= $101,855 - (5574 tons x $7.00/ton)
= $62,837

Gross average precious metal value of one ton of economic dump material = $101,855/5574 tons
= $18.27

5. May Day Claim (see Fig. 8)

a. Dump A

Two samples (CB-002 and CB-004) average 0.004 oz Au/ton and 0.09 oz Ag/ton or $0.80 Au/ton and $0.81 Ag/ton. This rock would not be economic to leach.

b. Dump B

plan area = 1900 ft^2
estimated average depth = 6.5 ft
volume of material = (1900 ft^2)(6.5 ft)/(27 ft^3/yd^3)
= 457 yd^3
tons of material = (1.5 tons/yd^3)(457 yd^3) = 686 tons

Two samples (CB-005 and CB-006) average 0.08 oz Au/ton and 0.64 oz Ag/ton or $32.00 Au/ton and $5.76 Ag/ton.

Total value of dump B = ($32.00 + $5.76)(686 tons)
= $25,903

c. Dump C

plan area = 870 ft^2
estimated average depth = 4 ft
volume of material = (870 ft^2)(4 ft)/(27 ft^3/yd^3)
= 129 yd^3
tons of material = (1.5 tons/yd^3)(129 yd^3)
= 193.5 tons

One sample (CB-007) assayed 0 135 oz Au/ton and 0.48 oz Ag/ton or $54.00 Au/ton and $4.32 Ag/ton.

Total value of dump C = ($54.00/ton + $4.32/ton)(193.5 tons)
= $11,285

d. Dump D

One sample (CB-008) assayed 0 012 oz Au/ton and 0.12 oz Ag/ton or $4.80 Au/ton and $1.08 Ag/ton. This rock would not be economic to leach.

e. May Day Claim dumps recoverable precious metal values

Dump	Economic Tonnage	Dollar Value	Notes
A	-	-	$1.61/ton; not economic
B	686	$25,903	
C	194	$11,285	
D	-	-	$5.88/ton; not economic
Total	880	$37,188	

Net profit from heap leaching dumps on the May Day Claim
= $37,188 - (880 tons x $7.00/ton)
= $31,028

Gross average precious metal value of one ton of economic dump material = $37,188/880 tons
= $42.26

5. West end of Eva Claim (see Fig. 9)

a. Dump A

plan area = 1860 ft^2
estimated average depth = 7 ft
volume of material = (1860 ft^2)(7 ft)/(27 ft^3/yd^3) = 482 yd^3
tons of material = (1.5 tons/yd^3)(482 yd^3) = 732 tons

High grade sample (CB-017) assayed 0.02 oz Au/ton and 1.84 oz Ag/ton or $8.00 Au/ton and $16.56 Ag/ton. A representative sample of the dump has not yet been assayed.

b. Dump B

plan area = 2220 ft^2
estimated average depth = 1 ft
volume of material = (2220 ft^2)(1 ft)/(27 ft^3/yd^3)
= 82 yd^3
tons of material = (1.5 tons/yd^3)(82 yd^3) = 123 tons

High grade sample (CB-018) assayed 0.282 oz Au/ton and 8.08 oz Ag/ton or $112.80 Au/ton and $72.72 Ag/ton. A representative sample of the dump has not yet been assayed.