

A PROSPECTING REPORT COVERING THE SILVER REEF CLAIM; TOODOGGONE RIVER
AREA, OMINECA MINING DIVISION, BRITISH COLUMBIA

CLAIM

Name	Units	Date	Record Number
Silver Reef	16	Nov. 15, 1979	2275(11)

LOCATION

Area Toodoggone River

Mining Division Omineca

NTS 94E: 2W, 3E, 6E, 7W

Coordinates Longitude:126 15" Latitude:57 14' 10"

OWNER-OPERATOR Charles Kowall

AUTHOR Charles Kowall

DATE November 12th, 1980

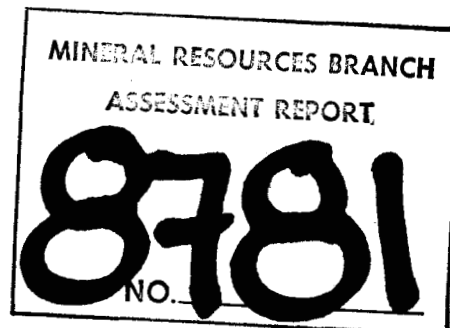


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INTRODUCTION

The Silver Reef claim is situated in the Toodoggone River area of British Columbia about 300 kilometres north of Smithers. The claim was staked to cover possible extensions along strike to the south, of gold-silver mineralization found in silicified Toodoggone Volcanics on the adjoining ~~Shasta~~ property of International Shasta.

Last summer, the author with two assistants, spent several days prospecting the claim and this report is a summary of that work.

Geography

The Toodoggone River area is one of the most isolated areas in B.C., and access is via air from Smithers to the recently enlarged Sturdee air strip, which is the main base from which exploration work is conducted on the numerous mineral prospects in the area. The strip also services the nearby Baker Mine of Dupont which is scheduled to produce gold and silver during early 1981. Access to the claim itself is via a six mile helicopter flight from the Sturdee strip, although the old Black Lake strip adjoins the property on the north and could probably be reopened if needed.

The climate of the area is characterized by cold winters during which several feet of dry, powdery snow accumulates. This snow has little moisture content and so disappears quickly in the spring and is largely melted by early June. Many of the higher, alpine reaches have little or no surface runoff after the snow disappears, though the valleys are generally well watered. The summers are fairly long for this latitude and good weather often persists well into the fall.

Vegetation consisting coniferous trees, poplar, alders and brush covers the valleys and adjoining slopes up to about 5000 feet elevation.

Alpine terrain extends above 5000 feet and consists of grass, flowers and dwarf brush covering rolling hillsides which is usually a pleasure to work in because of the ease of travel.

Large game animals are not abundant, with small groups of caribou being the most common, along with a few moose and bear. Some wolves are also present as well as the usual small game such as ptarmigan, hawks, song birds, mice, etc.

HISTORY

Early mineral exploration dates back into the 1930's when placer claims were worked near the junction of McClair Creek and the Foodoggone River. Several companies engaged in porphyry copper-molybdenum exploration during the 1960's, and during the 1970's precious metals exploration was conducted by Serem and Dupont on deposits originally found by Kennco who was the "pioneer" in the area. This exploration resulted in a production decision for Dupont on their property which is now called the Baker Mine, and which is reported to contain reserves of 100,000 tons of ore grading about 0.9 oz gold and 19 oz. of silver. Serem has vigorously explored their Lawyers property and have most certainly discovered a major precious metals deposit with in excess of one million tons of ore grading about 3 oz. silver, and .1 oz. gold, with the potential for much more, in the authors opinion.

This exploration has triggered extensive claim staking and prospecting with several other discoveries being made in the area which are currently being evaluated. Copper-gold porphyries are also being explored in addition to precious metals deposits. Exploration and continued staking are expected to be very intense during the 1981 season.

GEOLOGICAL SUMMARY

The Toodoggone area lies within the eastern margin of the Intermontane belt. The oldest rocks consist of lenses of Permian limestone of the Asitka Group which are overlain by the Triassic Takla Group of andesites and pyroclastic rocks. These rocks are intruded by the Omineca intrusions of Jurassic and Cretaceous age which are composed of granodiorite to quartz monzonite.

These basement rocks are unconformably overlain by a large pile of intercalated volcanic and sedimentary rocks called the Toodoggone group which are composed of green and purple pyroclastics, rhyolites, tuffs and feldspar porphyries as well as well as sedimentary lake and stream deposits. Upper Cretaceous conglomerates and sandstones of the Sustut group locally overlie all other rocks.

The whole area has been subjected to repeated normal block faulting with some of the larger faults being regional in nature. Caldera structures may be present along a northwesterly trending line of volcanic centers.

Precious metals mineralization is associated with certain of the many silicified structures that are present in the area in both the Takla and Toodoggone volcanic assemblages. These silicified structures take the form of quartz veins near a probable feeder zone for the Toodoggone rocks, but within the older Takla formation, at the Baker Mine area. The Lawyers deposit however occurs in silicified and locally brecciated fault zones as well as in silicified beds conformable to the local bedding, all within younger Toodoggone rocks. The Sha property carries local occurrences of gold and silver mineralization within silicified zones in Toodoggone volcanics and has similarities to the geology at the Lawyers deposit. Deposits of this type were also sought on the Silver Reef claim in the Toodoggone Volcanics.

WORK PROGRAM

Prospecting work was conducted by the author and two assistants during the period of July 7th to 15th, 1980. Access was via helicopter from our base camp on the Silver Sun claim which is about 15 miles to the northwest. Our personnel were put out each morning and picked up in the afternoon to be returned to base camp. Prospecting was conducted by systematic traverses along lines about 100 metres apart. Geological features of interest are shown on the map appended to this report. Weather at the time the prospecting was done was good.

DESCRIPTION OF WORK AND RESULTS.

Prospecting

Overburden covers in excess of 95% of the property but enough small outcrops were found so that some conclusions can be drawn concerning the underlying geology.

Some small outcrops of variably silicified crystal tuff and quartz eye rhyolite were found along the top of the ridge which parallels the northward flowing creek which crosses the west boundary of the property. This unit which belongs to the Toodoggone formation also locally carries fairly large masses (up to 50 feet in width) or lenses of quartz. This unit appears to be dipping at 20 or 30 degrees to the east, but a lack of clearly defined bedding features required some conjecture on the part of the author and this assumption may be in error.

This unit was the only one present in the outcrops on the property. The silicified rocks appear to strike in a northerly direction on to the adjoining Sha property. Several westerly trending snears cut this unit and are moderately kaolinized and iron stained. These faults appear to have near vertical attitudes and may have some localizing

affect or control on the silicification.

The area surrounding the claim was prospected particularly to the south and west. Most of the area is completely devoid of outcrop to the south until at a distance of $1\frac{1}{2}$ miles or so from the claim boundary a small lake surrounded by a cliff lined cirque is reached. Talus from these cliffs consists largely of green and purple colored fragmental volcanics which are often veined with calcite and some quartz. Two angular pieces of this float also carried small amounts of amethystine quartz and a little pyrite. At a distance of about $\frac{1}{2}$ mile to the north of the cirque lake a small outcrop of quartz monzonite was seen in the vicinity of numerous drift boulders of the same material.

A piece of quartz float about 2 feet long and carrying considerable fine blackish tetrahedrite was found about 2000 feet west of the middle of the claim's western boundary in an area of extensive overburden and vegetation. A few silicified boulders not mineralized with tetrahedrite were also found in the immediate area but boulders of any kind are rare in this overgrown place.

The area to the east of the Silver Reef claim has been recently staked by Serem over some reportedly very high silver geochem samples which were taken along a northward flowing stream draining another overburden covered valley. Immediately east of this stream valley is a large, rusty hill which was not visited but may be composed of hydrothermally altered Toodoggone volcanic rocks which have a similar appearance elsewhere in the region. This hill may represent one of the major volcanic centres of the district.

MINERALIZATION

No mineralization other than minor pyrite was seen in place on the

property however rock samples taken by International Shasta along the boundary of their Sha property with the north boundary of the Silver Reef claim showed 1 to 2 oz. of silver and low gold values in silicified but otherwise not visibly mineralized Toadogone rocks.

A thousand feet or so to the northwest, the Sha property has been found to have locally good grade gold and silver values often with gray quartz being present and also of a somewhat lensey nature. Silicification on this claim extends northwards towards Jock Creek where it disappears under overburden.

ALTERATION

The main alteration type is silicification which is in part a replacement type and in part may be syngenetic. Vuggy white quartz which is sometimes stained by black manganese oxides occurs as veins, stockworks and as large lens like replacements. Locally the quartz takes on a blackish hue due to finely disseminated minerals which are composed of tetrahedrite in part.

Kaolinization is present for a few tens of feet out from the eastward trending fracture zones.

Pyritization is present in small amounts in most rock types.

ROCK TYPES

Two rock types have been found on the claim. The first is a green tuff with prominent pink phenocrysts of feldspar which may be orthoclase or iron stained plagioclase.

The second type is flesh to pink to reddish pink rhyolite, often with prominent orthoclase phenocrysts and local small quartz eyes.

In addition, fragmental volcanics composed of green to purple volcanic fragments occur in the cirque previously mentioned to the southwest. A outcrop of medium grained hornblende-biotite ^{quartz} also occurs in this area.

CONCLUSIONS

Preliminary prospecting work has shown that the favorable silicified rocks which occur on the Sha Property extend southwards on to the Silver Reef claim. These silicified rocks which belong to the Toodoggone Unit are quite similar in appearance to those on the Lawyers property. The full thickness of the silicified rocks is nowhere exposed on surface so that the structure is poorly understood, but it appears to extend over at least 2000 feet along strike and could easily be 300 feet or more in thickness. At the Lawyers property high grade lenses of erratic extent occur towards the top or hanging wall sequence of the silicified rocks with more consistent mineralization towards the footwall sections, the whole forming a structure containing extensive gold and silver mineralization of economic importance.

It is recommended by the author that a geochemical sampling program be carried out over the claim on a 50 foot by 100 foot spacing. If results of this program are encouraging for gold, silver or mercury, a program of trenching should be carried out in an attempt to expose bedrock. If this trenching is encouraging, the silicified structure should be tested by several diamond drill holes oriented to penetrate the whole section down through its footwall.

The author feels that both the Lawyers and Baker properties were found because they occur on high ground and were signaled by frost heaved float. Since most of the remaining prospecting ground is overburden covered new precious metal deposits in the area will probably be found by those exploration people who are not easily discouraged and who are willing to apply intelligent persistence over a period of years. The author feels that this area is a major and unusual precious metals province similar to those in the basin and range province of the southwest United States and that there is an excellent likelihood of further discoveries

of importance most likely by those explorationists who put in the time and thought to unravel caldera type structures and their associated mineral deposits.

Respectively submitted,

Charles Kowall
exploration geologist

ITEMIZED LIST OF EXPENSES

Item	Cost
Hughes 500 helicopter, 2½ hours at \$450 per hour	\$1125
Wages	
Chuck Kowall \$100 per day 4 days consulting geologist	\$400
Gordon Gibson \$75 per day 3 days geologist prospector	\$225
John Taylor \$60 per day 3 days geological assistant	\$180
Field Expenses, food etc, \$25 per man day 10 man days	\$250
Cost of preparing this report typing, photocopy, binding, etc.	\$200
Total Cost	\$2380

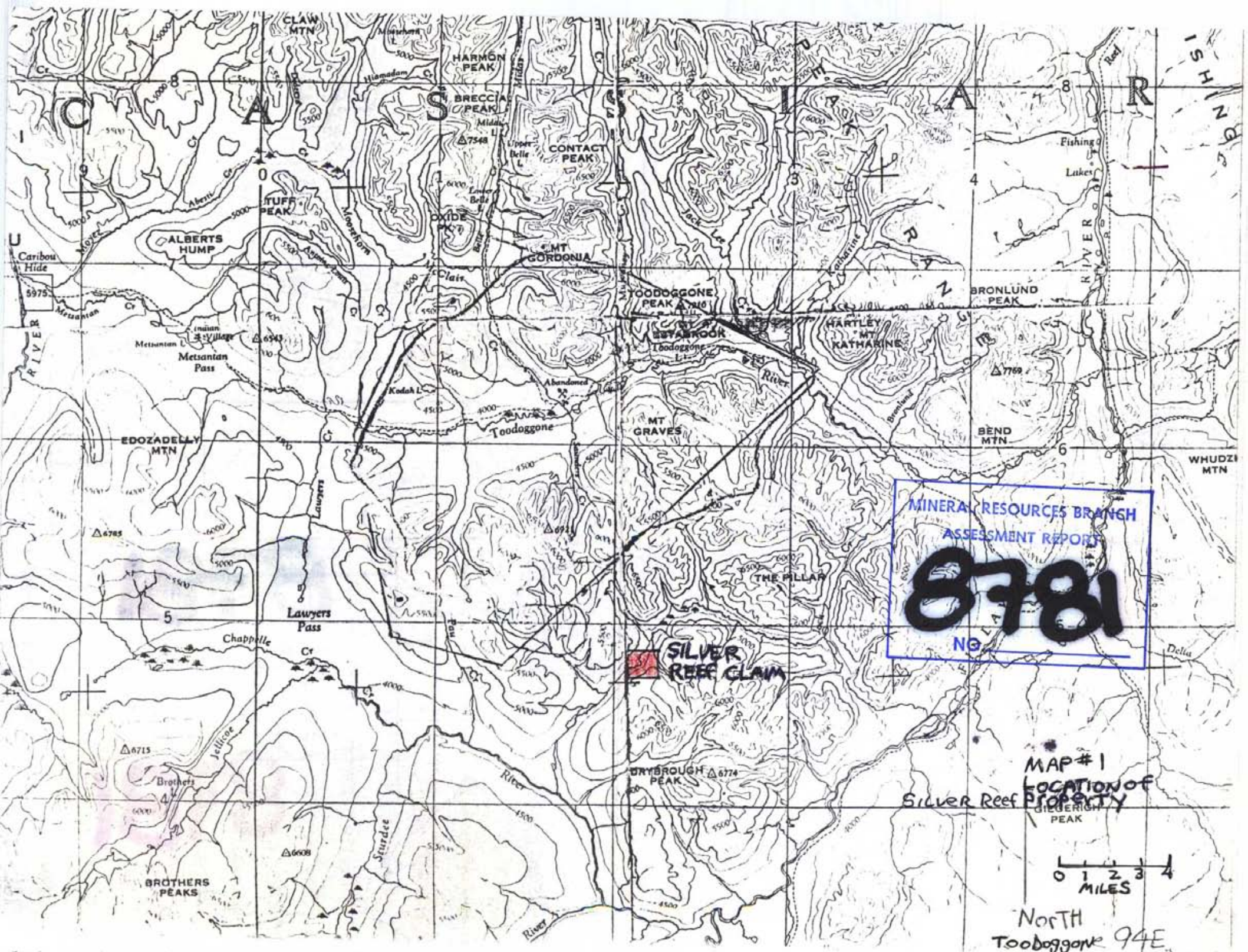
Apply \$1600 for one years assessment
credit to each of the 16 units forming
the Silver Reef Claim

LIST OF CLAIMS UPON WHICH WORK WAS DONE

Silver Reef Claim 16 Units Record No 2275(11) Recorded Nov15, 1980

AUTHORS QUALIFICATIONS

- 1 B.S. degree in Geology from Colorado College, Colorado Springs
Colorado 1964
- 2 Three years as field geologist and prospector for Highland Bell
Ltd. (Carl Springer interests) under the direction of Ed Wozniak
who is currently the director of Amoco's North American exploration
- 3 Seven years as staff exploration geologist for Silver Standard
Mines Ltd. under the direction of Bill Dunn
- 4 Three years as independent exploration geologist
- 5 Three years under the Provincial Prospectors Grant
- 6 Total of 14 years prospecting and exploration in British Columbia,
Alaska, Yukon, and the western United States

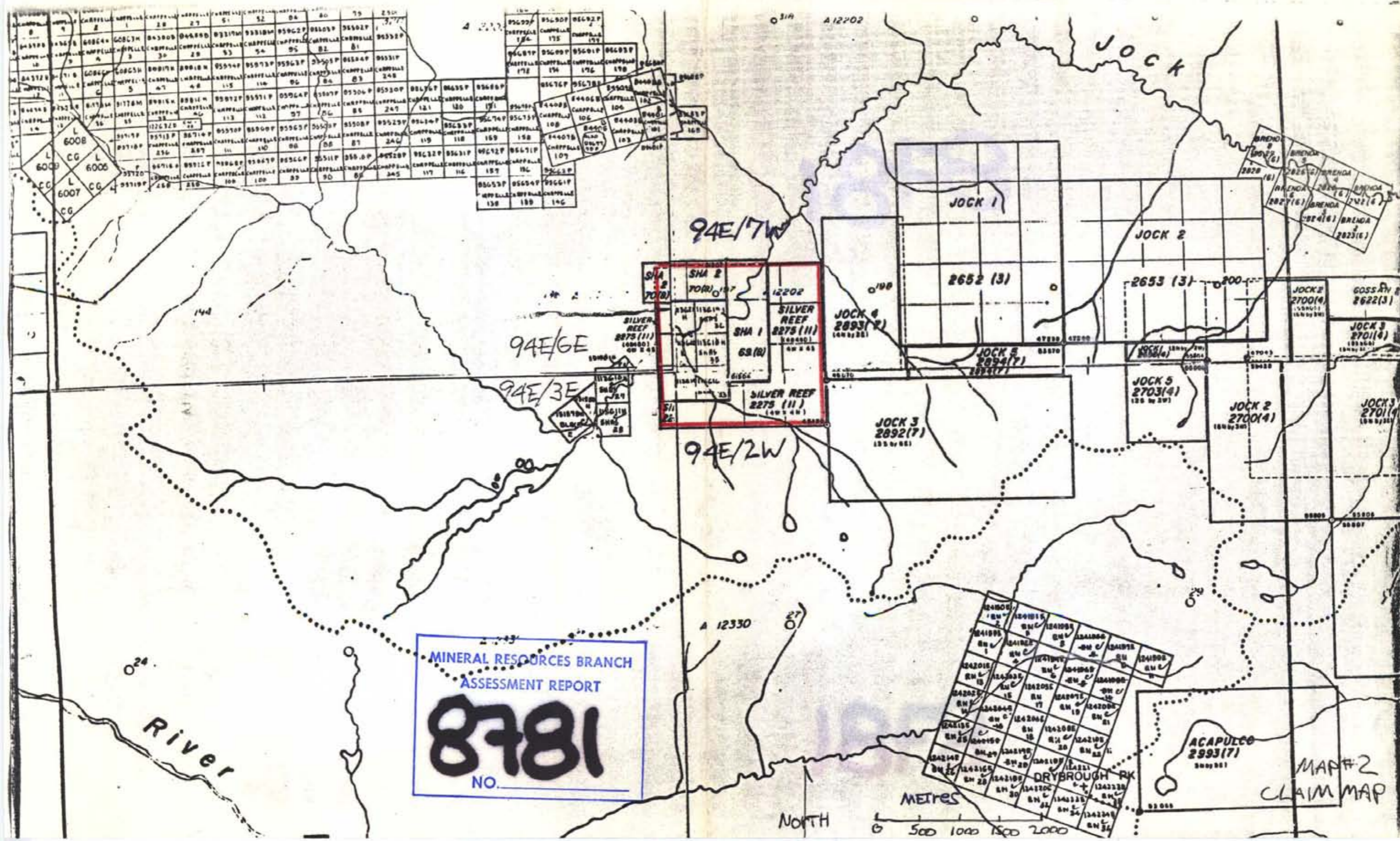


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MAP #1
LOCATION OF PROPERTY
SILVER REEF PROPERTY
DILGERICH PEAK

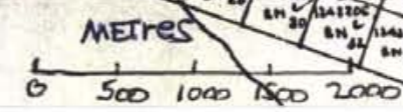
0 1 2 3 4
MILES

North
Toadoggone 94E



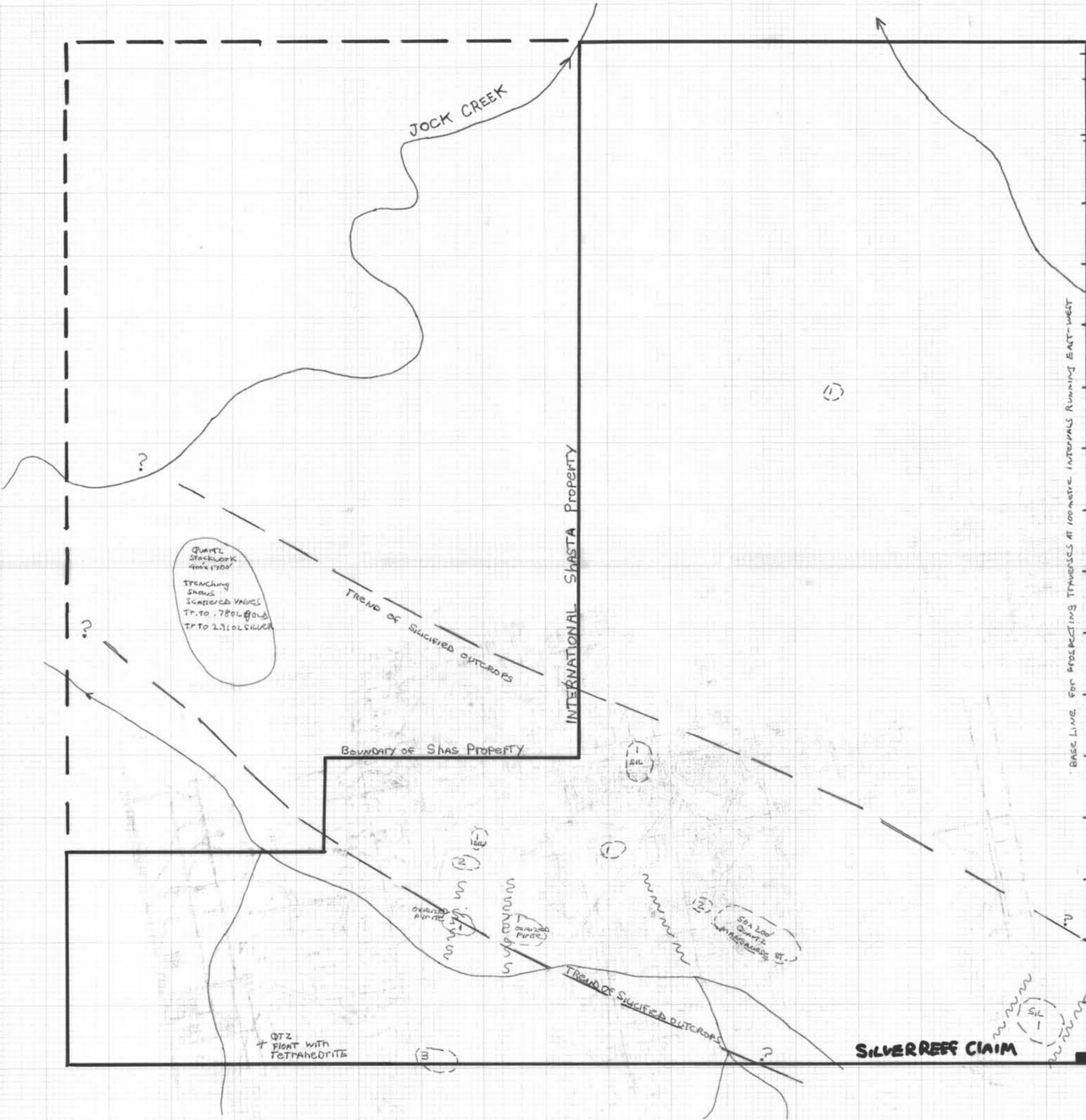
6008	6009	6006	6007	6005	6004	6003	6002	6001	6000
CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
6007	6008	6005	6006	6003	6004	6001	6002	6000	6000
CG	CG	CG	CG	CG	CG	CG	CG	CG	CG
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NORTH

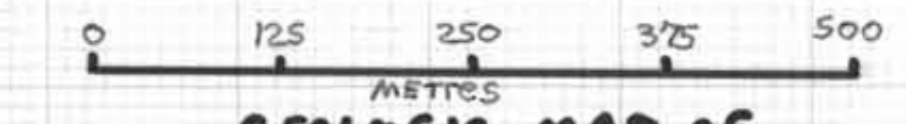
MAP #2
 CLAIM MAP



LEGEND

- OVERBURDEN
- 3 VOLCANIC ASSOCIATE
- 2 RHYOLITE
- 1 GREEN TUFF WITH K SPAN AMOEBISTS
- CLAIM BOUNDARY
- LEGAL CORNER POST
- - - AREA OF OVER STAKING ONTO SHAS PROPERTY
- ↙ STREAM
- ~ ~ ~ FAULT
- (3) OUTCROP
- X FLOAT
- SIL SILICIFICATION

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NO



LEGAL CORNER POST
GEOLOGIC MAP OF THE SILVER REEF CLAIM OMINECA M.D. MAP#3

CHANEKOWALL
Dec 1, 1980