

CA
X

PRELIMINARY GEOLOGICAL REPORT
ON

WHITEROCKS MOUNTAIN PROPERTY

VERNON M.D. B.C.

50° 119° SW

by

CHARLES A.R. LAMMLE, P. ENG.,

Claims Held By:

I. Greg & G. Schell

Examination Period - August 20-21, 1969

Report August 27, 1969

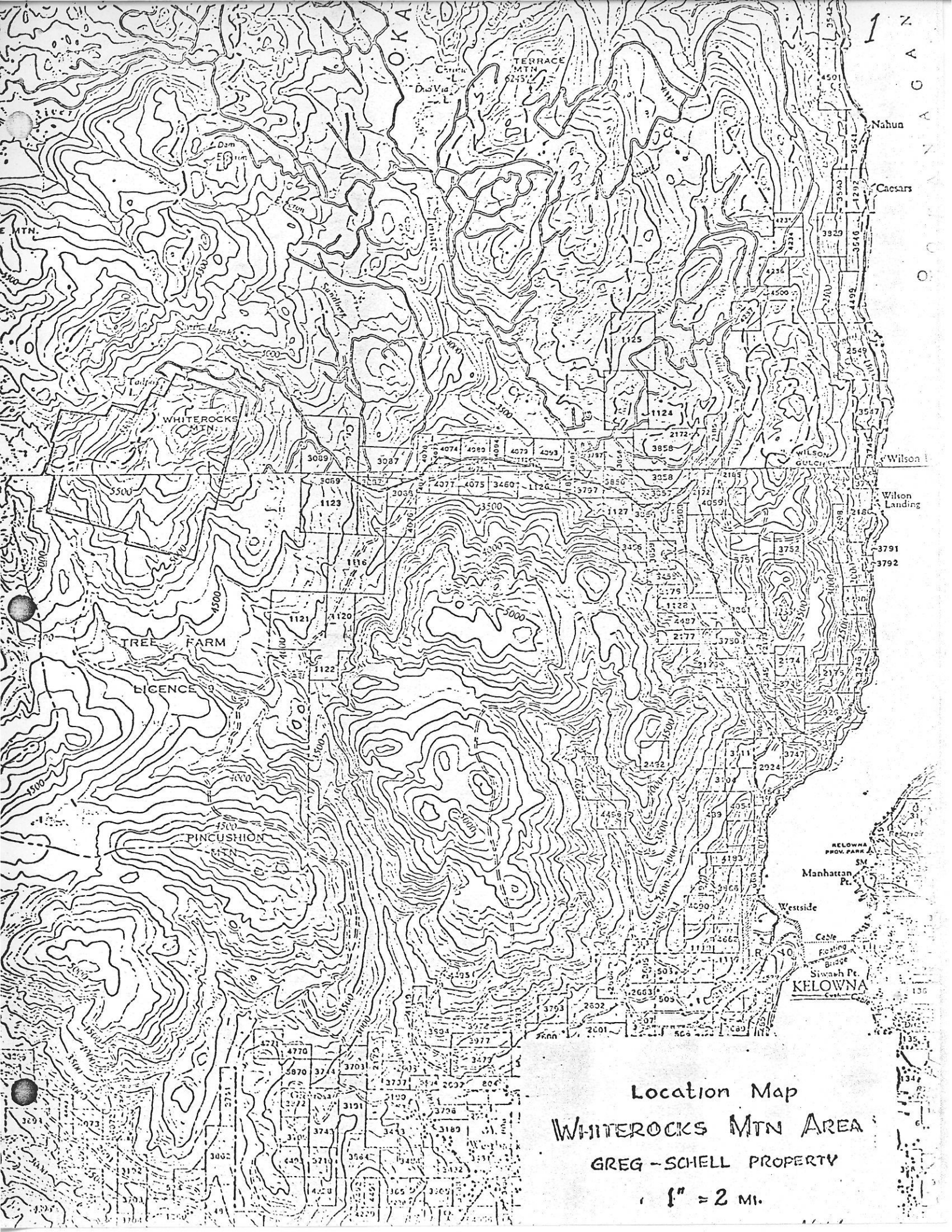
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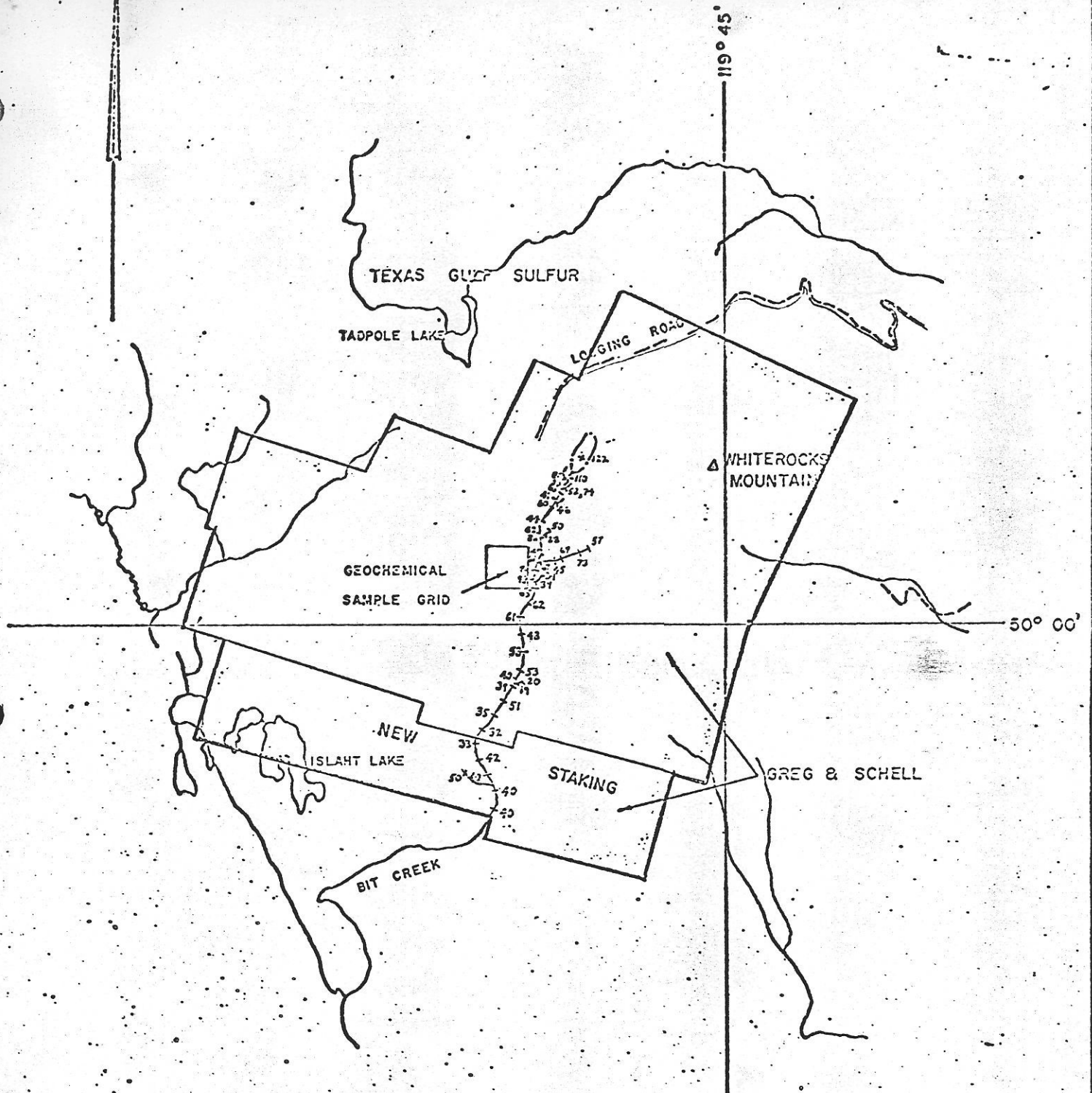
 Preliminary Geological Plan (Map 4)

 Photographs



1 N
A
G
A
O

Location Map
WHITEROCKS MTN AREA
GREG - SCHELL PROPERTY
1" = 2 MI.



*Copper (ppm.)
Stream Sediment Analyses*

**WHITEROCKS MOUNTAIN PROPERTY
(GREG & SCHELL - OWNERS)**

SCALE : 1 : 50,000

1 1/4" = 1 MILE (APPROX.)

DATE : JULY 17, 1969.

DRAWN BY : K. BRADLEY

Map 2.

INTRODUCTION

On August 20, 1969, at the request of Mr. H. Ogata Inter-Pacific Enterprises Ltd., the author and Mr. Ogata visited the Whiterocks Mountain Property with the company of Mr. Ivan Greg, part owner. During the visit, rocks about and in vicinity of the work area were examined, and samples were taken from a number of small pits blasted into bedrock. The author returned the following day to complete a preliminary geological map of the work area.

This report describes the property in general, and the presently known mineralized area in particular. Conclusions and recommendations based on the examination are included.

LOCATION AND ACCESS (Maps 1 & 2)

The property is located between elevations 4900' and 6100' in the Islaht Lake - Whiterocks Mountain Area approximately 14 air miles northwest of Kelowna, B.C., and 13 air miles northeast of Brenda Mines. Access is north along Westside road a distance of six miles from the west approach of the Kelowna floating bridge to the Crown Zellerback main gravelled logging road (Bear Lake Road), thence northwesterly along the logging road 23 miles to the north central property boundary where the road terminates. A foot trail leads south from the end of the road for about one mile to the work area.

Coordinates of the area are $50^{\circ}01'N$, $119^{\circ}46'W$.

PROPERTY (Map 3)

The property consists of 97 contiguous located claims held by Ivan Greg and Gary Schell of Vancouver, B.C. Forty-four of these claims in two groups - the Dobbin Group of 40 claims and the Islaht Group of 4 claims are held under an agreement with the original owners S. Brewer, A. Brewer and D. Jourdain, the remainder are held by location. Further particulars of the claims are set out below.

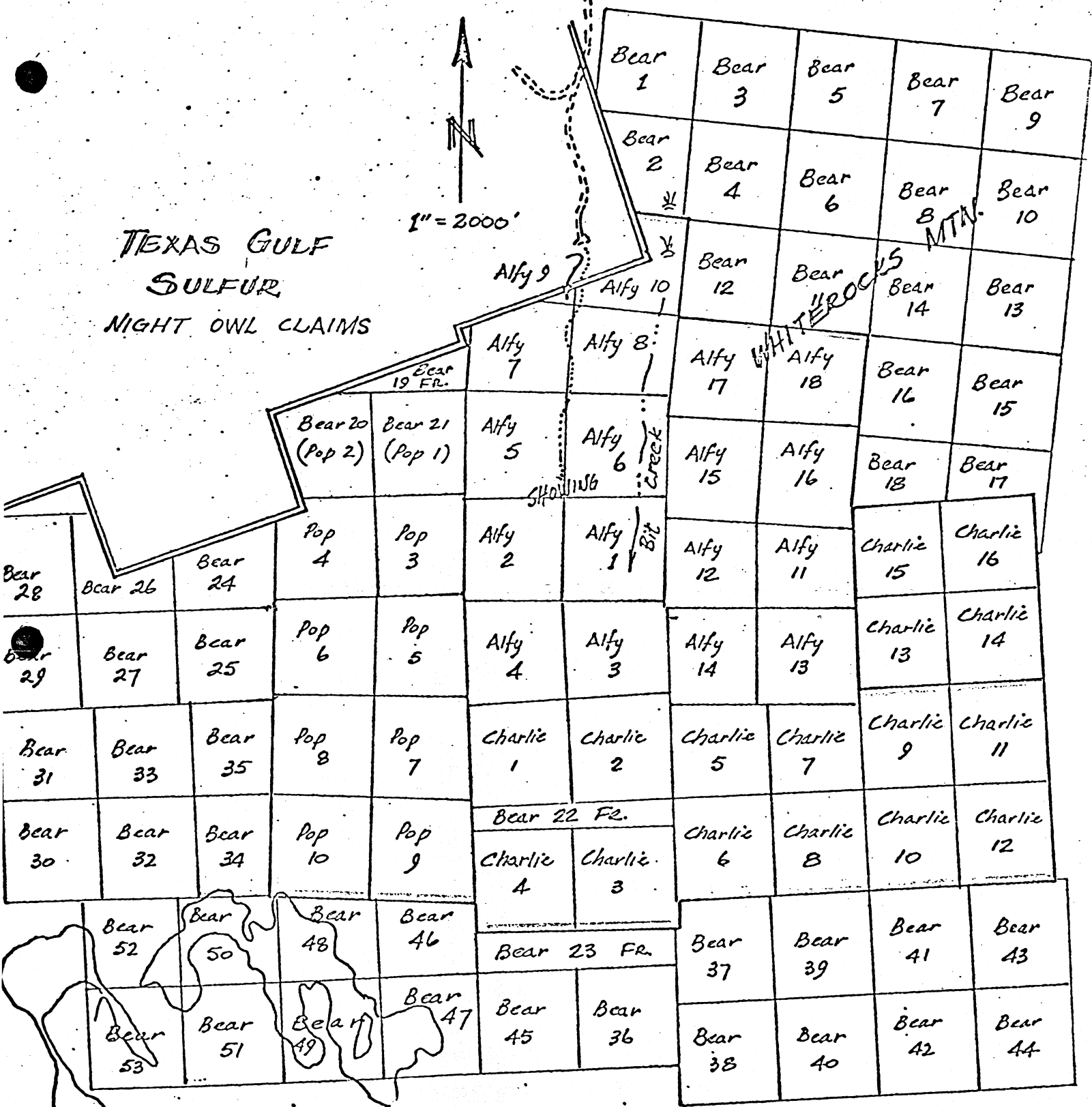
Group Name	Claim Name	Record No.	Expiry Date
DOBBIN Nov. 27, 1968	Alfy 1-4	10698-10701	Nov. 30, 1971
	Alfy 5-18	10702-10715	Nov. 30, 1970
	Pop 1-12	11458-11467	Aug. 26, 1970
	Charlie 1-4	11338-11341	July 31, 1970
	Charlie 5 & 7	11342&11344	July 31, 1971
	Charlie 6	11343	July 31, 1970
	Charlie 8-12	11345-11349	July 31, 1970
ISLAHT	Charlie 13-16	11350-11353	July 31, 1970
	Bear 19 FR	41349	July 8, 1970
	Bear 20-21	41350-51	July 8, 1970
	Bear 22-23 FR	13090-91	July 8, 1970
	Bear 24-35	41352-63	July 8, 1970
	Bear 36-45	13092-13101	July 8, 1970
	Bear 46-53	41364-71	July 8, 1970

Claims Bear 20-21 and Pop 1-2 appear to overlap, and in addition, there is some overlap over preexisting Texas Gulf Sulfur claims along the northwest boundary of the property.

The property adjoining to the north and west, formerly a Phelps Dodge property, is now held by Texas Gulp Sulfur, who are presently organizing a drill program for the ground. Claims held by others are shown on the claim maps to the south and west.

TEXAS GULF
SULFUR
NIGHT OWL CLAIMS

1" = 2000'



Dobbin Group ———
 Isiaht Group ———

CLAIM MAP
 WHITEROCKS MTN. PROPERTY
 IVAN GREG & GARY SCHELL
 Vernon & Nicola M.D., B.C.

Traced from reduction of Map

HISTORY

An old trail extending west from Kelowna to the Nicola River passes close to the present work area, and the presence of old claim posts and blazes suggests that the existence of the copper mineralization has been known for many years. However, it is apparent that no material exploratory work has ever been done on the ground until recently. This recent work consists of:

1. Soil Geochemical Survey (87 samples) Map 5
2. Stream Silt Sampling, Bit Creek (44 samples) Map 2
3. Rock Drilling and Blasting (approx 15 shots) Map 4
4. X-ray Diamond Drilling (3 holes-177 ft.) Map 4

Dr. A.C. Skerl examined the property on August 24, 1968 and prepared the drill core for assay. Because of the small size of the core, Dr. Skerl sent it all for analysis without splitting, retaining small 1" sections at 1' intervals for reference. The remains of the core are not at the property, but the assay results are quoted herein later. Dr. Skerl recommends a \$8,000 first stage preliminary exploration followed by a \$60,000 more comprehensive second stage program.

GENERAL GEOLOGY

- Reference
1. GSC Map 15-1961, Kettle River (West Half)
 2. GSC Map 1059 A, Vernon Map Area
 3. GSC Memoir 296, Vernon Map Area
 4. Map 5207G, Aeromagnetic (Shorts Creek)

The most recent government mapping of the area indicates that Whiterocks Mountain area has been intruded by a Tertiary stock of the Coryell Plutonic Rocks, an intrusive unit that consists of syenite and granite with minor monzonite and shonkinite. The stock is intrusive into northwest trending, southwest dipping sedimentary rocks - argillite and limestone

with some intercalated andesite - of the Permian Cache Creek Group. Aeromagnetically, the stock apparently causes a broad magnetic depression with a very strong magnetic high along its south and southwest surface trace. A similar stock on Whiteman Creek west of Vernon has a similar though more subdued magnetic expression.

Tertiary intrusive rocks, because of frequent metallic mineral association especially in the southwestern United States, but also in British Columbia, are often of economic importance.

LOCAL GEOLGY

As mapped (see Map 2) the rocks in the vicinity of the work area consist of two belts of black, medium to coarse grained, magnetic, epidotized hornblendic and gabbroic rocks within gray medium grained, frequently trachytic, monzonite. A larger body of porphyritic monzonite composed largely of pale blue to occasional lavender coloured or thoclase phenocrysts (mostly $\frac{1}{2}$ " in size but upto 4") adjoins to the northwest. Contacts between these three principal rock types are gradational, but a fourth rock type - a dark gray variously textured monzonite - in places is gradational between the mafic rock and the gray medium grained monzonite.

The trachytic fabric of the various rock types is fairly uniform, trending northwest and dipping steeply to vertically. Principal jointing also trends northeast with moderated to steep dip to the northwest.

Various rocks along the trail to the workings consist of strongly magnetic, fine to medium grained hornblendic, biotitic and gabbroic rocks cut by occasional, minor, northwest trending, white feldspathic dykes, and a belt of medium grained light gray modestly pyritic quartz monzonite. A more extensive area of uniformly medium grained monzonite occurs on the adjoining Texas Gulf Sulfur property.

The only alteration in the rocks noted was in the core of DDH2 where ~~the rocks~~, the fine to medium grained mafic rocks are variable epidotized and weakly garnetized in places, particularly near the bottom of the hole.

MINERALIZATION

Principal sulphide mineralization as presently known occurs in the north belt of hornblendic and gabbroic rocks within the area of Map 2. For the most part the sulphides- chalcopyrite and pyrite- are nicely disseminated in the fresh rock, however there is some good dissemination along a fine black banding in the rock, particularly at DDH 2. (This is also noted in Dr. Skerl's account of the core). There is also some minor sulphide fracture coating. Some chalcopyrite has a blue iridescent coating resembling bornite.

A rather strange but not uncommon feature of the mineralization is the visual absence of either malachite or chalcopyrite on the weathered surface, even though the rocks are fresh and unoxidized. At the work area, blast holes into plain looking rock disclosed fairly good mineralization. It is conceivable that similar blasting elsewhere is comparable rock will yield comparable

rewards.

Negligible chalcopyrite - an occasional grain or two - was noted in the med-grained and coarsely porphyritic monzonites. Occasional rust stained fractures can be found in the body of porphyritic rock and patches of pyritic rock occur elsewhere in the mapped area. Disseminated pyrite occurs in a belt of quartz monzonite along the access trail. Also appreciable pyrite is reported in the argillite adjoining the Coryell Stock to the west.

The assay results of all available assay results are tabulated below:

Table of Assays

Sample	Interval	% Cu	oz Ag	% MoS ₂	oz Au	% S
Skerl						
DDH 1	0-10'	0.73				
	10-20'	0.33				
	20-30'	0.25				
	30-41'	0.21				
DDH 1A(3?)	0-26	0.18				
DDH 2	0-40	0.60				
	40-110	0.16				
Lammle		Grab & chipped samples from Pits				
PIT 1	12'	0.04	Tr			
PIT 2	3'	0.10	Tr			
DDH 2	16'	0.26	0.2			
PIT 3	6'	0.14	0.1			
PIT 4	4'	1.05	0.2			
PIT 5	23'	0.30	0.1			
PIT 6	6'	0.28	0.1	0.001	Tr	
PIT 6A	8'	0.14	0.1			
PIT 7	6'	0.14	Tr			
PIT 7A	4'	0.06	Tr			
PIT 8A-B	25'	0.08	0.1			
ROCK 8C	1'	0.06	0.1			
PIT 9	7'	0.20	0.1	Tr	Tr	
Unknown						
7-7055		1.56			0.02	1.44
7-7056		1.21			0.02	0.84
7-7057		0.39			0.02	0.43
8-7058		0.78			0.02	0.54

In addition, a semi-quantitative spectrographic analysis of sample 8-7058 indicated 0.7% Cu, 0.7% Ti (Titanium) and 0.1% V (Vanadium).

The range in values of the drill hole samples is 0.16% to 0.73% Cu; the range from the pit samples is 0.04% to 1.05% Cu. The weighted average of the quoted core analysis is 0.31% Cu, the average of all pit samples exceeding 0.1% Cu is 0.315% Cu. The grand average of the pit samples is 0.22% Cu, 0.1 oz silver to the ton. There can be no strict comparison, however for the pit samples take in a much larger and different area than the core samples.

It is reasonable to expect that averaged samples from the mineralized zone will be about 0.3% Cu, 0.1 oz Ag/ton. Adjoining rock would be visually expected to return lower values but blasting in selected spots might reveal more sulphides than can be detected on the surface.

Judging the mineralized deposit on the surface data alone, with extremely limited subsurface data, the deposit must be considered small and low grade. The presence of the mineralization in the particular gabbroic rock type, the character and suspected origin of the mineralization, and the gross geological picture of a Tertiary intrusive stock, leads one to regard the mineralization as an excellent indication of the possibility of other deposits of better grade and larger dimensions existing in the same environment.

GEOCHEMISTRY

Soil geochemistry over the belt of black mineralized rock reveal a zone of irregular, but very strong copper

concentrations originating from the zone and spreading downslope to the southeast. The bulk of the area tested is anomalous and it must be considered open in all directions. It is clear that the soil geochemistry is very useful in directing one towards bedrock copper mineralization in this area.

Stream sediment geochemistry along Bit Creek (Map 2) on the other hand showed only slight variation, with the highest concentrations of copper in sediments adjacent to the work area. The stream however, is small and the silts and sediments poor. Results from Bit Creek, if used on a regional basis, probably would not have led to discovery of the deposit. Used in isolation, as they have had to be in this case, they have actually given faint indication of the deposit.

SUMMARY AND CONCLUSIONS

An interesting zone of low grade disseminated chalcopyrite-pyrite mineralization occurs in very fresh, highly magnetic, basic rocks that occur in monzonite near the south contact of a body of coarsely porphyritic, trachytic monzonite. All of these rocks together comprise part of a Tertiary stock of the Coryell Plutonic Rocks within Paleozoic sediments. The nature of the deposit is unlike the "porphyry coppers" in that, there is very little hydrothermal alteration, no fracture stockworks, breccias nor orthoclase metasomatism. Rather, because of the gradational nature of the contacts between the several rock types, and the fact that these rock types differ from each other only by their respective content of the same mineral components, it is likely that these rocks have originated by processes of fractional

crystallization and magmatic segregation. However, near the bottom of DDH 2, garnet, epidote and quartz replacement of a small part of the core indicate some high temperature alteration. This opens the possibility of the sulphides being epigenetic, rather than syngenetic, as would be the case if they formed by magmatic settling. The possibility of their being a more appreciable mineral deposit at depth is thus a distinct possibility.

The mineralized zone as it now stands in its relatively unexplored state, small and low grade, cannot be considered as having viable economics. However, the deposit, albeit small and low grade, considered in conjunction with the gross geologic picture of a Tertiary intrusive stock, possibly magmatically segregated and possibly with important alteration and replacement, at least locally at depth, must be considered an excellent indication of the possibility of more sulphide deposition. As such, the deposit should be used as the starting point for a thorough, systematic, preliminary exploration program over the property and particularly over the large areas underlain by the favourable hornblendic and gabbroic rocks. This preliminary exploration work is warranted and necessary.

RECOMMENDATIONS

First Stage

In view of the foregoing, it is recommended that a first stage flexible program of line cutting, soil sampling, ground magnetometer surveying, reconnaissance and detailed geological surveying, and rock drilling and blasting be carried out on the property.

The program should be flexible so that it might be directed or concentrated in particular areas as incoming results dictate.

The line cutting envisioned would consist of a straight N-S base line extending 3,200 feet north and a similar distance south of the present work area. Cross lines are to be turned so as to go both east and west of the base line at 400' intervals and extend 3,000' in both directions. Fill in line 200' apart should extend between 8N and 8S on the base line. Pickets in a straight line are to be established at 100' stations along all lines. (Compasses cannot be used for the line cutting.)

The grid established would be used for magnetometer soil geochemistry and detailed geological surveys. Geophysical and geochemical readings would be taken at each picket. Reconnaissance geological work would be done over the existing claims and selected rock drilling and blasting would be done.

Second Stage

At least two 500' AXWL diamond drill holes are recommended to test the subsurface characteristics of the mineralized zone (Map 4). However, as this work is expensive and will involve bulldozer road and site preparation, and because additional better targets might be delineated, it is advised that this work be deferred to a second stage when all first stage work is completed and assessed. Selected induced polarization work and additional drilling is envisioned for this stage.

Estimated costs of the above, first stage program areas follows:

LINES

Line cutting	25 miles @ \$100/mi.	\$ 2,500
GEOCHEM		
Soil sampling	\$1,300	\$ 3,300
Sample analysis	\$2,000	
MAGNETICS		
Instrument rental	\$ 300	
Operation	\$ 500	\$ 800
GEOLOGY"		\$ 1,000
ROCK BLASTING		\$ 700
CAMP	\$ 500	
LIVING EXPENSES	\$1,200	\$ 1,700
TRANSPORTATION		\$ 600
DATA PROCESSING & REPORT		\$ 700
CONTINGENCIES		<u>\$ 1,200</u>
TOTAL FIRST STAGE		\$12,500

The first stage work would require 4-5 men under the supervision of a geologist and would take about 4 weeks time.

For the second stage work a minimum allowance of \$8,000 should be induced polarization work over the preliminary grid and a further allowance of \$30,000 should be made available for the presently envisioned drilling and possible drilling that might be warranted by the above program. Total funds to be made available are therefore \$50,500. Appreciably greater expenditures might be required, depending upon the success of the preliminary work.

Respectfully submitted,

Chas A.R. Lammler

Chas A.R. Lammler
Professional Engineer

CARL:ws

August 27, 1969

TRANSMISSION