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Preliminary Exploration Report

PET CLAIM GROUP

Atlin Mining Division, B.C.

by P.R. DeLancey & D.B. Kilby
Vancouver, B.C. December 1971

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Preliminary Exploration Report

PET CLAIM GROUP

Atlin Mining Division, B.C.

SUMMARY

The Pet Group, consisting of 90 claims was staked during the 1971 Dease Lake Reconnaissance project. A limited amount of detailed mapping, trenching and sampling has been done on the property. Copper mineralization is found associated with a potassium rich syenitic intrusion and local andesitic rocks. The best showing is associated with a north-northwest trending fracture and breccia zone; chalcopyrite and hematite occur as veins and breccia fillings. The mineralized zone appears to be about 100 feet wide and is of unknown strike length. Results of a soil survey conducted over the area of interest reflect the mineralized zone and showed other weakly anomalous areas. The results of samples taken over a swamp immediately west of the mineralized zone, are inconclusive in that the soils probably do not reflect the underlying bedrock.

CONCLUSIONS

Insufficient work has been done on this property to evaluate it properly. The main copper occurrence discovered to date is probably not an orebody in itself but if a number of other zones were found nearby it could become an orebody. The contact

between the syenitic intrusive and the Triassic volcanics is probably the most favourable locus for economic mineralization. Unfortunately the contact is obscured by Tertiary cover.

RECOMMENDATIONS

Further work should be done with the object of:

1. Delineating the extent of the known showing and determining if there are more mineralized zones nearby.
2. Determining the exact nature of the contact between the syenite and the Tertiary cover on the western side of the property.
3. Examining the Tertiary rocks covering the contact in the hope of finding a window or windows that would help locate the contact between the Triassic andesite and the syenite.

The first steps next season should be to run a magnetic survey over the property and to map it on a 1"=400 foot scale. This could be followed by a trenching and/or drilling programme if results are encouraging.

INTRODUCTION

Property Ownership, Location and Access

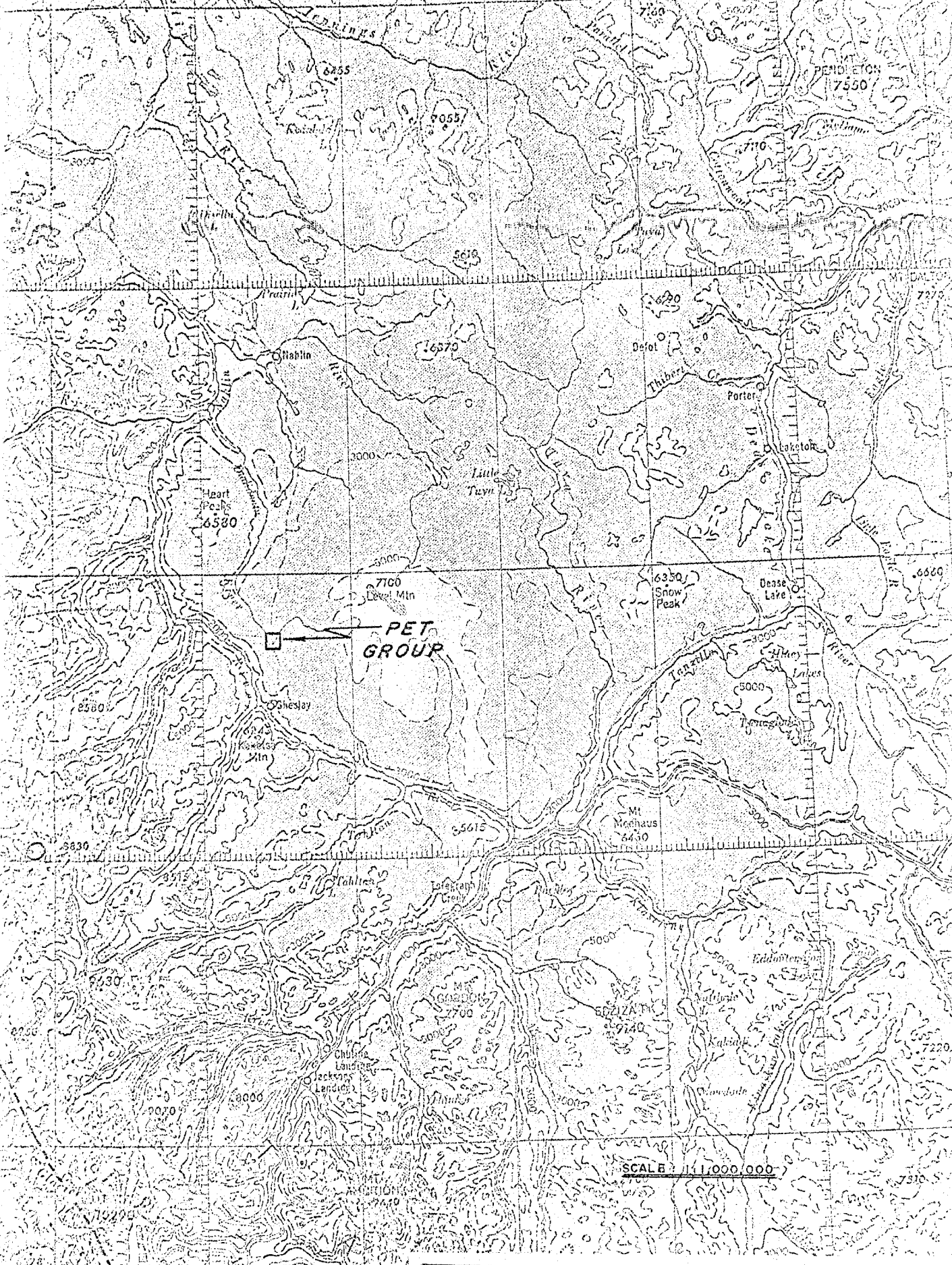
The Pet claim group is comprised of 90 full-sized mineral claims and one fractional claim staked by Texas Gulf Sulphur Company in June, August and September 1971.

The property is situated between Camp Island and Ketchum Lakes about 65 miles west of Dease Lake (see Figure 1). Access is provided by helicopter charter out of either Dease or Kinaskan Lakes. Aircraft equipped with floats can easily land in Ketchum Lake on the eastern boundary of the property if large amounts of equipment are required.

Summary of Work Completed to Date

The Pet group showings were discovered and staked while checking stain zones during the course of a regional reconnaissance programme. The primary objective of the preliminary work done to date has been to gain some information while doing enough assessment work to hold the ground for a year.

1. Soil samples were taken at 100-foot intervals on lines approximately 500 feet apart (1193 samples analysed for total Cu, Zn and Mo).
2. A small amount of 1"=1000' mapping, and preliminary trenching, chip sampling and blasting was done on the discovery showings (see accompanying map).
3. The area around the property was mapped on a 1:50,000 scale as part of the regional reconnaissance programme (see accompanying map).



TEXAS GULF SULPHUR CO.
LOCATION MAP
PET GROUP
FIGURE 1

GEOLOGY

The Pet group is located in a predominantly syenitic intrusion that is at least partially covered by Tertiary basalt. The contact between a Triassic andesite unit, exposed north of Camp Island Lake, and the intrusion is also hidden by Tertiary cover. The contact between the Tertiary basalts and the intrusion may be a fault of unknown displacement, but this remains to be proven.

The syenite is relatively fresh with little alteration associated with the copper mineralization. Some outcrops, especially those near the contact with overlying Tertiary rocks, may be andesites that have undergone extensive K-feldspar alteration. Shear zones are often characterized by extensive chloritization and epidotization.

The Triassic volcanic rocks include porphyritic andesites of variable texture and a few small diorite outcrops that appear to be genetically related to the andesites. Fracturing and epidote, chlorite and K-feldspar alteration are common, although only local in nature. Chalcopyrite, chalcocite and magnetite mineralization is often associated with these fractured and altered zones.

Trenching and blasting in the area around the discovery showing revealed good mineralization in two trenches and indications in others that did not penetrate the zone of weathering. Mineralization is related to a syenite breccia, with a hematite matrix, trending approximately north-northwest. Chalcopyrite and malachite are found both in the matrix and in the breccia fragments. The mineralized zone appears to be 100-150 feet wide at surface and has an unknown strike length.

GEOCHEMISTRY

Sampling Method

Soil samples were collected, at 100-foot intervals on lines approximately 500 feet apart. Samples were taken either by digging shallow pits with a mattock or by drilling holes with a soil augur where greater penetration was required.

Samples were shipped directly to the Bondar-Clegg & Company Ltd. geochemical laboratory in North Vancouver where they were dried, sieved and the -80 mesh fraction was analysed for total copper, zinc, and molybdenum.

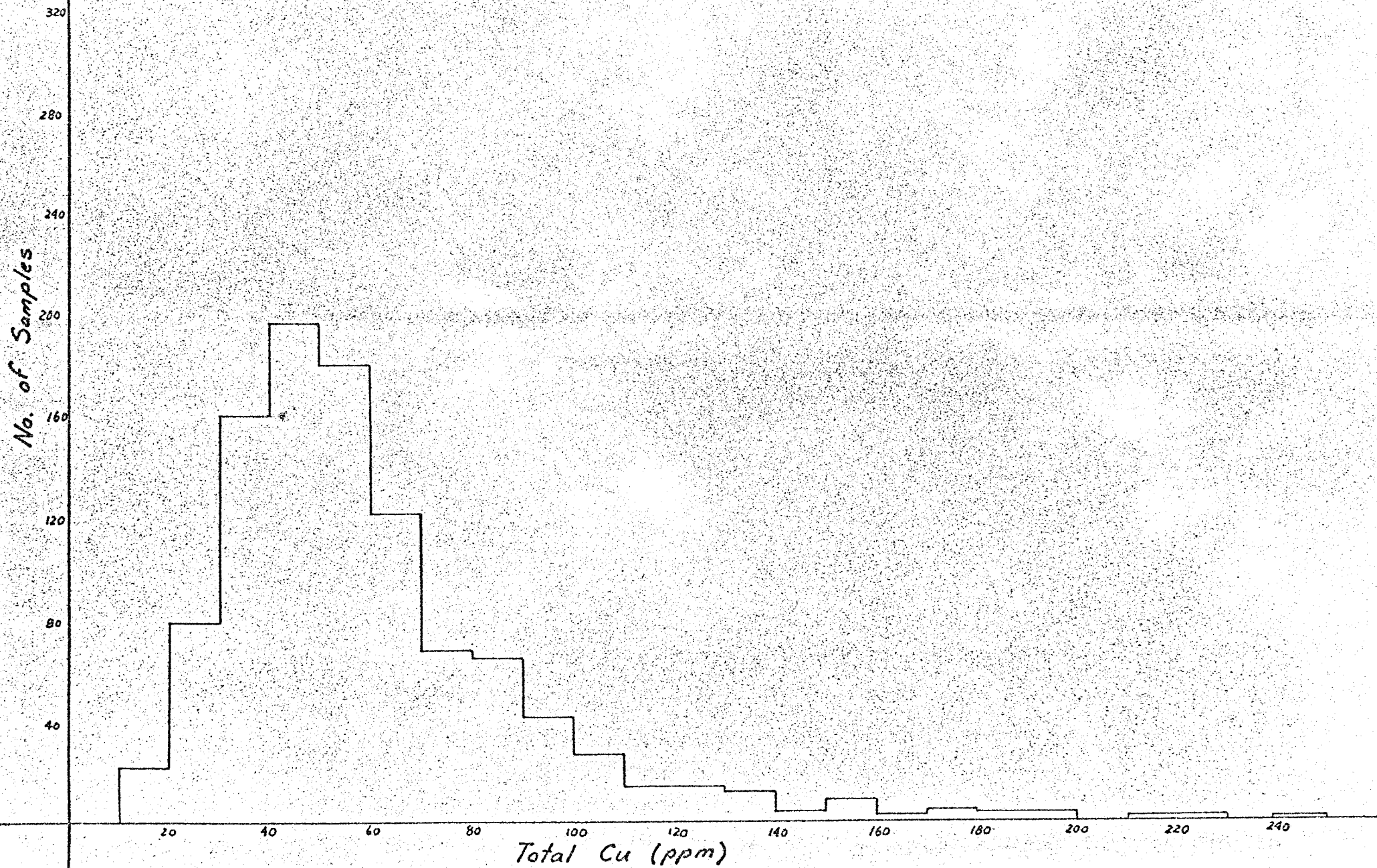
Discussion of Results

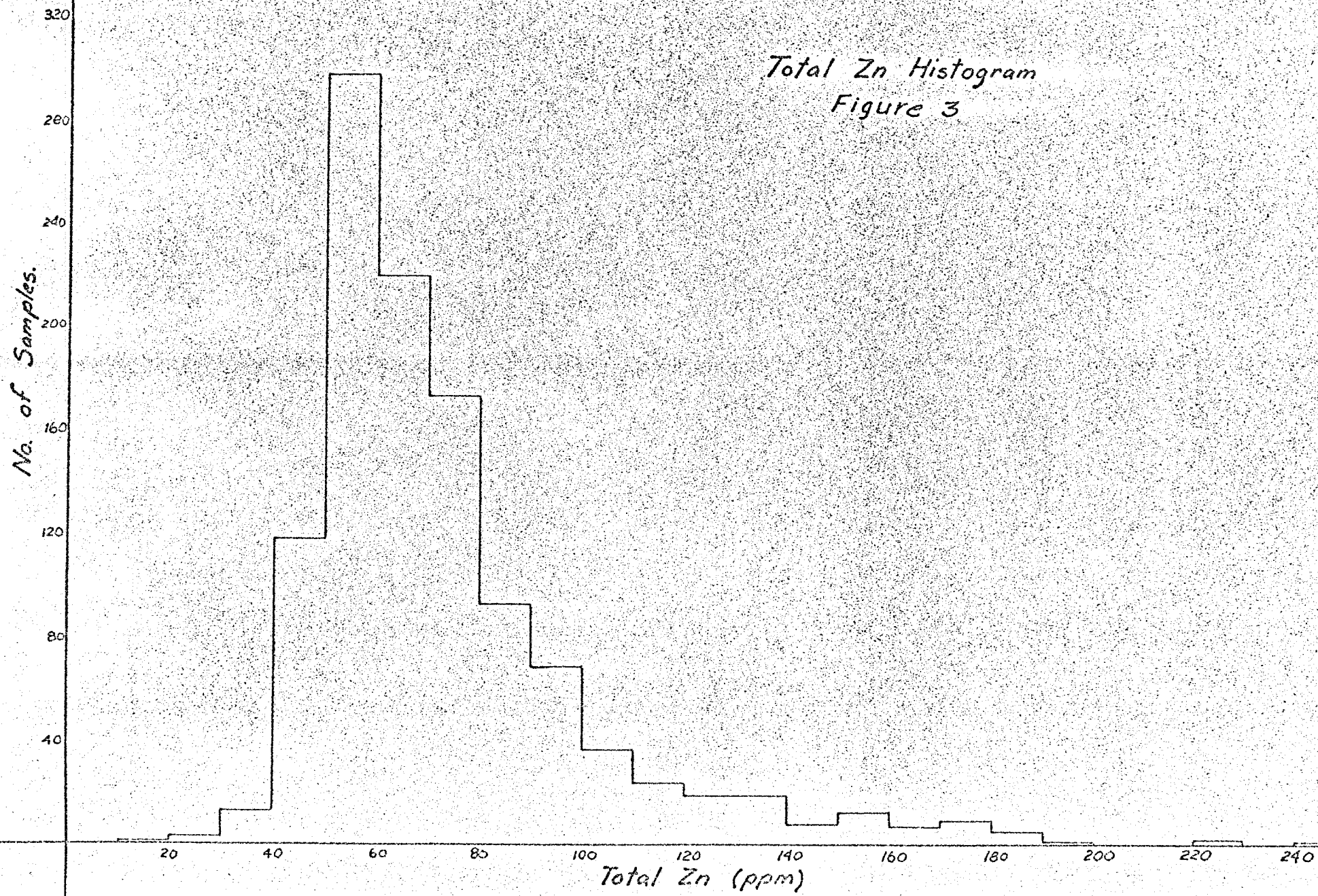
The value distribution curves for copper and zinc (see Figures 2 and 3) show no distinct breaks. The threshold of interest and anomalous sample boundaries have therefore been arbitrarily set at 110 ppm and 140 ppm for copper and at 140 ppm and 180 ppm for zinc with little statistical justification. No values were plotted and no value distribution curve was drawn for molybdenum as assays showed almost no variation in molybdenum content (i.e. varied between 0 and 2 ppm with a very few samples ranging as high as 6 ppm).

The geochemical soil survey shows a number of interesting features.

1. The linearity of north-northwest-trending copper anomalies suggest that soil highs may be related to a number of mineralized shears.
2. Although zinc anomalies are sometimes peripheral to copper highs, there is no obvious relationship between zinc and copper values.

Total Cu Histogram
Figure 2





3. Anomalous areas, in general, reflect the proximity of bedrock to surface.

Some features of the anomalous patterns may be explained by the clay content of soils on the property. Clay lenses inhibit the development of a secondary dispersion pattern over a mineralized area unless bedrock is close enough to surface that either clay lenses are not present or that bedrock was almost reached before samples were taken.

P.R. DeLancey
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LEGEND
■ Cu total ppm > 140 ppm
■ 140-110 ppm
 ○ Cu/Zn

SCALE: ONE INCH = 500 FT

TEXAS GULF SULPHUR CO.		
PET GROUP		
Soil Geochemistry		
ppm total Cu		
1193 samples		
WORK BY	DRAWN BY	DATE
B RATCLIFFE	D KILBY	OCT. 1971



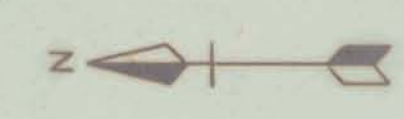
LEGEND

Zn total ppm

> 180 ppm

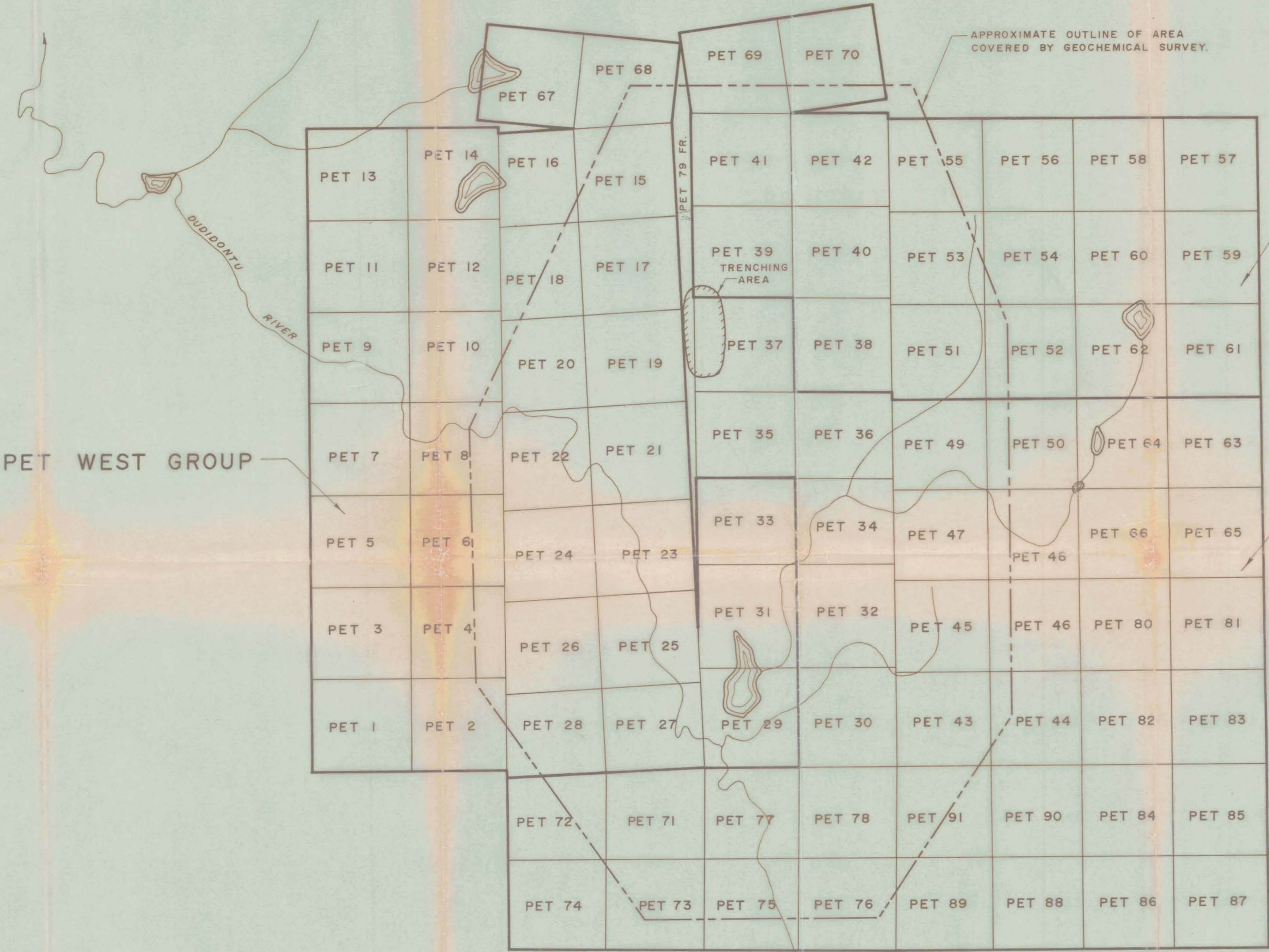
180-140 ppm

Cu/Zn



SCALE: ONE INCH = 500 FT.

TEXAS GULF SULPHUR CO.		
PET GROUP		
Soil Geochemistry		
ppm total Zn		
1193 samples		
WORK BY	DRAWN BY	DATE
B. RATCLIFFE	D. KILBY	OCT. 1971

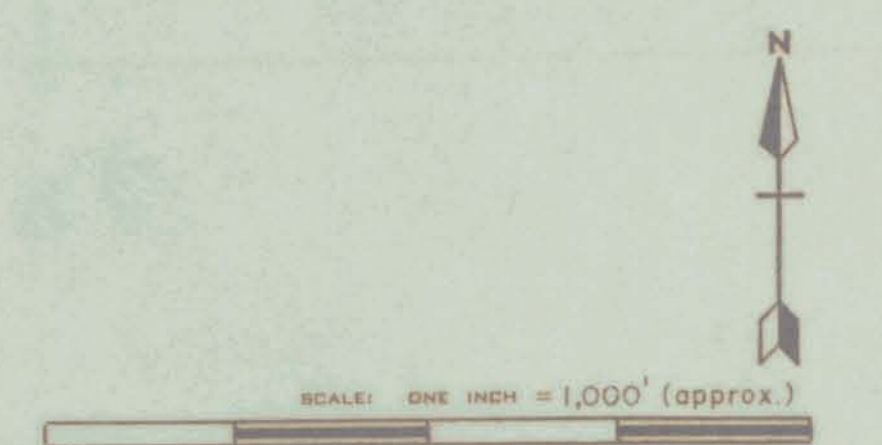


PET WEST GROUP

PET NORTH GROUP

PET SOUTH GROUP

APPROXIMATE OUTLINE OF AREA COVERED BY GEOCHEMICAL SURVEY.



TEXAS GULF SULPHUR CO.		
CLAIM MAP		
PET GROUP		
ATLIN MINING DIV., B.C.		
WORK BY	DRAWN BY	DATE
P.R.D.	L. BELL	JAN., 1972

Trench H
2 cu yds
- no mineralization seen
- although there is some rust
- along fractures
- did not penetrate zone of
- weathering

Trench G
2 cu yds
- no mineralization seen
- did not penetrate zone of weathering
- thus sulphides may have been
- leached

Trench C
8 cu yds
- upper hole showed significant amounts of
- azurite and malachite around a metallic
- mineral (possibly chalcocite)
- note presence of syenite breccia with
- hematite matrix although no chalcocite
- was seen
- rock is extensively weathered (very little
- fresh rock exposed)

- no mineralization seen
- zone of weathering was
- not penetrated
- might possibly be some
- brecciation

Trench B
10 cu yds
- syenite breccia with a hematite matrix was found in hole 2
- chalcocite was found in both the hematite and the
- syenite fragments
- holes 1 & 2 show malachite associated with hematite veinlets
- although primary copper was seen
- rock is heavily weathered although some fresh rock is
- exposed

Trench A
15 cu yds
- relatively fresh syenite with occasional stringers
- of specularite along fracture planes
- no chalcocite was seen although some flecks
- of malachite were noted
- fracturing is not as intense as in other trenches

- copper mineralization was seen along the entire length
- of this trench
- hematite occurs in veins and as the matrix of a syenite breccia
- chalcocite appears in both the original syenite and in
- the hematite breccia matrix
- pyrite is not common but it does occur in a number
- of 1-2" wide yfs veins
- copper mineralization is almost certainly controlled by
- large numbers of NE trending joints of varying
- attitudes.

Chip Samples

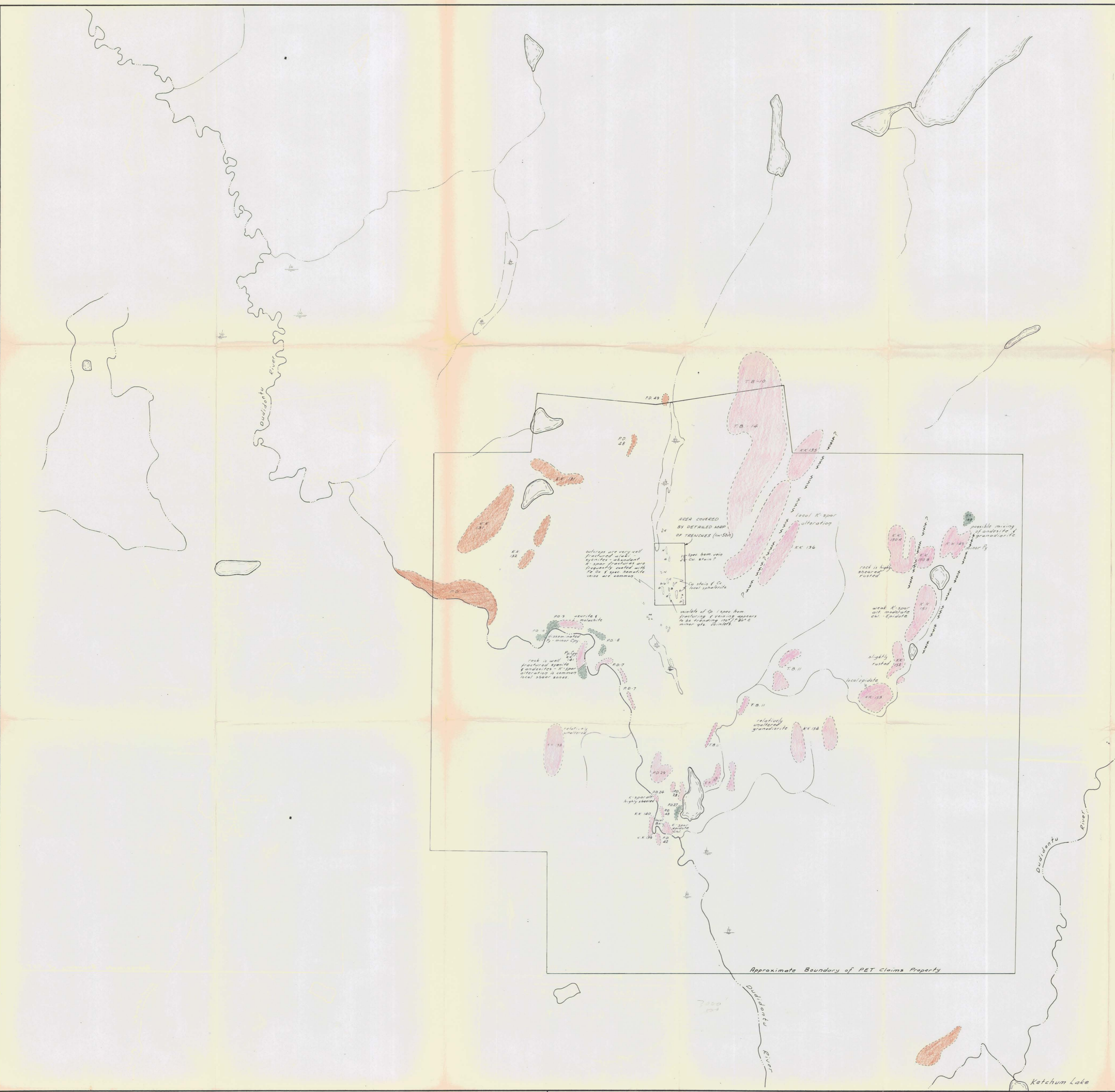
Outcrop	Length	Cu %	Zn %	Mo %	Ag oz/ton	Au oz/ton
A	50'	1.53	.05	.002	.005	.04
B ①	12'	.58	.07	.001		
B ③	12'	.26	.02	.001		
C	30'	.35	.02	.001		
E	18'	.07	.02	.001		
Rock Sample						
C		1.56	.02	.001		

SCALE: ONE INCH = 50 FT.

TEXAS GULF SULPHUR CO.

PET GROUP
TRENCHING & BLASTING

WORK BY	DRAWN BY	DATE
D. KILBY	D. KILBY	SEPT. 20, 1971



LEGEND

- SYENITE to GRANITE
- ANDESITES
- TERTIARY VOLCANIC ROCKS
- OUTCROPS MAPPED ON SCALE 1" = 1000'
- OUTCROPS SKETCHED FROM 1:50,000 SCALE MAP

INSPECTION PRINT

SCALE: ONE INCH = 1000 FEET (APPROX.)

TEXAS GULF SULPHUR CO.

GEOLOGY

AREA OF PET CLAIM GROUP

WORK BY	DRAWN BY	DATE
P. DELANCEY	P. DELANCEY	AUGUST 31, 1971

