

S.E.R.E.M. LIMITED

GEOLOGICAL & GEOCHEMICAL REPORT

ON THE

ROEN CLAIMS

NORTHEASTERN BRITISH COLUMBIA

LIARD MINING DIVISION

58°05' N Latitude

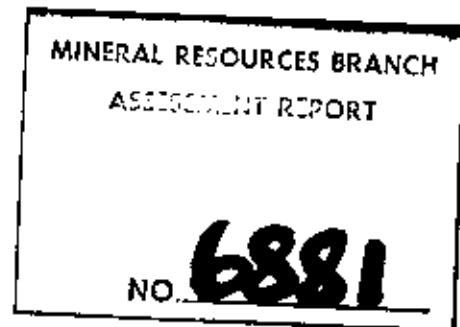
125°00' W Longitude

126°00'

N.T.S. MAP AREAS 94 K, L

by

Peter Tegart



OWNER &
OPERATOR : Serem Limited, 505-850 West Hastings St.,
Vancouver, B.C.

June, 1978

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1. INTRODUCTION

1.1. Summary

This report describes the results of work completed in the Gataga area.

A two man helicopter-supported program geologically reconnoitered, stream silt sampled and evaluated the economic potential of the Devono-Mississippian "Black Clastic" Group centered at South Gataga Lakes in northeastern British Columbia.

Results showed that a regionally baritiferous shale horizon hosts lead-zinc mineralization in the Drift-pile Creek area. The mineralization is claimed by Canex-Placer, and although peripheral areas may contain reasonable showings, none have been found to date.

The Roen #1 and #2 claims were staked to cover anomalous silt geochemical values coincident with barite horizons, but no lead-zinc was found.

1.2. Location and Access

The central point of Devono-Mississippian clastic rocks which were prospected resulting in the staking of the Roen group lie about 190 miles southeast of Watson Lake, Yukon, and about 80 miles due south of Muncho Lake on the Alaska Highway.

A camp was established on the Middle Lake of the Gataga chain which became free of ice on May 19th just before we arrived. Supplies of fuel for the helicopter had been flown into the lake from Muncho Lake the previous month utilizing the ice conditions for bigger payloads. Cost of fuel utilizing this procedure worked out to \$2.62 per gallon, including barrel deposit. Camp gear was flown directly from Watson Lake using a DeHavilland Beaver aircraft. Subsequent supply trips were split-chartered with other companies working in the area. Daily contact with Watson Lake was maintained using the B.C.-Yukon charter frequency.

1.3. Topography

The topography of the belt and area contained within the Roen claims is generally that of rounded mountains and steep sided valleys. Sharply incised creeks drain mountainous areas reaching 7000 feet above sea level.

Stunted spruce and juniper cover north-facing slopes to 4500 feet elevation whereas south-facing slopes are generally free of brush with only dotted trees and some buck brush to make traversing difficult.

Further to the east limestone peaks rise abruptly to in excess of 8000 feet and passes leading to the Alaska Highway are narrow rising to the 5000 foot elevation.

The topography of the belt is generally consistent as far west as the Rocky Mountain Trench.

1.4. Work Performed

Field work in the Gataga Lakes area took place between May 21 and June 18, 1977 and resulted in the staking of the Roen mineral claims. Except for a period between June 1 and June 7 when a delay caused by a pilot change on the helicopter forced the crew to return to Watson Lake, a total of 40 man days was spent.

Work consisted of stream silt sampling for copper, lead and zinc, sampling of gossans for lead and zinc, geologically traversing across the strike of the favourable host rocks to locate the stratigraphic position of the favourable barite beds and examination and sampling of lead and zinc showings.

The culmination of this work resulted in a general understanding for the location and extent of mineralization, its character and grade.

The Roen #1 and #2 claims consisting of 40 units (each unit being 500 meters square) were staked to cover outcropping barite beds with associated coincident geochemically lead-zinc anomalous stream silt values.

The claims were prospected for barite and associated lead-zinc mineralization. A preliminary geologic map was produced from the data collected during these traverses.

RECORD OF ROEN CLAIMS

<u>Name</u>	<u>Record No.</u>	<u>Date of Record</u>	<u>Anniversary Date</u>
Roen # 1	388	June 21, 1977	June 21, 1978
Roen # 2	389	June 21, 1977	June 21, 1978

2. RESULTS

2.1. Geology

Work in the Gataga area focused on a belt of essentially non-calcareous shales, sandstone, gritty greywacke, which has tentatively been assigned an Upper Devonian-Mississippian age (Gabrielse, Dodds, Mansy, Project 700047, Report of Activities, Part A (1977)). No fossils have been found within these strata but the information from sole markings giving north-easterly current directions, underlying Middle Devonian limestone and lithologies strikingly similar to Besa River sediments are overlain by Lower Mississippian carbonates to the west. These strata extend in a narrow belt from the upper reaches of the Kwadacha River to beyond Driftpile Creek to the northwest.

On the basis of stratigraphic mapping to date the Devono-Mississippian "Black Clastic" Group as it is known in the Selwyn Basin can be broken into lower and upper units that correspond respectively to the Canol (Bassett 1961) and Imperial (Hume and Link, 1945) formations of the northern Mackenzie and Richardson Mountains. The lower unit shales contain a high proportion of soft, black bituminous silty shales whereas the upper unit composition is essentially chert clastics and siliceous shales. However, within the lower unit in the Red Creek area chert pebble conglomerate and black massive chert occupy the middle of the lower unit. Barite and pyrite are also intimately associated within this central portion. In addition the lower unit undergoes a marked thickening in the Driftpile Creek area compared to sections measured elsewhere.

In the Gataga Lakes belt of "Black Clastics" a general section begins with a basal thin bedded limy brown weathering siltstone correlatable with the Sandpile Group. About 600 feet of rhythmically interbedded siliceous shales, limy siltstone, fine sandstone and bituminous shales grade into pyritiferous silty shales with massive chert levels as much as 50 feet thick. Chert pebble conglomerate has been noted in this interval but appear as 10 foot thick lenses which could not be traced laterally. As much as 1000 feet of silver weathering laminated shale lie above the basal units. The lower portion of the silver shales contains the massive barite and pyritiferous shales which host galena sphalerite mineralization in the Driftpile area. Although the carbonate content is unknown within this unit, float of limestone weathers out and is found on talus slides in the section.

The upper unit consisting of siliceous brown weathering shales, feldspathic sandstone, chert pebble conglomerate, silty limestone, massive chert and limestone overlies the lower more carbonaceous unit. The siliceous shales overlie the lower unit conformably and grade stratigraphically into feldspathic sandstone and shale. Chert pebble conglomerate found as 20 meter thick lenses are located within this sandstone level. The sandstone becomes less siliceous near the top 500 feet of the section where siltites and bands of silty limestone appear. A massive chert horizon, 130 meters thick, appears abruptly overlying the limestone followed by silty limestone and finally massive limestone which has been assigned a lower Mississippian age

The stratigraphic column for the complete "Black Clastic Group" is represented in Figure # 1.

No microscopic determinations have been made on the silty pyritic shales but these may prove to be tuffaceous as they are in the Canol Formation at McMillan Pass. The bituminous shales within the lower unit suggest that these units were deposited during a quiescent period of sedimentation between periods of uplift and rapid deposition of chert bearing strata.

Except for the chert and chert pebble conglomerate, the lower unit at South Gataga Lakes bears striking similarity to the Canol Formation in the Selwyn Basin. In addition, the type of mineralization and host rock lithology generally correlate with the Tom and Jason deposits at McMillan Pass.

2.2. Barite and Mineralization

The barite horizon appears ubiquitous to the "Black Clastic" Group in the South Gataga Lakes area. The silver weathering shales are caused by tiny concordant barite lamellae dispersed through the black shales. In most localities the lamellar barite may grade to nodular or ovoid forms up to 20 mm diameter with radial internal structure which like the sections in the Selwyn Basin coalesce into coarse to fine laminated beds. The laminations are most often centrimetric alternating black shales and white barite.

In the Driftpile area the thinly laminated lamellar barite which weathers a silver colour has a basal baritic bed some 15 meters in thickness. Individual barite beds thicken to 20 centimeters and are inter-layered by silty pyritic shale horizons up to 10 centimeters thick. The potentially economic Pb-Zn-Ag showings occupy the same stratigraphic interval as the barite. Galena, the most easily identifiable mineral, is barely discernible with a mineral glass in the baritic host. Faint traces of what appears to be slump structures and millimetric cross-bedding can be seen on a fresh surface of galena rich barite. In still other specimens centrimetric bands of pyrite or marcasite can be seen interbedded with barite. Pyrite is always associated with the barite horizons on Driftpile Creek and it imparts a rusty weathering colour to these units when exposed in outcrop.

Quartz can be found in two forms associated with the barite on Driftpile Creek and one other locality to the north. The barite horizon on the Driftpile showings is also cherty and as a result resistant to weathering. Whenever the barite horizon is encountered, silica in the form of remobilized quartz in fractures can be found. This was found to be a good prospecting tool in locating cherty barite horizons.

The mineral sulvanite, a somewhat rare sulphide of copper and vanadium, has been identified in nodular barite from the Driftpile area. The sulvanite has a honey yellow colour and occurs as millimetric grains disseminated in the brown nodular barite.

The barite horizon is generally overlain by a 20 to 30 meter pyritic silty shale which weathers a rusty brown on outcrops. This, in turn, is overlain by the baritic lamellar silver weathering shales.

The mineralized barite horizon on Driftpile may be as much as 15 meters thick. However, a measured section of siliceous barite north of Driftpile gave a stratigraphic thickness of 150 meters but was void of any sulphides including pyrite. Barite is suspected in more than one stratigraphic level within this horizon measured on Red Creek. But isoclinal folding or thrust faulting may have repeated the same bed more than once. No detail work was performed to solve this problem. Individual nodules of barite measuring over 5 cm in diameter were found in a bed located southwest of Joe Poole Creek.

Sulphide mineralization including pyrite associated with barite appears to be confined in aerial extent to Driftpile Creek drainage with little or no economic lead-zinc-silver found outside a radius of 5 miles from the main showings.

2.3. Geology of the Roen Group

The Roen # 1 and # 2 claims were staked to cover pyritiferous barite horizons north of Driftpile. Isoclinal folding and thrust faulting have complicated the geologic mapping of the area. Preliminary prospecting yielded barite containing disseminated pyrite but no recognizable sulphide of galena or sphalerite were located to date.

The Roen claims lie within a structurally complex area involving either a reverse or thrust fault placing older Sandpile Group (unit 2) on the west next to Devono-Mississippian Black Clastics on the east. Attitudes to bedding were found to be extremely erratic and the interpretation shown on Figure # 6 (Geology of the Roen Group) can only be described as preliminary at best.

Within the area of the Roen claims the lower unit corresponding to Unit 3 on Map # 1 is subdivided into two separate lithologic units. Unit 3a contains the pyritiferous barite near the top of the succession, underlain by black carbonaceous chert lenses, chert pebble conglomerate and limestone. This sub-unit is believed to contain the favourable stratigraphic level for lead-zinc mineralization in the barite although none was found.

Unit 3a is overlain by black, silver, in part rusty weathering silver to fine black pyritiferous graphitic shales of Unit 3b.

The favourable areas of barite with associated pyrite are shown on Figure # 6 and is believed to represent the top of subunit 3a. The structural and lithologic interpretation shown on Figure # 6 suggests that the favourable Unit 3a may extend along the flanks of the anticlinal-synclinal trend for the full length of the property.

The major anti-form to the northeast of the Roen claims as shown on Figure # 6 contains the known lead-zinc mineralization on Driftpile Creek.

2.4. Stream Silt Geochemistry

A total of 154 stream silt samples were collected utilizing a helicopter and traversing by foot in valley bottoms. The samples were analysed for copper, lead and zinc using a hot aqua regia acid extraction and atomic absorption measurement to give results in p.p.m. The results were statistically analysed using Lepeltier's method of plotting the lognormal distributions.

Results of the lognormal distribution showed that one population exists for copper, lead and zinc for the "Black Clastic" Group. The mean, first confidence interval of 68 percent and second confidence interval of 95 percent were performed on the results.

The mean, anomalous and threshold values are listed below:

	Mean	Above 68% Confidence Level Anomalous	Above 95% Confidence Level Threshold
Copper	33	51	76
Lead	28	44	98
Zinc	900	2060	4500

The values for lead, zinc and copper are plotted on Map # 2.

Anomalous creeks generally confirmed the prospecting and geology results. Driftpile Creek was definitely anomalous. The drainage due north of Driftpile and covered in part by the Roen claims is anomalous. The Red Creek area south of Driftpile was mildly anomalous as was the drainage from the northeastern most part of the belt.

An unexpected high set of zinc values from in situ gossans formed over feldspathic sandstone horizons was found to be caused by possible microscopic sphalerite grains disseminated in the sandstone.

Streams draining the area of the Roen #1 and #2 claims gave some of the highest values for lead and zinc from the whole survey. Pyritic and barite horizons outcrop on the east side of the valley, however, no sulphides of lead and zinc have been found to date to explain the anomalous values.

3. CONCLUSIONS AND RECOMMENDATIONS

Lead and zinc mineralization found to date in the South Gataga Lakes appears to be confined to the Driftpile Creek area. Considering the best grade of 10 percent combined lead-zinc across a stratigraphic interval of less than 5 meters would place the showings in the marginal category at this time. However, additional work may prove a large lateral continuity making the Driftpile showings economic in the future.

The possibility of economic mineralization outside of the Driftpile Creek area appears small in view of the diminishing pyrite content in the barite horizon outside of this area.

The Roen #1 and #2 claims lie on the margin of the Driftpile pyrite halo and therefore a detailed examination of the claims would be in order to determine their economic potential.

The geochemical silt sample results from the Roen claims in comparison to the Gataga results from Devono-Mississippian rocks in general make it obvious that more work is required on the claims.

Peter Tegant

COST STATEMENT

WAGES

P.F. Tegart May 21 - 31/77, June 8 - 18/77 22 days @ \$125.00*	\$ 2,750.00	
Ken Ralfs May 21 - 31/77, June 8 - 18/77 22 days @ \$116.67*	2,566.74	
Joe Tucker June 8 - 18/77 11 days @ \$68.10*	749.10	\$ 6,065.84

* includes all company benefits and bonuses

TRANSPORTATION

Fixed-wing aircraft	\$ 4,816.10	
Helicopter	15,225.00	
Fuel and Oil	2,472.31	
Freight	203.68	
Truck Rental	144.01	
Airline (CP Air) Vancouver-Watson Lake, Fort Nelson - Vancouver	223.85	23,084.95

ASSAYS

837.58

CAMP COSTS

Room & Board, May 21-31/77, June 8-18/77 55 man days @ \$20.00	\$ 1,100.00	
Field equipment	231.22	
Expediting	183.57	1,514.79

TOTAL \$31,503.16

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Peter Tegart

Explanation of Costs to be Credited
as Assessment Work on the Roen Claims

The Roen claims were staked, prospected, geologically mapped and assessed in conjunction with a regional geochemical and prospecting program along a 30 mile belt of Devonian-Mississippian Black Clastic rocks in the Gataga Lakes area of northeastern British Columbia.

Total costs for this program are recorded as \$31,503.16 in this report. Because work on the Roen claims represents only a portion of the expenses incurred during this program, we are attempting to credit the Roen claims with \$8,000.00 worth of assessment which we feel represents a just portion of total costs on the Gataga Project as a whole.

Indirect costs on the Roen could have been kept lower by camping on the claim group instead of Gataga Lake, 15 miles to the south, but the added knowledge of geologic sections off the claims helped in assessing the potential and sorting out the complicated stratigraphy on the Roen claims.

It is the purpose of this brief explanation to allow Serem to credit the Roen claims with \$8,000.00 in assessment by taking a fraction of the total expenses spent on the regional program.

Peter Tegart

Peter F. Tegart,
Geologist

STATEMENT OF QUALIFICATIONS

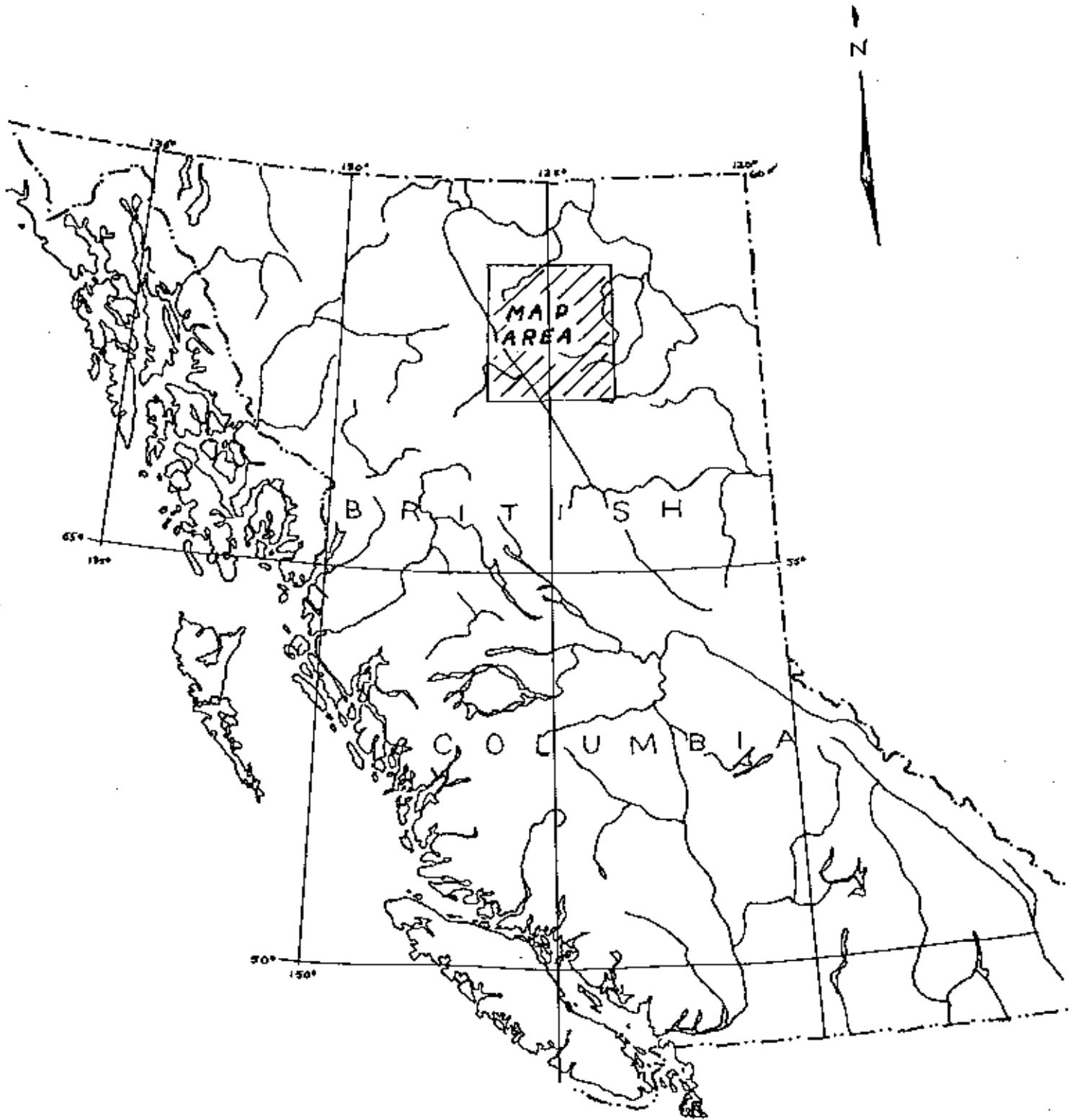
I, Peter F. Tegart of North Vancouver, B.C., hereby certify that:

1. I am a geologist employed by Serem Ltd., with offices at #505 - 850 West Hastings Street, Vancouver, B.C.;
2. I graduated from the University of British Columbia in 1971 with the degree of Bachelor of Science in Geology;
3. I have worked as a geologist in mineral exploration since 1971;
4. I personally conducted or supervised the work on which this report is based, and wrote the report.

Respectfully submitted,

Peter Tegart

Peter F. Tegart, Geologist
North Vancouver, B.C.
July 5, 1978



SEREM LTD.

LOCATION MAP

Scale: 1" = 100 miles

figure # 1

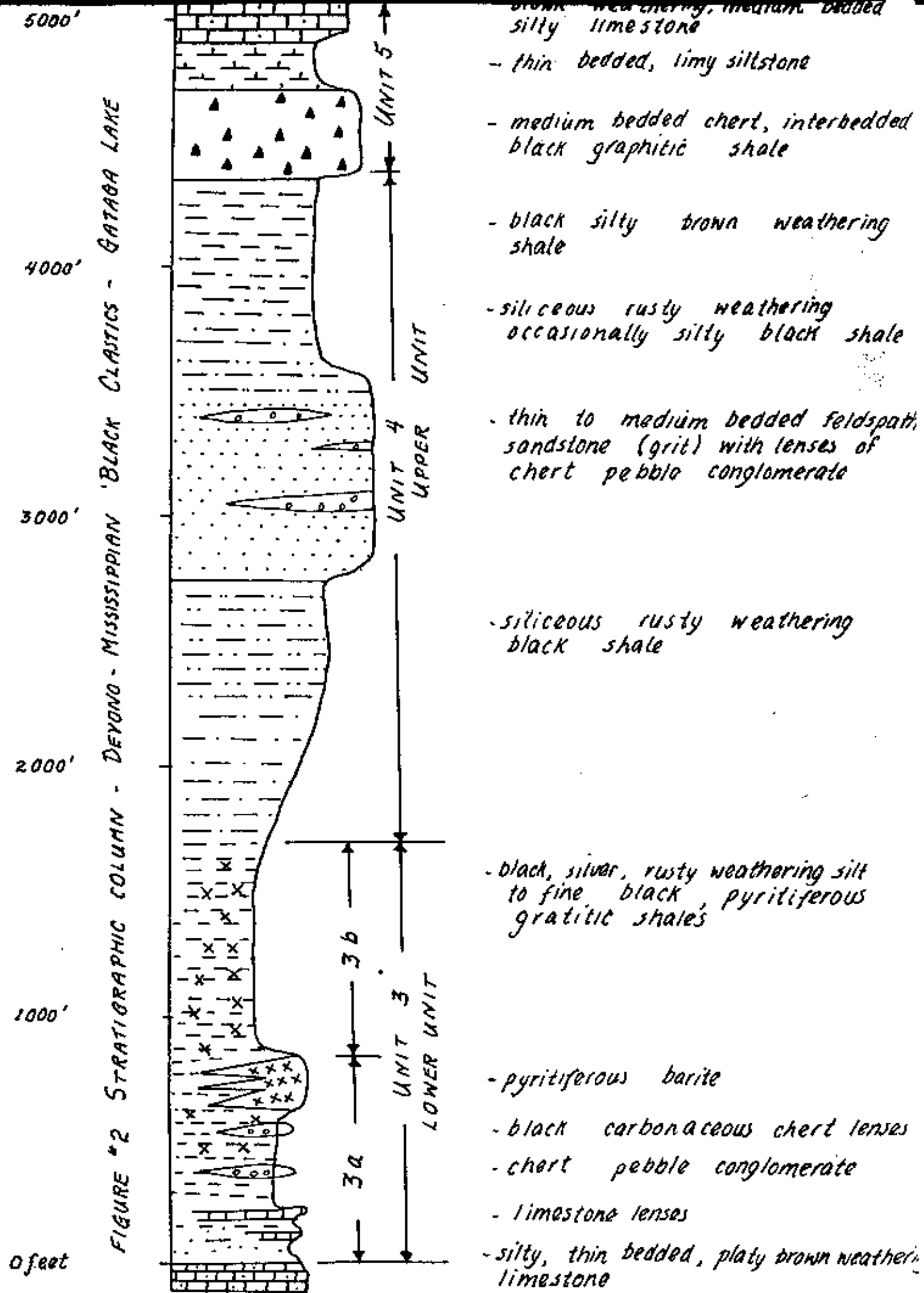


figure #2

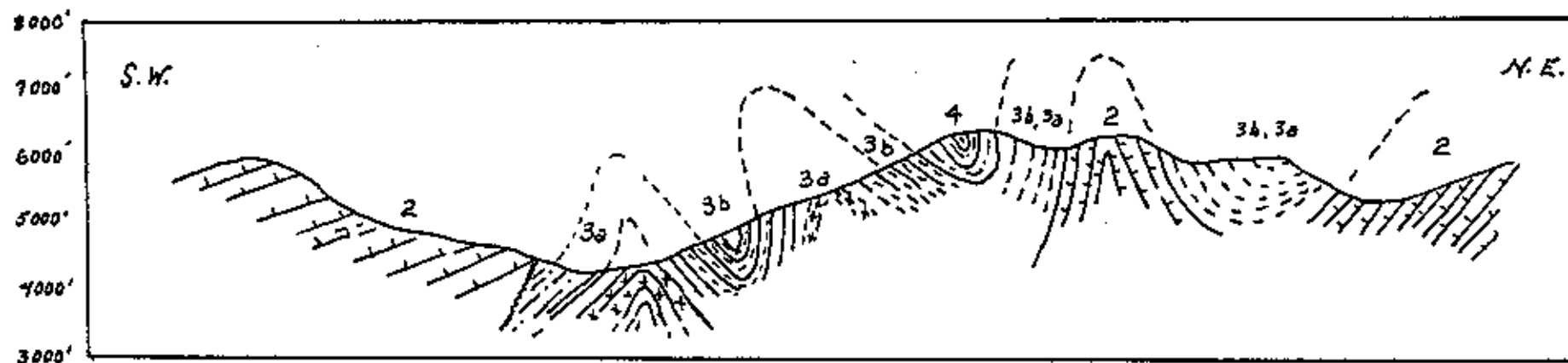
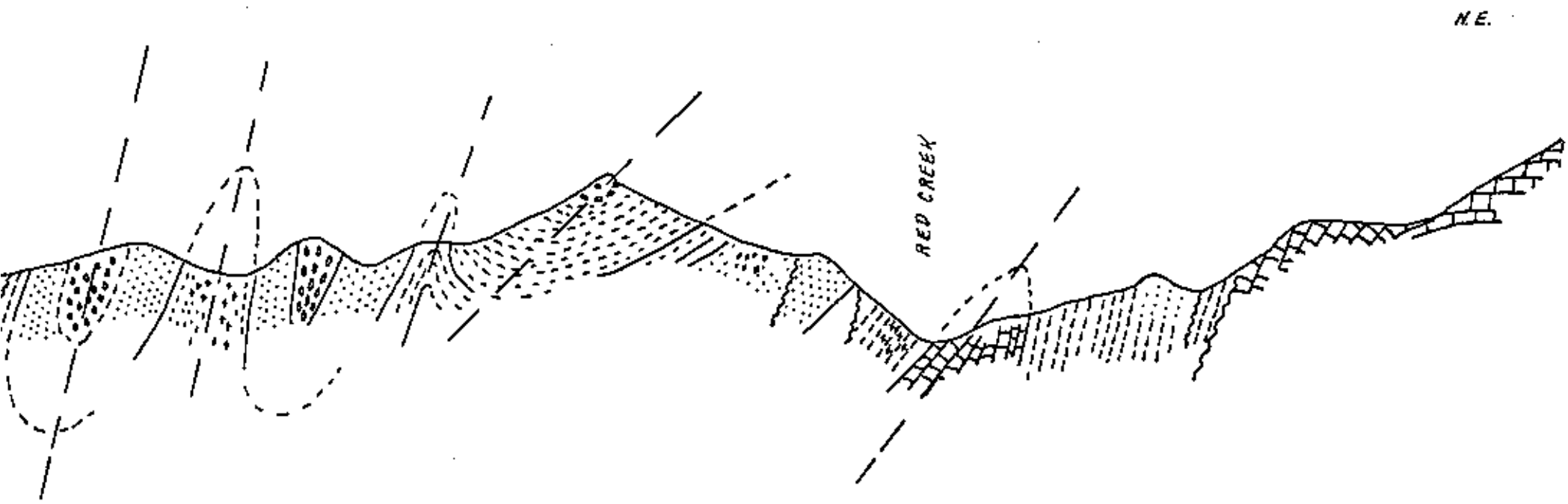


FIGURE #3 SECTION A-A' NORTHWEST OF DRIFTPILE CREEK - ROEN CLAIMS



SECTION B-B'

NORTHWEST OF SOUTH GATAGA LAKES

RED CREEK

N.E.

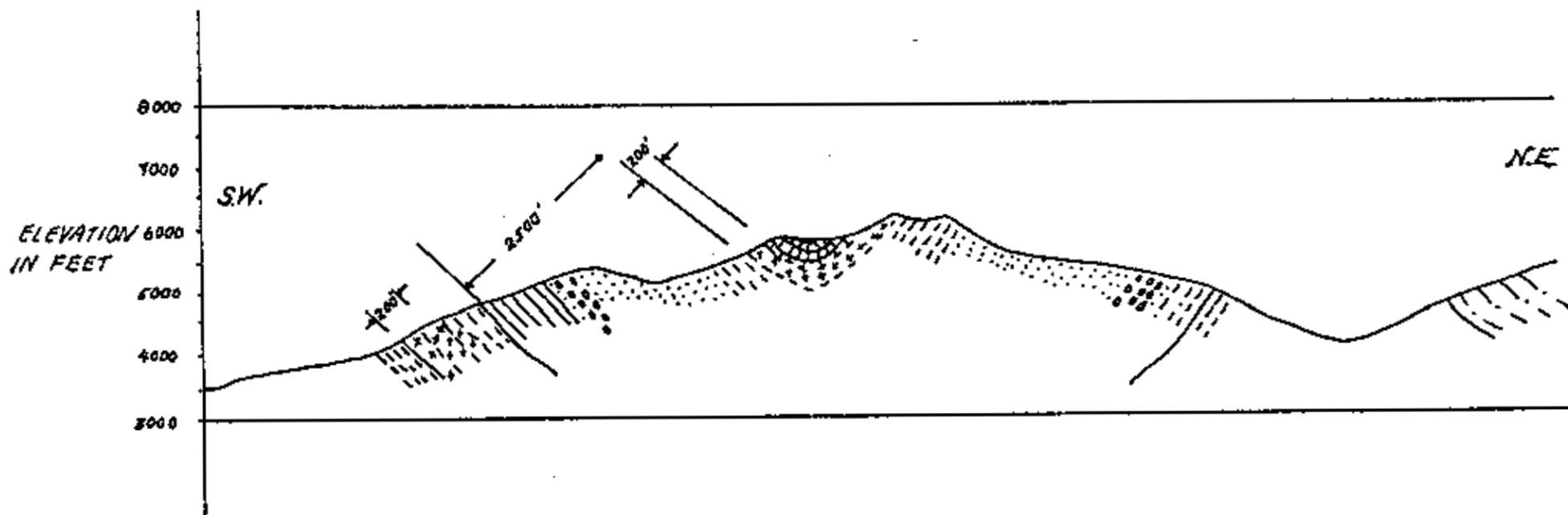
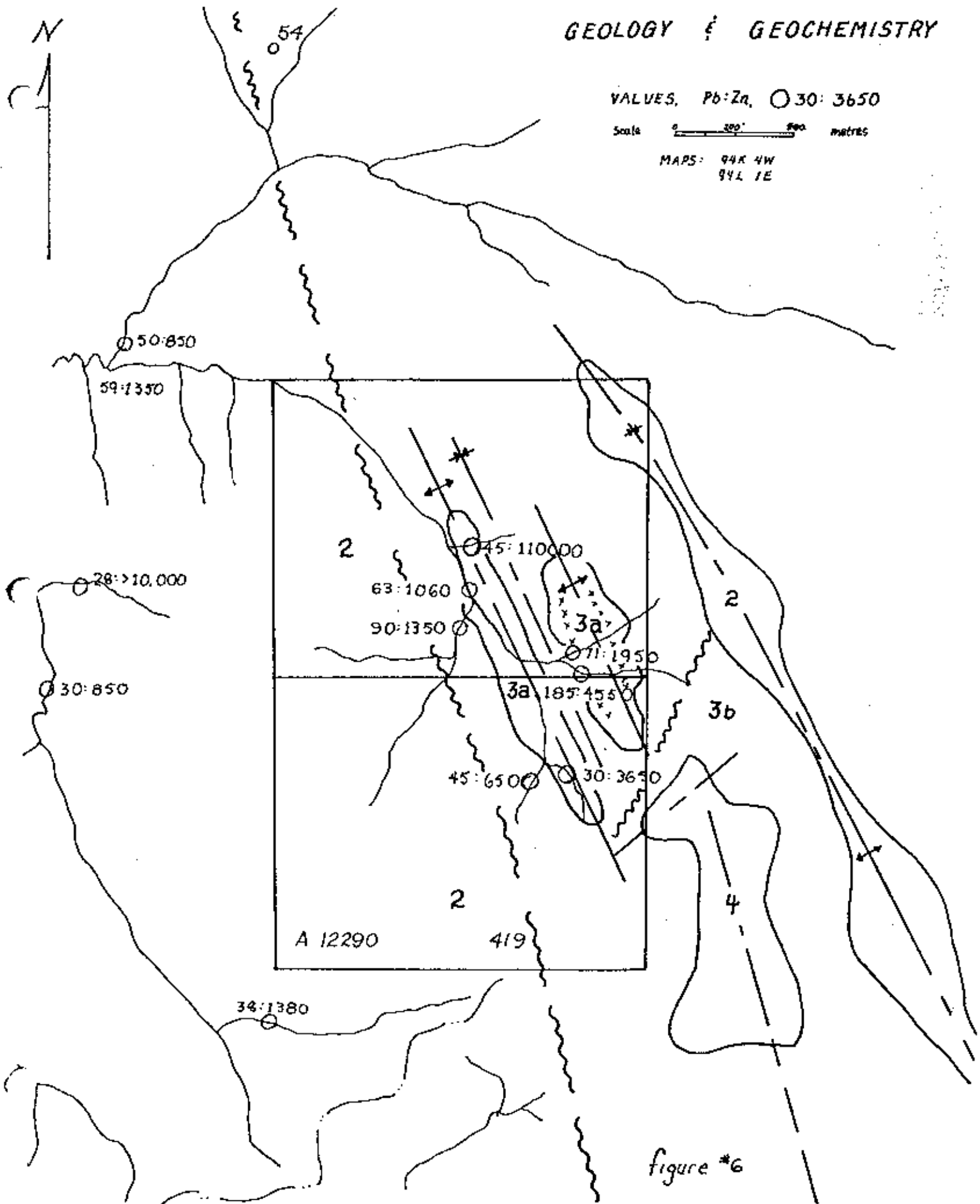


FIGURE 5 SECTION C-C' BETWEEN JOE POOLE CREEK & WAINFORD RIVER

ROEN CLAIMS

GEOLOGY & GEOCHEMISTRY



GATAGA PROJECT

GEOLOGY

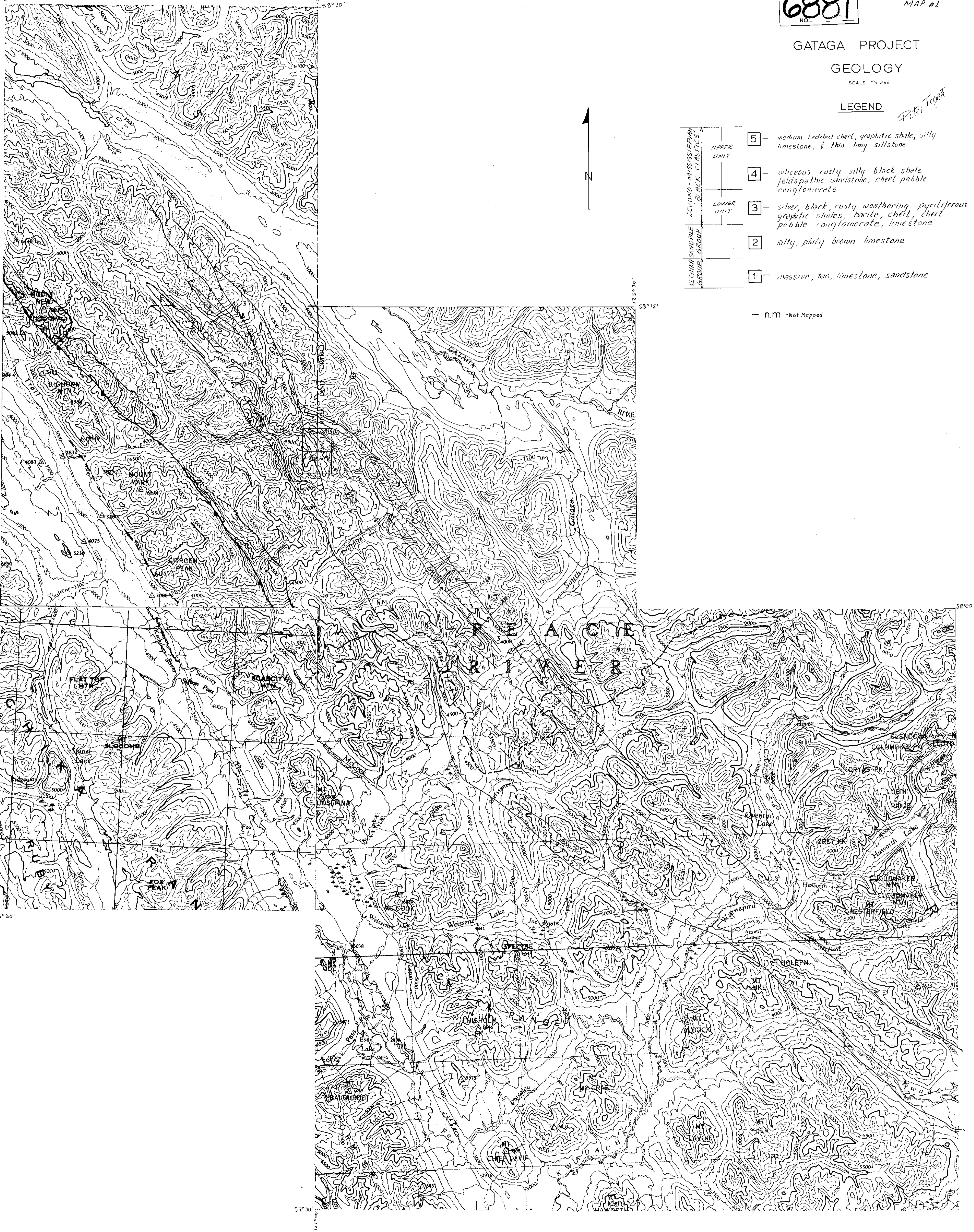
SCALE: 1" = 2mi.

LEGEND

Peter Tegoff

DELOWO - MISSISSIPPIAN BLACK CLASTICS	UPPER UNIT	5 - medium bedded chert, graphitic shale, silty limestone, & thin limy siltstone
	LOWER UNIT	4 - siliceous rusty silty black shale, feldspathic sandstone, chert pebble conglomerate
TECHUKA SANDRILE GROUP		3 - silver, black, rusty weathering pyritic graphitic shales, barite, chert, chert pebble conglomerate, limestone
		2 - silty, platy brown limestone
		1 - massive, tan, limestone, sandstone

- N.M. - Not Mapped



GATAGA PROJECT GEOCHEMISTRY

SLT SAMPLE LOCATION ○ LEAD-ZINC (ppm)

SCALE: 1" = 2 mi
JUNE, 1977

Plat. Tiquit

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
6881
NO. _____

