

PROPOSED OGILVIE PROJECT - 1974General

During 1972 and 1973, several significant zinc-lead discoveries were made in the northeastern margin of the Selwyn Basin, near the Yukon-N.W.T. border. The most important of these are:

<u>Company</u>	<u>Location</u>	<u>Miles from Ross River</u>
(1) Canex Placer	near Summit Lake	100 ENE
(2) Welcome North	Godlin Lakes area	170 NE
(3) Barrier Reef	near Bonnet Plume Lake	170 N

While the mineralogy and setting vary from one to another, these occurrences have several similarities. They are mainly associated with Cambrian, Ordovician or middle Devonian dolomitized limestones or their adjacent shale equivalents, and all seem to have a structural control, i.e. collapses or fault brecciation, tensional faulting or local folding. In every case, zinc is more abundant than lead and the surface showings are relatively inconspicuous because of a low iron content which inhibited gossan formation.

From the standpoint of exploration significance, the new discoveries are important for three reasons, irrespective of whether or not they prove economic:

- (1) they have most of the characteristics of major stratabound zinc-lead deposits
- (2) they are the initial discoveries in their respective areas and were found relatively easily through prospecting and geochemical sampling by the first field crew shrewd enough to look in the right area.
- (3) Most experts agree that the development of two more zinc deposits as large as Anvil's Faro Mine would justify the construction of a northern zinc smelter, which would in turn help the economics of smaller deposits.

Project Area

Published GSC maps indicate that rocks favourable for hosting stratabound zinc-lead deposits form a belt which continues northwest and west for hundreds of miles from the area of the recent discoveries. The quality of published maps decreases in this direction, with some areas recently mapped and not

yet available on 4 mile scale and the portion north of 65° available only on 16 mile scale. The northern end of the belt as it curves westward towards Alaska between Latitudes 65°N and 66°N is also virtually unexplored by the mineral industry. Previous work consists of reconnaissance mapping by government and oil geologists, airborne gossan prospecting by mineral exploration crews and sporadic prospecting for sulfide float by trappers and big game outfitters. The recent northern discoveries and the Robb Lake discovery in 1971 have proven that substantial surface showings can be easily overlooked in this fashion because of the little effort spent on the favourable areas and the difficulty in recognizing the pale oxides and carbonates of zinc and lead.

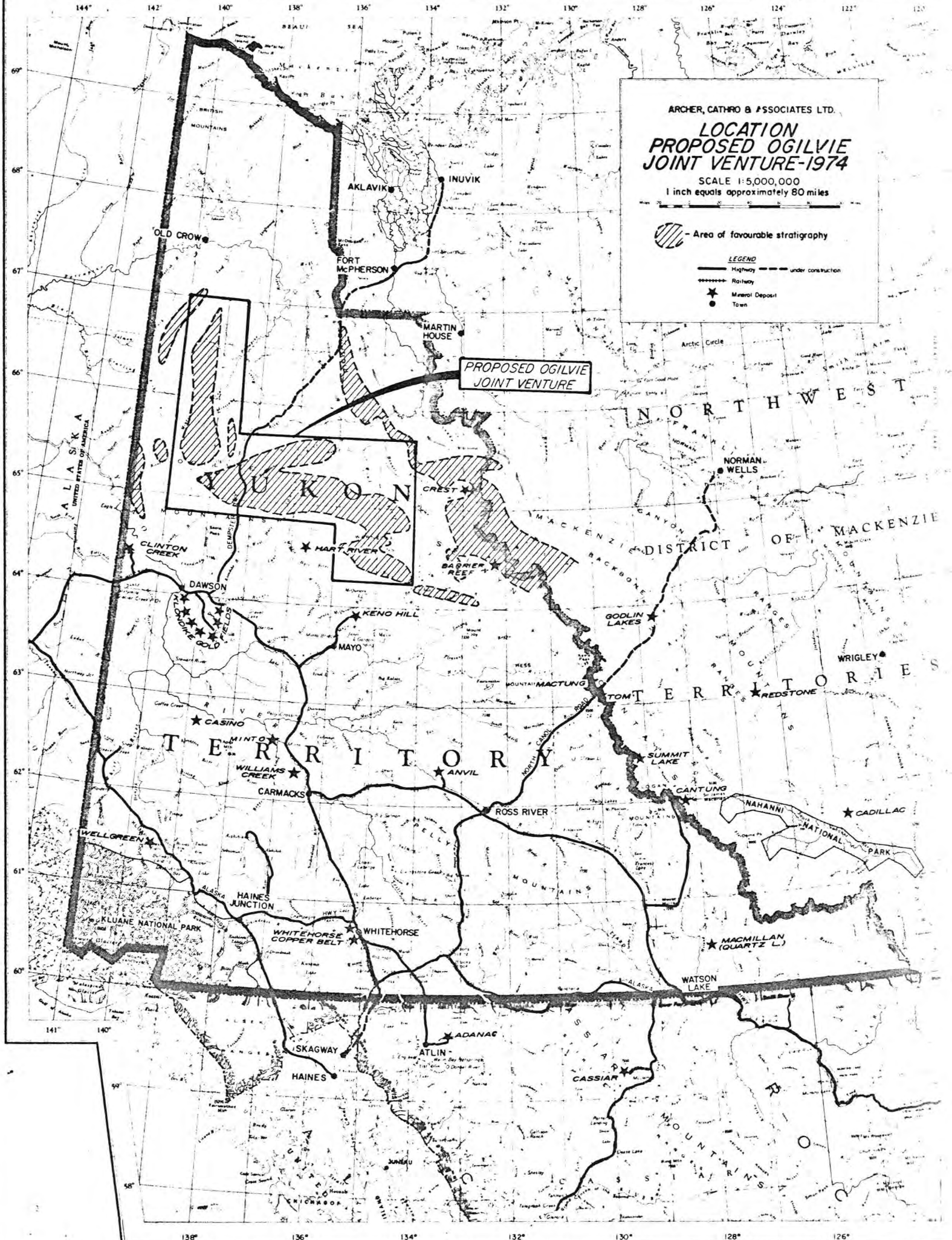
A quick review of published literature suggests that between 64° and 67°N latitude, at least 10,000 square miles are underlain by rock units correlatable with the host units near the recent discoveries. This is obviously an unrealistic exploration target and the Ogilvie Project will try to select smaller areas within this region which appear to have the highest potential, and explore them using (1) geologist-prospectors familiar with northern conditions and these types of deposits, and (2) with geochemistry. The selection of the target areas will be based on discussions with the GSC in those areas that have not yet been published at 4 mile scale and a review of all available references that deal with stratigraphic correlation, including reports filed on nearby oil permits.

A major cratonic fracture (Peel Lineament) transects the project area and may have some relationship to the metallogeny of the region. It extends from the Yukon-N.W.T. border at 66°N to the Yukon River at 65°N, more or less following the Peel and Ogilvie Rivers. It separates the main northwest to west trending arc of the eastern cordillera through the Mackenzie and Ogilvie Mountains from the northerly trending Richardson Mountains and Nahoni and Keele Ranges. To the southwest the Peel Lineament appears to terminate on the Tintina Trench while it disappears under the Mackenzie River valley to the northeast. Somewhat similar transverse crustal lineaments have been recognized in B.C. and are related to belts which contain clusters of mineral deposits. None of the B.C. tectonic features has exerted the same degree of distortion to the regional cordilleran trends that is evident along the Peel Lineament.

Exploration Technique

The Barrier Reef discovery coupled with the swing of mineral exploration from British Columbia to Yukon is almost certain to result in a high level of activity in the project area. It will be essential to cover the most favourable portions as quickly as possible. During the first six weeks of the project (May 15 to June 30) approximately 8 helicopter hours will be used per day to (a) scout ahead to locate areas of carbonate or carbonate-shale sequences (b) silt sample drainages and (c) traverse favourable


units and follow-up on anomalous geochemical values. The silt sampling will be done with a single landing near each creek rather than by traversing on foot. This will allow examination of some 30-50 drainages per day to provide a rapid screening for large obvious deposits such as the Barrier Reef discovery. The high helicopter usage, particularly the large number of landings, will require two helicopter pilots working alternative days during this period. The final portion of the project (July 1 - Sept.1) will consist of prospecting traverses, backed up by close spaced silt sampling, in favourable areas outlined by the initial work and/or property evaluation if claims have been staked. Helicopter usage during this period will drop to five hours per day which can be done with one pilot.




ARCHER, CATRO & ASSOCIATES LTD.

**LOCATION
PROPOSED OGILVIE
JOINT VENTURE-1974**

SCALE 1:5,000,000
1 inch equals approximately 80 miles

 Area of favourable stratigraphy

LEGEND

-  Highway
-  under construction
-  Railway
-  Mineral Deposit
-  Town

**PROPOSED OGILVIE
JOINT VENTURE**

YUKON

**NORTHWEST
TERRITORIES**

DISTRICT OF MACKENZIE

TERRITORIES

TERRITORIES

**WHITEHORSE
COPPER BELT**

**NHANANI
NATIONAL PARK**

SKAGWAY

**CASSIAR
MOUNTAINS**

138° 136° 134° 132° 130° 128° 126°

Budget For
Proposed Ogilvie Project

Four man crew and senior supervision with contract helicopter

Helicopter

-660 hours contract rental Bell G3-B1 (at \$130/hr for the first 360 hours and \$110/hr for each hour after) including cost of fuel \$ 90,000.

Labour

-Four field men (including two geologists) plus senior supervision 39,000.

Fixed Wing

-Mobilization of 220 drums avgas, camp moves and supply trips 18,000.

Field Expenses

-Camp and field equipment, consumable supplies, crew travel and living expenses while in Whitehorse 12,000.

Assaying

-Geochemical and rock 18,000.

Office

-Includes drafting, printing and duplicating, telephone, general supplies and air express for soil samples 6,000.

Freight and Expediting

-Includes rental of 4 wheel drive truck for the summer 9,000.

Management

-At \$1,500/month over twelve months 18,000.

\$210,000.

Schedule of Charges
For
Proposed Ogilvie Joint Venture

Management

\$1,500/month on a twelve month basis for a total of \$18,000. This includes all time spent on the project, either office or field, by A.R. Archer or R.J. Cathro.

Supervision

Parttime supervision during the four month field season at rate of \$150/day for senior geologists. No more than 40 days total-year charged to project unless work enters a property development phase.

Labour

Salaries - charged at direct salary plus 50% (our firm pays Canada Pension Plan, Workmen's Compensation, Unemployment Insurance, holiday pay, etc.).

Expediting - charged at flat rate of \$700/month during the four month field season. This includes expeditor's time, use of truck in Whitehorse area, use of and monitoring of office two-way radio link to field and parparation of geochemical samples for shipment.

Drafting - \$9/hour (includes all supplies)

Other Services

Radio - if the field radio is supplied by Archer, Cathro the charge is \$150/month while in use.

Xerox - 20¢ per copy

Room & Board - student room and board supplied by Archer, Cathro in Whitehorse charged at \$17/manday (there is no charge for room and board of principals or associates).

Workmen's Compensation Aviation Premium - charged at cost, which is \$2.70/hour for each hour a crew member flies in a helicopter, \$1.80/hour for each hour in a single engine fixed wing and \$0.90/hour for each hour in a multiengine fixed wing aircraft.

Expenses - charged to project at direct cost and supported by appropriate invoices. Price deductions recieved by suppliers for high volume are credited back to the project.

Responsibility and Insurances - Archer, Cathro assumes all direct and indirect responsibility for the project during the exploration phase and carries, at no cost to the project, all appropriate liability insurances.

Summary of Form of Agreement to be Prepared For
1974 Ogilvie Joint Venture

- (1) The agreement will be in Joint Venture form and the project will be called the Ogilvie Joint Venture.
- (2) The 1974 budget and each participant's contribution to the budget and resulting interest in the project is outlined.
- (3) Archer, Cathro will retain a 2 per cent interest in the Joint Venture but is not required to contribute financially to the project or in the development of properties to earn its interest. The interest will constitute 2 per cent of net profit in each and any company formed by the Joint Venture to exploit any discoveries and can be purchased by the company for a negotiable sum not to exceed one million dollars or can be paid out of profits.
- (4) The 1975 exploration budget (assuming the project continues beyond the first year) will be divided into exploration and property development portions. Each participant's interest in each portion will be proportional to its contribution in an interest equivalent to its 1974 interest. Should any participant elect to decrease its interest, the other participants will have first right to obtain such interest. Should any participant terminate expenditure in 1975, that participant will retain no interest in the properties that were acquired by the Joint Venture in 1974.
- (5) Should any participant elect to decrease or terminate its interest after 1975, it will retain an interest in the properties developed by the remaining participants in proportion to the total final expenditure. For example if participant 'A' provides \$30,000. in 1975 and then withdraws from the Joint Venture, and a mine is subsequently brought into production at a total expenditure of three million dollars, participant 'A' will retain a 1% interest in the mine.
- (6) Archer, Cathro will be managers of the Joint Venture in 1974 and will remain managers as long as elected by the participants. A management committee composed of one representative from each participant and Archer, Cathro will be formed to regulate the project and will meet, as required, during the life of the Joint Venture. Archer, Cathro will not have voting privileges within the management committee.
- (7) The managers of the Joint Venture will submit a prospective work program to the participants by December 15, of 1974, and each subsequent year. This work program will be ratified (and modified by the participants by mutual agreement if so desired) by the management committee within six weeks and such program will establish the level of expenditure for the following year.
- (8) All mineral claims or properties will be held in the name of Archer, Cathro on behalf of the Joint Venture. Archer, Cathro will not undertake exploration work for others in the area of interest without consent of the participants. The area of interest will be defined on a map attached to the agreement.

- (9) Each of the participants will be free after April 1, 1975 to independently prospect or acquire mineral claims within the area of interest as long as such claims are not within two and one half miles of claims held by the Joint Venture, or as long as they are not within areas specifically stated to require further work in 1975.
- (10) The manager of the Joint Venture will assume all damages, liabilities, etc., arising from the regional exploration phase of the Joint Venture.

Summary of Exploration Method
Proposed Ogilvie Joint Venture

Pre-Planning

- (1) Airphotos ordered and catalogued.
- (2) Base map preparation started.
- (3) Complete literature search undertaken and all available geological data compiled.
- (4) Location of main base areas established and fuel mobilized to field before break-up (if necessary).
- (5) Land use application made.

Start-Up

- (1) Field crew assembled in Whitehorse.
- (2) Senior personnel study data compilation and work on airphoto interpretation.
- (3) Junior personnel assemble field equipment and complete base map preparation.

Field Technique

- (1) The crew, consisting of a helicopter pilot, helicopter mechanic and four field men (6 man total) work from base camps that are moved at two or three week intervals. Whenever possible, camps are located on lakes, rivers or bush airstrips in order that service trips can be made with fixed wing aircraft rather than helicopter.
- (2) The party chief will use the helicopter during the day to (a) scout the project area for favourable carbonate-shale sequences and obtain wide space silt sampling coverage of them (b) select areas for ground traverses by the field crew and (c) examine mineralized areas found by the field crew and explore high priority geochemical targets.
- (3) For ground traverses, personnel are set out by helicopter in the morning and picked up at a designated point in the evening. Each man works independently using airphotos for navigation and note taking. Traverses are usually designed to collect silt samples from drainages that cut across the stratigraphy. Reconnaissance soil sampling and prospecting traverses are done over geologically favourable areas that are poorly drained.
- (4) Each field man and the crew chief completes a standard traverse form in the evening which illustrates the area covered, location of geochemical and rock samples, comments on geology and geomorphology and any other observation considered pertinent. An example of a completed traverse form is attached.
- (5) The camp is equipped with an ultraviolet lamp, geiger counter and binocular microscope and all rock samples are routinely tested for radioactivity and fluorescence.
- (6) Geochemical samples are collected in standard prenumbered kraft bags and hung in camp to dry. All accumulated samples and traverse sheets are sent to Whitehorse on the return of each service trip.

Whitehorse Office

- (1) A twice daily radio schedule is maintained with the field camp.
- (2) Geochemical samples are sorted, packaged and air expressed to Vancouver when received from the field. These are picked up at the airport by Chemex Labs Ltd., North Vancouver and analyzed by atomic absorption spectrometry of a nitric-perchloric extraction. Anomalous results are telephoned by Chemex to the Whitehorse office (usually within 7 days of shipment, but faster on special request) and values of interest can be relayed to the field during the daily radio schedule if necessary.
- (3) A xerox copy of the traverse sheets sent from the field is returned in order that both the Whitehorse office and field crew can study the geochemical results independently.
- (4) Field data is plotted on base maps in the office on a regular basis.
- (5) Progress reports are prepared at regular intervals.
- (6) A separate bank account is established for the project and financial statements are prepared from time to time.

Post Field

- (1) At the conclusion of the field season, high-value equipment is returned to Whitehorse for storage.
- (2) Senior personnel are retained in Whitehorse until field reports and raw data organization is complete.
- (3) Final drafting and report preparation is completed at the Vancouver office during the period September to November.

Project FJV

Date JULY 12 1973

Sampler STYAN

Silt - X, Soil - ●

Rock - ◻, Pan - ▲

NW	N	NE
W	C	E
SW	S	SE

sample numbers E 8432 - 8445

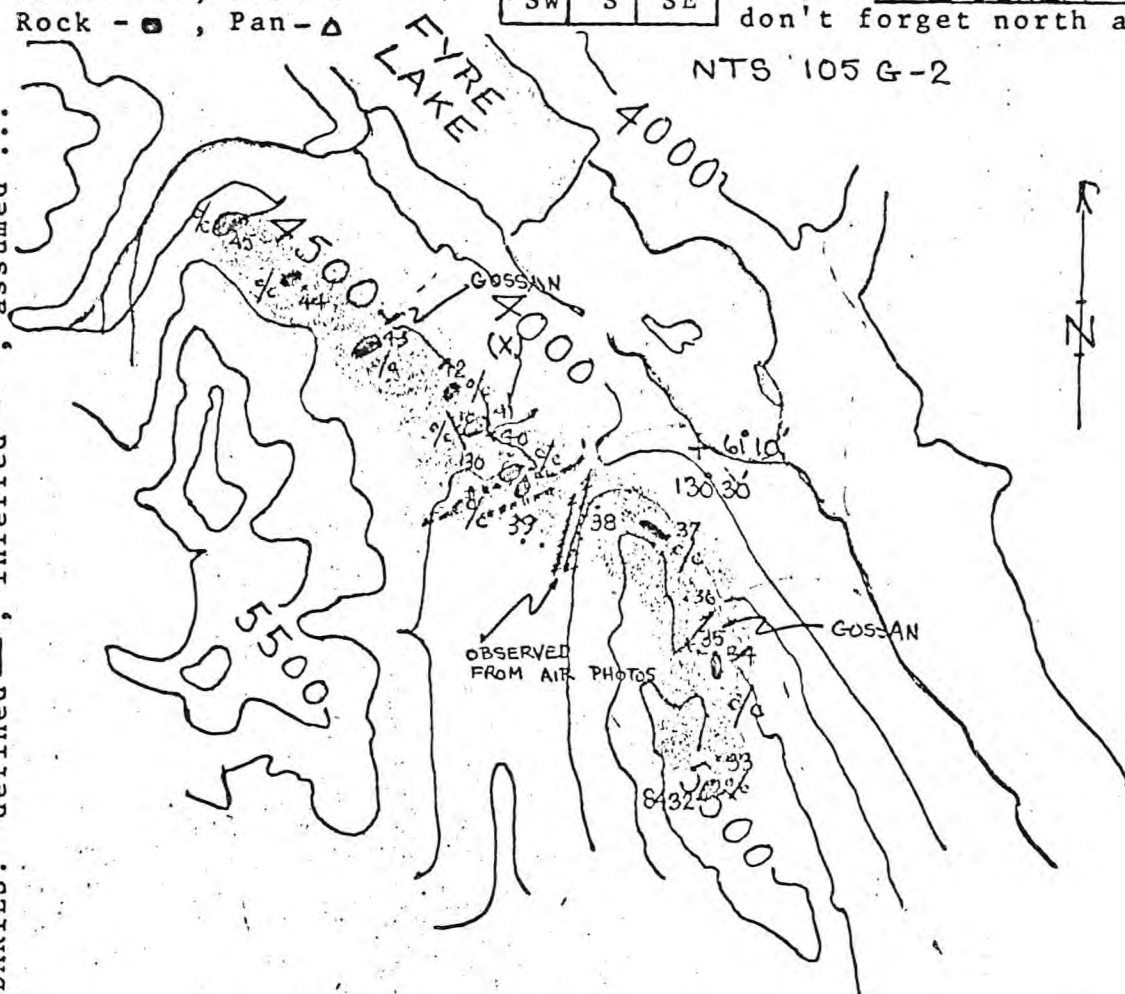
air photo numbers A 12189 - 235 (233)

targets GEOCHEM & PROSPECTING

don't forget north arrow

NTS 105 G-2

show contours, drainage, north arrow, all samples: old workings, gossans, cabins, or trails -- is there any intrusive or volcanic outcrop or float not shown on available maps. GEOLOGIC BOUNDARIES: defined —, inferred --, assumed ...



UNIT C : MUSCOVITE GNEISS ; MUSCOVITE , HORNBLLENDE GNEISS
MINOR QUARTZ VEINS (TOURMALINE PRESENT), MINOR
LIMONITE STAIN

INTRUSIVE: DIORITE , QUARTZ MONZONITE , MEDIUM GRAINED.

THE TRAVERSE BEGAN IN A MEDIUM GRAINED INTRUSIVE. (QUARTZ MONZONITE - DIORITE) A GOSSAN NEAR # 8435 APPEARED TO BE A LIMONITE COATING PROBABLY A RESULT OF A FAULT ZONE. THE ROCK HERE APPEARED TO BE FINER. FLOAT IN THIS CIRQUE WAS THE HOST ROCK PLUS ULTRAMAFICS. GNEISS FLOAT GRADUALLY BECAME COMMONER TOWARDS #8437 AND DOMINATED THE CREEK AND AREA PAST # 8439

BETWEEN # 8439 AND # 8440 THE ROCK TYPE CHANGES. TOPOGRAPHY SUGGESTS THE INTRUSIVE IS FAULTED AGAINST UNIT C. ROCKS IN THE AREA WERE FINE GRAINED WITH LARGE FELDSPAR PHENOCRYSTS AND MUCH MUSCOVITE. QUARTZ VEINS THOUGH CLEAN APPEARED IN GREATER NUMBER. A ROCK OF UNKNOWN ORIGIN (X) APPEARED AS FLOAT HERE. IN UNIT C, AT # 8443, ANOTHER GOSSAN PROVED TO BE SIMILAR TO THE EARLIER MENTIONED ONE AT # 8435. MINOR ULTRAMAFICS WERE FOUND IN UNIT C AS WELL.

NO MINERALIZATION WAS FOUND

rock types SEE ABOVE

Project FJV

Date July 11/73

Sampler E.W. JENSEN

Silt - X, Soil - \odot

Rock - \square , Pan - \triangle

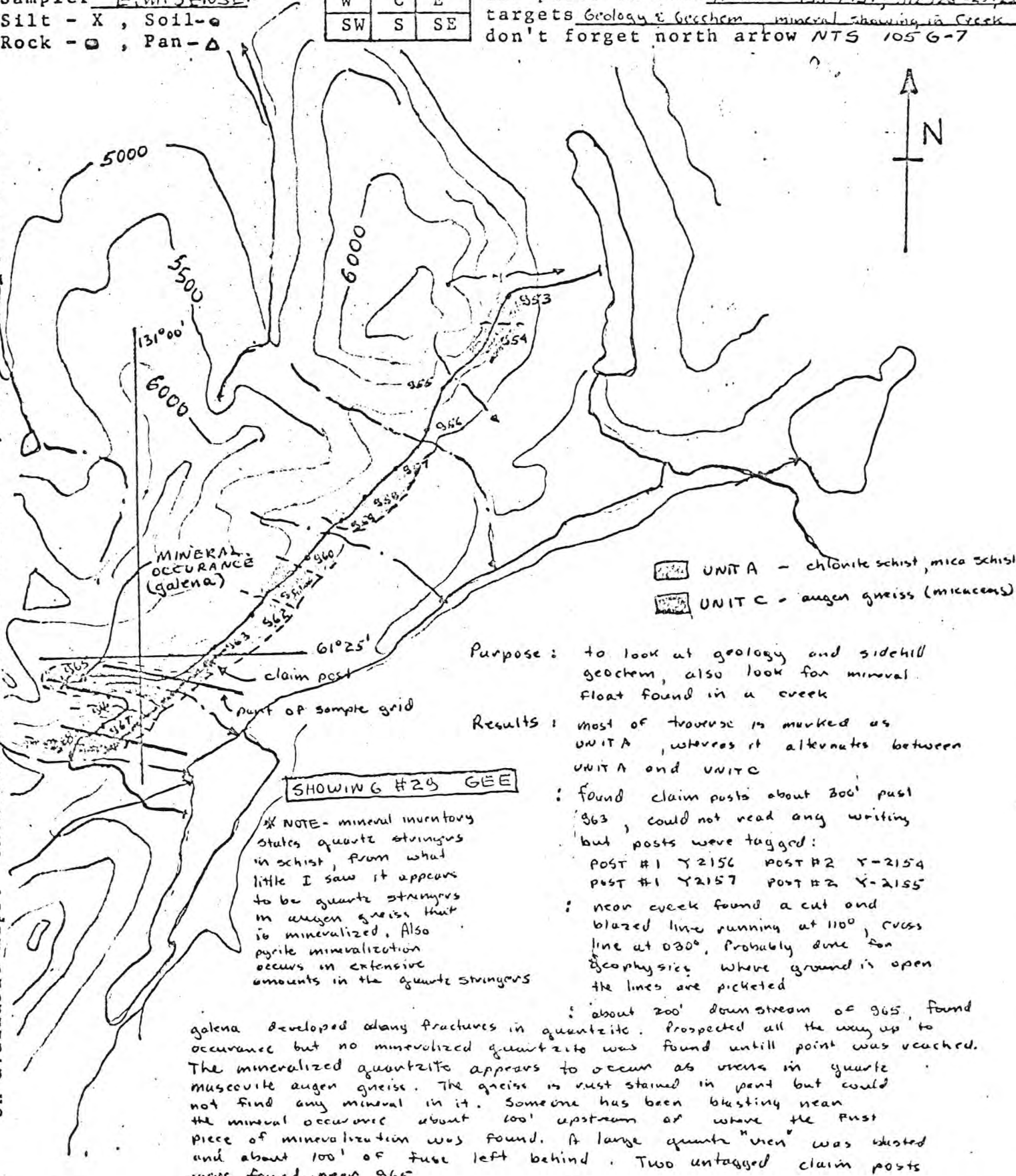
NW	N	NE
W	C	E
SW	S	SE

sample numbers A-953 → 968

air photo numbers A12231-155 → 157; A12326-239, 245

targets Geology & Geochem mineral showing in Creek
 don't forget north arrow NTS 105 G-7

on available maps. GEOLOGIC BOUNDARIES: defined --, inferred --, assumed ...
 or trails -- is there any intrusive or volcanic outcrop or float not shown
 snow contours, drainage, north arrow, etc.



Purpose: to look at geology and sidehill geochem, also look for mineral. Float found in a creek

Results: most of traverse is marked as UNIT A, whereas it alternates between UNIT A and UNIT C

found claim posts about 300' past 963, could not read any writing but posts were tagged:
 POST #1 Y-2156 POST #2 Y-2154
 POST #1 Y-2157 POST #2 Y-2155

near creek found a cut and blazed line running at 110°, cross line at 030°. Probably done for geophysics where ground is open the lines are picketed

about 200' downstream of 965, found galena developed along fractures in quartzite. Prospected all the way up to occurrence but no mineralized quartzite was found until point was reached. The mineralized quartzite appears to occur as veins in quartz muscovite augen gneiss. The gneiss is rust stained in part but could not find any mineral in it. Someone has been blasting near the mineral occurrence about 100' upstream of where the first piece of mineralization was found. A large quartz "ven" was blasted and about 100' of fuse left behind. Two untagged claim posts were found near 965

NOTE - mineral inventory states quartz stringers in schist, from what little I saw it appears to be quartz stringers in augen gneiss that is mineralized. Also pyrite mineralization occurs in extensive amounts in the quartz stringers

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rock types noted in legend
 soil types rocky yellow brown to red brown clayey sands
 percent outcrop 25 % scale 1" = 1 mile