

GEOLOGICAL REPORT  
on  
PIKE MINERAL CLAIM GROUP

TRAFFIC MOUNTAIN AREA  
Watson Lake Mining Division  
Yukon Territory

Long.  $130^{\circ} 40'$  West

Lat.  $62^{\circ} 08'$  North

by

Clyde L. Smith

Atlas Explorations Limited

July 1 - October 25, 1966

and

May 29 - June 23, 1967

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LIST OF CLAIMS

<u>Claim Number</u>	<u>Grant Number</u>	<u>Date Recorded</u>
PIKE 1 - 24	Y13149 - Y13172	July 4, 1966
25 - 88	Y13443 - Y13506	August 10, 1966
89 - 152	Y13682 - Y13745	August 30, 1966
153 - 608	Y13763 - Y16204	September 9, 1966
609 - 776	Y16727 - Y16894	October 17, 1966
PIKE FRACTIONS		
1 - 6		
8 - 9		
14 - 22	Y17243 - Y17259	November 21, 1966

## INTRODUCTION

Atlas Explorations Limited became interested in the Pike Lake area during June, 1966. Interest was prompted primarily by an earlier prospecting discovery by Al Kulan of Cu-Ag mineralization in porphyry, running about 20 ounces Ag, in the area of Pike Lake. An airborne magnetic and electromagnetic survey, under contract to Lockwood Survey Corporation, was conducted in a 35 square mile area west of Traffic Mountain in early June, and prospectors began prospecting, trenching and geochemical silt sampling anomalous magnetic areas.

A 24-claim group was staked in mid-June to cover showings and anomalous geochemical results discovered. The Pike group was increased to 152 claims in mid-July. In mid-August, the decision was made to increase the Pike group to 608 total claims to cover scattered high geochemical results as well as an area of apparently significant structural geology. A 168-claim addition was staked in mid-September, bringing the Pike group total to 776 claims.

Geologic mapping on Pike grid number 1 was done using grid stakes for location. This grid consists of 140,000 feet of cut line with a 10,000-foot long base line and 400-foot spaced cross lines. Cross lines between 80 W and 0 run 2,000 feet north and 3,000 feet south of base line. Between 0 and 56 E cross lines run 1,000 feet north and 3,000 feet south of base line.

Mapping on Pike grid number 3 was done on 1,000-foot scale air photo blow-ups and was tied to grid stakes in the north half of the grid area. Pike grid number 3 consists of 111,100 feet of cut line with a 14,000-foot long base line and 800-foot spaced cross lines. Cross lines average about 5,000 feet long.

## LOCATION AND ACCESS

The Pike group is centered roughly at latitude 62°08' North and longitude 130°40' West, and covers much of the north half of topographic sheet 105J-2, and a western portion of sheet 105J-1. The group is elongate in a westerly direction, and extends from the south slopes of Traffic Mountain to a point 15 miles to the west. Three small groups adjoin the Pike claims on the west end: Star 1-40 and Cree 1-32 held by A. Rasicot, and Oxo 1-40 held by C. Poli.

Access to the property is by aircraft from Ross River; air-line mileage is 52 miles. Beavers on floats have been

used, and landings made on 3/4 -mile long Pike Lake. A temporary camp was established on the north side of Pike Lake, from which supplies were transported to the base camp, 1½ miles to the west, by helicopter or D6 Cat. Pike Lake is connected with the base camp by a Cat road.

During April, 1967, a tote road was put in from north of Finlayson Lake on the Watson Lake-Ross River road to the Pike group. Fuel was trucked over the road to the Pike base camp. It was intended that the road be used for bombardier support but the Pelly River could not be forded with the bombardier and it was not used on the property.

### REGIONAL GEOLOGIC SETTING

The Pike area is located within, or just north of, a major northwesterly-striking wrench fault, here termed the Traffic Mt. Fault. The Traffic Mt. Fault is topographically and geologically recognizable over a distance of about 100 miles from Anderson Creek in the southeast to Big Timber Creek in the northwest, and is well exposed along the south slope of Traffic Mt. where it brings older, Precambrian or Cambrian, quartzites to the north against Lower Mississippian shales and cherts to the south. Northwest of Traffic Mt., in the Pike area, linears are recognizable on air photos which parallel the major fault and suggest that the Pike area lies within a zone of strong dislocation.

The Pike area is underlain by a succession of Ordovician and Silurian black and gray cherts and shales (unit 3 on G.S.C. Sheldon Lake sheet) which lies along the axis of a northwesterly-plunging tight syncline.

The deformed sedimentary rocks of the Pike area have been intruded by a granitic stock of probable Cretaceous age, which outcrops locally on the property, and to the east on Traffic Mt., and occurs at the northwest end of a linear intrusive belt which extends southeasterly through the Logan Mountains. The Pike stock is outlined by an area of anomalous air magnetics which is largely covered by the Pike group, although extensions occur to the west, northwest, and east of the group. The stock is only slightly unroofed and outcrops may be only dykes and cupolas.

TABLE OF FORMATIONS

Cretaceous (?):	6	Dyke rocks of dark color
	6a	Kersantite lamprophyre
	6b	gray oplitic
	6c	greenstone
	6e	alkalic gabbro or diabase
	1	Granitic intrusives (3 on 400-foot scale map)
	1a	quartz monzonite
	1b	quartz monzonite porphyry
	1c	granite
	1d	fine grained chilled granite
Paleozoic (?):	2	Shales
	2a	limey shale
	2b	graphitic shale with limestone interbeds
	2c	graphitic shale
	3	Slates
	3a	gray slate
	3b	black slate
	3c	black cherty slate
	4	Limestone
	5	Chert
	5a	chert breccia
	2	(on 400-foot scale map) Quartzite

GEOLOGY OF PIKE GRID #1

A. Sangster mapped much of the Pike grid at a scale of 1" = 400' and submitted a brief report dated July 17, 1966. The following is a synopsis of Sangster's findings, but consists mainly of notes made by C. L. Smith during brief outcrop examinations.

The dominant geologic feature of the grid area is a N70°W trending, steeply-dipping biotite granite dyke. The dyke is exposed over widths of a few feet to over 500 feet, and over a length of about 2 miles. The intrusion is relatively resistant to erosion and underlies a low-lying ridge on the property. Country rocks are steeply-dipping and consist of interbedded

cherts, quartzites, and slates to the north of the intrusion and black slates and minor limestone to the south.

Most exposed granite is chilled and contains angular quartz eyes in a fine-grained matrix; central portions of the intrusion consist of medium-grained biotite granite.

The granite dyke is offset up to 400 feet by northerly-trending faults. Sangster mapped an east-west offsetting fault between zone 1 (lines 43W to 56W) and zone 2.

Ground magnetic and EM data indicate that the granitic dyke of the Pike grid is an offshoot of the underlying Pike stock. Position of the dyke may have been controlled by a fault for the intrusion trends parallel to the Traffic Mt. Fault fracture system.

### GEOLOGY OF PIKE GRID #3

During late May and June, 1967, T. Adamson mapped the area of Pike grid number 3. Outcrop is scarce in the area, most occurring in low hills north of the grid and in stream banks west of the grid.

Four stratigraphic units containing at least seven sub-units were recognized. Stratigraphic relations are not clear; the sequence is steeply-dipping and tops of beds could not be determined. The most prominent stratigraphic unit is black slate which varies locally in color but has a generally high carbonaceous content and local narrow lenses containing magnetic material. It is this unit which is responsible for narrow, intense magnetic anomalies in the grid area. In places electromagnetic anomalies correspond - these may be explained by the graphitic content of the slates.

Gray to black, massive-bedded cherts occur in contact north of the slates. These are followed again to the north by black carbonaceous shales with sub-units containing interbedded black limestone bands; this unit is also abundant in stream outcrops west of the grid.

Stratigraphic units are cut by dykes and sills of quartz monzonite (locally porphyritic), granite (locally chilled), and four varieties of gray dyke rocks. Granitic intrusives are biotite-bearing and commonly contain disseminated pyrrhotite or pyrite. Pyrrhotite in intrusives appears to explain the magnetics of some of the Pike region. Gray dyke rocks consist of kersantite lamprophyre, gray oplitic, greenstone, and alkali diabase.

Structural trends are about N70°W throughout the area. Dips are steep and to the north or south. Extensive faults of the same attitude are suggested by strong photo-linears in the area and fault zones may be seen cutting sediments west of the grid.

Apart from disseminated pyrrhotite, pyrite, and arsenopyrite in altered granitic intrusive, and rare arsenopyrite veins, no mineralization was noted in the area.

#### DETAILED GEOLOGY OF TRENCHES AND MINERAL OCCURRENCES

J. Staniford mapped all trenches in zone 1, and trench maps were made by C. L. Smith at 43W and 48W in zone 1.<sup>1</sup> The following statements are drawn mainly from Smith's observations in zone 1.

Copper-silver, with minor lead-zinc, mineralization of potential economic grade occurs over narrow widths in the hydrothermally altered, chilled granitic dyke of the Pike grid area.

Mineralization is predominantly of the porphyry copper type with the rather unusual mineral assemblage, arsenopyrite, pyrrhotite, pyrite, chalcopyrite, tetrahedrite, and minor enstatite, bornite, sphalerite, and galena occurring as disseminations and veinlets in zonally altered intrusive. Narrow ladder veins occur perpendicular to dyke contacts along the north and south margins and carry nearly all of the significant lead-zinc.

The intrusive contains irregular alteration-mineral type zones which roughly parallel dyke contacts. Alteration minerals are silica (quartz), chlorite, clay-sericite, and biotite.

#### DISCUSSION AND CONCLUSIONS

A major geochemical anomaly and a major magnetic-electromagnetic anomaly have been located on the Pike group. The geochemical anomaly reflects porphyry copper-silver mineralization in an altered granitic intrusive. Detailed trenching and sampling of part of the anomaly area revealed a small

- 
1. Refer to report "Trenching and Engineering Evaluation on Pike Mineral Claim Group" by C. L. Smith for Atlas Explorations Ltd.

tonnage situation with marginal copper-silver grades and narrow sections of lead-zinc-silver. However, only a portion of the entire anomaly has been adequately investigated and sufficient drilling has not been done to test depth extensions in the area trenched. Results to date are encouraging and further drilling and perhaps more trenching are warranted.

The magnetic anomaly with areas of superimposed electromagnetics reflects magnetic black carbonaceous slates which crop out along the north side of the number 3 grid. This anomaly should not be considered as having economic potential.

APPENDIX I

SUMMARY OF COSTS

	<u>Costs</u>
	\$
1. <u>Salaries</u> - 3 geologists for 6 weeks	1,000
- 2 prospectors for 1 week	300
- 2 party chiefs for 2 weeks	500
2. <u>Camp Support</u> - total of 30 man/weeks (including cook)	2,550
3. <u>Helicopter</u> - 8 hours at \$110/hour	880
4. <u>Fixed Wing</u> - 4 round trips, Ross River to Pike	1,200
5. <u>Equipment</u>	<u>200</u>
	<u>\$6,630</u>

APPENDIX II

A F F I D A V I T

Supporting Summary of Costs

I, Clyde L. Smith, Chief Geologist, Atlas Explorations Limited, of Vancouver, B.C., do hereby state that to the best of my knowledge and belief the statement of costs as presented in Appendix I of this report "Geological Report on Pike Mineral Claim Group" is both true and correct.

DATED at Pelly Lakes, Yukon Territory, this 6th day of July, A.D. 1967.

SWORN BEFORE ME at  
Pelly Lakes, Yukon  
Territory, this 6th  
day of July, A.D. 1967

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A Commissioner for taking  
Affidavits in the Yukon  
Territory



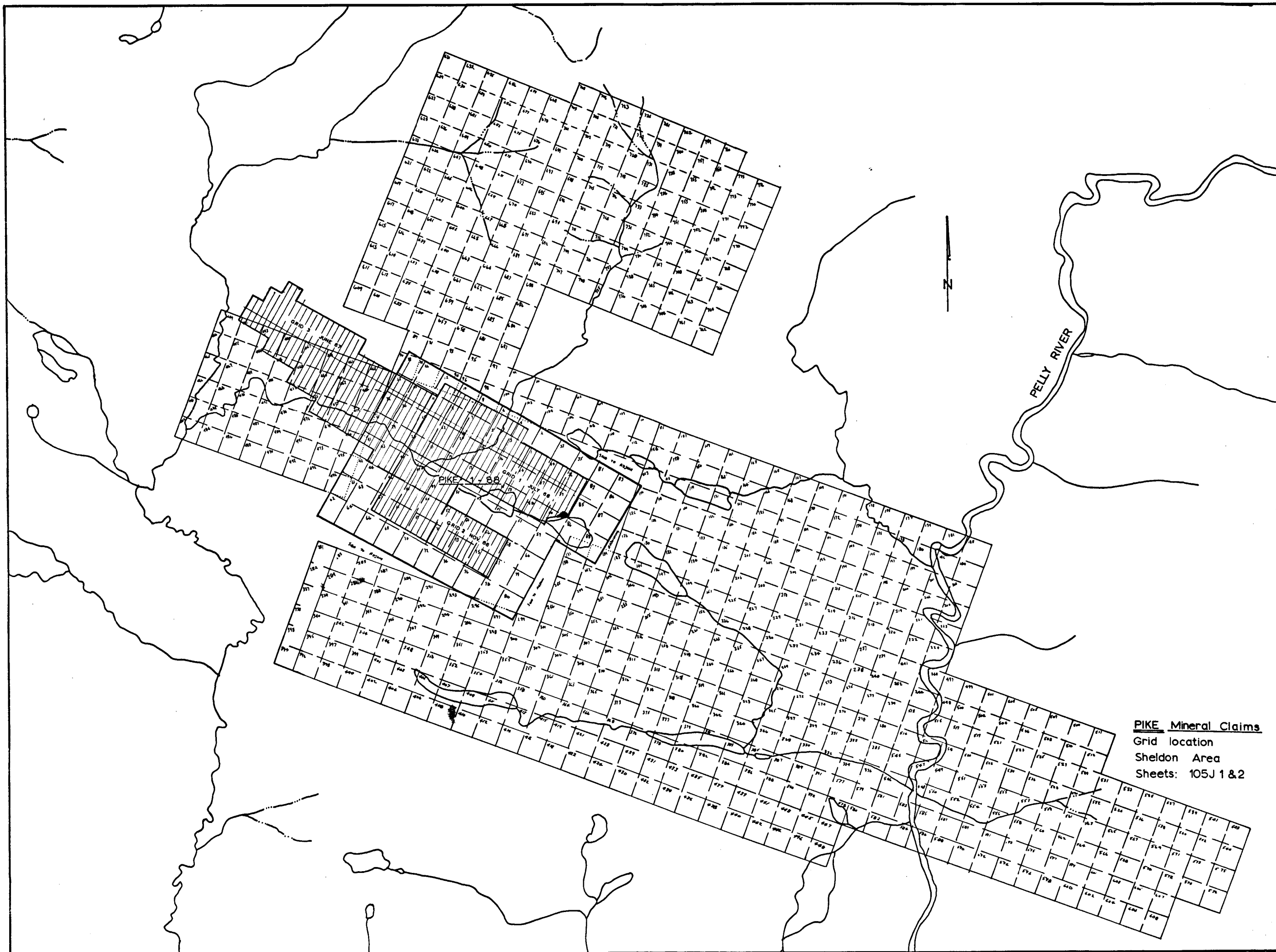
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Clyde L. Smith

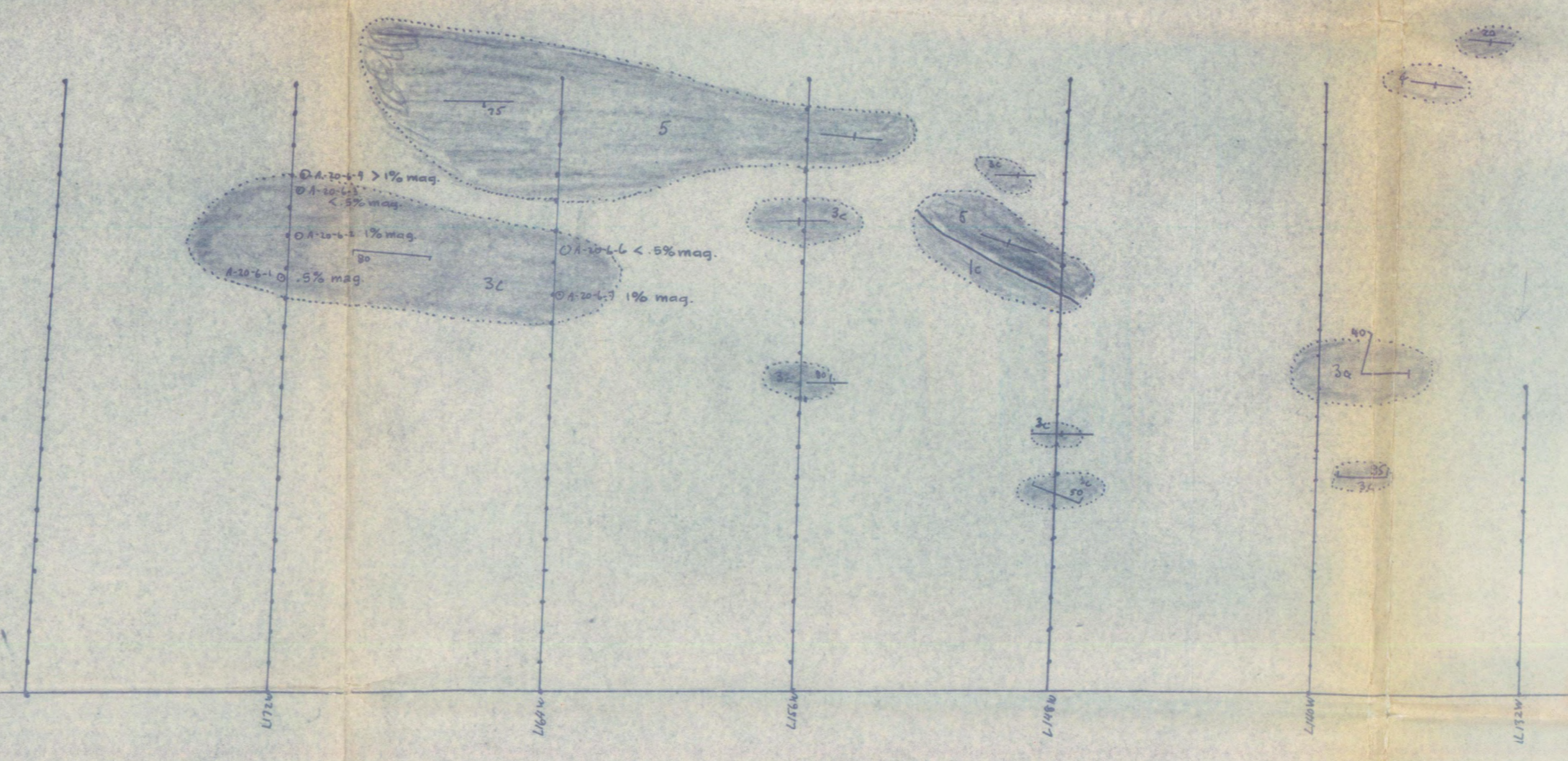
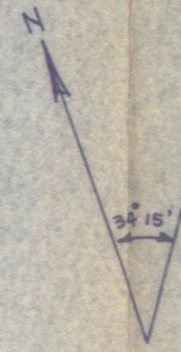
APPENDIX III

PERSONNEL

Al Sangster	Geologist	Ottawa, Ontario
Jay Staniford	Geologist	Los Angeles, California
Tom Adamson	Geologist	Vancouver, B.C.
Clyde L. Smith	Geologist	Vancouver, B.C.



**PIKE Mineral Claims**  
Grid location  
Sheldon Area  
Sheets: 105J 1 & 2




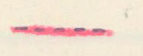

PIKE GRID NO 2  
O.C. IN VICINITY OF MAG. HIGHS.

- 1a - GRANITE (RED)
- 2a - LIMY SHALE (GREY)
- 3a - GREY SLATE (BROWN)
- 3c - BLACK CHERTY SLATE (BROWN)
- 4 - L.S. (BLUE)
- 5 - CHERT (YELLOW)

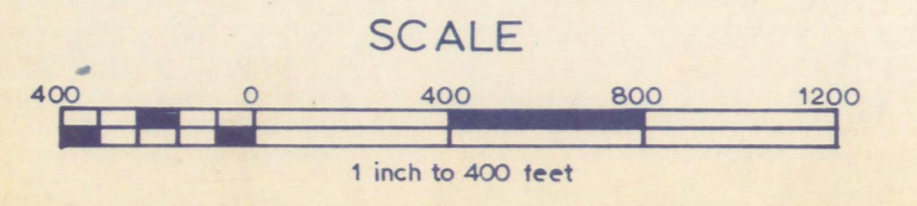
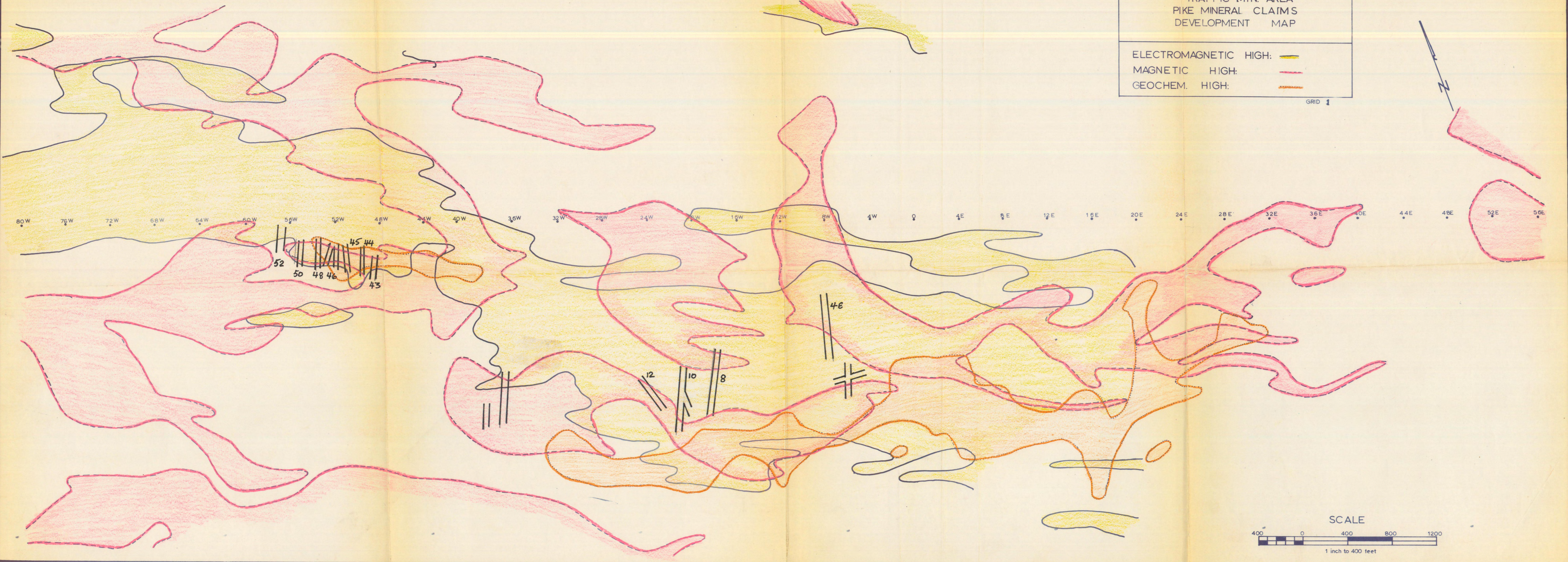
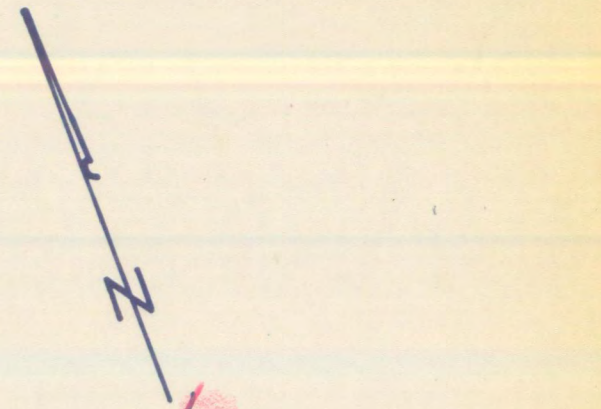
GEOLOGY: T. ADAMSON

ATLAS EXPLORATIONS LIMITED  
ROSS RIVER, YUKON  
400 0 400 800 1200  
Scale in feet

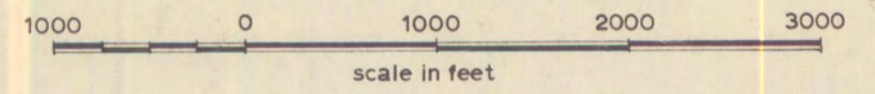
ATLAS EXPLORATIONS LTD.  
 ROSS RIVER, YUKON  
 TRAFFIC MTN. AREA  
 PIKE MINERAL CLAIMS  
 DEVELOPMENT MAP

ELECTROMAGNETIC HIGH:   
 MAGNETIC HIGH:   
 GEOCHEM. HIGH: 

GRID 1



ATLAS EXPLORATIONS LIMITED  
ROSS RIVER (Y.T.)



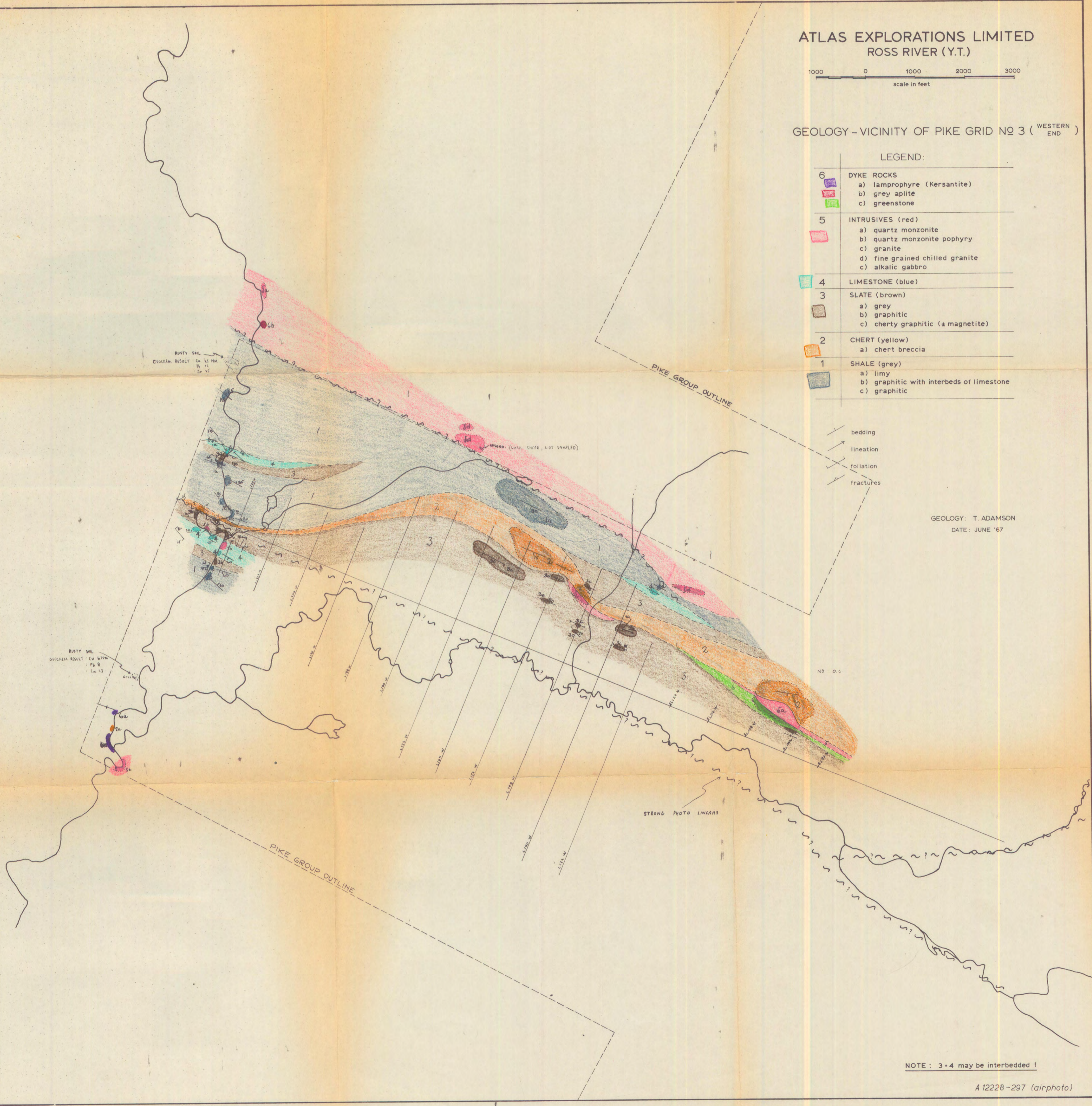
GEOLOGY - VICINITY OF PIKE GRID NO 3 (WESTERN END)

LEGEND:

6	DYKE ROCKS
a)	lamprophyre (Kersantite)
b)	grey aplite
c)	greenstone
5	INTRUSIVES (red)
a)	quartz monzonite
b)	quartz monzonite porphyry
c)	granite
d)	fine grained chilled granite
e)	alkalic gabbro
4	LIMESTONE (blue)
3	SLATE (brown)
a)	grey
b)	graphitic
c)	cherty graphitic ( $\pm$ magnetite)
2	CHERT (yellow)
a)	chert breccia
1	SHALE (grey)
a)	limy
b)	graphitic with interbeds of limestone
c)	graphitic

- bedding
- lineation
- foliation
- fractures

GEOLOGY: T. ADAMSON  
DATE: JUNE '67



NOTE: 3+4 may be interbedded!

# ATLAS EXPLORATIONS LTD VANCOUVER, B.C. PIKE MINERAL CLAIMS GEOLOGY UP TO AUGUST, 1966

**LEGEND**

SLATE	1	GRANITE	3
QUARTZITE	2	FOLIATION	—
FAULT	—	FLOAT	xxxx
BLASTHOLE	o	OUTCROP	○
DATE : NOV 21, 1966		MAPPED BY : A.L. SANGSTER	
DRAWN BY : J.N.B.		SCALE : 1" = 400'	

