#### ARIS SUMMARY SHEET

rict Geologist, Smithers

Off Confidential: 92.03.04

ASSESSMENT REPORT 21046

MINING DIVISION: Atlin

PROPERTY:

Pineload

LOCATION:

LAT 59 35 00

LONG 133 29 00

NTS 104N11W

CAMP:

053 Atlin Camp

CLAIM(S):

Yam 2-3 Noranda Ex. Diment, R.

OPERATOR(S): AUTHOR(S): REPORT YEAR:

1990, 28 Pages

COMMODITIES

SEARCHED FOR: Gold

**KEYWORDS:** 

Pennsylvanian-Permian, Cache Creek Group, Limestones, Argillites

Cherts, Quartzites, Andesites, Ultramafics

WORK

DONE:

Geophysical

IPOL 7.2 km

Map(s) - 1; Scale(s) - 1:5000

RELATED

REPORTS:

13918,17440,19944,21050

LOG NO:	march 8/91	RD.
ACTION:	· · · · · · · · · · · · · · · · · · ·	
FILE NO:		

## INDUCED POLARIZATION SURVEY REPORT 1990

ON THE

YAM 1-3, MAY 1-21 & KAREN CLAIMS

PINELODE PROPERTY

Atlin Mining District

NTS: 104 N/ 11 & 12

Latitude: 59 43'

Longitude: 133 29'

SUS	-RECORDER
§	RECEIVED

MAR 0 4 1991

M.R. # ...... \$...... VANCOUVER, B.C.

# GEOLOGICAL BRANCH ASSESSMENT REPORT

Author: R. Diment Date : June 1990

21,046

#### SUMMARY

The Pinelode Property consists of 85 contiguous units 12km east of Atlin B.C.. During April and May of 1990 a 7.2km I.P. survey was conducted over the property to verify drill targets defined by a previous magnetometer survey done in February 1990. The I.P. survey produced several high resistivity and chargeability anomalies in conjunction with linear magnetic low areas. It is believed that this geophysical signature represents gold bearing listwanitic (quartz-carbonate-mariposite alteration zone. High Priority I.P. target are as follows:

- 1. L9300E/10325N/depth = 30m
- 2. L9700E/9850N/depth = 75m
- 3. L10200E/10075N/depth = 65m
- 4. L10800E/9412.5N/depth = 30m.

A 500m reverse circulation drilling program is recommended to test these high priority I.P. anomalies which are coincident with linear magnetic lows.

## TABLE OF CONTENTS

			Page
Title Page			
Summary			
Table of Cont	ent	ts	
List of Figur	es		
CHAPTER ONE	:	INTRODUCTION	
1-1	:	Introductory Statement	1
1-2	:	Location & Access	1
1-3	:	Physiography & Vegetation	1
1-4	:	Claim Status	3
1-5	:	Previous Exploration	3
1-6	:	Work Program	6
CHAPTER TWO	:	GEOLOGY	
2-1	:	Regional Geology	7
2-2	:	Property Geology	9
CHAPTER THREE	Ξ:	GEOPHYSICS	
3-1	:	Induced Polarization Survey	11
3-2	:	Discussion of Results	11
CHAPTER FOUR	:	CONCLUSIONS	14
Statement of	Co	osts	15
Selected Ref	ere	ences	16
Statement of	Qυ	aalifications	17

# LIST OF FIGURES

				Page
Fig.	1:	Location Map		2
Fig.	2:	Claim Location Map	1:50,000	4
Fig.	3:	Regional Geology	1:250,000	8
Fig.	4:	Magnetometer & I.P. Survey Compilation Map	1:5,000	in pocket
		LIST OF	APPENDICES	

Appendix I: I.P. Pseudo Sections

18

#### CHAPTER ONE: INTRODUCTION

#### 1-1: INTRODUCTORY STATEMENT

The Pinelode property consists of 85 contiguous units (May 1-21, Yam 1-3 and Karen claims) approximately 12km east of Atlin B.C.. The claims were staked at the heads of both the Pine Creek and Gold Run placer deposits targeting the possible lode gold source of the placers. In April and May of 1990 an Induced Polarization survey was conducted on the Pinelode Property. The purpose of the survey was to verify drill targets (silicified gold bearing shear zones) identified by a total field magnetics survey done in February of 1990. For interpretation of results from the magnetometer survey refer to the assessment report by the author dated April 1990.

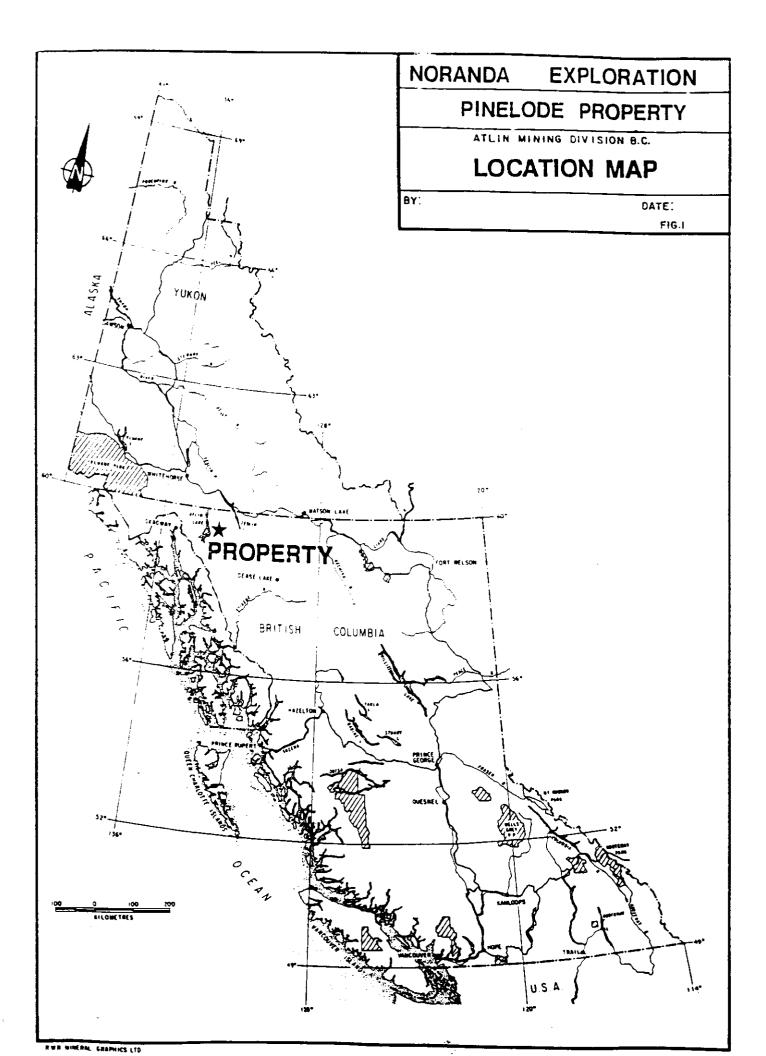
This report discusses the results of the I.P. survey and how it relates to the economic geology of the property.

## 1-2: LOCATION & ACCESS

The property (NTS 104N/11 & 12, Lat. 59 43', Long. 133 29') is located 12km east of Atlin B.C.. The claims are accessible by the all-season Atlin-Surprise Lake gravel road, which traverses the property in an east-west direction. Numerous cat trails on the Yam 3 claims and the Birch Creek placer mining road on the Yam 2 claim give greater access to the bulk of the property in summer months.

## 1-3: PHYSIOGRAPHY & VEGETATION

The Atlin area is located just east of the coast mountains



on the Teslin Plateau. This area is characteristic of broad U shaped valleys which strike northeast and northwest. Topography is moderately rugged with slopes up to 35 degrees rising from valley floors at a 900m elevation to mountains over 1900m. Most of the property lies on the Pine Creek valley bottom where topography is very gentle (900-950m); however the southern edge of the claim block runs along the northwestern flank of Spruce Mountain where slopes are greater than 30 degrees and topography reaches a maximum of 1300m. On the valley bottom the property is covered by glacial till up to 20m thick. Glacial features such as terraces and kames are common south of Pine Creek on the Yam 3 claim.

The property is forested with lodgepole pine, black spruce, aspen and dwarf birch on the valley bottom. Alder and willow predominate near creeks and buckbrush on the higher topography.

1-4: CLAIM STATUS

CLAIMS	NO. UNITS	RECORD NO.	OWNER	EXPIRY DATE
Karen	10	2751	D.G.S. Purvis	Aug. 25/97
Yam 1	14	2342	Cream Silver	Aug. 10/98
Yam 2	20	2343	Cream Silver	Aug. 10/98
Yam 3	20	2344	Cream Silver	Aug. 10/98
May 1-21(2-Pos	st) 21	2590-2610	D.G.S. Purvis	Apr. 28/96

#### 1-5: PREVIOUS EXPLORATION

Gold was first discovered in the Atlin area by Fritz Miller

in 1897. By 1898 3,000 people were camped near Atlin placer mining the nearby creeks. From 1898 to the present placer mining has produced an estimated 1,000,000 ounces of gold. Pine and Spruce creeks were the richest streams accounting for almost 60% of the total gold extracted in the Atlin placer camp.

Gold bearing quartz veins were first discovered in 1899, and by 1905 most of the known showings had been discovered. Although the showings have been reworked several times there is no record of regional exploration in the Atlin area since 1905.

In 1981 Yukon Revenue Mines Ltd. acquired the old Lakeview property and reported an extensive area of low grade gold bearing quartz stockworks in silicified and carbonatized andesites in contact with a serpentinite intrusive. This discovery created a renewed interest in the area especially where silicified and carbonatized ultramafics were in the vicinity of major placer gold producing creeks. After the claims were allowed to lapse Cream Silver acquired the acquired the property and adjoining ground by staking the GDC and Yam claims in 1984. The May and Karen claims were later staked D.G.S. Purvis. Later, the Yam May and Karen claims were combined forming the Pinelode property, jointly owned by Cream Silver Mines Ltd. (50%) and D.G.S. Purvis (Surprise Lake Exploration Ltd. 50%).

In 1984, Dighem Surveys and Processing Inc. conducted an airborne magnetometer survey over the Atlin Gold Camp. The survey outlined several magnetic anomalies on the Yam and May claims which were further delineated through a ground

magnetometer survey conducted by Cream Silver Mines Ltd. in 1985 and 1986. Between 1987 and 1989 no further exploration work was done on the property.

From 1986-1989 Homestake drilled the Yellowjacket property (2km west of the Pinelode Property) indicating intersections up to .5 oz/t Au over 3m. Gold values are associated with a quartz stockwork in carbonatized andesite and ultramafic rocks.

#### 1-6: WORK PROGRAM

## February 1990

Amerok Geophysics of Whitehorse, under contract by Noranda Exploration, conducted a 58 line km magnetometer survey over the Yam 2 and Yam 3 claims. For interpretation of results refer to magnetometer survey report by the author dated April, 1990.

#### April - May 1990

In late April and early May of 1990 a 7.2km Induced Polarization Survey was conducted on the property. The survey was performed by Amerok Geophysics from Whitehorse under guidance by Noranda personnel. Interpretation of survey results was done by Ted Wong from Noranda Exploration in Vancouver.

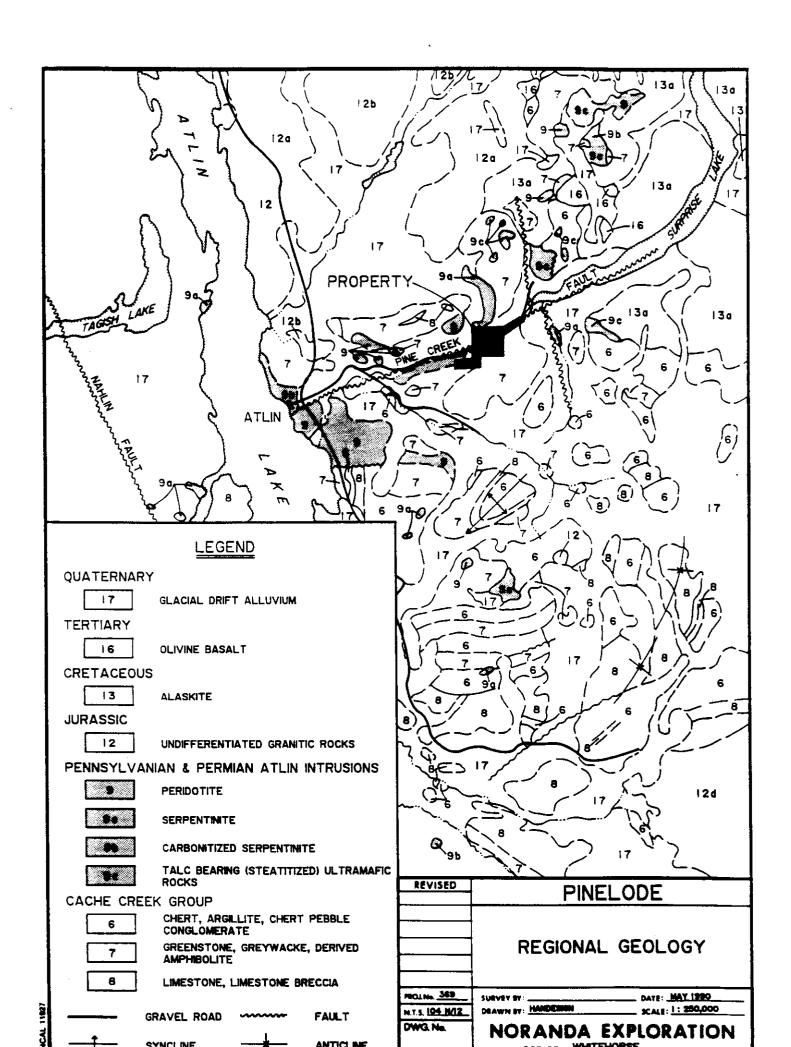
#### CHAPTER TWO: GEOLOGY

#### 2-1: REGIONAL GEOLOGY

The Atlin area lies within a northwest trending sequence of Upper Paleozoic Cache Creek group rocks called the Atlin Terrane. These rocks consisting of radiolarian cherts, argillites, carbonates and volcanics that have been thrusted toward the east along the northwesterly striking Nahlin Fault during mid-Jurassic time. This sequence has been intruded by late Jurassic Granite and Cretaceous Alaskite and Quartz Monzonite. Small remnant outcrops of Tertiary Olivine Basalt represent the youngest rock in the area.

Within the Atlin Terrane Permian ultramafic rocks form a discordant belt that cuts the tectonic fabric of the terrane. These intrusive bodies, consist of serpentinized peridotite, dunite, commonly exhibit intense listwanitic and alteration (quartz-carbonate-mariposite) along their margins. This alteration is believed to be caused by thrust faults that have emplaced these ultramafics within Cache Creek group rocks (C.L. Ash and R.L. Arskey, 1989). The majority of known lode gold deposits in the Atlin area are associated with these quartzultramafics in contact with Cache Creek carbonate altered The alteration zones show up as distinct linear magnetic lows in contrast to the relatively high magnetic response of the unaltered ultramafics.

Two major fault systems are known in the area. A series of



east-northeast trending structures occur just east of Atlin, represented by the Adera, Pine Creek and Union Mtn. Faults. A north trending fault system represented by the Otter & Ruby Creek Faults are believed to be tension fractures related to the Pine Creek linear.

## 2-2: PROPERTY GEOLOGY

Most of the property is overlain by a thick sequence of glacial till; therefore outcrop exposure is scarce and is confined to the steeper southern edge of the property. Large piles of placer tailings on the western portion of the property consists mainly of glacial till, gravels and minor fragments of local bedrock.

The claims are underlain by Cache Creek Group sediments and volcanics that have been intruded by Pennsylvanian and Permian ultramafics.

Cache Creek sediments outcrop along the southern edge of the claim block consisting of light grey fetid limestone, dark grey to black interbedded argillite and chert and light grey quartzite.

Small subcrops and angular float of Cache Creek volcanics occur on the northwestern part of the property. These volcanics consist mainly of light green fine grained andesite with 1-2% disseminated pyrite.

Ultramafics outcrop on the southern edge of the property consisting of dark green-blue waxy serpentinite that has been

weakly to moderately carbonatized. Large angular fragments of quartz-carbonate altered serpentinite are common in the tailings pile from the Queenstake placer pit.

# CHAPTER THREE: GEOPHYSICS (by Ted Wong)

#### 3-1: INDUCED POLARIZATION SURVEY

Four lines totaling 7.2km were surveyed. They are: L.10800E, L.10200E, L9700E and L.9300E. Instrumentation used was a BRGM IP-6 time-domain receiver and a Phoenix Geophysics IPT-1 transmitter. Dipole separation used was 50 metres with n=1 to 5 being recorded. A dipole separation of 25m with n=1 to 6 was used for stations south of the baseline on L.10800E and L.10200E.

#### 3-2: DISCUSSION OF RESULTS

The geological model for the property is gold mineralization associated with listwanitic alteration zones which are intensely silicified and contain 1-5% disseminated sulphide. These alteration zones show up as linear magnetic lows and should exhibit a high resistivity and chargeability signature. Targets that meet this requirement are discussed below.

<u>L9300E</u>: A narrow and shallow moderate chargeability anomaly with associated high resistivity signature is centred at 10325N. This anomaly coincides very closely to the location of Magnetic Target 6 situated on interpreted magnetic break E and is considered to be an attractive target.

L9700E: A strong, deep seated chargeability anomaly lies in a fractured resistive setting at 9850N proximal to a possible contact zone as indicated by the closely situated magnetic plateau and Magnetic Break C.

A secondary target of coincident deep moderate chargeability

and high resistivity could be considered at 10275N. This chargeability expression lies north of Pine Creek at the edge of the contact zone between the intense and quiet magnetics.

L10200E: South of magnetic break E is an area of coincident high resistivity and chargeability. Its southern edge appears defined by magnetic Break D. This area is detailed further with the 25m dipole spacing and could be tested at 10075N.

A shallow moderate chargeability expression with moderate resistivity values coincides well with Magnetic Target 9 which lies on Magnetic Break E.

A distinct shallow secondary target with coincident moderate resistivity and chargeability values lies at 9525N within an active magnetic area.

L10800E: Two nodes of high chargeability values form part of a broad anomalous chargeability and low resistivity package lying between interpreted fault zones expressed by high resistivity zones. The two nodes at 10412.5N and 10275N appear flat lying and are associated with very low resistivity values. The character of this line is different from that of L.10200E and a structural break is inferred, although not evident from the magnetics, between these two lines.

Preliminary geological investigation of the low resistivity area indicates it to be a possible paleochannel with possible clay deposits at depth which would account for the high chargeability and pronounced low resistivity values. As such, these high chargeability features would not be targets of merit.

A chargeability feature at 10150N appears splintered off at depth from the rest of the low resistivity package. Is association with moderate resistivity expressions and its proximity to Magnetic Break C makes it a secondary target of merit.

The resistivity section south of 10000N has verified the location of Magnetic Breaks D and F at 9550N and a broad anomalous I.P. and resistivity package is seen south of these breaks. The shallow, moderate I.P. expression at 9412.5N close to the Magnetic Breaks at 9550N makes it an attractive location to test the I.P. responses.

#### CHAPTER FOUR: CONCLUSION & RECOMMENDATION

Results from the I.P. survey produced several high resistivity and chargeability anomalies which are coincident with linear magnetic lows. This type of geophysical signature is believed to represent gold bearing, listwanitic alteration zones. A summary of the I.P. targets are listed below.

#### PRIORITY 1:

- 1. L.9300E/10325/d=30m
- 2. L.9700E/9850N/d=75m
- 3. L10200E/10075N/d=65m
- 4. L.10800E/9412.5N/d=30m

#### PRIORITY 2:

- 1. L9700E/10275N/d=100m
- 2. L10200E/10487.5/d=30m

## PRIORITY 3:

- 1. L10200E/9525N/d=30m
- 2. L10800E/10150N/d=100m

#### PRODUCTION:

25m Dipole Spacing: 2.3km, n=1 to 6 50m Dipole Spacing: 4.9km, n=1 to 5

A 500m reverse circulation drilling program is recommended to test high priority I.P. anomalies which are coincident with linear magnetic breaks.

Respectfully submitted by;

Richard Diment

Geologist

June 19, 1990

# STATEMENT OF COSTS

I.P. SURVEY

7.2km @ \$2,750./km

\$19,800.

TOTAL \$21,300.

#### SELECTED REFERENCES

Aitken, J.D.

1960: Geology, Atlin, Cassiar District, British Columbia: Geological Survey of Canada Map 1082A, Scale 1:250,000.

Ash, C.H. and Arskey, R.L.

Tectonic Setting of Listwanite-Lode Gold Deposits in the Atlin Area NW. B.C., NTS 104N/12, B.C. Ministry of Energy Mines and Petroleum Resources, Open File 1990-22.

Bloodgood, M.A., Rees, C.J. and Lefebure, D.V.

Geology and Mineralization of the Atlin Area, Northwestern British Columbia (104N/11W and 12E), B.C. Ministry of Energy Mines and Petroleum Resources, Geologic Fieldwork, 1988, Paper 1989-1, pages 311-320.

Diment, R.M.

1990: Magnetometer Survey Report on the Yam 1-3, May 1-21 & Karen Mineral Claims, Atlin Mining District, B.C..

Gonzalez, R.A.

1985: Magnetometer Survey Report on the Yam 3 Mineral Claim, Atlin Mining Division B.C..

## STATEMENT OF QUALIFICATIONS

- I, Richard M. Diment, do hereby certify that;
- 1) I have been employee of Noranda Exploration Company Limited (npl) in Whitehorse, Yukon since April 1989.
- 2) I am a graduate of the University of British Columbia with a B.Sc. in Geology.
- 3) I have practised my profession for the past three years in British Columbia and one year in the Yukon.
- 4) I supervised and participated in field work done in 1990.

Richard M. Diment

Geologist

June 19, 1990

# APPENDIX I

# I.P. PSEUDO SECTIONS

