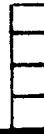


WHITEHORSE M.D.

MAP No.

ASSESSMENT REPORT
N. M. E. A. P.
CONFIDENTIAL
OPEN FILE



TYPE OF
WORK: GEOLOGY
GEOPHYSICS
TRENCHING

115 I 6

REPORT FILED UNDER	NORANDA EXPLORATION CO. LTD. (N.P.L.)	DOCUMENT NO. 091785
DATE PERFORMED	JULY 1985	DATE FILED: FEBRUARY 25, 1986
LOCATION - LAT. LONG.	62°16'N	AREA: MT. FREEGOLD
	137°03'W	
CLAIM NO.	DART 1-6 YA23829-YA23834	
VALUE \$600.00		
WORK DONE BY	M.P. WEBSTER	
WORK DONE FOR	NORANDA EXPLORATION CO. LTD. (N.P.L.)	
REMARKS	<p>Work in 1985 consisted of hand trenching, soil and rock sampling and geologic mapping. Only very weak Au, Ag and Zn anomalies were detected in one trench. All other samples showed background concentrations.</p>	

63-DART

091785

40x 85 p 222 ✓



GEOLOGY, GEOCHEMISTRY and TRENCHING REPORT, 1985

on the

DART 1-6 Claims

Mt. Freegold Property

Whitehorse Mining District

N.T.S. 115 I/6

Latitude 62°16'

Longitude 137°03'

DATE DUE

NOV 29 1986

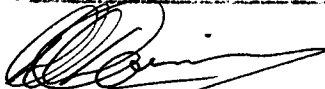
Author: M.P. Webster

Owner: Noranda Exploration Company, Limited
(No Personal Liability)

Date: January, 1986

091785

This report has been examined by
the Geological Evaluation Unit
under Section 53 (4) Yukon Quartz
Mining Act and is allowed as
representation work in the amount
of \$ 600.00.

 18 March 1986

Regional Manager, Exploration and
Geological Services for Commissioner
of Yukon Territory.

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CHAPTER ONE: INTRODUCTION

1-1: INTRODUCTORY STATEMENT

The DART 1-6 claims were staked in September, 1978 by Noranda Exploration Company, Limited (No Personal Liability) to cover the American Yukon gold-antimony prospect which lies midway between the Laforma gold mine and the Tinta Hill Pb-Ag-Au occurrence within the Dawson Range Gold Belt approximately 56 kilometres west of Carmacks, Y.T.

The Yukon Antimony shaft (1930) was sunk 28 metres on a quartz feldspar porphyry dyke containing quartz veins. The shaft reportedly cuts mineralization which assayed up to 4.0 oz/T Au over 0.68 metres (4.5-5.18 metre depth) and averages 1.5 oz/T Au between the 18.3 and 20 metre depths. The Whale showing just south of the DART claims is described as a quartz feldspar porphyry dyke containing vein quartz and trace amounts of gold.

The brief 1985 trenching program failed to detect gold in amounts greater than 70 ppb Au in rock samples which included quartz veinlets. Previous work by Noranda Exploration Co., Ltd. outlined coincident PFE, low conductivity and CEM anomalies. The 1980 drill program has not been well documented yet remaining core samples show intense clay alteration, silicification and minor amounts of stibnite and pyrite in a presumed quartz feldspar porphyry dyke and granitic host rock.

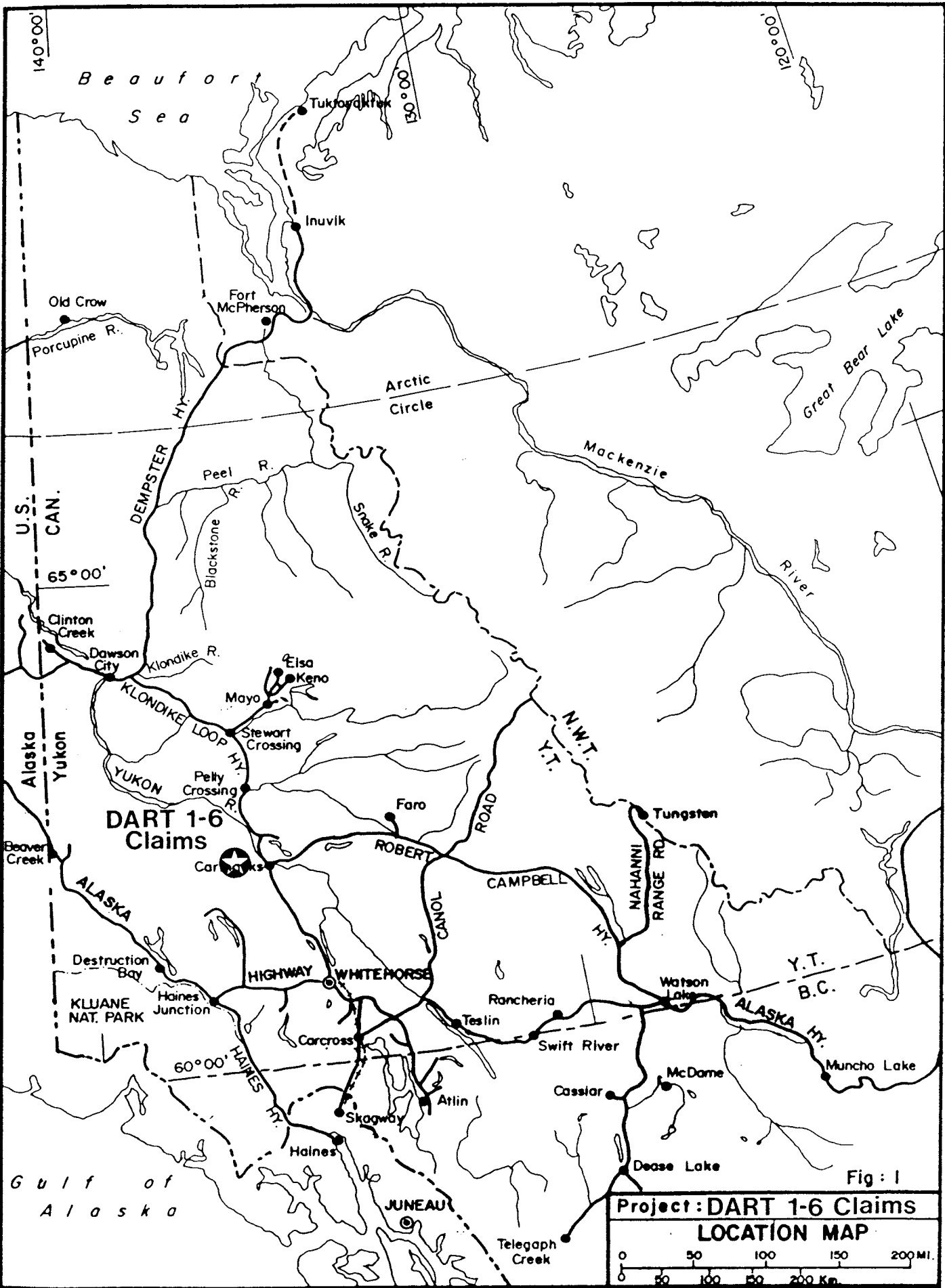
As epithermal, mesothermal and porphyry type gold deposits are well documented within and around Mt. Nansen/Freegold areas and are commonly associated with high level intrusions and dykes, further work is strongly recommended on this property.

1-2: LOCATION AND ACCESS

The DART 1-6 claims lie 56 kilometres west of Carmacks, Yukon on the east flank of Mt. Freegold (Figure 1). The claims are drained to the north by Stoddart Creek and to the south by several small, south flowing tributaries of Seymour Creek. Grizzly Gulch lies 1 kilometre southwest of the claim group. The claims are situated on mapsheet 115 I/6 at longitude $137^{\circ}03'$ and latitude $62^{\circ}15'$ (Figure 2).

The Mt. Freegold gravel road provides year round access to within 1.5 kilometres of the property. An old cat road follows the west side of Grizzly Gulch and allows skidoo or ATV vehicle passage. Limited upgrading is required for 4x4 vehicle access. The roads on the hilltops and ridges of the claim group are in good condition.

Access this season was provided by Trans North Helicopters based in Carmacks and by foot to the Mt. Freegold road via Grizzly Gulch.



Project: DART 1-6 Claims
LOCATION MAP
 0 50 100 150 200 MI.
 0 50 100 150 200 Km.

VANCAL 11926

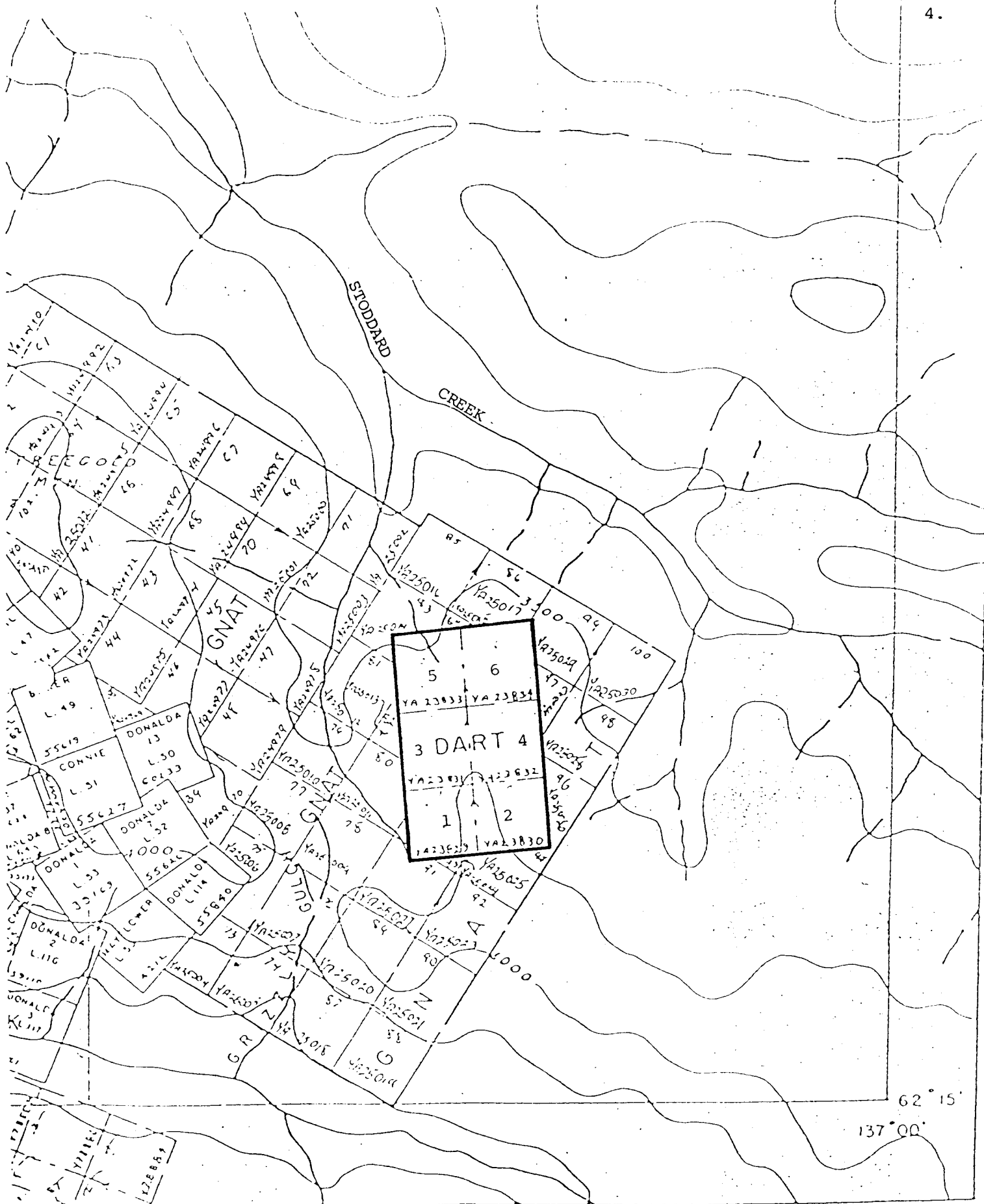


Figure 2: DART 1-6 Claims
 Scale 1:31,680
 N.T.S. 115 I/6

1-3: PHYSIOGRAPHY AND VEGETATION

The DART claims are located within the Dawson Range of the Yukon Plateau. The Mt. Freegold summit has an elevation of 1,453 metres (4,766'), however the DART claims and most ridges or rounded peaks of the area reach a maximum elevation of 1,220 metres (4,000').

Vegetation includes timbered valleys dominated by conifers with some birch and cottonwood to an approximate elevation of 1,066 metres (3,500'). Alpine grass and moss with some sparse tree cover is found on hilltops and ridges. Alder, poplar and thick moss cover is confined to flat areas of slow drainage. Permafrost is usually found at depths >1.0 metres on south facing slopes.

Drainage of the claims is via tributaries of Stoddart Creek to the north and Seymour Creek to the south.

1-4: HISTORY OF THE PROPERTY

The American Yukon prospect, as described by Johnston (1937), is located approximately 300 metres east of Emmon Hill. A 28 metre shaft with short crosscuts at 12 metre and 25 metre levels was sunk in the 1930's on a brecciated felsic dyke. This shaft reported cuts mineralization from 4.5-20 metres (15-65') with assays from 4.5-5.18 metres (15-17') up to 4.0 oz/T Au and from 18.3-20 metres (60-65') an average of 1.5 oz/T Au (MacDonald, April 1980).

The DART 1-6 claims were staked and recorded in 1978 by Noranda Exploration Company, Ltd. (N.P.L.). In 1979 the company conducted I.P. and CEM geophysical surveys and soil sampling over a 4,000 metre chain and compass grid. The CEM survey defined a weak anomaly which trends NNW across DART-4 and DART-6 claims. The I.P. survey defined a percent frequency effect (PFE) and low resistivity anomalies coincident with the CEM anomaly. Soil samples were taken at 100 metre intervals over the coincident geophysical anomalies. A weak zinc anomaly was found over the geophysical target zones, however no geochemical values for Au, Ag, As or Sb are available. In 1980 two BQ drill holes to total 94.2 metres were drilled. Three cat trenches were excavated July 5-8, 1981 by Noranda and cash in lieu of assessment work has been paid by the company since that time.

The following table gives the claim status to date:

CLAIM NAME	NO. UNITS	GRANT NO.	RECORD DATE	EXPIRY DATE
DART 1-6	6	YA-23829-34	October 25, 1978	October 25, 1986

The claims are wholly owned by Noranda Exploration Company, Limited (No Personal Liability) and upon acceptance of this report will be in good standing until the above expiry date.

1-5: 1985 WORK PROGRAM

On July 1, 1985 three mandays were spent on the DART 1-6 claims. Excavation of two pits and two trenches was done by hand and with the use of a Cobra drill and explosives. Six soil samples and five rock samples were analyzed for Cu, Zn, Pb, Ag, Mo, As and Au.

Mobilization was provided by Trans North Helicopters based in Carmacks, Y.T.

CHAPTER TWO: GEOLOGY2-1: REGIONAL GEOLOGY

The oldest rock units in the Carmacks area are quartz-mica schist and hornblende schist with lesser amounts of quartzite, gneiss, greenstone and limestone which make up the Paleozoic or older Pelly Gneiss metamorphic belt. The Triassic Lewes River Group, Jurassic Laberge series and the Jurassic-Cretaceous Tantalus formation of clastic sequences overlie the Pelly Gneiss to the southeast. The metamorphic assemblages has been intruded by coarse grained, homogeneous Mesozoic batholiths which range from diorite to granite and syenite in composition. Late Triassic to Late Cretaceous igneous rocks, contemporaneous with the Coast Plutonic complex, are considered subvolcanic equivalents to the Mid to Upper Cretaceous Mt. Nansen Group and the intermediate to basic Upper Cretaceous Carmacks Group. The Late Triassic-Late Cretaceous igneous rocks are comprised largely of quartz porphyry to granite porphyry with minor rhyolite units. The Mt. Nansen Group includes black weathering, green-grey, red or purple andesitic, tuff and tuffaceous breccias. The Upper Cretaceous Carmacks Group includes brown weathering, basalt and andesite flows and flow breccias. The youngest rocks in the area include the Selkirk Series of fresh Pleistocene basaltic lavas and tuffs found near the mouth of Wolverine Creek and Black Creek

areas.

Big Creek Fault is the major structural feature which trends west-northwest along Big Creek and divides the Yukon Crystalline complex on the southeast and the Yukon Cataclastic complex on the northeast. This fault forms the northeast boundary of the Dawson Range Gold Belt in which many porphyry copper prospects occur with apparently distal epithermal and mesothermal Au-Ag(Cu, Pb, Zn) vein deposits. Mineralization occurs adjacent to or within brecciated subvolcanic plugs related to the Mt. Nansen Group volcanic centres. Feldspar porphyry dykes are typically found in close association with the breccia occurrences and along faults which are known to host precious metal vein deposits. Quaternary gravels are deposited in most stream and river valleys. The Carmacks map area is largely unglaciated with Mt. Freegold and McDade Hill marking the western limit of glaciation.

2-2: PROPERTY GEOLOGY

The property was mapped in detail at the 1985 trench sites which were surveyed to claim post No. 2, DART-3, 4 by chain and compass methods. One to two metres of overburden covers the entire property so that geological mapping was limited to talus and bedrock debris at the bottom of old cat trenches. The trenches are badly caved and very little bedrock remains exposed.

TABLE 1
TABLE OF FORMATIONS

ERA	PERIOD OR EPOCH	FORMATION	LITHOLOGY
Cenozoic	Recent and Quaternary		Fluvial gravels, loess volcanic ash, glacial debris, alluvium
	Pleistocene	Selkirk Series	Black basaltic lavas and tuffs
	Cretaceous Upper Cretaceous	Carmacks Group	Andesite flows; basaltic to dacitic composition range, minor trachyte and rhyolite, brown weathering
	Mid to Upper Cretaceous	Mt. Nansen Group	Dark green-grey, red or purple andesitic tuffs and tuffaceous breccias
		Feldspar Porphyry	Hypabyssal quartz porphyry, granite porphyry, minor rhyolite stock, dykes
Mesozoic	Lower Cretaceous	Tantalus Formation	Chert pebble conglomerate, interbedded sandstone and shale, minor coal
	Jurassic	Laberge Group	Poorly sorted sandstone conglomerate with interbedded tuff and shale
	Uncertain Age	Granodiorite	Undifferentiated granodiorite to quartz monzonite, variety of composition, subvolcanic equivalent of Mt. Nansen Group and Carmacks Group
	Triassic	Hornblende Granodiorite	Batholithic, homogeneous, coarse grained, dark grey, biotite-hbl'd diorite to granodiorite and granite Syenite; coarse grained, grey, melanocratic, porphyritic
		Lewes River Group	Massive, impure limestone and undifferentiated tuffaceous sandstone and breccia
Paleozoic	(or older)	Pelly Gneiss	Strongly foliated, quartz musc-biotite gneiss bio-hornblende schist, minor marble, aplite and pegmatic dykes

The DART 1-6 claim area and Mt. Freegold to the west are underlain by Paleozoic Pelly Gneiss metamorphic rocks which dip steeply east, intruded by feldspar porphyry dykes. Quartz and chalcedonic quartz cement a brecciated dyke which reportedly hosts disseminated stibnite, barite, siderite and pyrite. This dyke or dyke swarm strikes northwest and appears conformable to the bedding foliation of a competent quartzite band of the Pelly Gneiss.

East of the DART claims, Triassic hornblende diorite is strongly foliated to resemble gneissic textures with a dominant mafic mineral percentage.

The "Yukon American" shaft was sunk on a brecciated quartz feldspar porphyry dyke and similar float material is found 300 metres northwest of the shaft and on the dump piles of old pits 600 metres to the southeast.

The two trenches and hand pits excavated to a maximum depth of 1.0 metre during the 1985 program failed to penetrate competent bedrock. Trench 1 was drilled along a shear zone in the Pelly Gneiss schist previously exposed by bulldozer trenching. The trench was centred on a narrow silicified zone with quartz stringers up to 1 cm wide with pervasive limonite, Fe-oxide stain and clay (kaolin) alteration up to 0.5 metres wide. The limonite and clay alteration extends >3 metres to the east and west of the 0.4 metre wide silicified zone which is a minimum of 15 metres in length. Less than 10% fine-grained, disseminated pyrite occurs throughout this area without increased sulphide content in the quartz stringers. Some laminated and brecciated silica textures are found as well as abundant clay

alteration and indicator minerals such as barite, stibnite, siderite and pyrite which may indicate an epithermal type deposit. A hand pit was dug in an attempt to expose this "vein" structure 50 metres north of Trench 1. Overburden severely hampered these efforts and bedrock was not exposed in the hand pit. Approximately 150 metres east of Trench 1, a second blast trench was excavated (2 m x 2 m x 0.5 m deep) over an alteration zone similar to that of Trench 1. No silicification or mineralization was uncovered and a second hand pit was dug approximately 50 metres north of this site. This pit did not expose mineralization or significant alteration.

CHAPTER THREE: GEOCHEMISTRY AND TRENCHING3-1: ROCK and SOIL SAMPLING PROGRAM

A total of 6 soil and 5 rock samples were taken during this program. Twelve holes were drilled to a depth of 0.8 metres at approximately 40 cm spacings with a Cobra Drill in Trench 1. The trench (4.5 m x 1.0 m x 0.5 m) followed a shear or clay-sericite alteration zone with some quartz veinlets which trends at approximately 10°. Two soil samples (S-70899, 70900) and two rock samples (R-70905, 70906) were taken from this trench which has a length of 4.5 metres, width of 1.0 metre and depth of 0.5 metres. Only trace values of all elements (Cu, Zn, Pb, Ag, Mo, As and Au) analyzed were found. The soil is light buff to brown in colour with a dominant clay fraction and remnant medium sized quartz grains derived from host Pelly Gneiss rocks. The rock samples contained intensely clay altered, crumbly quartz veinlets and possibly porphyry dyke material from the extremely weathered shear zone. Samples, S-70901 and R-70907, were taken from a hand dug pit in the same shear zone 50 metres to the north. Zinc was slightly enhanced to 74 ppm Zn in R-70907 but the shear zone was poorly exposed.

Trench 2 (2 m long, 2 m wide, 0.5 m deep) was centred over an alteration zone similar to that of Trench 1. Soil samples, S-70902, 70903, and rock sample, R-70908, failed to yield any geochemical anomalies. A hand

pit was dug approximately 50 metres north of Trench 2. Soil sample S-70904, taken from this pit, yielded no anomalies, however rock sample R-70909 returned 0.4 ppm Ag, 70 ppb Au and a weak zinc anomaly of 78 ppm Zn. R-70909 is similar to rock samples taken from the other trenches and pits and is comprised of heavily clay altered, limonite stained, loosely consolidated, strongly sheared Pelly Gneiss schist with possibly pinkish porphyry dyke material. Minor pyrite occurs in all samples.

Detail Location

PIT I
S70901
R70907

Shear Zone

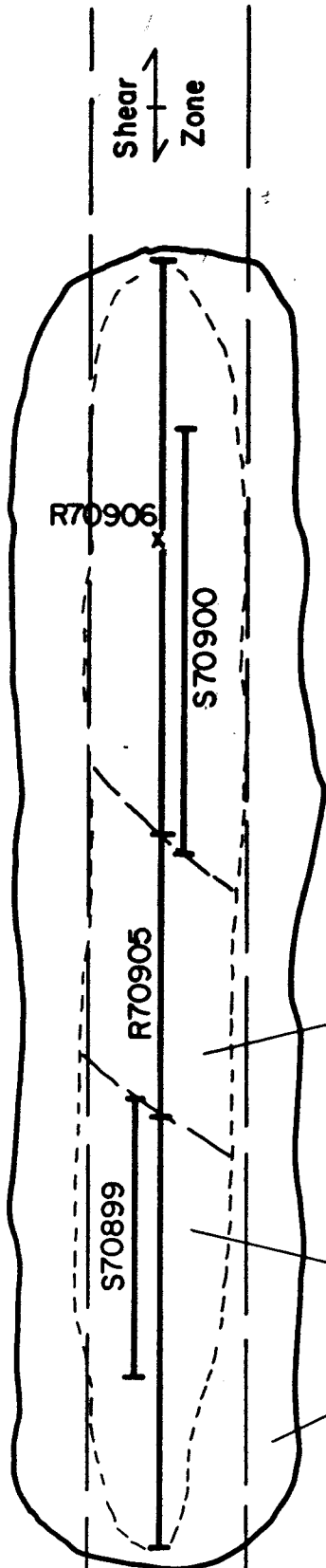
S70899
S70900
R70905
R70906

TRENCH I

0 10
metres



Trench I



Pinkish felsic
quartz porphyry dyke
minor pyrite.

Intense clay alteration
minor quartz stringers
and pyrite in host Pelly Gneiss

Clay altered soils
Depth 0.5m.

0 0.5 1.0
metres

TOP VIEW

Fig. : 3

REVISED	DART 1-6 Claims	
	Trench I	
PROJ.No. _____	SURVEY BY: _____	DATE: _____
N.T.S. _____	DRAWN BY: _____	SCALE: _____
DWG.No. _____	NORANDA EXPLORATION	
	OFFICE: <u>Whitehorse</u>	

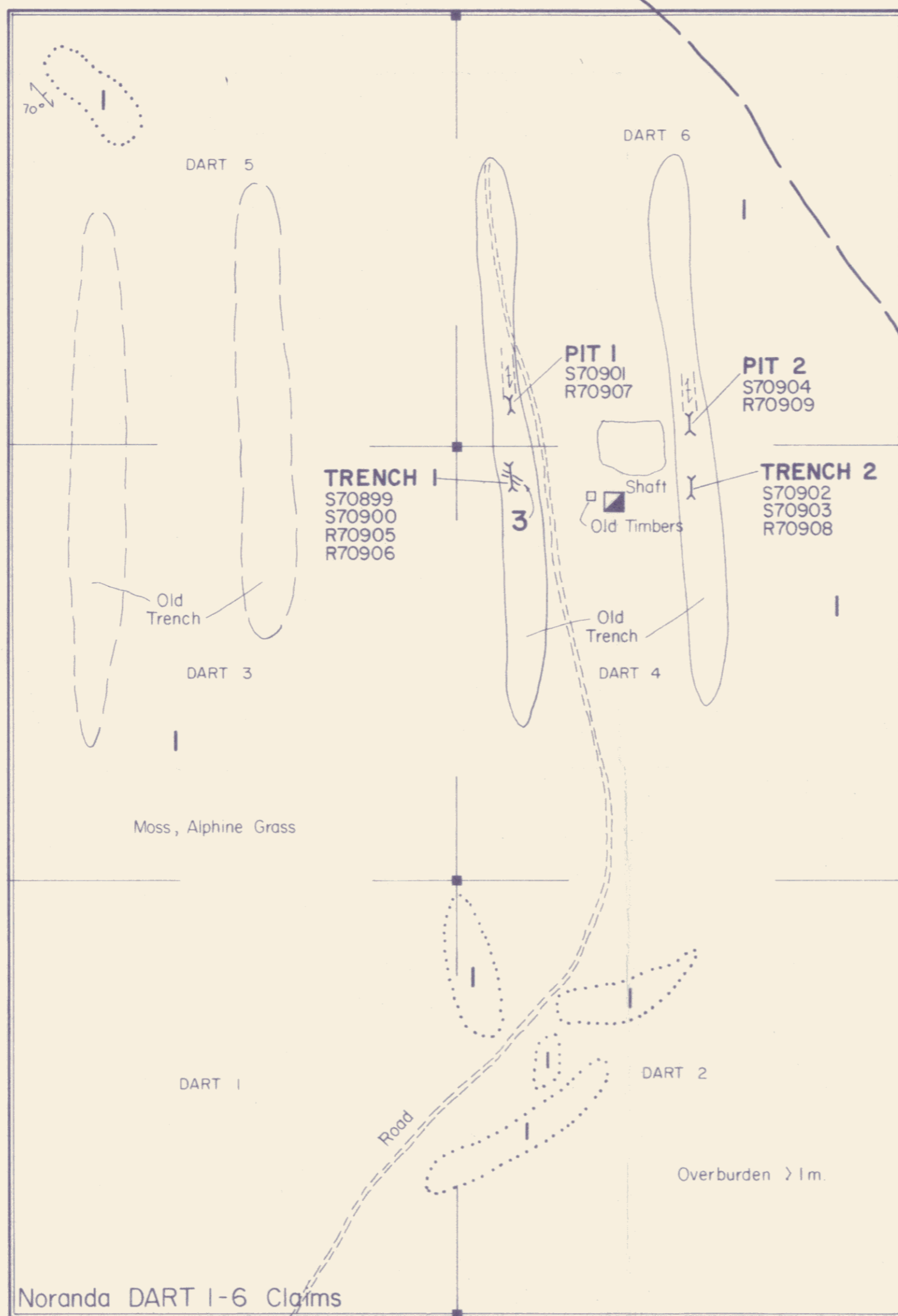
CHAPTER FOUR: CONCLUSIONS AND RECOMMENDATIONS

The geochemical results of the 1985 work program yielded only one gold anomaly of 70 ppb Au in a rock sample, R-70909, taken from a shear zone previously exposed in a bulldozer trench. One day was spent on the property in 1985 and detailed evaluation of the alteration patterns and shear zones previously exposed in the bulldozer trenches has not been done. Data on the drill program conducted in 1980 is not available and the core presently stored in the core library at D.I.A.N.D. in Whitehorse should be logged and sampled.

Considerable interest in the region by Chevron, Archer-Cathro and Associates and independent prospector, Ron Granger, may open the possibility for a joint venture or option proposal in further work on the claims. Detailed prospecting, trenching and geological mapping is certainly warranted in close vicinity to Mt. Nansen (or equivalent) volcanics in conjunction with high level intrusive plugs and dyke swarms. Proven reserves are indicated in this setting at Mt. Skukum (Wheaton River), Laforma (Mt. Freegold) and at the Brown-McDade showing in the Mt. Nansen area.

Respectfully submitted,

Mary P. Webster
Field Geologist



Legend

TERTIARY (?)

3 Felsic dyke

CRETACEOUS

2 COAST PLUTONIC COMPLEX
Granodiorite

PALEOZOIC

1 PELLY GNEISS
Quartz biotite - hornblende schist, musc - biotite gneiss

Symbols

- Outcrop
- Contact (real, assumed)
- Trench (1985)
- Shear zone
- Foliation

NOTE: For detail trench maps see Fig. 3 & 4, pages 15 & 16 of Report.

091785
Fig. : 5




REVISED	DART 1-6 Claims	
	Geology & Sample Location Map	
PROJ. No.	SURVEY BY: AI	DATE: FEB 86
N.T.S. 1:5000	DRAWN BY: AI	SCALE: 1:5000
DWG. No.	NORANDA EXPLORATION OFFICE: Whitehorse	

STATEMENT OF QUALIFICATIONS

I, Mary P. Webster, of the City of Whitehorse, Yukon Territory do hereby certify that:

1. I have been employed as a Geologist by Noranda Exploration Company, Limited (No Personal Liability) since May 1984.
2. I am a graduate of McMaster University, Hamilton, Ontario with a B.Sc. in Geology.
3. I am a member of the Prospector's and Developers Association and the B.C. and Yukon Chamber of Mines.
4. I supervised and carried out part of the work described in this report.


Mary P. Webster
Field Geologist
Noranda Exploration Co. Ltd.
(No Personal Liability)

STATEMENT OF COSTS

PROJECT: DART 1-6 Claims (Mt. Freegold Property)

Labour:		
3 mandays at 110.00 per day		\$ 330.00
Blasting Supplies		150.00
Food/Accommodation:		
3 days at 30.00		90.00
Transportation:		
Truck rental/gas		120.00
Helicopter		304.15
Geochem Costs:		
Rocks	5 x 8.50	42.50
Soils	6 x 10.00	60.00
Data Entry	11 x 1.10	12.10
Shipping Costs		104.14
Report Writing and Drafting		300.00

	TOTAL	\$1,512.89

APPENDIX 1

ROCK DESCRIPTIONS

and

GEOCHEMICAL RESULTS

NORANDA EXPLORATION COMPANY, LIMITED
 ROCK SAMPLE DESCRIPTIONS AND GEOCHEMICAL RESULTS
 DART 1-6 Claims

ROCKS	TYPE	DESCRIPTION	Cu	Zn	Pb	Ag	Mo	As	Au
R70905	Chip 1 m Trench 1	Quartz feldspar porphyry dyke, pink, fine-grained, clay altered margins, friable, 1-2% Py, minor Qtz stringers	38	28	8	.2	1	2	10
R70906	Grab Trench 1	Shear Zone in Pelly Gneiss lens, limonite stain, intense clay alt'n, 5% dissemin. Py	28	62	4	.2	1	2	10
R70907	Chip 1 m Pit 1	Shear Zone in Pelly Gneiss, intense clay alt'n, friable, Py 2%, limonite stain, minor Qtz stringers	8	74	6	.2	1	2	10
R70908	Chip 1 m Trench 2	Shear Zone in Pelly Gneiss, intense clay alt'n, limonite stain, minor Fe-Mn stain on fractures, 2% Py	6	22	6	.2	1	2	10
R70709	Grab Pit 2	As R70908, minor Qtz stringers <1 cm wide	48	78	12	.4	1	2	70
SOILS:									
70899		Trench 1	22	80	14	.2	1	1	10
70900		Trench 1	22	78	12	.2	1	1	10
70901		Pit 1	16	34	4	.4	1	1	10
70902		Trench 2	20	80	14	.2	1	4	10
70903		Trench 2	18	76	16	.2	1	4	10
70904		Pit 2	18	74	10	.2	1	6	10