

GEOLOGICAL AND GEOCHEMICAL REPORT

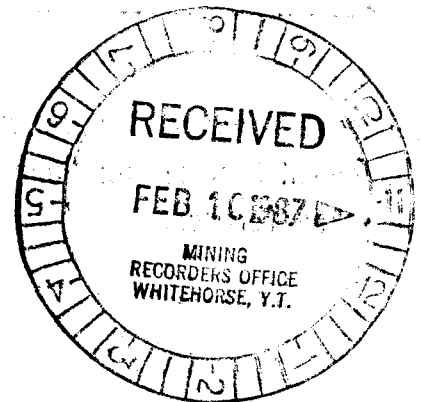
on the
TORO 1-46 CLAIMS

Whitehorse Mining District

N.T.S. 115 I/12

Latitude 62°38'

Longitude 138°35'



091906

by

Craig J.R. Hart

December, 1986

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 \$ 4800.00.

D A Emerald

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

1980-11-18

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CHAPTER ONE: INTRODUCTION

1-1: INTRODUCTORY STATEMENT

The TORO 1-24 claims were staked by David H. Waugh June, 1984 to cover an area thought to be favourable for a high tonnage, low grade precious metal deposit. Previously this property had been a porphyry copper-moly target and was known as the TAD property. During the 1986 field season, Noranda carried out a program of soil sampling and reanalysis of old drill core. Results from this program were somewhat encouraging and at the time of this writing, an option agreement between Noranda and Waugh is in the process of being finalized. An additional 22 claims were staked (TORO 25-46) in November, 1986.

1-2: LOCATION AND ACCESS

The TORO 1-46 quartz claims are situated at 62°38' north latitude and 138°35' west longitude on map sheet 115 I/12 in the Dawson Range area, Whitehorse Mining District. The claims are located 250 air kilometres northwest of Whitehorse, 105 air kilometres northwest of Carmacks, 55 air kilometres west of Minto or 47 air kilometres northwest of Guder Junction which is located at the confluence of Bow and Seymore Creeks (Figures 1 and 2).

A winter tote trail, originating at Revenue Creek, follows Big Creek

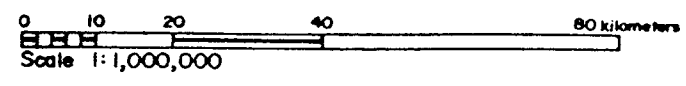
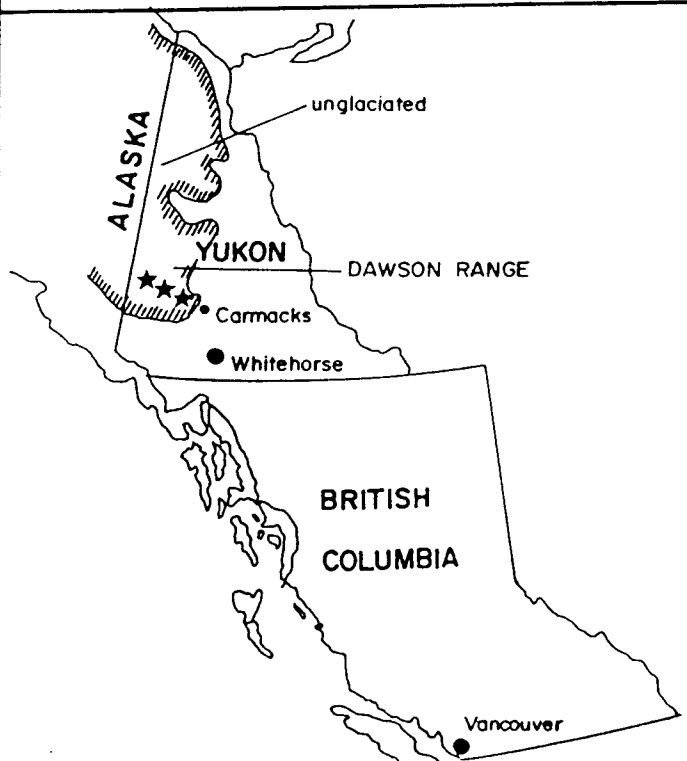
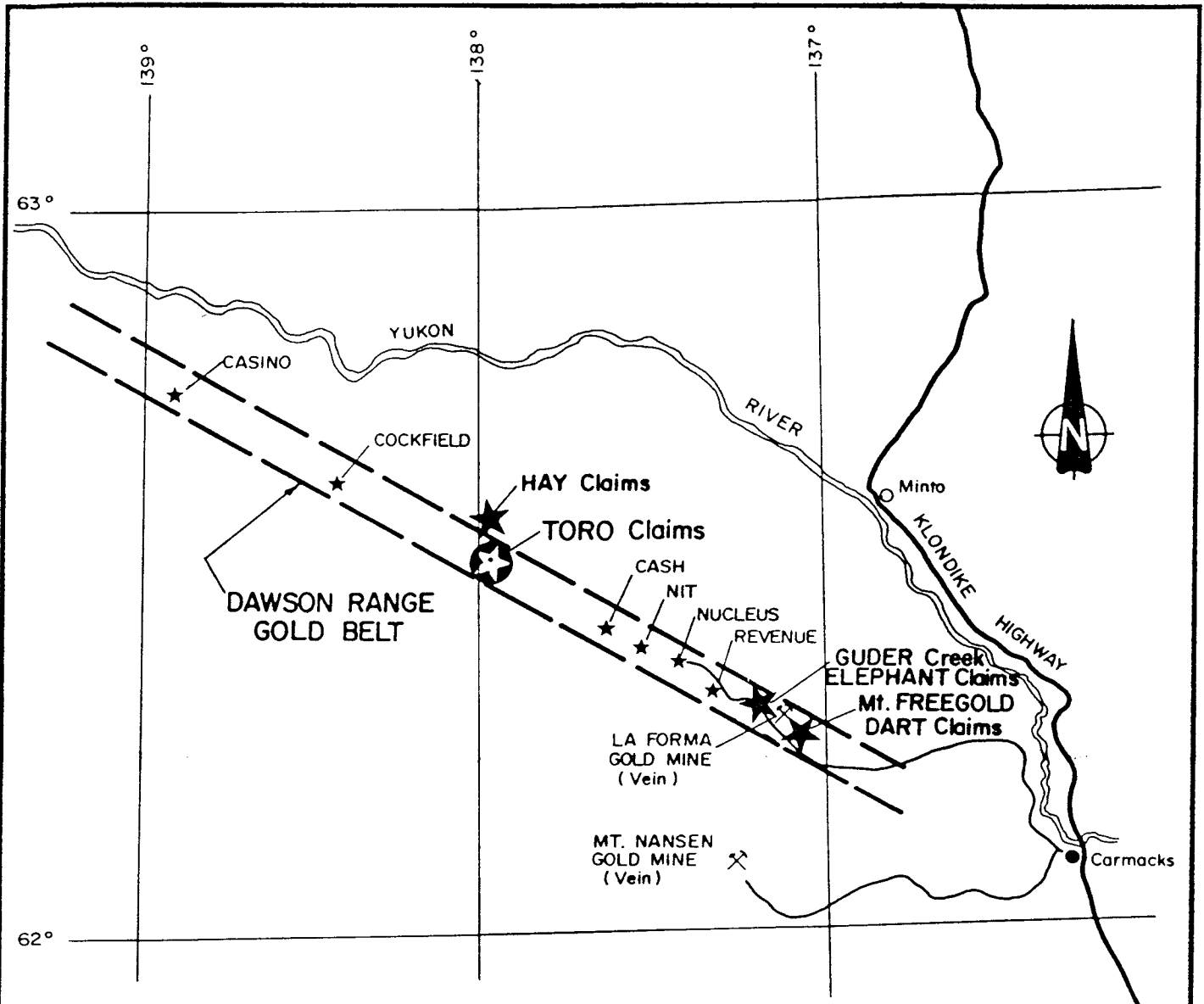


Fig. 1

REVISED	TORO Claims	
	TAD GOLD PORPHYRY Dawson Range	
	LOCATION MAP	
PROJ. No. <u>20</u>	SURVEY BY: _____	DATE: _____
N.T.S. <u>115112</u>	DRAWN BY: _____	SCALE: <u>1:1,000,000</u>
DWG. No.	NORANDA EXPLORATION	
	OFFICE: <u>Whitehorse</u>	

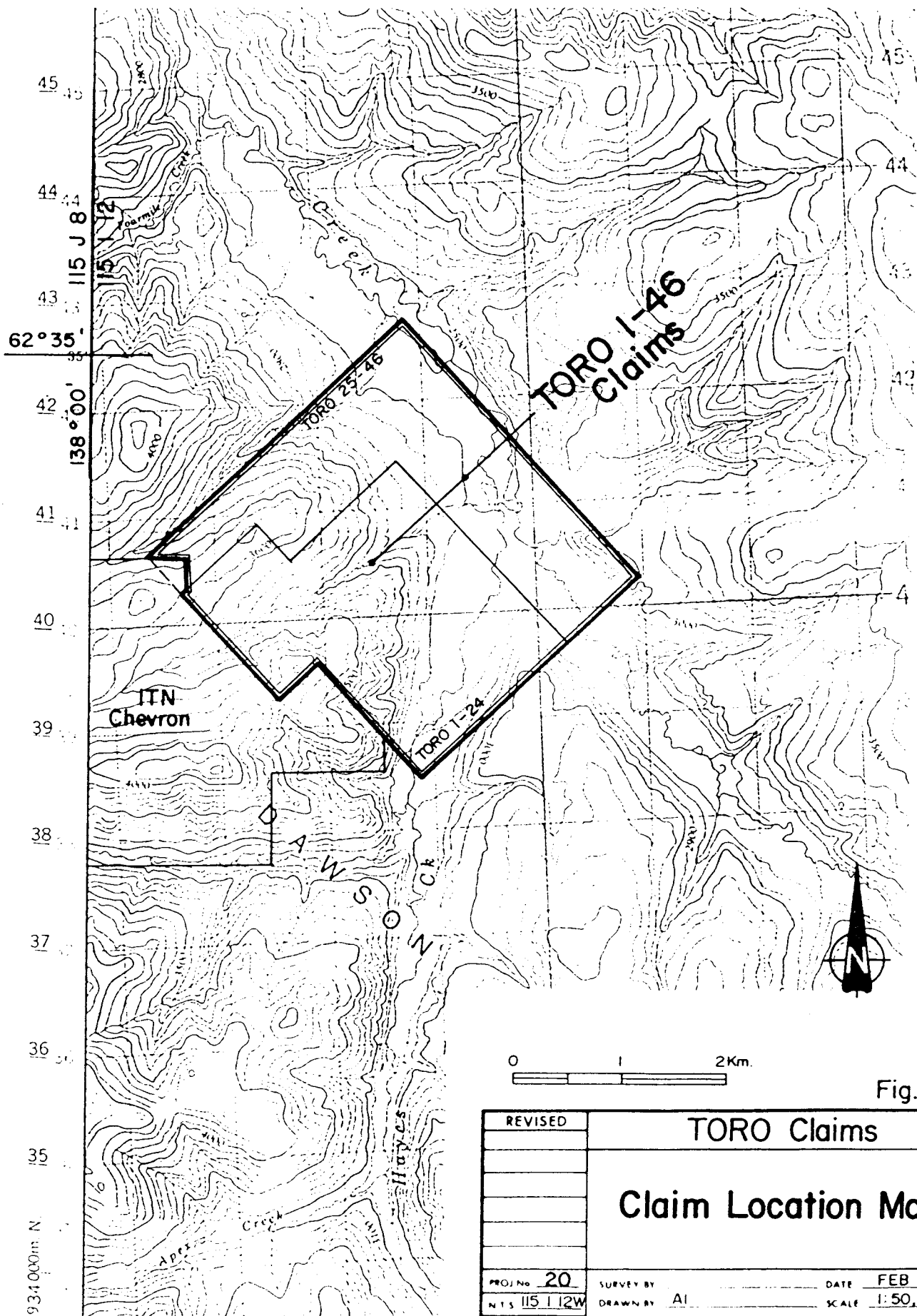


Fig. : 2

REVISED	TORO Claims	
	Claim Location Map	
PROJ No <u>20</u>	SURVEY BY _____	DATE <u>FEB 87</u>
N.T.S <u>115 1 12W</u>	DRAWN BY <u>AI</u>	SCALE <u>1:50,000</u>
DWG No _____	NORANDA EXPLORATION	
	OFFICE <u>Whitehorse</u>	

VANCAL 11927

and bypasses the property. The tote trail is 42 kilometres long and connects with the Freegold Road from Carmacks, an additional distance of 100 kilometres. Two adjoining 750 metre winter airstrips were constructed along Hayes Creek in 1969. Their condition is presently unknown.

The tote trail is presently being upgraded to a four wheel drive, industrial access road which will extend as far as the Casino property, 50 kilometres northwest of the TAD/TORO. Present estimates suggest that the road to the property will be driveable by the end of the 1987 field season.

1-3: PHYSIOGRAPHY AND VEGETATION

The claims exist in the foothills on the northeast side of the Dawson Range near Prospector Mountain. The topography of the property exhibits considerable relief from a low elevation of 2,500 feet on Hayes Creek to the highest point of 4,200 feet located on the ridge northwest of camp. The property is bordered by the broad valleys of Hayes Creek whose streams obviously underfit their valley. Thick fluvial deposits fill the valley bottoms and occasionally form stream terraces.

The topography is knobby with the high points exhibiting well rounded features typical of unglaciated terrane.

Well developed regoliths exist such that there may be up to 3 metres between the soil horizon and bedrock.

Soil development is fair on the south facing slopes with an easily recognizable orange soil available very near the surface. North facing

slopes have thick moss layers underlain by a frozen A horizon. Lowlands generally consist of wet moss bogs.

The vegetation varies from thick stands of mature pine and spruce on south facing slopes to stunted spruce and buckbrush on north facing slopes and in bogs. Walking is made easier by cut lines of a 1970 vintage.

Outcrops are few and widely scattered and constitute <1% of the total surface area on the property.

1-4: HISTORY OF THE CLAIMS

The first work in the immediate area of the TORO claims was placer related activity evidenced by pits and diggings along the east ridge and creek beds. Several old prospector's cabins date back to 1898.

More recently, International Mines Services staked 267 TAD claims over the area in 1969. Discovery of disseminated Pb-Zn mineralization led to extensive soil sampling, line cutting, magnetometer, induced polarization and trenching during 1969 and 1970. Two geochemical anomalies of significant magnitude with coincident IP chargeability and/or magnetic anomalies delineated two drill targets.

A total of 8,880 feet (2,708 metres) were drilled on 18 holes between November, 1969 and May, 1970. The majority of the core remains on site.

Reports, logs, maps and previous results were made available to Noranda.

1-5: WORK PROGRAM

Following a property exam by Noranda and Waugh in early July 1986, a program of wide spaced soil sampling and analysis of old drill core was carried out. All samples were analyzed for As, Au and Ag. The core was also run for base metals. A return trip was made in September to fill in some of the sampling and an additional 22 claims were staked in November (TORO 25-46).

The following is a list of personnel involved with the program:

Wayne Reid	Project Geologist
Craig Hart	Crew Chief
Steve Mackay	Geologist
Jurg Hofer	Field Assistant
Rob Copland	Field Assistant

The field portion of the project required 18 mandays:

9 mandays - soil sampling
7 mandays - core sampling
<u>2</u> mandays - evaluating property
18

A total of 171 soil samples, 4 silt samples and 114 drill core samples were taken.

CHAPTER TWO: GEOLOGY

2-1: REGIONAL GEOLOGY

The property lies within the Yukon Crystalline Terrane (Figure 3). This province consists of four units of Paleozoic metamorphic rocks which are intruded by Cretaceous plutonic rocks. The intrusive rocks are considered to be the roots of the Carmacks (uKcb) and Mt. Nansen (Kmn) volcanic groups which have been sporadically preserved.

In places, klippe of Nisutlin Allocthon (PMn) overlies presumably younger Yukon Crystalline Terrane rocks. The predominant rock of the Crystalline Terrane is a biotite-rich gneiss (Ppn or Cpsn) known as the Selwyn or Pelly Gneiss (Tempelman-Kluit, 1981).

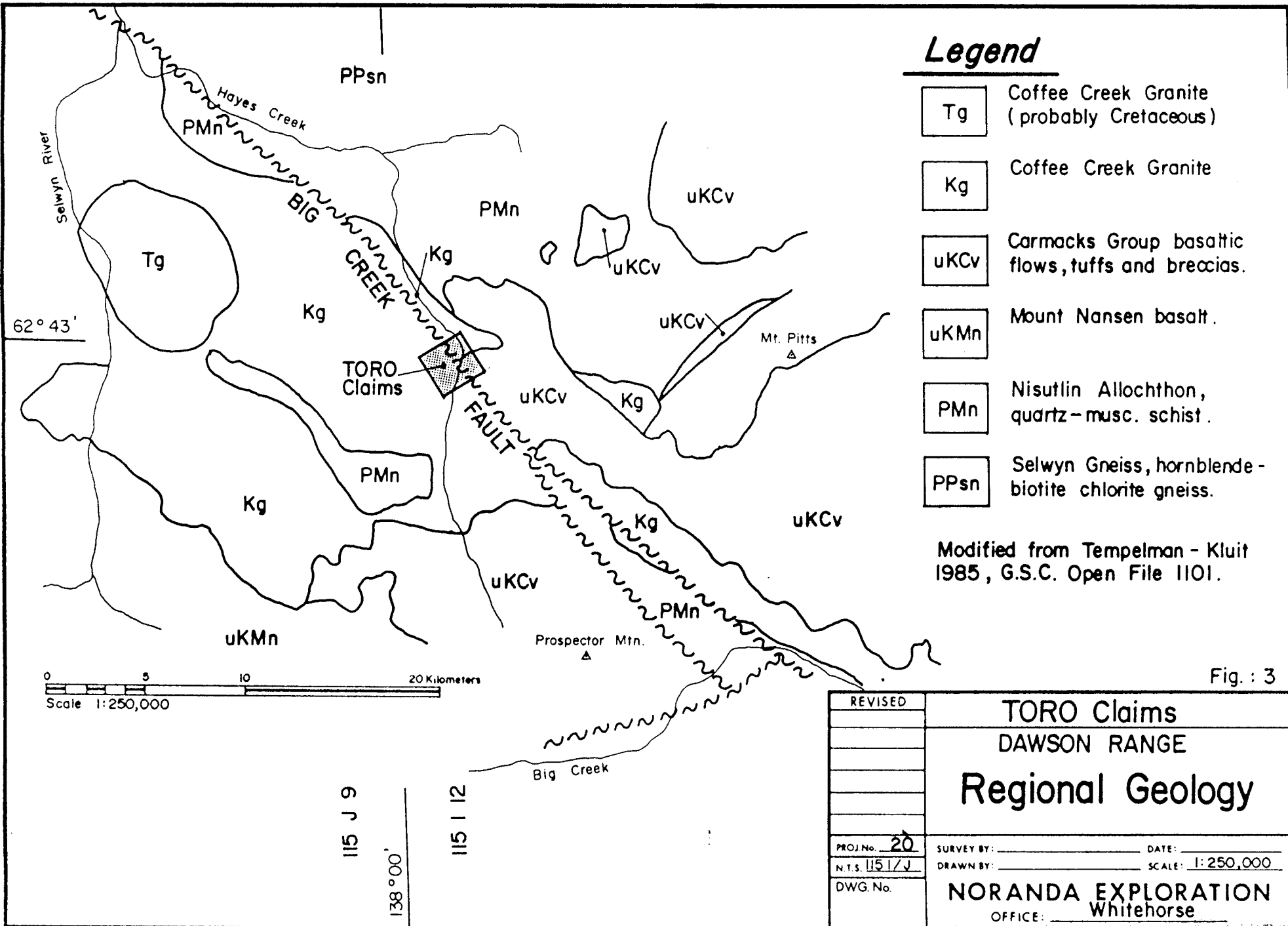
The regional trend is northwest-southeast. The Big Creek Fault parallels this trend and forms the lineation for both Big and Hayes Creeks.

This area of the Yukon has not been glaciated and as a result is covered in a thick regolith.

2-2: PROPERTY GEOLOGY

The geology of the TAD property is well described by Waugh (1971) and covers an area much greater than the present TORO claims. Only two units are recognized on the TORO 1-24 claims; both are Cretaceous intrusives.

The oldest is a coarse to medium-grained, flesh coloured quartz

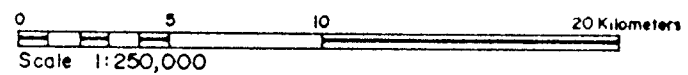


Legend

- Tg Coffee Creek Granite (probably Cretaceous)
- Kg Coffee Creek Granite
- uKcV Carmacks Group basaltic flows, tuffs and breccias.
- uKMn Mount Nansen basalt.
- PMn Nisutlin Allochthon, quartz-musc. schist.
- PPsn Selwyn Gneiss, hornblende-biotite chlorite gneiss.

Modified from Tempelman - Kluit 1985, G.S.C. Open File 1101.

Fig. : 3



115 J 9
138°00'

115 I 12

REVISED	<h2>TORO Claims</h2> <h3>DAWSON RANGE</h3> <h1>Regional Geology</h1>
PROJ. No. <u>20</u> N.T.S. <u>115 I 12</u> DWG. No.	SURVEY BY: _____ DATE: _____ DRAWN BY: _____ SCALE: 1:250,000
NORANDA EXPLORATION OFFICE: <u>Whitehorse</u>	

monzonite that grades into a granodiorite. It contains quartz, orthoclase, plagioclase, muscovite and clay minerals after biotite, carbonate and opaques (Waugh, 1971).

The younger of the two is a biotite quartz monzonite porphyry which is seen cross-cutting the older quartz porphyry in T-10 (Waugh, 1971).

Alteration of both units is slight with ferromagnesian minerals altering to chlorite and some feldspars becoming chalky white with argillic minerals. The alteration, though slight, is pervasive. Drill holes intersected mineralized breccia zones in the younger quartz monzonite. The breccias are often heterolithic containing vari-coloured cherty fragments.

Core on the property was often manganese and/or limonite stained and altered to clays such that a spoon was required to sample it. This was especially prevalent in the upper 10-20 metres but often continued throughout the oxidized portion of the core down to 450 feet. It is thought that considerable alteration of the core has taken place due to exfoliation and weathering since being brought to the surface in 1969 and 1970.

Outcrops of Upper Cretaceous age Carmacks Group basalts, breccias and porphyritic basalts are exposed on the more recently staked TORO 25-46 claims. More specifically they exist in the Hayes Creek valley floor.

CHAPTER THREE: GEOCHEMISTRY3-1: STREAM SAMPLING

Four silt samples and one pan concentrate sample were taken at locations where soil lines crossed drainages. No gold values were returned, however 3 of the silts had values of 0.6 ppm Ag indicating a high silver background. The pan concentrate sample did not return any anomalous values.

A silt sample taken by D. Waugh from the drainage of Zone II returned values of 1120 ppm Zn, 580 ppm Pb, 62 ppm Cu, 4.6 ppm Ag, and 60 ppb Au.

TABLE 1: Silt Sample Results

	Cu	Zn	Pb	Ag	As	Au
S72622	12	74	36	0.6	56	10
S81409	12	90	18	0.2	40	10
S78379	16	180	38	0.6	54	10
H78378	16	100	32	0.4	38	10
S72625	16	92	22	0.6	24	10

3-2: SOIL SAMPLING

One hundred and seventy soil samples were taken along approximately 10 kilometres of cross-lines. Cut lines from 1969 were used and a metric formula was overlain the original imperial grid where lines were spaced at 400 foot and 800 foot intervals.

Good "B" horizon soils were obtained from most lines, however those on north facing slopes and in wet, boggy lowlands were either poor or were not

taken.

Soil geochemistry in 1969-70 was concentrated on base metals and Mo and the anomalies were well defined. This program concentrated on gold and silver with As as a trace element.

Extensive regolith development at the TORO property has probably resulted in element leaching of the upper portions of the regolith. The result is a lowering in the values considered anomalous if taken from the upper regolith and an increase in the anomalous threshold if taken lower in the regolith where elements may be concentrated.

As a result, values greater than 20 ppb Au, 1.0 ppm Ag and 40 ppm As are considered anomalous.

Gold: Three separate areas of highly anomalous gold values (>100 ppb) have been found on the TORO property (Figure 4). One is located in the western portion of the claim block on line 56W. It is in the location known as Zone II which also identifies a high chargeability zone and an interpreted magnetic contact. The anomalous zone is centred on a value of 140 ppb Au with supporting Ag and As values of 4.6 and 570 ppm respectively.

A second anomalous area is located on line 36W between DDH T-5 and T-8 near the centre of the property. It also is centred on a value of 140 ppb Au and associated with a high chargeability area. It is also located entirely within an anomalous zinc zone (>500 ppm) as delineated in 1969-70. Lower values of 80 and 20 ppb Au are found downslope from the highest gold values. Since line 36W did not continue southwest of the base line, the anomalous area is open in this direction.

The third area of anomalous gold is the largest and extends for a minimum distance of 1,400 metres. It is elongate and has a maximum width of 200 metres at its intersection with line 24W. This widest point is again associated with a high chargeability zone previously recognized as Zone I (Walcott, 1969).

The anomalous area is almost north-south trending and is open at both ends. Interestingly, this zone sub-parallel the topography and is contained along the base of Tad Mountain between 2,600' and 2,800'.

Previous drill holes, DDH T-1, T-2, T-10 and T-12 all occur in this zone but none were drilled in areas where soil values were >40 ppb Au.

The highest value in this zone is 240 ppb Au which occurs at the northernmost point on the soil grid on line 52W.

Silver: Three areas of highly anomalous silver values in soil (>5.0 ppm) have been delineated on the TORO property (Figure 5), one of which is quite large. Drill holes DDH T-2, T-4, T-5, T-8, T-10, T-12 and T-14 are all within this anomalous silver area where values reach 12.0 ppm. This large silver zone is almost identical to the Zn >500 ppm zone as delineated in 1969-70 (Waugh, 1971).

The second zone is somewhat coincident with gold and I.P. values which outline Zone II. The silver anomalies, however trend further westward and remain open to the south.

Isolated silver values of 6.4 and 4.4 ppm occur along line 16W and form the small, third silver anomalous zone.

Overall, the on ground gold:silver relationship in soils is not good,

but some similarities do exist. Especially if one were to line up the third anomaly with Zone I where a northerly trend would correspond to the major gold zone.

Arsenic: Two areas of highly anomalous As in soil have been uncovered (Figure 6). The largest is at the Zone II position where values 900 and 570 ppm are coincident with high silver values (5.6 and 4.6 ppm). The other is a smaller area around a value of 400 ppm located near the Zone I area. This value also has a high coincident silver value (5.0 ppm).

Discussion: There appears to be a strong silver:arsenic correlation. In all instances of As >250 ppm, Ag >2.0 ppm. Both As and Ag maintain a reasonable relationship with gold but the correlation is not constant and varies considerably (i.e. Au 240/Ag 0.2/As 240 [1:0.8:1000] versus Au 140/Ag 4.6/As 570 [1:33:4071]).

As well, both the silver and zinc anomalous areas overlap quite well.

Gold maintains its reasonable affiliation with both silver and arsenic but appears to have a stronger relationship with the +8 millisecond high chargeability zone (Figure 7).

3-3: DRILL CORE SAMPLING

Drill core from holes T-1 to 6, T-8, T-10 and T-12 were sampled for Au and Ag while hole T-14 was sampled for Au, Ag, As, Pb, Zn, Cu and Mo to determine metallogenic relationships. One hundred and fourteen samples were taken with preference given to altered and/or mineralized portions as

outlined in old drill logs or visual inspection.

The highest gold values occur in areas of most intense oxidation and alteration. That is, in areas of intense argillic and/or sericitic alteration, commonly with excessive limonite and/or manganese staining. Further, brecciated areas with oxide matrices or less commonly, sulphides tend to carry higher gold values. Only rarely do gold values exceed 100 ppb below the oxidation horizon. Typically a fault or breccia zone will be present where supergene, meteoric fluids can percolate and deposit or remobilize minerals. Secondary quartz/carbonate stringers may have local importance.

The richest gold values occur approximately 3/4 the down hole distance to the oxidation horizon as shown below.

TABLE 2: Oxidation Horizon Depth

HOLE	VALUE	INTERSECTION DEPTH	DEPTH OF OXIDATION	DEPTH AS % TO OXIDATION
T-2	2.03 g/t	163-190'	230'	78%
T-12	1.25 g/t	143-162'	236'	63%
T-14	1.09 g/t	80-86'	110'	75%
				72% average

Holes with oxidation horizons deeper than 250 feet tend to have lower maximum gold values.

Base metal and As values were determined for T-14 to establish any metallogenic relationships. The interval between 63 feet and 86 feet contains an overall gold value of 1.68 g/t (0.049 o.p.t.). Similarly this interval contains the highest silver value (11.3 ppm) and arsenic values in the hole (>1,000 ppm) (Figure 8). Conversely, zinc values are extremely

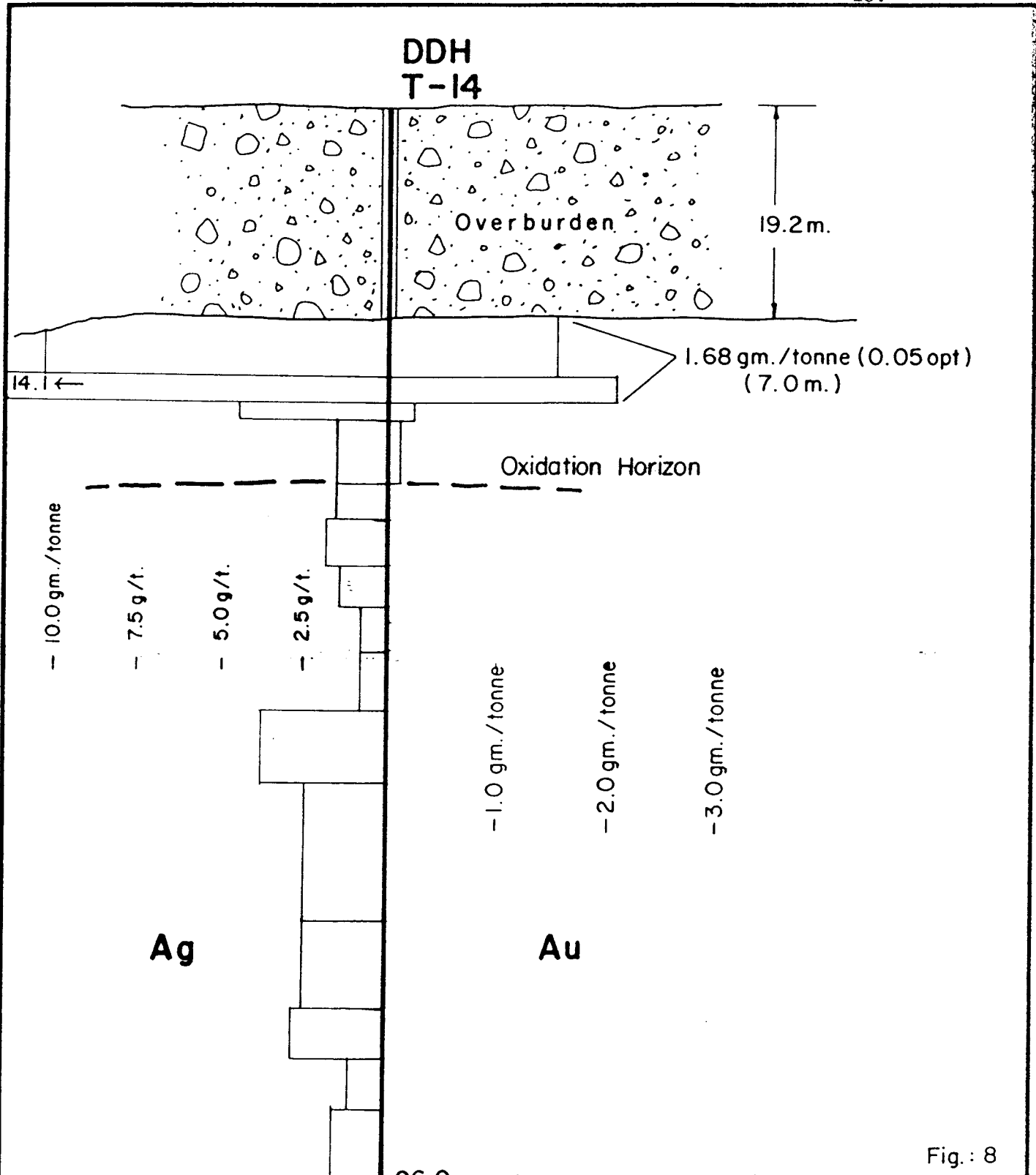


Fig. : 8

REVISED	TORO Claims	
	DDH - T-14	
PROJ. No. 20	SURVEY BY: <u>CH</u>	DATE: <u>FEB 87</u>
N.T.S. <u>115/12</u>	DRAWN BY: <u>AI</u>	SCALE: <u>1:500</u>
DWG. No.	NORANDA EXPLORATION	
	OFFICE: <u>Whitehorse</u>	

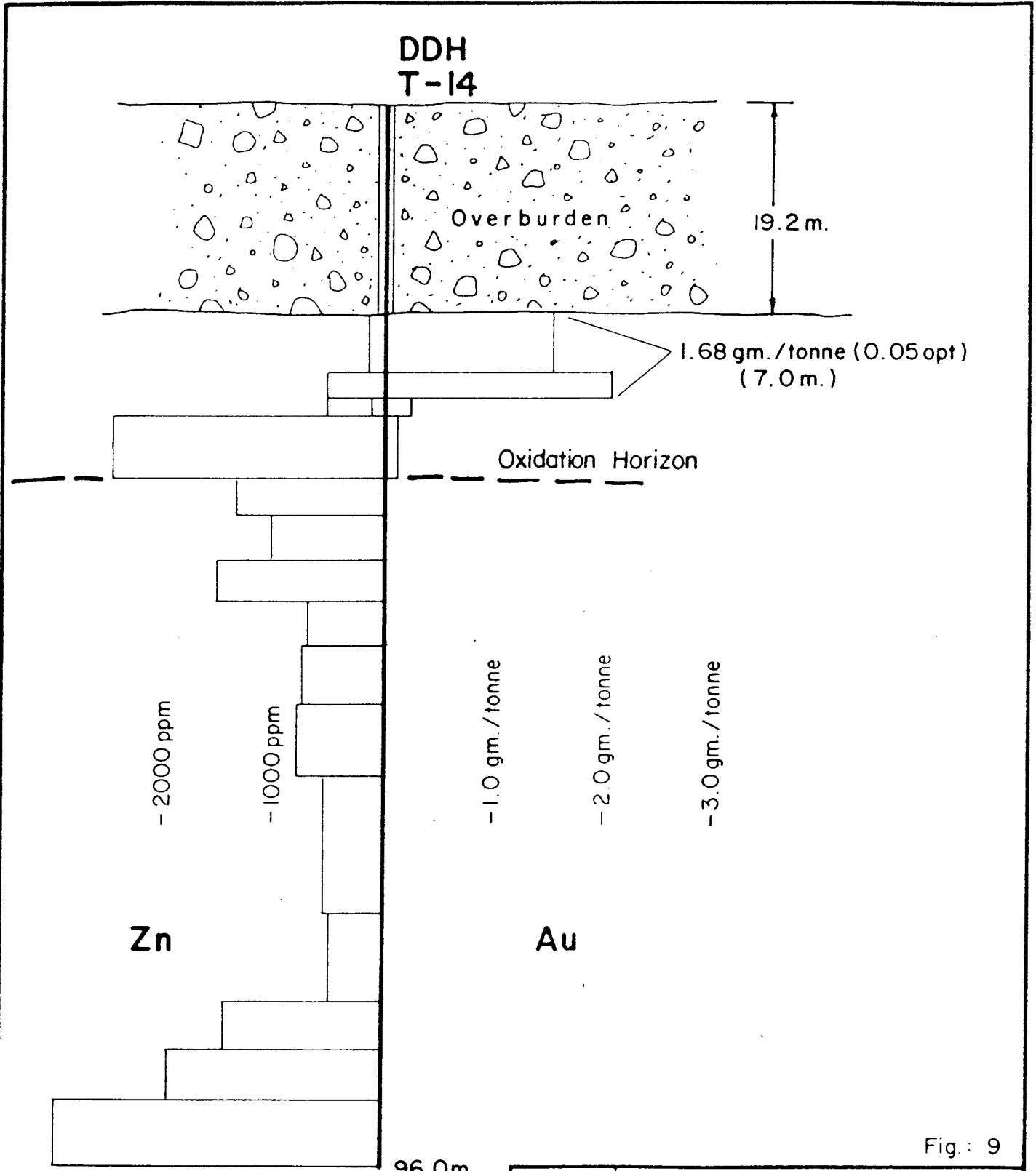


Fig.: 9

REVISED	TORO Claims	
	DDH - T-14	
PROJ No 20	SURVEY BY CH	DATE FEB 87
NTS 1512	DRAWN BY AI	SCALE 1:500
DWG. No.	NORANDA EXPLORATION	
	OFFICE: Whitehorse	

low, probably due to meteoric leaching within the oxidized portion of the hole (Figure 9).

Discussion: Oxidation and meteoric leaching is responsible for remobilizing metals. More reactive metals (i.e. zinc) have been almost totally leached from the oxidized portion of rock. Disseminated sulphides (i.e. pyrite) are rare within the oxidized portions. Limonite and manganese oxide (possibly derived from Mn-rich pyrite) is locally abundant in the oxidized rock.

Metal enrichment is most significant approximately 3/4 the down hole distance to the oxidation surface (Figures 10 and 11). Gold has a strong correlation with As, a moderate correlation with silver and an excellent negative correlation with zinc (Figure 12).

A comparison between geochemical and assay values for gold and silver values in DDH-T-2 suggested that gold assay values are, on average, higher than the geochemical value for the same sample. Conversely, silver assay values are lower than their geochemical counterparts, but only slightly (Figure 13).

A greater discussion regarding these comparisons is given in Appendix 5.

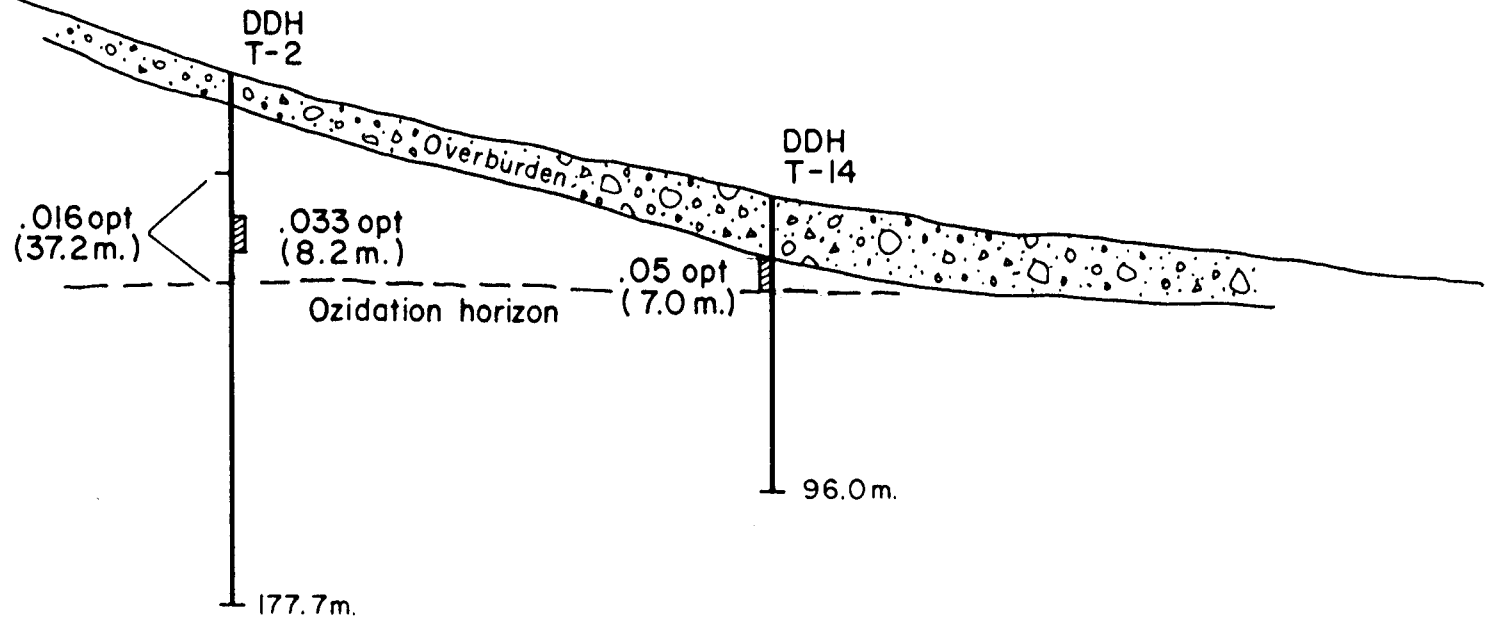


Fig.: 10

REVISED	TORO Claims	
	Section L-32+00W	
PROJ. No. <u>20</u>	SURVEY BY: <u>CH</u>	DATE: <u>FEB 87</u>
N.T.S. <u>1:5112</u>	DRAWN BY: <u>AI</u>	SCALE: <u>1:2500</u>
DWG. No.	NORANDA EXPLORATION	
	OFFICE: <u>Whitehorse</u>	

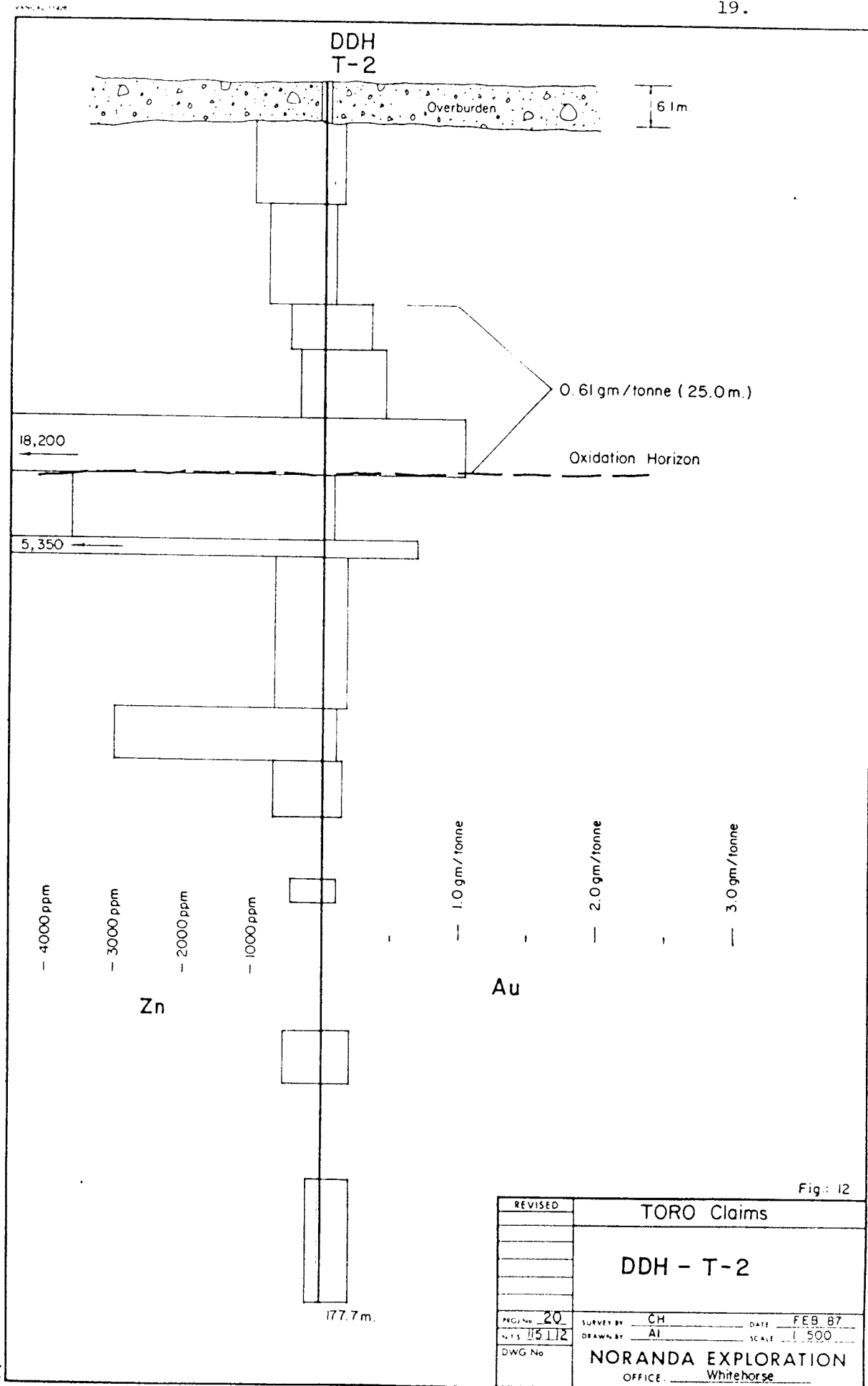


Fig: 12

REVISED	TORO Claims	
	DDH - T-2	
PROJ. No. 20	SURVEY BY CH	DATE FEB 87
N.T.S. 1:5112	DRAWN BY AI	SCALE 1:500
DWG No.	NORANDA EXPLORATION	
	OFFICE: Whitehorse	

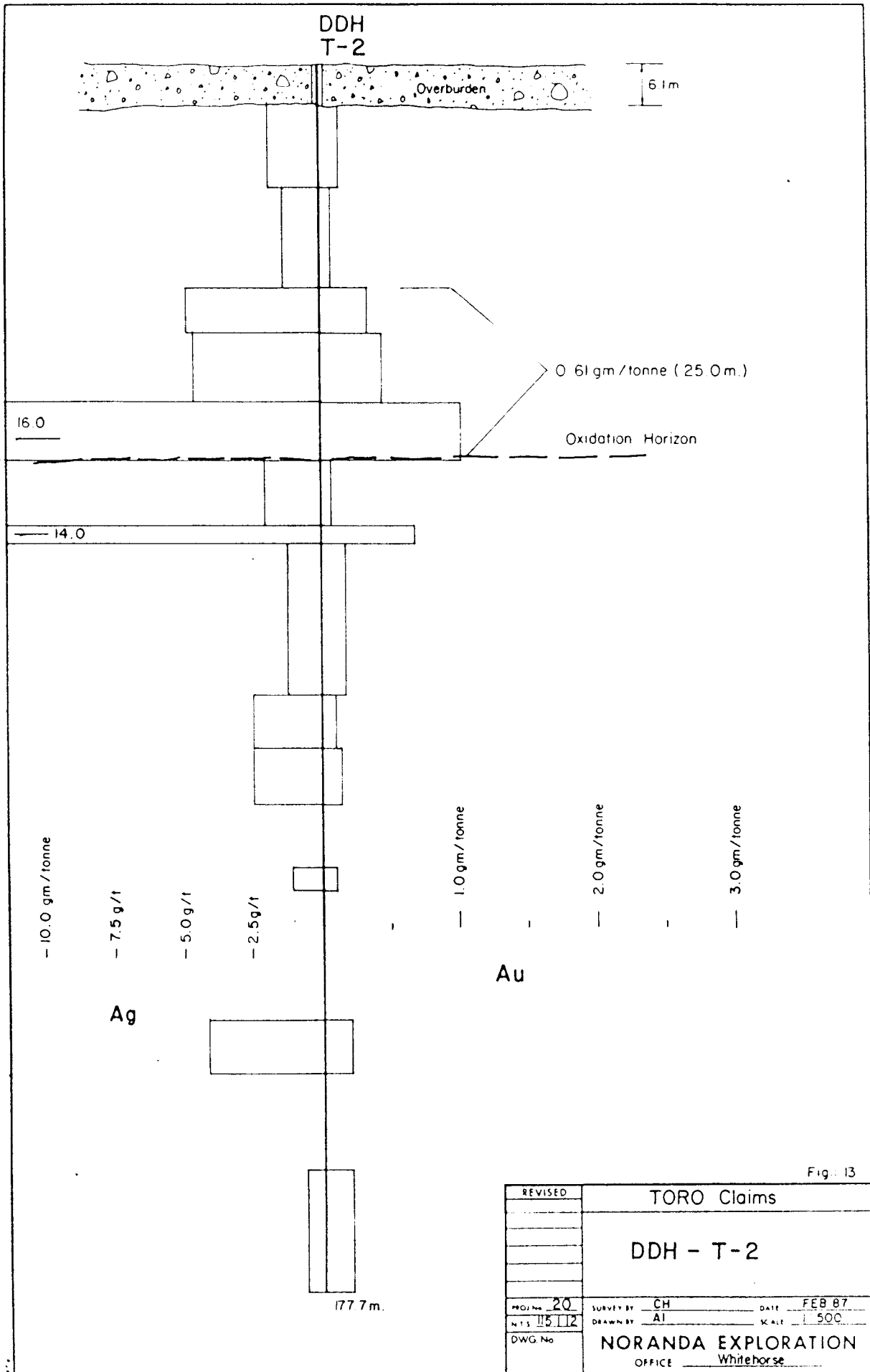


Fig: 13

REVISED	TORO Claims		
	DDH - T-2		
PROJ. No. 20	SURVEY BY CH	DATE	FEB 87
N.T.S. 1:5000	DRAWN BY AI	SCALE	1:500
DWG. No.	NORANDA EXPLORATION OFFICE Whitehorse		

CHAPTER FOUR: CONCLUSIONS AND RECOMMENDATIONS

4-1: CONCLUSIONS

Examination of geological, geochemical, geophysical and drill data obtained during a work program in 1969-70, combined with recent information, suggests that the potential for a large, bulk tonnage gold deposit exists. Metal values are hosted in: 1) the porphyry system, 2) oxidized and metal enriched zones and 3) fracture and breccia zones within and below the oxidation horizon. Drill core examination suggests gold has a strong relationship with arsenic, a moderate relationship with silver and a good negative relationship with zinc. These findings reflect the relative mobilities of the metals.

Soil geochemistry has outlined a north trending area of anomalous gold to be at least 1,500 metres in length and open at both ends. Gold values in soil have a strong relationship with areas of >8 millisecond I.P. chargeability. This area may be coincident with the peripheral argillic alteration zone. Similarly, a second anomalous gold zone (Zone II) in the western portion of the claims also exists in a high chargeability zone. This anomaly has not been drill tested.

Drilling in 1969-70 did not take place in areas where gold-in-soil values were >100 ppb. Soil anomaly threshold levels are less than in glaciated terrain where surface oxidation and regolith horizons have had

less time to develop.

Geochemical analyses for gold are typically 100% less than the assayed value. It has been suggested that anomalous values increase significantly with depth within regolith. Mineralogical, geophysical and geochemical data suggest that with respect to a porphyry system, we can say that the TAD/TORO property is within the peripheral or low pyrite shell. This is well demonstrated by the presence of galena and sphalerite containing good precious metal vein breccias occurring in a slightly argillic host rock with chlorite alteration of the ferromagnesium minerals.

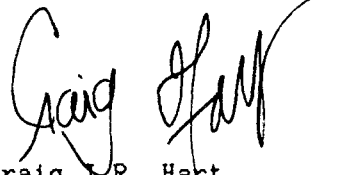
4-2: RECOMMENDATIONS

Encouraging gold values suggest an extensive work program be undertaken.

- 1) Grid soil sampling should be extended to: i) cover additional claims; ii) fill in large gaps on present grid; and iii) cover and confirm present anomalies in greater detail.
- 2) A trenching program should be conducted to remove regolithic material over present geochemically anomalous areas and areas with >8 milli-second chargeability.
- 3) Sampling of all core, in all holes that remain unsampled (i.e. T-9 in high chargeability zone, T-10 between 110' and 469').

- 4) Analyses of all rock samples should be by assay method to achieve optimum values.
- 5) Drill testing of Zone Ia, Ib and Zone II to depths only slightly greater than the oxidation horizon.

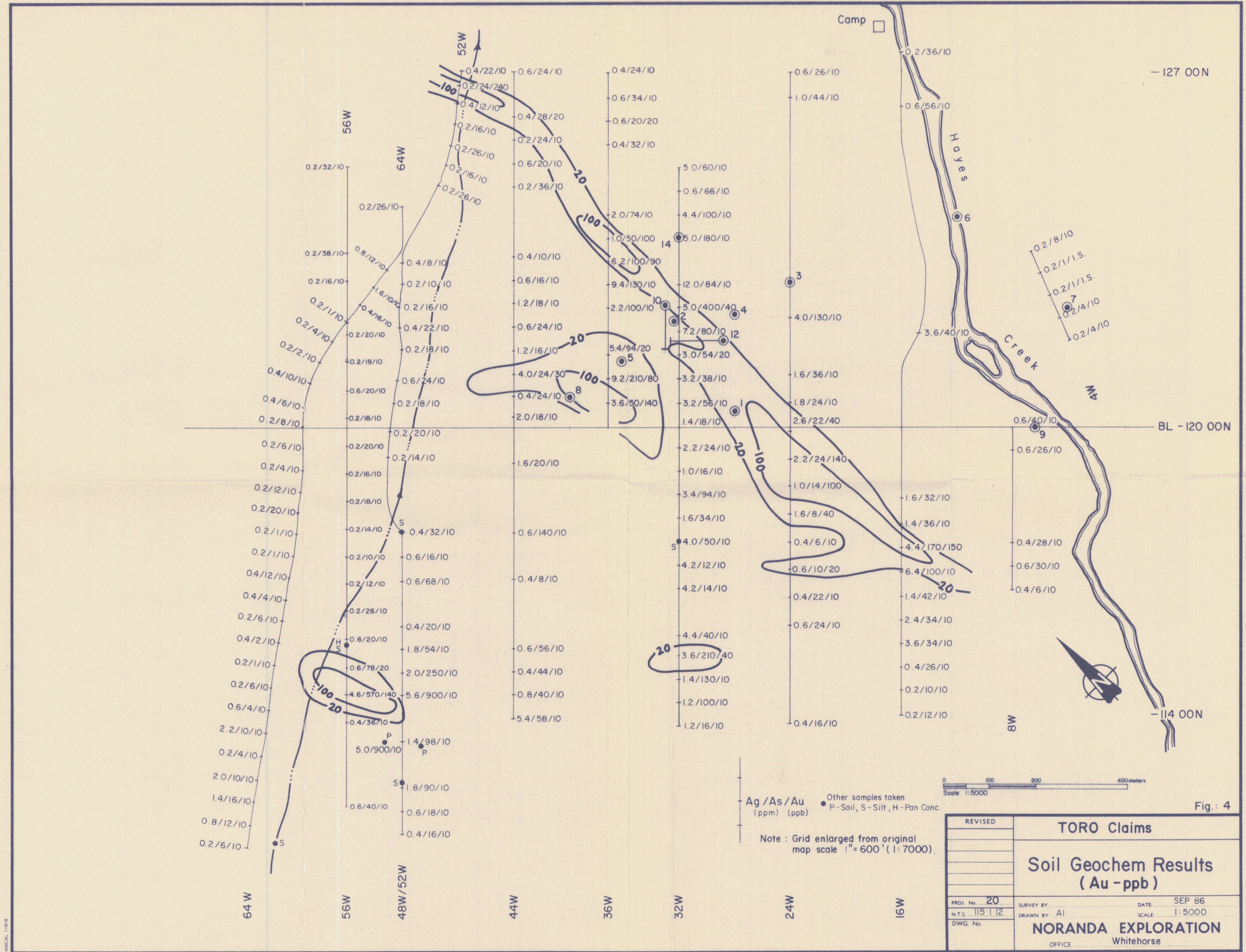
Respectfully submitted,

A handwritten signature in black ink, appearing to read "Craig Hart", with a long, sweeping flourish extending from the end of the signature.

Craig J.R. Hart
Geologist

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- 127 00N

BL - 120 00N

- 114 00N

091906

Ag /As /Au (ppm) (ppb) ● Other samples taken P - Soil, S - Silt, H - Pan Conc.

Note : Grid enlarged from original map scale 1" = 600' (1 : 7000).

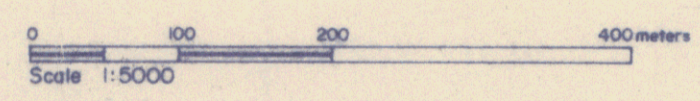
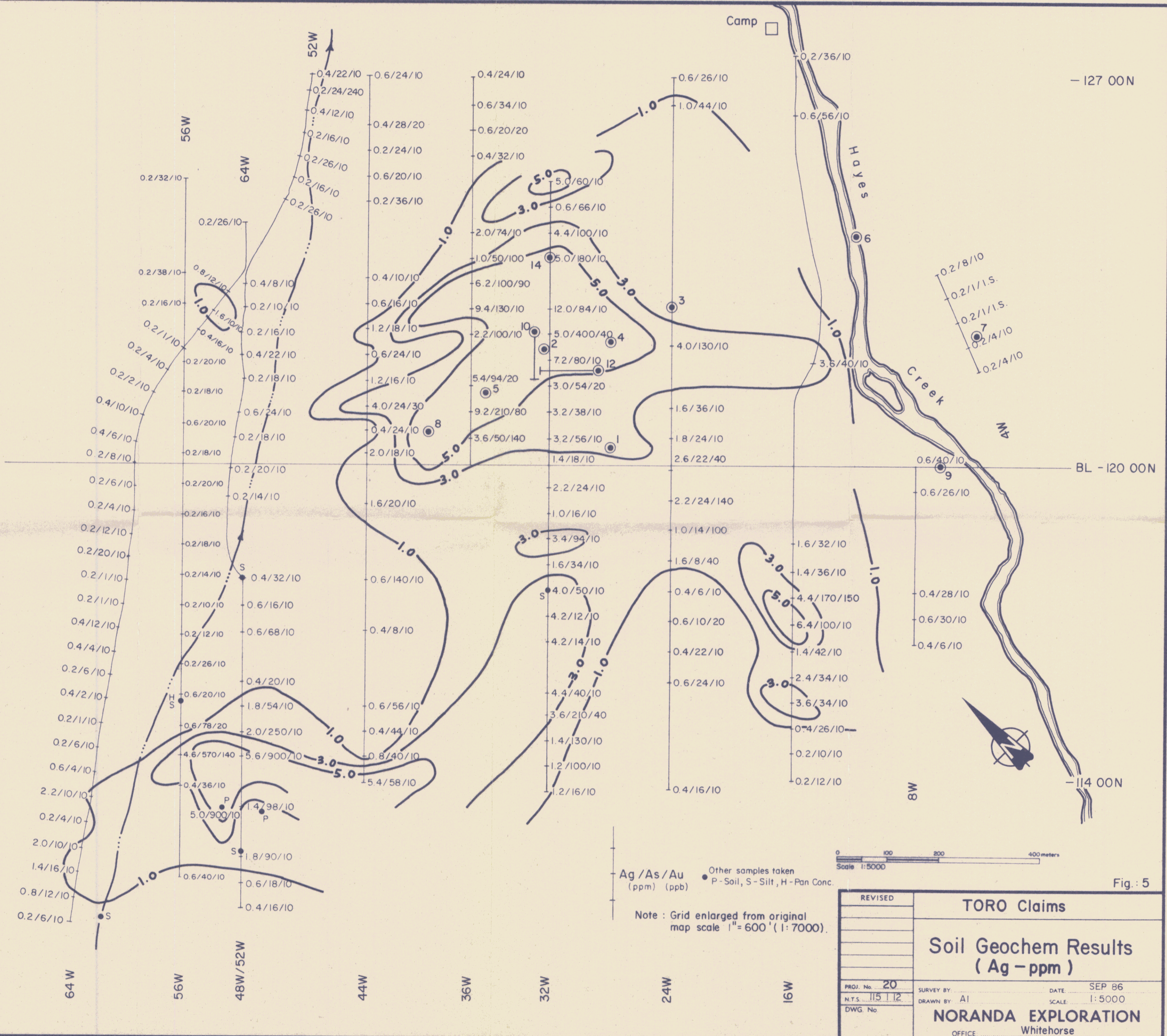


Fig. 4

REVISED	TORO Claims	
	Soil Geochem Results (Au - ppb)	
PROJ. No. 20	SURVEY BY: _____	DATE: SEP 86
N.T.S. 115 112	DRAWN BY: AI	SCALE: 1:5000
DWG. No. _____	NORANDA EXPLORATION	
	OFFICE: Whitehorse	



Ag / As / Au
 (ppm) (ppb)

Other samples taken
 • P - Soil, S - Silt, H - Pan Conc.

Note : Grid enlarged from original
 map scale 1" = 600' (1 : 7000).

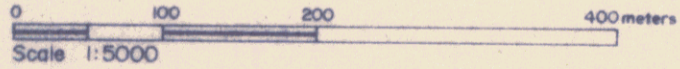
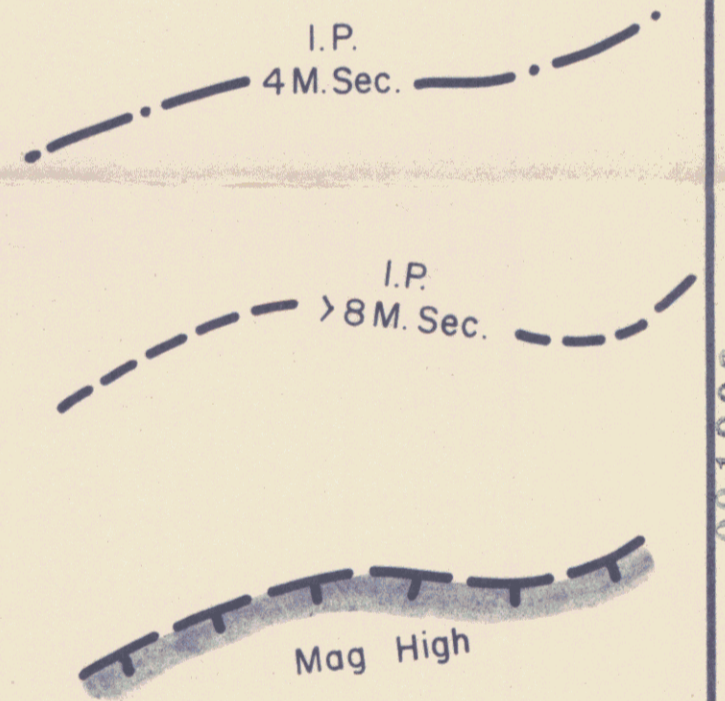


Fig. : 5

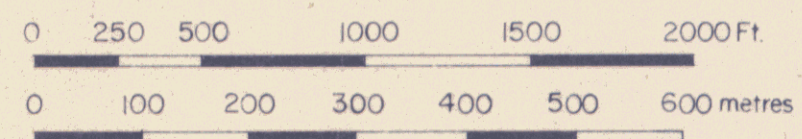
REVISED	TORO Claims	
	Soil Geochem Results (Ag - ppm)	
PRJ. No. 20	SURVEY BY: AI	DATE SEP 86
N.T.S. 115 112	DRAWN BY: AI	SCALE 1:5000
DWG. No.	NORANDA EXPLORATION	
	OFFICE Whitehorse	

091906

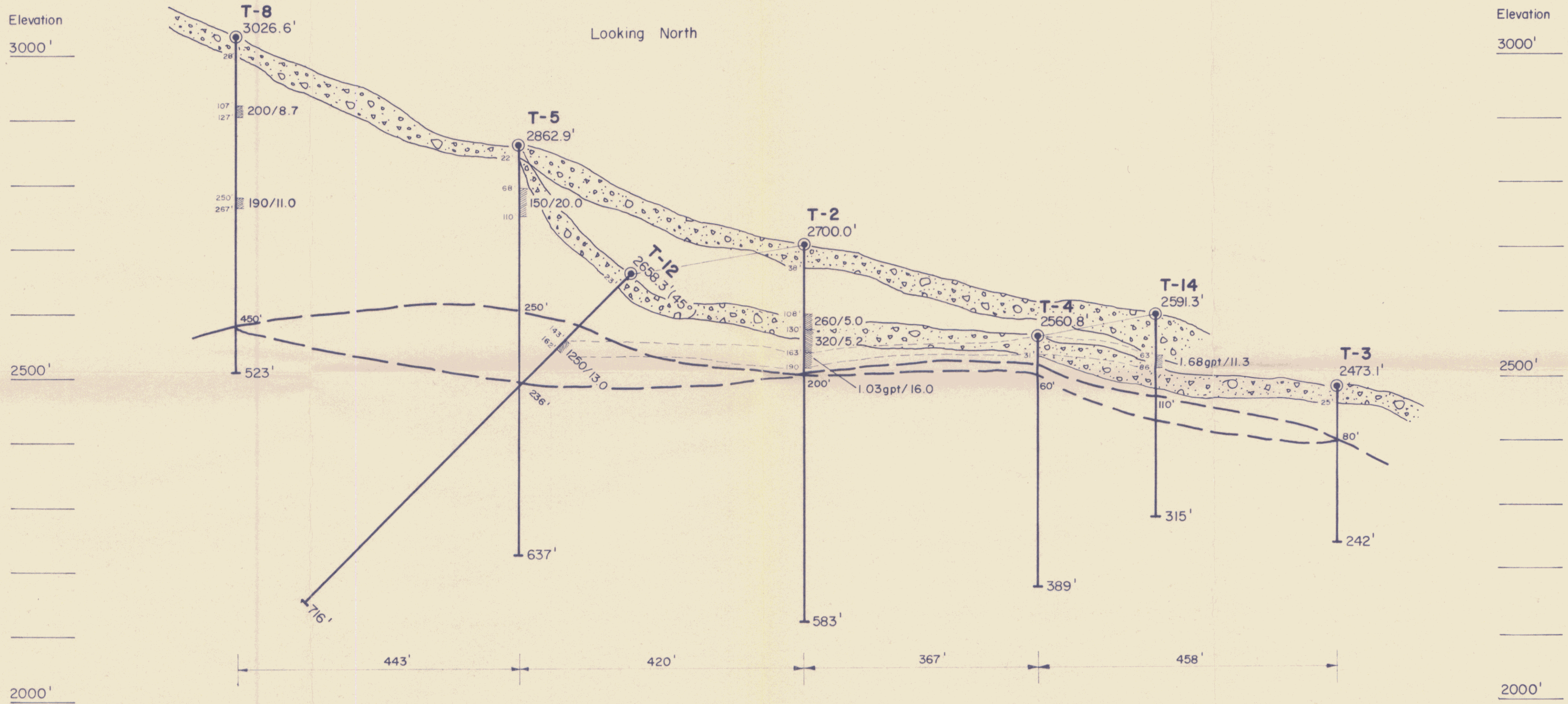


091906

Fig. : 7



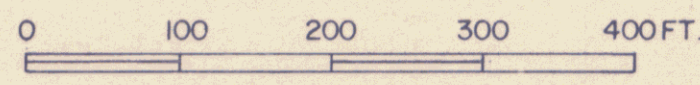
REVISED	TORO Claims	
	Geophysical Compilation (with DDH Locations)	
PROJ No. <u>20</u>	SURVEY BY _____	DATE <u>FEB 87</u>
N.T.S. <u>1:12</u>	DRAWN BY <u>AI</u>	SCALE <u>1" = 600' (1:7000)</u>
DWG No.	NORANDA EXPLORATION OFFICE <u>Whitehorse</u>	



091906

Fig. II

REVISED	TORO Claims	
	Longitudinal Section DDH Compilation	
PROJ. No. 20	SURVEY BY: CH	DATE: DEC 86
N.T.S. 115 1 12	DRAWN BY: AI	SCALE: 1 cm = 50 ft.
DWG. No.	NORANDA EXPLORATION Whitehorse	
	OFFICE:	



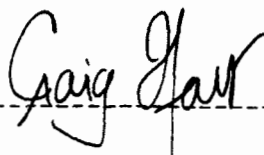
APPENDIX 1

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Craig J.R. Hart of Whitehorse, Yukon, do hereby certify that:

1. I am a geologist presently employed by Noranda Exploration Company, Limited (No Personal Liability) in Whitehorse, Y.T.
2. I am a graduate of McMaster University, Hamilton, Ontario with a Major B.Sc. in Geology (1986).
3. I have practiced my profession in the Yukon for the previous seven field seasons.
4. I am an Associate of the Geological Association of Canada, a member of the C.I.M.M., the B.C. and Yukon Chamber of Mines and the Prospectors and Developers Association.
5. I was a geologist on the crew which conducted the work described in this report.



Craig J.R. Hart
Geologist

APPENDIX 2

STATEMENT OF COSTS

STATEMENT OF COSTS

PROJECT: TORO Claims

Labour:	
18 mandays @ \$120 per day	2160.00
Helicopter	3486.00
Vehicle Rental and Gas	321.00
Camp Supplies and Groceries	442.50
Analyses Cost	2295.10
Sample Shipment	62.50
Report Writing, Drafting, etc.	800.00

TOTAL	9567.10

DETAILS OF ANALYSES COSTS

PROJECT: TORO Claims

	No. of Determinations	Cost per Determination	Total
<u>CORE:</u>			
Prep	114	2.00	228.00
Au	127	3.50	444.50
Ag	140	1.60	224.00
Cu	40	.60	24.00
Pb	40	.60	24.00
Zn	40	.60	24.00
As	40	1.50	60.00
Mo	27	.60	24.00
			<u>1052.50</u>
<u>SOILS:</u>			
Prep	170	.50	85.00
Au	170	3.50	595.00
Ag	170	1.60	272.00
As	170	1.50	255.00
			<u>1207.00</u>
<u>SILTS:</u>			
Prep	4	.50	2.00
Au	4	3.50	14.00
Ag + BM	4	3.40	13.60
As	4	1.50	6.00
			<u>35.60</u>
		TOTAL	2295.10

APPENDIX 3

SOIL SAMPLE RESULTS

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION:WHSE GENERAL

CODE :8608-060

Project No. :394
 Material :SOIL
 Remarks :

Sheet:1 of 3
 Geol.:CH

Date rec'd:AUG 11
 Date compl:AUG 18

Values in PPM, except where noted.

T. T. No.	SAMPLE No.	Ag	As	PPB Au
2	4W 12500	0.2	4	10
3	12550	0.2	4	10
4	12600	0.2	1	I. S.
5	12650	0.2	1	I. S.
6	4W-12700	0.2	8	10
7	8W 12000	0.6	40	10
8	12050	0.6	26	10
9	12250	0.4	28	10
10	12300	0.6	30	10
11	8W-12350	0.4	6	10
12	24W-11320	0.4	16	10
13	11500	0.6	24	10
14	11560	0.4	22	10
15	11620	0.6	10	20
16	11680	0.4	6	10
17	11740	1.6	8	40
18	11800	1.0	14	100
19	11860	2.2	24	140
20	11920	2.6	22	40
21	11980	1.8	24	10
22	12040	1.6	36	10
23	12160	4.0	130	10
24	12640	1.0	44	10
25	24W-12700	0.6	26	10
26	32W-11300	1.2	16	10
27	11350	1.2	100	10
28	11400	1.4	130	10
29	11450	3.6	210	40
30	11500	4.4	40	10
	11600	4.2	14	10
	11650	4.2	12	10
	11700	4.0	50	10
	11750	1.6	34	10
	11800	3.4	94	10
	11850	1.0	16	10
	11900	2.2	24	10
	11950	1.4	18	10
	12000	3.2	56	10
	12050	3.2	38	10
	12100	3.0	54	20
	12150	7.2	80	10
	12200	5.0	400	40
	12250	12.0	84	10
	12350	5.0	180	10
	12400	4.4	100	10
	12450	0.6	66	10
	32W-12500	5.0	60	10
	44W-11300	5.4	58	10

SAMPLE
No.

Ag

As

PPB
Au

8608-060
Pg. 2 of 3

SAMPLE No.	Ag	As	PPB Au
44W-11350	0.8	40	10
51 11400	0.4	44	10
52 11450	0.6	56	10
53 11600	0.4	8	10
54 11700	0.6	140	10
55 11850	1.6	20	10
56 11950	2.0	18	10
57 12000	0.4	24	10
58 12050	4.0	24	30
59 12100	1.2	16	10
60 12150	0.6	24	10
61 12200	1.2	18	10
62 12250	0.6	16	10
63 12300	0.4	10	10
64 12450	0.2	36	10
65 12500	0.6	20	10
66 12550	0.2	24	10
67 12600	0.4	28	20
68 44W-12700	0.6	24	10
69 48W-11000	0.4	16	10
70 11050	0.6	18	10
71 11100	1.8	90	10
72 11200	1.4	98	10
73 11300	5.6	900	10
74 11350	2.0	250	10
75 11400	1.8	54	10
76 11450	0.4	20	10
77 11550	0.6	68	10
78 11600	0.6	16	10
79 11650	0.4	32	10
80 11800	0.2	14	10
81 11850	0.2	20	10
82 11900	0.2	8	10
83 11950	0.6	24	10
84 12000	0.2	18	10
85 12050	0.4	22	10
86 12100	0.2	16	10
87 12150	0.2	10	10
88 48W-12200	0.4	8	10
89 52W-12400	0.2	26	10
90 12450	0.2	16	10
91 12500	0.2	26	10 RERUN
92 12550	0.2	16	10 ↓
93 12600	0.4	12	10 (10)
94 12650	0.2	24	240 (120)
95 52W-12700	0.4	22	10 (10)
96 56W-11050	0.6	40	10
97 11200	0.4	36	10 (10)
98 11250	4.6	570	140 (80)
99 11300	0.6	78	20 (20)
CHECK NL-5	1.2	58	10
11350	0.6	20	10
11400	0.2	26	10
11450	0.2	12	10
11500	0.2	10	10
11550	0.2	14	10
56W-11600	0.2	18	10

SAMPLE
No.

Ag

As

PPB
Au

8608-060
Pg. 3 of 3

108	56W-11650	0.2	16	10
109	11750	0.2	20	10
110	11750	0.2	18	10
111	11800	0.6	20	10
112	11850	0.2	18	10
113	11900	0.2	20	10
114	12000	0.2	16	10
115	12050	0.2	38	10
116	56W-12200	0.2	32	10
117	64W-11000	0.2	6	10
118	11050	0.8	12	10
119	11100	1.4	16	10
120	11150	2.0	10	10
121	11200	0.2	4	10
122	11250	2.2	10	10
123	11300	0.6	4	10
124	11350	0.2	6	10
125	11400	0.2	1	10
126	11450	0.4	2	10
127	11500	0.2	6	10
128	11550	0.4	4	10
129	11600	0.4	12	10
130	11650	0.2	1	10
131	11700	0.2	1	10
132	11750	0.2	20	10
133	11800	0.2	12	10
134	11850	0.2	4	10
135	11900	0.2	6	10
136	11950	0.2	8	10
137	12000	0.4	6	10
138	12050	0.4	10	10
139	12100	0.2	2	10
140	12150	0.2	4	10
141	12200	0.2	1	10
142	12250	0.4	16	10
143	11300	1.6	10	10
144	11350	0.8	12	10
	64W-12500	0.2	26	10

file

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION:TAD TORO/WHSE GENERAL

CODE :8608-055

Project No. :394

Sheet:1 of 1

Date rec'd:JUL 30

Material :SILT/SOIL/PAN Geol.:WR/CH

Date compl:AUG 19

Remarks :

Values in PPM, except where noted.

T. T. No.	SAMPLE No.	Cu	Zn	Pb	Ag	As	PPB
							Au
138	S72625	16	92	22	0.6	24	10
139	S72622	12	74	36	0.6	56	10
140	S78379	16	180	38	0.6	54	10
141	S81409	12	90	18	0.2	40	10
142	P72623	38	640	600	5.0	900	10
143	S72624	14	90	32	0.4	30	10
144	16W 11400	14	70	8	0.2	12	10
145	11450	16	72	8	0.2	10	10
146	11500	16	86	14	0.4	26	10
147	11550	20	540	110	3.6	34	10
148	11600	28	740	260	2.4	34	10
149	11650	18	630	190	1.4	42	10
150	CHECK NL-5	30	68	72	1.4	64	-
151	11700	20	420	360	6.4	100	10
152	11750	48	580	470	4.4	170	150
153	11800	20	270	80	1.4	36	10
154	12200	22	230	200	3.6	40	10
155	12650	38	150	64	0.6	56	10
156	12750	28	220	58	0.2	36	10
157	16W 11850	20	280	110	1.6	32	10
158	PAN 78378	16	100	32	0.4	38	10

NORANDA VANCOUVER LABORATORY

PROPERTY/LOCATION: YUKON GENERAL

CODE : 8609-046

Project No. : 394 Sheet: 1 of 1 Date rec'd: SEP 08
 Material : SOIL Geol.: CH Date compl: SEP 16
 Remarks :

TAD/TORO

Values in PPM, except where noted.

T. T. No.	SAMPLE No.	Ag	As	PPB Au
140	36W 12000N	3.6	50	140
141	12050	9.2	210	80
142	12100	5.4	94	20
143	12200	2.2	100	10
144	12250	9.4	130	10
145	12300	6.2	100	90
146	12350	1.0	50	100
147	12400	2.0	74	10
148	12550	0.4	32	10
149	12600	0.6	20	20
150	CHECK NL-5	4.2	70	-
151	12650	0.6	34	10
152	36W 12700N	0.4	24	10

APPENDIX 4

DRILL CORE RESULTS

NORANDA EXPLORATION COMPANY, LIMITED
DRILL CORE RESULTS

PROJECT: TORO

*Reruns

SAMPLE	DEPTH in feet	GEOCHEMICAL VALUES							ASSAY VALUES				
		Cu ppm	Pb ppm	Zn ppm	As ppm	Mo ppm	Ag ppm	Ag* ppm	Au ppb	Ag gm/t	Ag* gm/t	Au gm/t	Au* gm/t
T-2													
81410	20-60	13	180	1000	400		1.9	1.8	150	1.7	1.4	.14	.17
81411	60-108	50	119	790	250		1.2	1.3	15	1.4	1.4	.07	.14
81412	108-130	21	480	400	>1000		5.1	4.8	260	4.1	3.8	.34	.24
81413	130-163	13	570	320	>1000		5.2	4.6	320	4.8	3.8	.45	.27
81414	163-190	165	2000	18200	>1000		17.0	16.0	980	12.3	11.0	1.03	.96
81415	190-221	20	290	3650	400		2.0	2.0	46	1.4	1.7	.07	.17
81416	221-230	75	600	5350	>1000		15.0	14.0	560	10.6	8.9	.69	.58
81417	230-302	12	86	680	110		1.2	1.2	45	1.0	1.0	.17	.07
81418	302-328	21	66	3050	200		2.4	2.5	45	2.4	.7	.10	.07
81419	328-355	38	90	700	150		2.4	2.5	65	2.1	1.7	.14	.10
81420	385-396	13	50	445	110		1.1	1.1	25	1.0	.7	.10	.07
81421	457-482	23	61	520	>1000		4.0	4.2	170	4.5	3.4	.21	.17
81422	529-583	25	30	160	250		.5	.6	15	4.8	.7	.21	.07
T-1													
81423	43-73						.7		25				
81424	73-112						.8		45				
81425	302-317						.8		35				
81432	355-375						.8		30				
81433	375-395						.8		30				
81434	529-552						.8		20				
T-3													
81435	24-52						.4		5				
81436	52-74						.3		5				
T-4													
81437	31-60						1.6		15				
81438	60-88						1.1		15				
81439	160-186						2.1		20	(.7		(.07	
81444	187-208						2.8		35				
81440	208-225						.7		5				
81442	227-243						1.9		10				
81441	304-327						.9		5				
81443	331-358						.9		10				
T-5													
81445	22-58						1.6		15				
81446	58-110						20.0		150	(.7		.10	
81449	110-160						9.4		75	(.7		.10	
81448	231-248						2.5		15				
81447	279-294						3.0		15				
T-6													
91932	40-63						.8		5				
91933	145-160						.5		15				
91934	175-192						.8		60	(.7		.07	
91935	310-317						.3		5	(.7		(.07	
91936	341-349						2.0		100	1.0		(.07	
91937	348-366						.3		10				

PROJECT: TORO

*Reruns

SAMPLE	DEPTH in feet	GEOCHEMICAL VALUES							ASSAY VALUES				
		Cu ppm	Pb ppm	Zn ppm	As ppm	Mo ppm	Ag ppm	Ag* ppm	Au ppb	Ag gm/t	Ag* gm/t	Au gm/t	Au* gm/t
T-8													
91976	51-57							2.0		10			
91977	57-65							5.0		35			
91978	67-87							4.5		30			
91979	87-107							6.2		80	(.7		.10
91980	107-127							8.7		220	(.7		.21
91981	127-140							3.7		40	3.4		.07
91982	147-161							5.0		140	4.1		.14
91983	167-187							6.0		75	5.5		.07
91984	187-207							3.7		30	3.1		.07
91985	207-220							8.4		30	5.8		(.07
91986	220-240							4.9		45	4.1		.07
91987	240-250							4.3		25	3.1		(.07
91988	250-267							11.0		190	9.6		.07
91989	267-280							1.6		20			
91990	280-297							1.2		15			
91991	297-315							.6		10			
91992	315-334							1.9		25			
91993	334-336							1.2		15			
91994	336-375							1.0		8			
91995	375-395							2.4		30			
91996	395-435							2.3		15			
T-9													
99876	22-47	24	70	345	21	8					1.4		.10
99877	47-50	23	114	720	21	2					.7		(.07
99878	50-67	22	79	330	24	7					1.0		.07
99879	67-100	44	286	450	48	29					1.4		.07
99880	100-124	22	342	460	21	35					1.0		(.07
99881	124-150	16	307	450	95	12					1.0		(.07
99882	150-165	24	105	440	26	23					.7		.07
99883	165-197	28	975	1300	51	16					2.7		.07
99884	197-229	17	148	340	36	11					1.4		.07
99885	229-253	13	620	420	31	47					3.1		.07
99887	315-335	21	200	440	37	56					1.7		(.07
99886	335-347	29	27	198	31	10					1.4		.07
T-10													
91929	20-39							3.3		140	3.1		.14
91930	39-55							1.2		140	(.7		.14
91928	55-71							.4		(5			
91927	71-89							.9		(5			
91926	89-106							3.0		30	(.7		.07
91931	469-482							1.9		40			
T-12													
91997	26-42							1.6		10			
91999	42-75							.8		(5			
91998	76-94							1.6		240			
92000	94-108							1.2		80			
91951	109-126							.5		10	(.7		(.07
91952	126-143							1.0		50	(.7		(.07
91953	146-162							13.0		1250	7.5		1.23
91954	162-175							3.6		240	(.7		.27
91955	209-225							1.5		10	1.0		(.07
91956	517-527							2.6		230	1.7		.27

PROJECT: TORO

#Reruns

SAMPLE	DEPTH in feet	GEOCHEMICAL VALUES							ASSAY VALUES				
		Cu ppm	Pb ppm	Zn ppm	As ppm	Mo ppm	Ag ppm	Ag* ppm	Au ppb	Ag gm/t	Ag* gm/t	Au gm/t	Au* gm/t
91957	527-547						1.3		30	.7		.10	
91958	547-563						1.4		10	.7		.24	
91959	563-580						.6		10				
91960	580-597						1.2		35				
91961	597-617						1.2		80				
91962	617-642						.5		10				
91963	642-664						2.6		120				
91964	664-687						.4		20				
91965	687-716						.2		5				
T-14													
99888	63-80	15	323	124	>1000	6				10.3		1.54	
99889	80-86	53	475	480	>1000	3				14.1		2.09	
99890	86-92	12	127	97	>1000	3				4.5		.21	
99891	92-111	27	162	2500	1000	2				1.4		.10	
99892	111-122	16	213	1300	130	2				1.4		.07	
99893	122-135	10	300	1020	46	2				1.7		.07	
99894	135-147	15	95	1540	32	2				1.4		.07	
99895	147-161	4	19	650	27	1				.7		.07	
99896	161-178	4	18	780	14	2				.7		.07	
99856	178-200	4	40	830	26	1				1.4		.07	
99855	200-240	5	61	525	11	2				1.0		.07	
99854	240-265	10	121	530	27	2				2.7		.07	
99853	265-280	14	146	1460	28	2				2.4		.07	
99852	280-295	15	209	1900	30	2				2.4		.07	
99851	295-315	14	315	5600	61	2				3.8		.07	
T-14: Grab samples of core													
		Cu	Pb	Zn	As	Sb	Ag	Au					
		ppm	ppm	ppm	ppm	ppm	ppm	ppb					
99982		106	234	8700	166	22	4.8	5					
99983		10	208	62	3440	70	7.4	2080					
99984		6	30	1240	44	4	.8	20					

T-1
-opp to 130'

81423 0.7/25

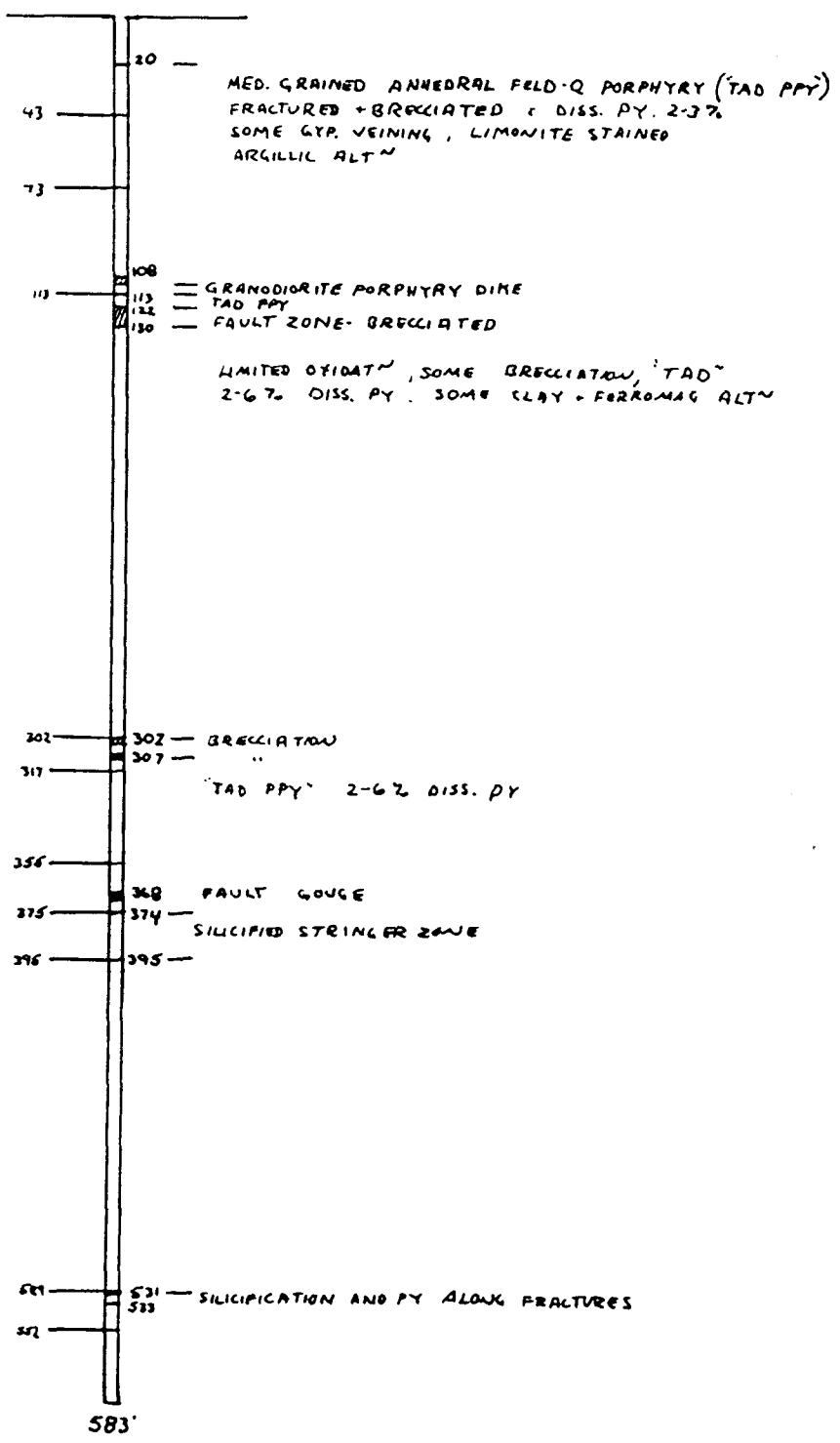
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81425 0.8/35

81432 0.8/30

81433 0.8/30

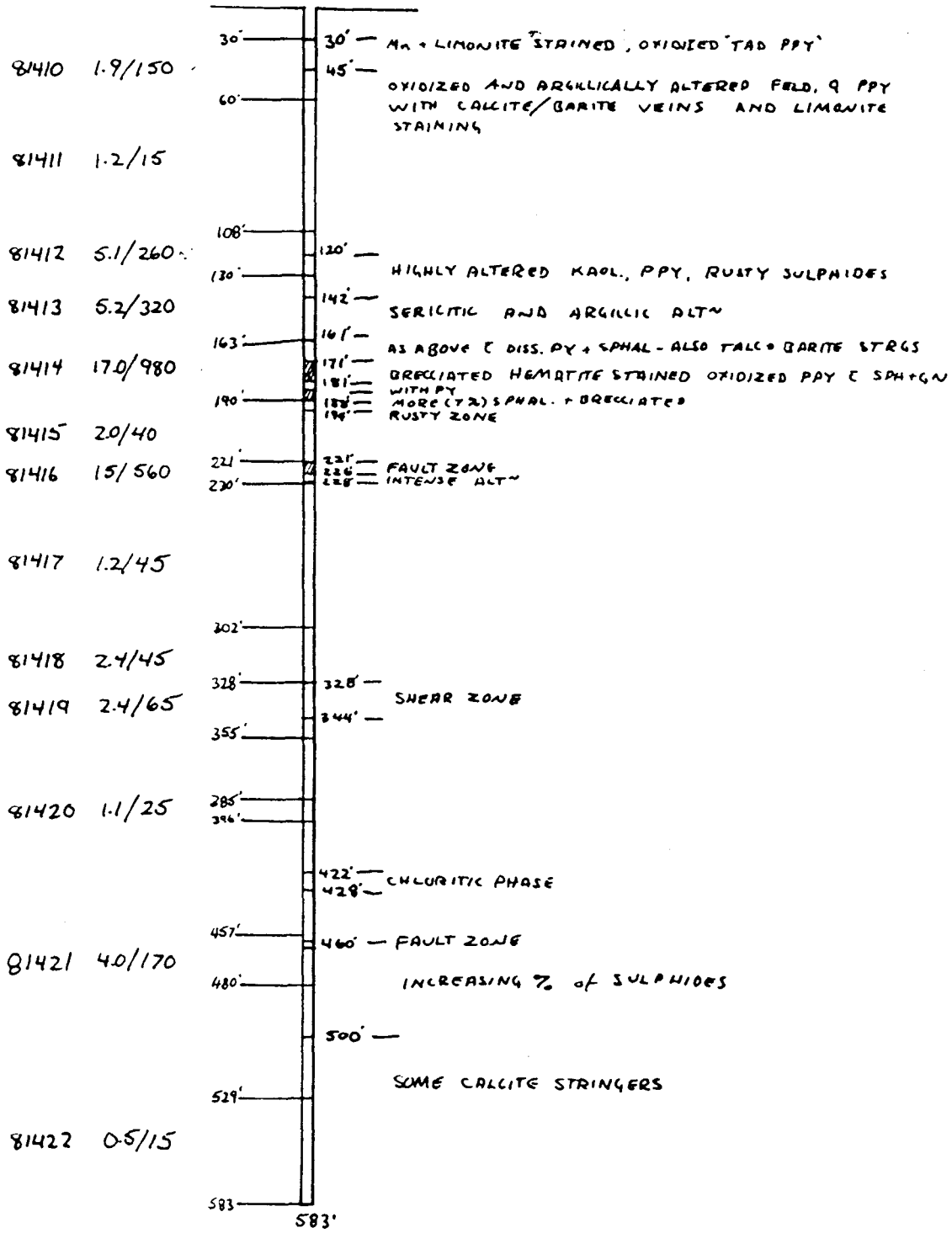
81434 0.8/20



6 SAMPLES Ag/Au

REVISED		
	DOH-T-1	
	TAD/TORO	
FIG. No.	SURVEY BY	DATE
N.T.S.	DRAWN BY HART	SCALE
DWG. No.	NORANDA EXPLORATION	
	OFFICE:	

T-2
- OXIDATION TO 200'

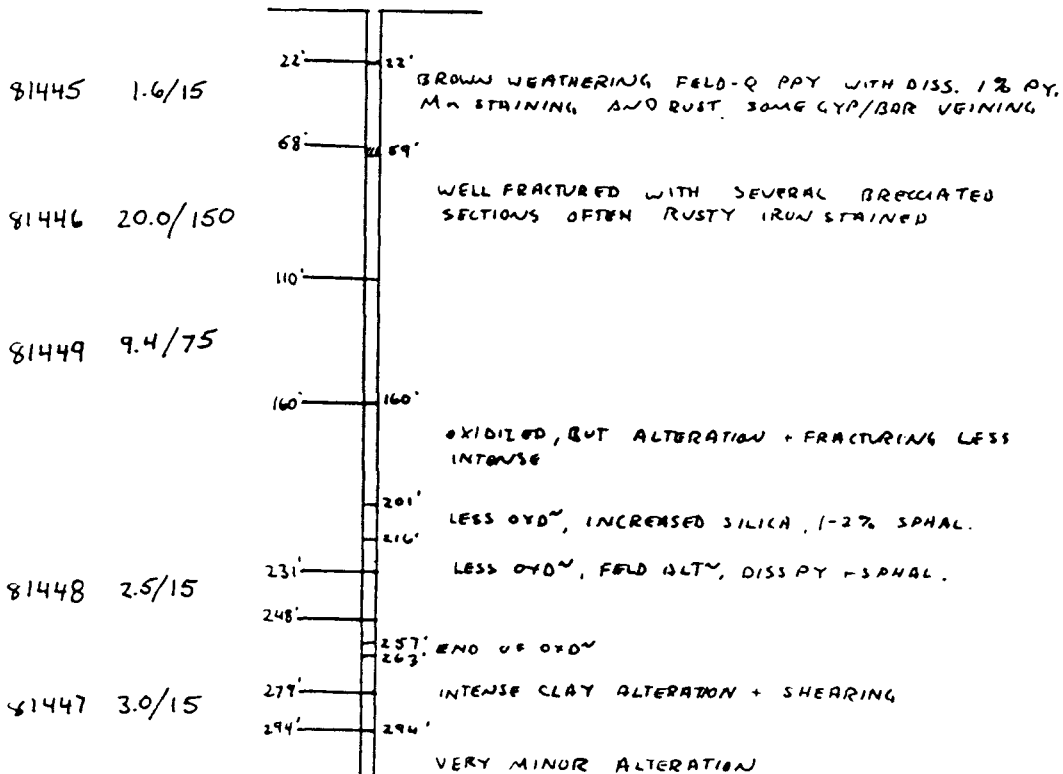


13 SAMPLES Ag/Au 100 FT / 01

REVISED	
	DDH-T-2
	TAD/TORO
PRO. No.	SURVEY BY _____ DATE _____
N.T.S.	DRAWN BY <u>HART</u> SCALE _____
DWG. No.	NORANDA EXPLORATION office

T-5

- OXIDATION TO
250'

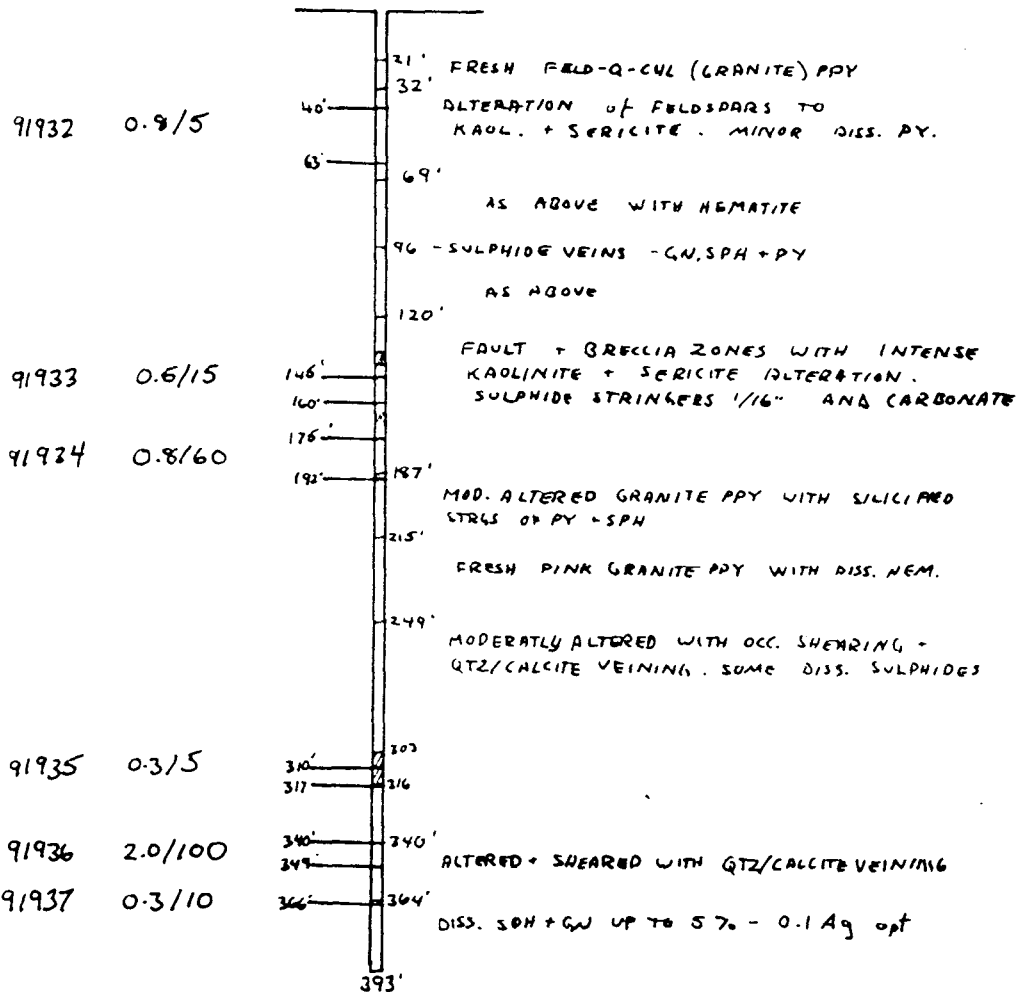


5 SAMPLES Ag/Au

REVISED	
	DDH - T - 5
	TAD/TORG
PROJ. No.	SURVEY BY DATE
NTS	DRAWN BY HART SCALE 1" = 50'
DWG. No.	NORANDA EXPLORATION
	office:

T-6

-OXIDIZED TO

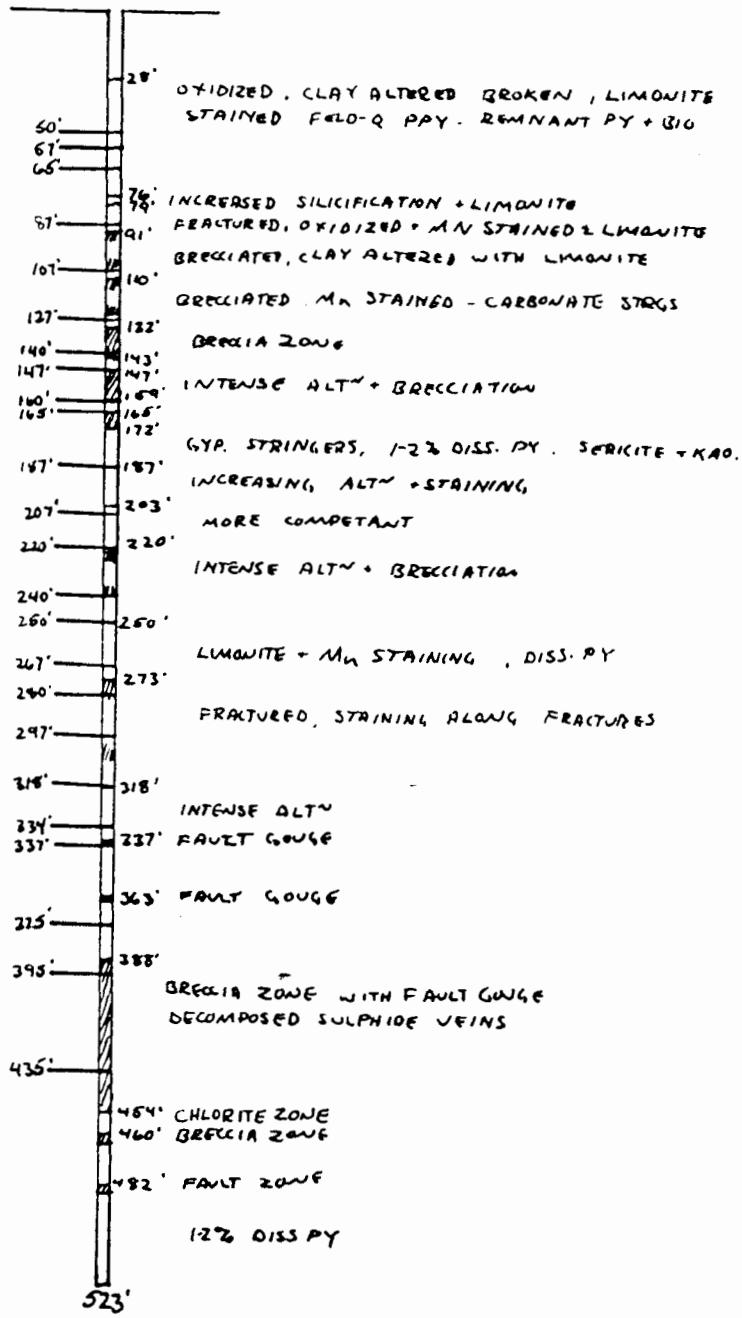


6 SAMPLES Ag/Au

REVISED	
	DDH - T-6
	TAD/TORO
PROJ. No.	SURVEY BY
NTS	DRAWN BY HART
DWG. No.	DATE
	SCALE 1" = 50'
NORANDA EXPLORATION	
OFFICE	

T-8
 OXIDIZED TO 450'

91976 2.0/10
 91977 5.0/35
 91978 4.5/30
 91979 6.2/80
 91980 8.7/220
 91981 3.7/40
 91982 5.0/140
 91983 6.0/75
 91984 3.7/30
 91985 8.4/30
 91986 4.9/45
 91987 4.3/25
 91988 11.0/190
 91989 1.6/20
 91990 1.2/15
 91991 0.6/10
 91992 1.9/25
 91993 1.2/15
 91994 1.0/8
 91995 2.4/30
 91996 2.3/15

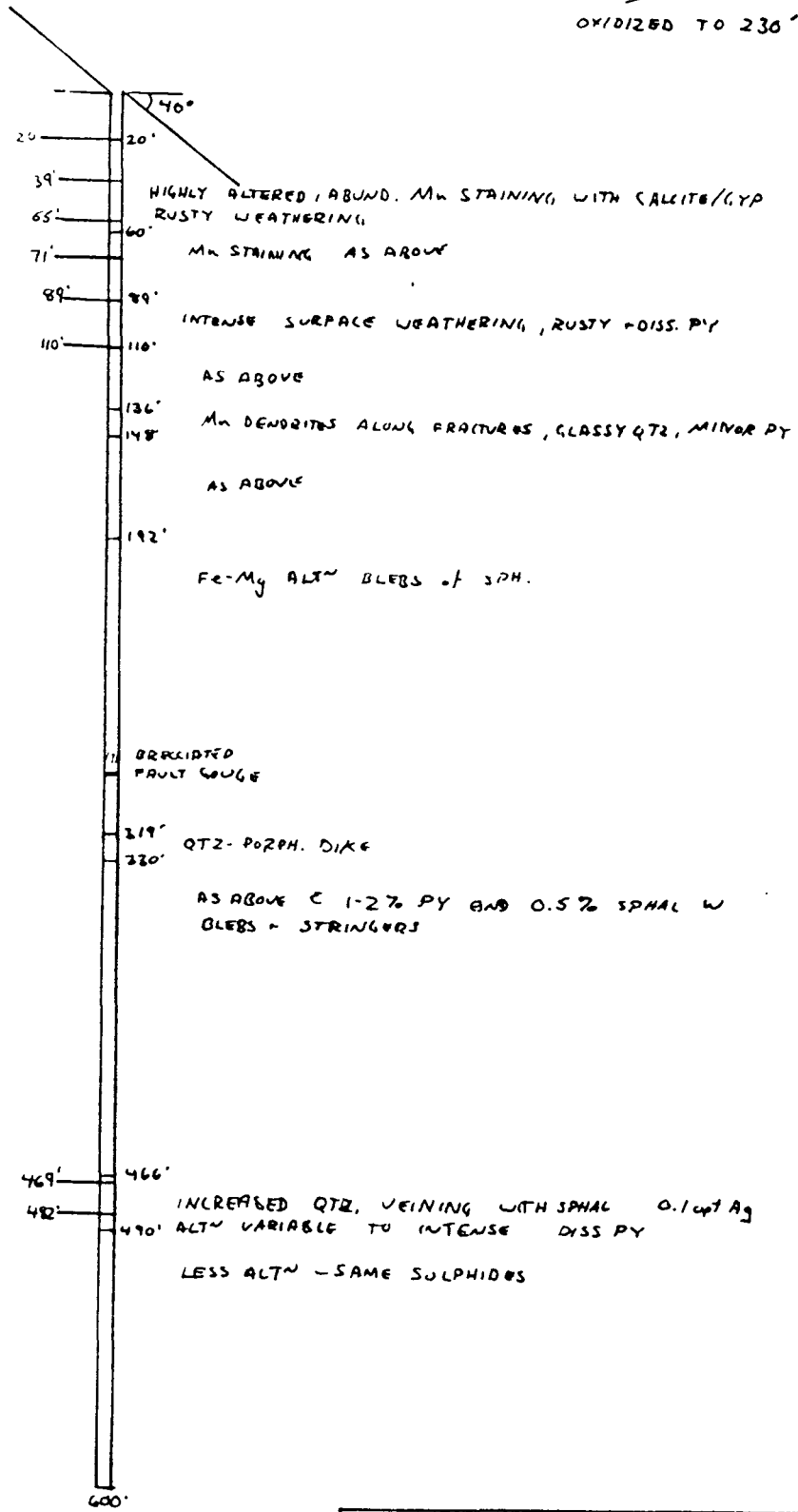


21 SAMPLES Ag/Au

REVISED	
	DDH-T-8
	TAD/TORO
PROJ No	SURVEY BY HART DATE
MTS	DRAWN BY HART SCALE 1"=50'
DWG No	NORANDA EXPLORATION
	OFFICE

T-10
OXIDIZED TO 230'

91929 3.3/140
91930 1.2/140
91928 0.4/45
91927 0.9/45
91926 3.0/30

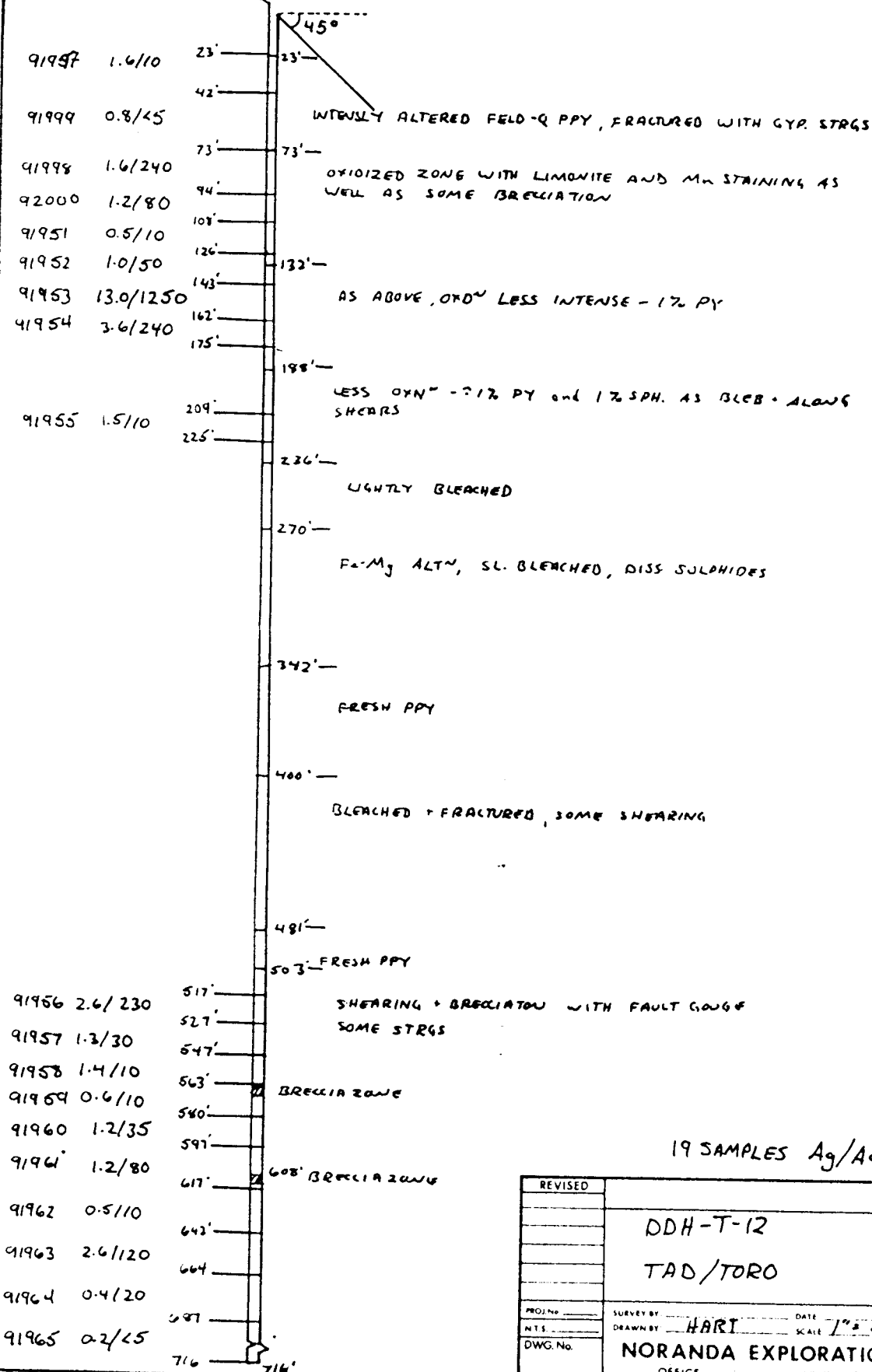


91931 1.9/40

6 SAMPLES Ag/Au

REVISED	
	DDH-T-10
	TAD/TORO
MOJIN	SURVEY BY HART DATE
NTS	DRAWN BY HART SCALE 1" = 50'
DWG No.	NORANDA EXPLORATION
	OFFICE

T-12
 OVIATION TO 236'
 @45°



19 SAMPLES Ag/Au

REVISED	
	DDH-T-12
	TAD/TORO
PROJ. No.	SURVEY BY
N.T.S.	DRAWN BY HART
DWG. No.	DATE
	SCALE 1" = 50'
NORANDA EXPLORATION	
OFFICE	

APPENDIX 5

ASSAY vs. GEOCHEMICAL RESULTS

PROJECT: TORO

COMPARISON OF GEOCHEMICAL AND ASSAY VALUES FOR Au and Ag

SAMPLE NO.	GOLD				SILVER		
	GEOCHEMICAL ppb	ASSAY gm/t	% of Original		GEOCHEMICAL ppm	ASSAY gm/t	% of Original
81410	150	.14	93.3		1.9	1.7	89.5
81411	15	.07	455.7		1.2	1.4	116.6
81412	260	.34	130.7		5.1	4.1	80.4
81413	320	.45	140.6		5.2	4.8	76.9
81414	980	1.03	105.1		17.0	12.3	72.3
81415	40	.07	175.0		2.0	1.4	70.0
81416	540	.69	123.2		15.0	10.6	70.6
81417	45	.17	377.7		1.2	1.0	83.3
81418	45	.10	222.2		2.4	2.4	100.0
81419	65	.14	215.4		2.4	2.1	87.5
81420	25	.10	400.0		1.1	1.0	90.9
81421	170	.21	123.5		4.0	4.5	112.5
81422**	15	.21	1400.0		.5	4.8	960.0
Average	205	.28	214.4		4.5	4.0	87.5
	+/- 20	+/- .10			+/- .3	+/- 1.0	
Difference	+38%		+144.4%		-11.2%		-12.5%
Greatest increase	+366.7%				+16.6%		
Greatest decrease	-6.7%				-30.0%		
Widest range	373.4%				46.6%		

** Sample 81422 was omitted from all calculations.

TO : C. Hart - Whitehorse

23-12-1986

FROM: E. J. van Leeuwen - Lab

RE : Comparison between Au assay and geochem on TORO rock samples.

First of all, a word about precision, accuracy and detection limits to clarify the apparently poor comparison between assay and geochem gold results for Tad/Toro (labcode 8607-112).

Precision refers to the reproducibility of independent, replicate measurements of a single sample, often expressed as the RSD.

Accuracy is the agreement between the estimated measurements and the true value, and can not be better than the precision of the analytical procedure.

Detection limit is the smallest concentration that can be detected with reasonable certainty. In practice, detection limits are often impaired when high concentrations of other elements are present in solution or fusion e.g. sulfur with fire-assaying.

As to fire-assaying for gold, some rough guidelines on detection limits and precision are noted. The venerable gold fire-assaying procedure was primarily designed to analyze ore in the range from 0.02 oz/t (0.70 ppm) to 29,167 oz/t (100%). Only recently, we have become interested in very low grades i.e. < 0.02 oz/t Au, which is rather taxing on the fire-assayer. Improvements such as increased sample weight for analysis and instrumental techniques (A.A.) has enabled the assayer to attain a detection limit of 0.001 oz/t or 0.034 ppm Au. Although lower limits are possible with neutron activation (NA) or Flameless AA - Graphite furnace.

It has been my experience with the various assay labs re gold assay results, 0.07 ppm (G/T) should be the lowest reported value. Precision is very poor at that level, $\pm 100\%$. Accuracy is, of course no better. Values less than 2.00 ppm Au are perhaps more accurately stated with an uncertainty range of ± 0.15 ppm. Gold results over 2.0 ppm are generally determined gravimetrically - weighing of the gold bead - and tends to be more accurate. It is my contention, anything < 0.2 ppm Au should not be used for statistical interpretation, whether it be for comparisons or ore assessment, i.e. with the conventional fire-assay method.

Geochem serves the purpose to cover the range of 0.005 ppm (5 ppb) to about 10 ppm, thus to some degree it complements the assay method for the low range. Geochem gold results can be expected to have a precision of about 10 to 15% for the range noted previously. Geochem results < 0.020 ppm (20 ppb), which approaches detection limits, suffer from poor precision as well.

Note that geochem methods emphasize precision, whereas assaying adheres more stringently to quality controls to assure accuracy. Besides, assaying uses larger sample weights for analysis to reduce

sub-sampling error. If, indeed the sampling errors are greater than the analytical errors, then there is little to gain to improve laboratory precision/accuracy without due consideration for sample collection and/or sample weight used for analysis.

Finally, a few comments about the Bondar geochem and assay results. I had asked Bondar to explain what limitation apply, and as you can see, they are somewhat more optimistic than I am. I have, however, seen many replicate analyses over the year, both geochem and assay. Based on these observations, more liberal margins of errors are noted. That said, your comparison of geochem and assay still fall within the range of analytical error, with a few exceptions. The reasons the assay results appear to be systematically higher is because a value such as 0.07 ppm (g/T) can often be much lower, but is reported nevertheless. It is difficult to discern between 0.07 ppm and less than that. Similarly with geochem for 10 ppb and lower values where sensitivity (resolution) is poor. You will find after recalculation of the set 81410 - 422 (81411 = 0.07 not 0.7 g/T), the average for the assays is 0.28 versus 0.205 for geochem. The difference of 0.075 is well within the range of errors. Observe that with higher values the agreement between methods improves. Also, the second set of assays (B-C report 526-2926) compares favourably with geochem.

Set 81410 - 22 was re-assayed to show the reproducibility for very low values, most likely worse than geochem in that range.

In short, the reliability and accuracy of the assay procedure is inadequate to assess the Tad/Toro project. Geochem may well be more precise and accurate for values less than 0.5 g/T Au. Geochem methods, however, are less acceptable for ore evaluation on account it was originally developed for trace analysis.

Craig, I trust this shed some light on the obscure subject of gold exploration.

P.S. Silver results compare relatively well, except for some sample e.g. 81449, 91979, 91980 and 81446. (Enquiry pending)

Other than that, analytical limitations for Ag are in a similar vein as gold, except a 10 - fold decrease of detection limits.

Enclosure: B-C Letter (R.K.R.)
Rep 526-2926
Rep 426 2932



Evert J. Van Leeuwen
Laboratory Supervisor
Noranda Exploration Co. Ltd.
1050 Davie St. Box 2380
Vancouver, B.C.
V6B 3T5

December 12 1986

Dear Evert:

This letter is to explain our detection limits and what that means when comparing assay and geochem Au analyses. I will explain each separately and try to tell why they might not be exactly the same when looking at the low levels.

Assay Detection Levels:

The sample used for assay, is primarily 1 AT or 29.166 grams. It is fire assayed and the resultant dore bead is digested in aqua regia, bulked to 5 mls with D I water, shaken and run on the A.A. Our detection level is set at 0.07 GMT. It is possible to read 0.035 GMT but we feel that the 0.07 number is more realistic. Our readings are at best +/-0.035 GMT. Whether the sample itself is reproducible within these limits is open to question. The whole system is geared to this level and to be better than +/-0.035 GMT would entail some major changes.

Geochem Detection Levels:

The sample used for geochem Au is 10 grams unless otherwise requested, it therefore may not be as good a representative split as a 30 gram sample. The detection level is listed at 5 PPB and is as good as possible by A.A. The reading is at best +/- 5 PPB. The sample is prepared similar to assay but is bulked to 2 mls. The small volume creates some possible problems with accuracy, (ie give or take 10% just on possible loss by evaporation). The volume is therefore very critical.

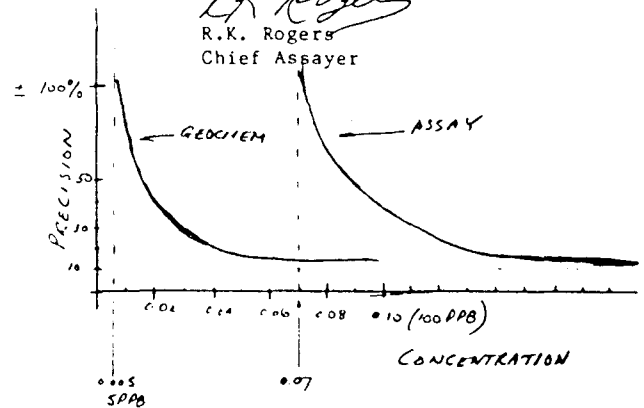
Comments:

When looking at results from the different systems one must realize the impact of the different volumes and weights. In the range of 300 PPB the geochem system is more sensitive. It is possible to have fluctuations of at least 70 PPB in the assay method. Therefore if the assay is 70 PPB low and the geochem is high by 10% you could have a difference of 100 PPB at the 400 PPB level between the 2 methods. This is not taking sample erratics into consideration!

I hope the above is what you need Evert. If you have further questions please feel free to call me.

Sincerely yours,

R.K. Rogers
R.K. Rogers
Chief Assayer



$$1 \text{ PPM} = 0.029167 \text{ oz/l}$$

$$1 \text{ oz/l} = 34.186 \text{ g/T}$$

$$\frac{0.707 \text{ kg (1500 lbs)}}{1000 \text{ kg}}$$

Variation of precision versus concentration

NB This idealized representation assumes homogeneous sample material, which is rarely the case

ADDENDUM

to

GEOLOGICAL AND GEOCHEMICAL REPORT on the TORO 1-46 CLAIMS

This report is filed for work completed on the claims TORO 1-24 inclusive, for which the grant numbers YA82449-YA82472 inclusive were given. Claims TORO 25-46 were staked subsequent to work performed on the original claim group and as a result do not yet qualify for assessment credit.

The work outlined in this report was completed during:

- i) 07 July 1986;
- ii) 11 July - 14 July 1986 (inclusive);
- iii) 03 September 1986.

The work outlined in this report was completed by Noranda Exploration Company, Limited (No Personal Liability) for Mr. David H. Waugh. As mentioned on page 1 of this report, at the time of writing an option agreement between the two parties was "in the process of being finalized". Since then, an agreement has been reached and at the time this report was submitted to the Mining Recorder's office, arrangements to transfer the claim ownership to Noranda was being undertaken.

It was felt that the locations of Hayes Creek and a tributary to the northwest of the grid would provide sufficient geographical control for the grid location, however, a map including topographic contour lines with respect to grid location has been enclosed to further assist the reader.

Submitted 20 February 1987,

Craig J.R. Hart
Project Geologist

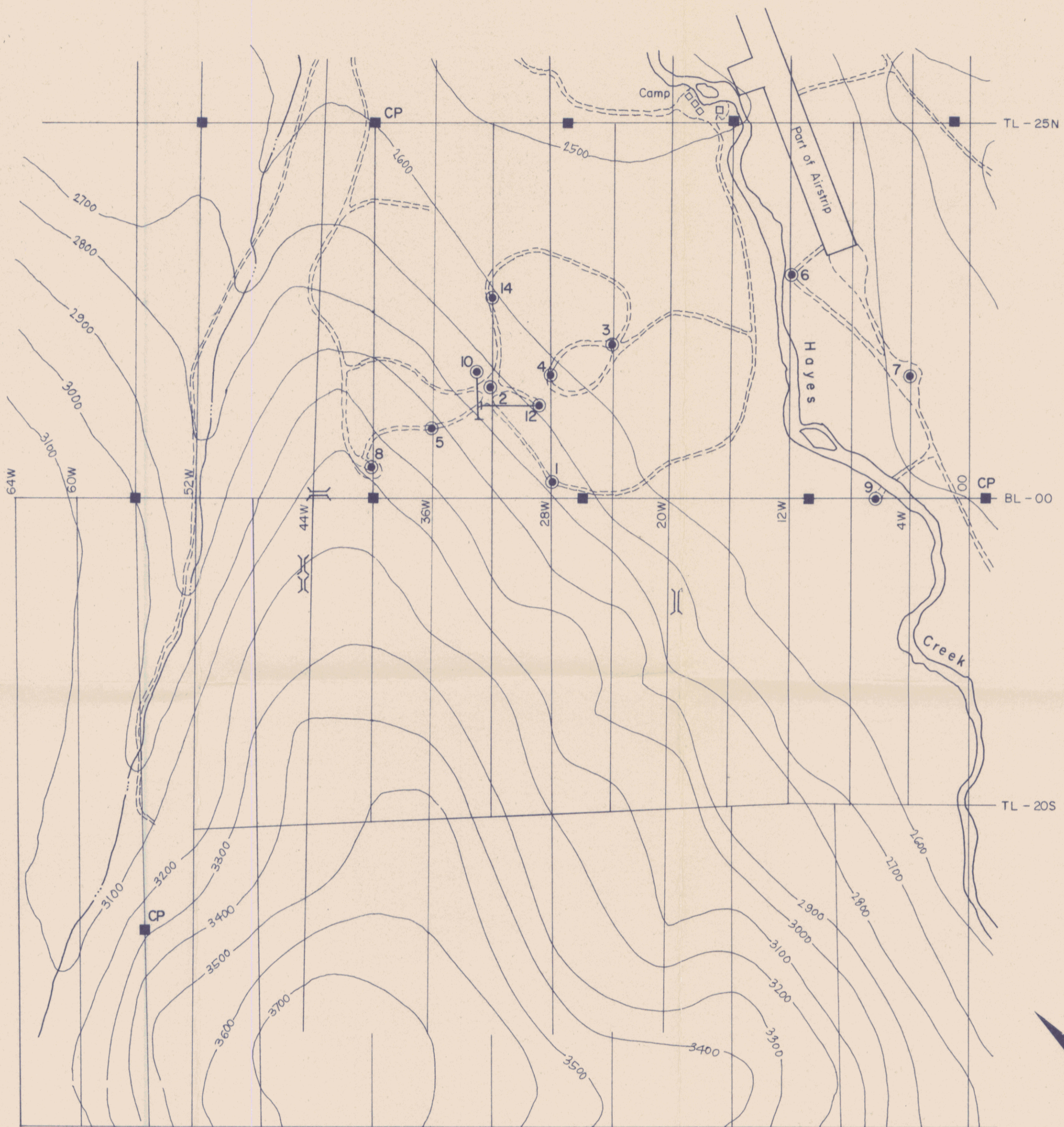
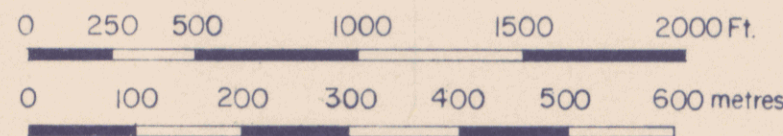


Fig. 1



REVISED	TORO Claims	
	091906	
PROJ. No. 20	SURVEY BY: AI	DATE:
N.T.S. 1:12	DRAWN BY: AI	SCALE: 1" = 600' (1:7000)
DWG. No.	NORANDA EXPLORATION	
	OFFICE: Whitehorse	