ARIS SUMMARY SHEET

District Geologist, Smithers — Off Confidential: 90.03.22

ASSESSMENT REPORT 18800 — MINING DIVISION: Skeena

PROPERTY: Todd Creek
LOCATION: LAT 56 16 40 LONG 129 46 00
UTM 09 6237046 452527
NTS 104A04W 104A05E

CAMP: 050 Stewart Camp

CLAIM(S): Toc 3-15
OPERATOR(S): Noranda Ex.
AUTHOR(S): Baerg, R.J.;Bradish, L.
REPORT YEAR: 1989, 374 Pages
COMMODITIES
SEARCHED FOR: Gold,Copper
KEYWORDS: Jurassic,Unuk River Formation,Feldspar Porphyry,Andesites
Chalcopyrite,Specular hematite,Malachite,Gold,Quartz Veins,Breccia
WORK
DONE: Drilling,Geological,Geochemical,Geophysical
DIAD 4645.5 m 48 hole(s);BQ
Map(s) - 19; Scale(s) - 1:250
GEOL 4500.0 ha
Map(s) - 8; Scale(s) - 1:2500,1:5000
IPOL 1.3 km
MALM 2.9 m
Map(s) - 3; Scale(s) - 1:1000
ROCK 115 sample(s) ;CU,PB,ZN,AU,AG,AS
SAMP 2529 sample(s) ;CU,AU
SILT 40 sample(s) ;CU,PB,ZN,AU,AG,AS
SOIL 484 sample(s) ;CU,PB,ZN,AU,AG,AS
Map(s) - 3; Scale(s) - 1:2500,1:5000
MINFILE: 104A

GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL AND DRILLING REPORT

ON THE

TODD CREEK PROPERTY

(TOC 3 -15 CLAIMS)

N.T.S. 104 A/04,05

SKEENA MINING DIVISION

Situated at coordinates: 56 16' 40" N
129 46' 00" W

NORANDA EXPLORATION COMPANY, LIMITED
(NO PERSONAL LIABILITY)

By: Robert J. Baerg
Lyndon Bradish

Jan., 1989

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1.0 Summary

The Todd Creek copper-gold property is located on the eastern flank of the Coast mountains approximately 45 km north of Stewart, B.C. Mineralization, consisting of copper-gold bearing quartz and sulphide veins was first documented by Newmont in 1959. Noranda staked the area of the showings in 1986 and has subsequently confirmed the presemce of the copper-gold mineralization. To date, there are six main areas of interest:

1. **South Zone:** A copper-gold mineralized fracture zone cutting feldspar porphyry volcanics. Chip sampling on this zone in 1986 delineated an area an average 3m wide by 270m long, averaging 4.08 gmt Au.

Drilling in 1987 tested the southern 175m of the zone. Significant intersections include 1.98 gmt Au/13.32m (this includes 11.93 gmt Au/1.73m),4.10 gmt Au/2.0m, 4.01gmt Au/1.5m, 3.51 gmt Au/1.38m, 6.85 gmt Au/6.15m, 2.84 gmt Au/9.93m (includes 3.25 gmt Au/ 3.69m and 3.36 gmt Au/2.61m).

Drilling in 1988 tested the down dip extension of the zone in holes 1-9 and the continuity of the zone for an additional 200m to the north. The intersections ranged from >1m to 30m with the following significant values: 3.61 gmt Au/ 29.75m (includes 6.91 gmt Au/8.15m), 6.86 gmt Au/ 2.00m, 6.53 gmt Au/ 2.05m, 4.65 gmt Au/ 6.15m, 8.83 gmt Au/ 11.70m, 6.12 gmt Au/ 6.10m.

2. **North Zone**

The North Zone mineralization consists of several north-northwest trending, vertical to steeply west dipping, 0.1 to 2m wide quartz-chalcopyrite-pyrite-hematite veins and breccia zones. The veins, which are commonly banded and brecciated, have been traced for up to 320m.

The "A" zone was tested with 9 drill holes and a Mise-a-la-Masse survey. Drilling and geophysics indicate that this zone is discontinuous/poddy along strike and down dip. The zone ranges from >1m to 32m wide. Significant results include 3.47 gmt Au,0.75% Cu/ 31.85m (includes 14.47gmt Au, 2.06% Cu/ 5.95m), 2.83 gmt Au, 0.58% Cu/ 1.95m, 3.95 gmt Au, 0.22% Cu/ 2.00m, 3.43 gmt Au, 0.73% Cu/1.70m and 6.21 gmt Au, 0.60% Cu/ 1.75m.

3. **Fall Creek Zone**

Followup of last years Cu - Au soil anomaly on the south side of Fall Creek located a new mineralized zone. The zone consists of quartz-pyrite-chalcopyrite +/- barite veins in altered andesite. The zone has been traced, by surface mapping and geophysics, at least 400m horizontally and 350m vertically and is open in all directions.

Surface samples have returned values to 24.20 gmt Au. Four drill holes tested a small part of this zone with the following significant results: 6.72 gmt Au/ 1.45m, 12.10 gmt Au/ 1.25m, 5.41 gmt Au/ 5.25m, 4.34 gmt Au/2.00m, 3.94 gmt Au/ 7.90m (includes 4.71 gmt Au/ 4.75m). As well the I.P. and soil geochem have delineated several significant anomalies which have yet to

be tested.

4. **Virginia Creek**

Followup of last years silt anomalies on the north side of Virginia Creek has indicated a large area of anomalous Pb-Zn-Ag values associated with altered felsic volcanics. Values in soil samples ranged up to 1252 ppm Pb, 1939 ppm Zn and 19.5 ppm Ag.

5. **Orange Mountain**

Recon sampling on the east and south slopes of Orange Mountain has identified several areas of anomalous Pb, Zn, Ag associated with an area of quartz-sericite-pyrite altered trachyte volcanics.

6. TOC 13-15

The TOC 13-15 claims are underlain by a thick sequence of andesitic volcanics. Recon silt sampling in this area has identified several weak to moderate Pb-Zn +/- Ag-As anomalies which warrant further follow-up.

Further work on the Mid Zone did not return any significant results.

2.0 Introduction:

The Todd Creek property is located on the eastern side of the Coast Mountains of British Columbia, within the Skeena Mining Division. The property was staked to cover several Cu-Au occurrences which were first documented by Newmont Mining Corp. in 1959. 1988 fieldwork included mapping the showings, regional mapping, silt, soil and rock sampling, geophysics and diamond drilling on the South Zone, North Zone and Fall Creek Zone.

3.0 History:

The South and North Zone showings were originally discovered in 1959 by prospectors Ole Olsen and Fred Hasselberg Jr., in the employ of Newmont Mining Corporation. Newmont conducted a limited trenching and drilling program on the zones in 1960 with inconclusive results.

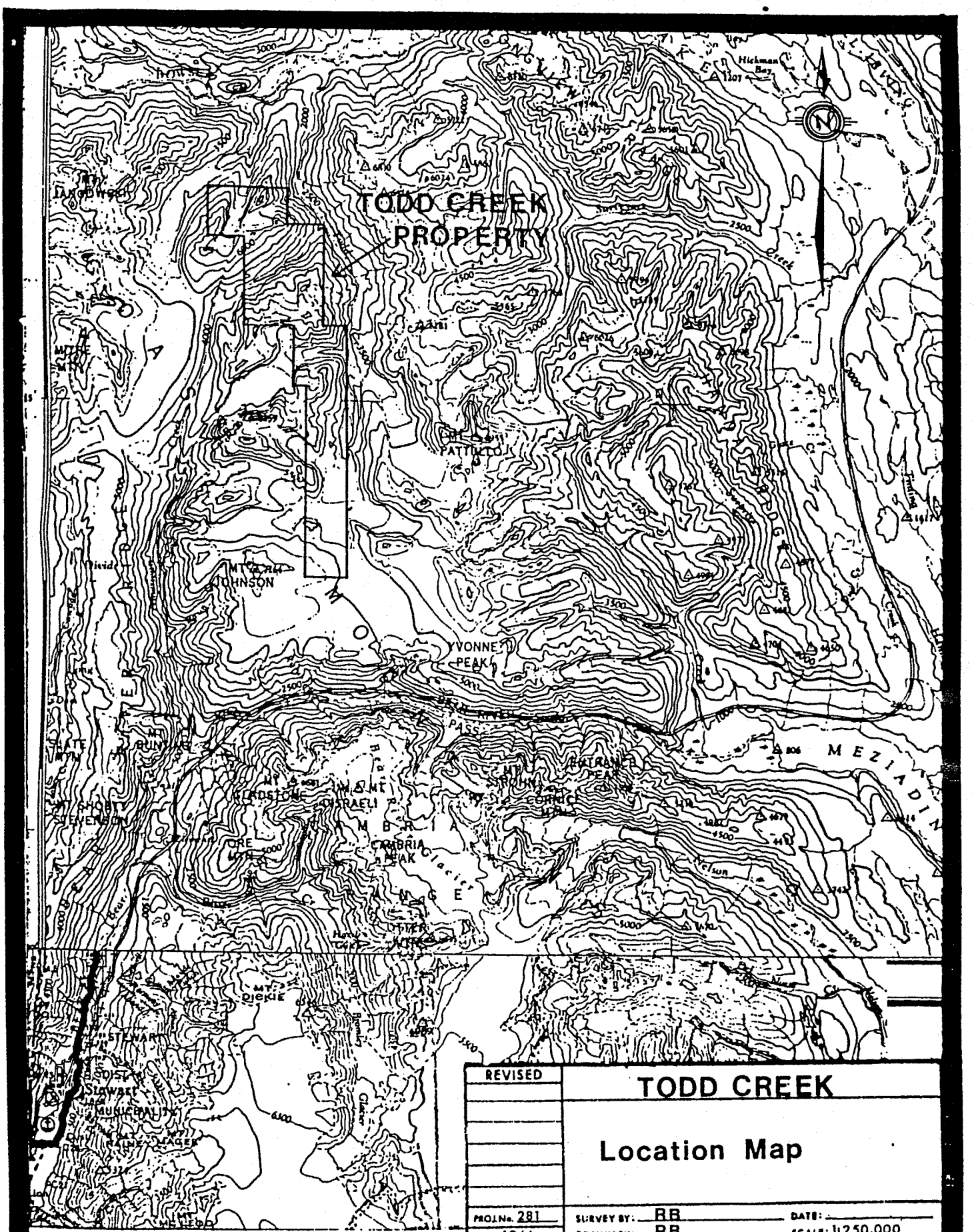
On the South Zone, a zone of chalcopyrite-pyrite stringers and hematitic quartz breccias, Newmont drilled 5 randomly spotted packsack drill holes.

In 1969, the South Zone showing was staked for Kerr Addison Mines by Wilf Christians. Kerr Addison, who recorded no work on the property, subsequently transferred title to Christians, who in turn sold the claims to C.S. Powney. During 1970-1972, several trenches were blasted and sampled. In 1981, J.R. Woodcock Consultants staked the North Zone and a large altered area further north. From 1981-1984, Woodcock and Riocanex conducted extensive geological and geochemical programs on their claims. In 1985, Woodcock dropped everything except two units, which they currently hold.

In 1986, Noranda Exploration Company Limited staked the TOC 1-10 to cover the known showings and gossans along Todd Creek. TOC 11 and 12 were added in 1986 and TOC 13-15 in 1987.

4.0 Location and Access:

The Todd Creek property is located in the Skeena Mining Division, approximately 45 km NNE of Stewart, B.C.(Figure #1). Highway #37A to Stewart passes 10 km to the south of the property. The property covers most of the western side of the Todd Creek valley and portions of the Todd Creek glacier. Access to the property has been via helicopter from Stewart, B.C.



REVISED	
PROJ.No. 281	
N.T.S. 104A	
DWG. No. 1	

TODD CREEK

Location Map

SURVEY BY: RB DATE:

DRAWN BY: RB SCALE: 1:250,000

NORANDA EXPLORATION

OFFICE: Prince George

5.0 Physiography & Vegation:

The property lies on the eastern flank of the Coast Range Moutains. Relief in the area is great, from 885 meters in the valley bottom to 2075 meters on the highest summit. Todd Creek glacier and several valley glaciers occupy portions of TOC 11 and 12. The sides of the valley have extensive areas of bedrock exposure which commonly forms steep rock faces and cliffs. The valley has a thick cover of glacier outwash material. Vegetation on the property consists of young willow, poplar and alder in the valley bottom, grading up slope into local stands of fir, hemlock and spruce and higher up into alpine meadows and bare rock.

6.0 Claim Statistics:

The Todd Creek property consists of 12 modified grid claims(Figure #2), as listed below:

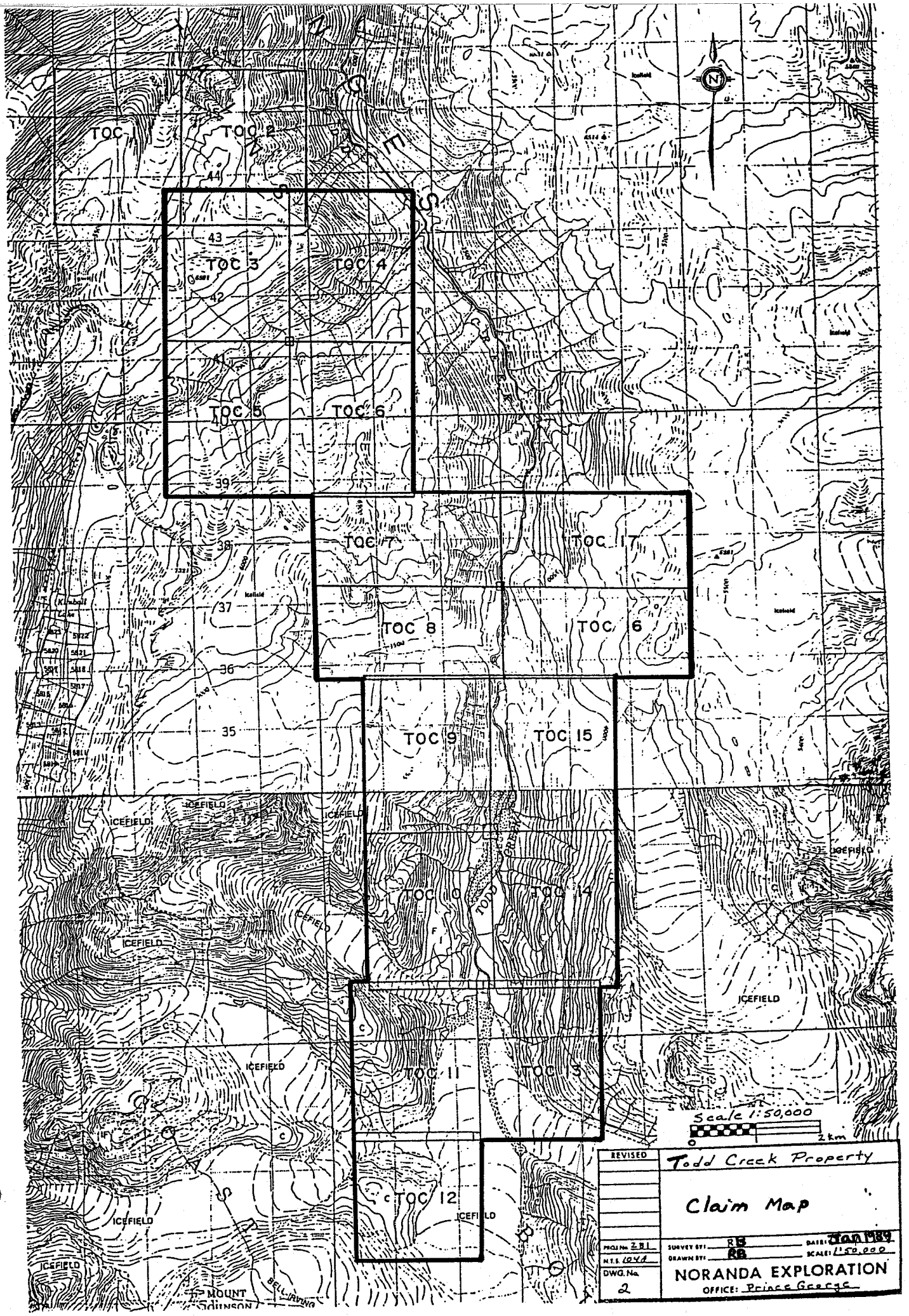
NAME	UNITS	RECORD #	EXPIRY DATE
TOC 3	20	5305	April 9, 1989
TOC 4	20	5306	April 9, 1989
TOC 5	20	5307	April 9, 1989
TOC 6	20	5308	April 9, 1989
TOC 7	18	5309	April 9, 1989
TOC 8	18	5310	April 9, 1989
TOC 9	20	5311	April 9, 1991
TOC 10	20	5312	April 9, 1991
TOC 11	20	5518	Sept 17, 1991
TOC 12	16	5577	Oct. 28, 1991
TOC 13	20	5996	Mar. 26, 1989
TOC 14	20	5997	Mar. 26, 1989
TOC 15	20	5998	Mar. 26, 1989

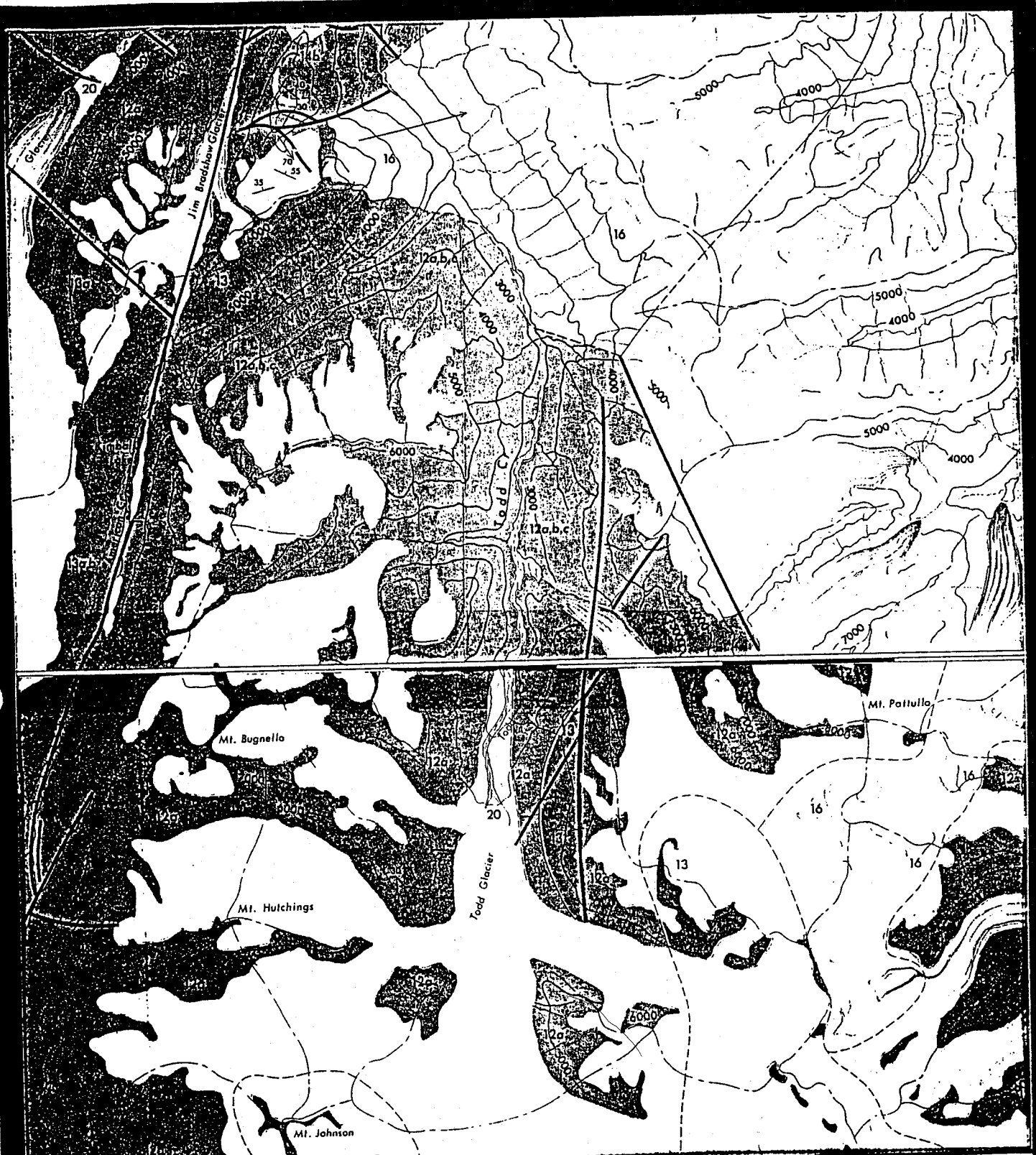
The 2 unit Todd claim in central TOC 7 is currently held by Woodcock Consulting.

The work described in this report will be filed for assessment credit on the TOC 3 to 15 claims.

7.0 Regional Geology:

The area has been mapped as being largely underlain by Lower Jurassic age Unuk River Formation volanics and clastic sediments which are cut by numerous Jurassic and Tertiary age intrusive bodies ranging in size from narrow dykes and sills to large plutons. (Figure #3)


TOC 1
TOC 2
TOC 3
TOC 4
TOC 5
TOC 6
TOC 7
TOC 17
TOC 8
TOC 16
TOC 9
TOC 15
TOC 10
TOC 14
TOC 11
TOC 13
TOC 12
ICEFIELD
MOUNT
ROBINSON
BELL-IRVING
Scale 1:50,000
0
2 km
REVISED
Todd Creek Property
Claim Map
PROJ No. 281
N.T.S. 104A
SURVEY BY: RS
DRAWN BY: RB
DATE: Jan 1989
SCALE: 1:50,000
DWG. No. 2
NORANDA EXPLORATION
OFFICE: Prince George



REVISED	TODD CREEK
	Regional Geology (after Grove, 1982)
PROJ.No. 281	SURVEY BY: R. Baerg DATE: May 1988
N.T.S. 104A	DRAWN BY: R. Baerg SCALE: 1:100,000
DWG. No. 3	**NORANDA EXPLORATION** OFFICE: Prince George

Province of British Columbia
Ministry of Energy, Mines and Petroleum Resources

GEOLOGY OF THE UNUK RIVER - SALMON RIVER - ANYOX MAP AREA

KILOMETRES 0 10 KILOMETRES

SCALE - 100 000

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

QUATERNARY

RECENT

CENOZOIC

20 UNCONSOLIDATED DEPOSITS; RIVER FLOODPLAIN, ESTUARINE, RIVER CHANNEL AND TERRACES, ALLUVIAL FANS, DELTAS AND BEACHES, OUTWASH, GLACIAL LAKE SEDIMENTS, TILL, PEAT, LANDSLIDES, VOLCANIC ASH, HOTSPRING DEPOSITS

19 BASALT FLOWS (a), CINDERS, ASH (b)

PLEISTOCENE AND RECENT

18 BASALT FLOWS

JURASSIC

HAZELTON GROUP

UPPER JURASSIC

NASS FORMATION

MESOZOIC

17 SILTSTONE, GREYWACKE, SANDSTONE, SOME CALCARENITE, ARGILLITE, CONGLOMERATE, MINOR LIMESTONE, MINOR COAL (INCLUDING EQUIVALENT SHALE, PHYLLITE, AND SCHIST)

MIDDLE JURASSIC

SALMON RIVER FORMATION

16 SILTSTONE, GREYWACKE, SANDSTONE, SOME CALCARENITE, MINOR LIMESTONE, ARGILLITE, CONLOMERATE, LITHOIDAL DEPOSITS

15 RHYOLITE, RHYOLITE BRECCIA, CRYSTAL AND LITHIC TUFF

BETTY CREEK FORMATION

14 PILLOW LAVA, BROKEN PILLOW BRECCIA (a); ANDESITIC AND BASALTIC FLOWS (b)

13 GREEN, RED, PURPLE, AND BLACK VOLCANIC BRECCIA, CONLOMERATE, SANDSTONE, AND SILTSTONE (a); CRYSTAL AND LITHIC TUFF (b); SILTSTONE (c); MINOR CHERT AND LIMESTONE (INCLUDES SOME LAVA (=14)) (d)

LOWER JURASSIC

UNUK RIVER FORMATION

12 GREEN, RED, AND PURPLE VOLCANIC BRECCIA, CONGLOMERATE, SANDSTONE, AND SILTSTONE (a); CRYSTAL AND LITHIC TUFF (b); SANDSTONE (c); CONGLOMERATE (d); LIMESTONE (e); CHERT (f); MINOR COAL (g)

11 PILLOW LAVA (a); VOLCANIC FLOWS (b)

TRIASSIC

UPPER TRIASSIC

TAKLA GROUP (?)

10 SILTSTONE, SANDSTONE, CONGLOMERATE (a); VOLCANIC SILTSTONE, SANDSTONE, CONLOMGERATE (b); AND SOME BRECCIA (c); CRYSTAL AND LITHIC TUFF (d); LIMESTONE (e)

PLUTONIC ROCKS

OLIGOCENE AND YOUNGER

CENOZOIC

DYKES AND SILLS (SWARMS), DIORITE (a); QUARTZ DIORITE (b); GRANODIORITE (c), BASALT (d)

EOCENE (STOCKS, ETC.) AND OLDER

8 QUARTZ DIORITE (a); GRANODIORITE (b); MONZONITE (c); QUARTZ MONZONITE (d); AUGITE DIORITE (e); FELDSPAR PORPHYRY (f)

7 COAST PLUTONIC COMPLEX: GRANODIORITE (a); QUARTZ DIORITE (b); QUARTZ MONZONITE, SOME GRANITE (c); MIGMATITE - AGMATITE (d)

JURASSIC

MIDDLE JURASSIC AND YOUNGER ?

MESOZOIC

6

Reconnaiscance property mapping indicates that much of the property is underlain by intermediate to felsic flows, tuffs, agglomerates and volcaniclastics with local areas of fine to coarse clastic sediments. Intermediate volcanics, andesite flows agglomerates, predominate with lesser but significant amounts of rhyolite-dacite flows and volcaniclastics along the west side of the Todd Creek valley from TOC 9 to 11 and on the north side of Virginia Creek on TOC 3 and 4. The clastic sediments, which consist of siltstones, greywackes and conglomerates, occur on TOC 6 and to the east in the main Todd Creek valley. The stratigraphy generally trends north to northwest with moderate northeasterly dips.

8.0 Property Geology:

8.01 South Zone

8.01.01 Geology - The South Zone is underlain by siliceous Feldspar Porphyry flows which are exposed over an area 500m x 950m.(Figure # 4) The porphyry is bounded to the west and north by dark green-grey andesite flows and agglomerates and to the south and east by glacial till. The western contact was not observed in outcrop, while the northern contact is a sharply defined E-W trending, north dipping fault. The feldspar porphyry is pervasively altered; alteration ranging from quartz-pyrite, to quartz-sericite-pyrite, chlorite and iron carbonate-quartz-sericite. The western 2/3 of the exposed porphyry body is predominantly quartz-pyrite altered and has a rusty yellow-brown weathered surface and is pale brown on a fresh surface. To the east, the porphyry is locally chloritic and proximal to the mineralized zone there is increased sericite alteration and locally iron-carbonate alteration.(Figure #6)

8.01.02 Mineralization - The mineralization on surface, consisting of chalcopyrite, pyrite, specular hematite and malachite, is hosted in a 5 to 15m wide north-northeast trending, steeply west dipping fracture zone, which cuts the eastern flank of the exposed feldspar body. The fracture-alteration zone has been traced at least 900m. Mineralization occurs along the southern 425m and the northern 100m of the exposed zone. There are two types of mineralization within the fracture system:

1. massive pyrite-chalcopyrite stringers and veins from less than 1 cm to 10 cm wide, and,

2. a zone of quartz-hematite-chalcopyrite stringers and breccia veins to 3m wide.

Typically the zone consists of one or two larger quartz breccia veins separated by a stockwork of narrow quartz-hematite veins. The larger quartz breccia veins generally occur along the footwall and hangingwall of the zone. Above the main zone, moving into the hangingwall, is a zone of silica-sericite-chlorite alteration with minor quartz-hematite and/or pyrite +/- hematite stringers. The amount of pyrite veining was observed to increase from south to north.

Geochemically the two types of mineralization are distinct; the pyrite-chalcopyrite veins generally have distinctly higher Mo, Cu and As values and lower Au values than the quartz breccia veins.

8.01.03 Drilling - In 1988 a total of 25 BQ-size drill holes, totalling 2605.65m, were directed at the South Zone (Figure 6). This includes NTC-88-10 to 19 and 26 to 39. The drilling was contracted out to Falcon Drilling of Prince George, B.C.

NTC-88-13 to 16(Figures 8-11) tested the downdip continuity of the mineralized zones encountered in holes NTC-87-2 to 9. The remainder of the holes tested the northward continuity of the higher grade zone encountered in NTC-87-8 and 9. To date the South Zone has been tested along a strike length of 325m and to a maximum vertical depth of 160m.

Drilling indicates that, to the south of holes 8,9, and 13, the zone consists of hangingwall and footwall quartz breccia veins separated by a stringer-stockwork zone. The quartz breccia veins generally become narrower with depth, ranging from >.5 to 2.0m true width. To the south and with depth the zone gradually moves closer to the porphyry-andesite contact and in hole #16(Figure 8) the footwall breccia vein is actually interfingered with the andesite. To the south gold values are generally low, the best value being 11.93 gmt Au/ 1.73m in hole #5(Figure 9).

From hole #8 north to holes 26-28(Figures 11-14), a distance of 120m, the zone shows a distinct increase in width and grade. Within this section the zone consists of one or more breccia veins ranging up to 6.15m wide and there is increased stringer veining between the breccia veins. Hole #19(Figure 13) in particular intersected a 29.75m section which contained 5 quartz breccia veins and strong stringer mineralization. This section, which is not a true width, returned 3.61 gmt Au/ 29.75m, including 6.91 gmt Au/ 8.15m. Holes 37and 38 (Figures 13, 17) tested the downdip continuity of the zone in holes 19 and 35 with mixed results. Hole 37, behind hole 35, cut a 6.10m zone which returned 6.12 gmt Au. However hole 38, behind hole 19, hit a strongly fractured and faulted section within which only weak mineralization was encountered. It is possible that the zone has been faulted off or merely chopped up by a fault. The zone, as indicated by holes 13, 37 and 39 remains open at depth.

Holes 29 to 32(Figures 15, 16) tested the northward continuity of the South Zone for an additional 84m north of hole 26. These holes indicate that the zone decreases in width with increased depth along strike to the north and that gold values drop off to the north. Associated with this decrease in width and grade is a distinct increase in the strength and width of the hangingwall alteration zone. It is possible that this may reflect a throttle point in the system, with the fluids flowing in a general north to south direction. Table 1 lists the significant drilling results.

TABLE 1: SIGNIFICANT SOUTH ZONE DRILL RESULTS

HOLE #	FROM (m)	TO (m)	WIDTH (m)	Cu ppm	Cu %	Au ppb	Au gmt
10a	35.76	36.50	0.74		0.06		1.30
10a	36.50	37.50	1.00		0.27		5.79
10a	37.50	38.50	1.00		0.78		7.92
10a	38.50	39.50	1.00		0.34		3.70
10a	39.50	40.50	1.00		0.07		1.54
10a	40.50	41.40	0.90		0.26		4.49

WEIGHTED AVERAGE:
35.76 to 41.40m = 0.38 % Cu, 4.25 gmt Au/5.64m
includes 36.50 to 38.50m = 0.53 % Cu, 6.86 gmt Au/2.00m

HOLE #							
11	46.50	48.00	1.50		0.54		5.73
11	55.20	55.60	0.40		0.56		4.35

HOLE #							
12	27.15	27.60	0.45		<0.01		4.46
12	75.85	76.85	1.00		0.19		1.58
12	76.85	77.50	0.65		0.56		2.43
12	77.50	79.00	1.50		0.87		5.21
12	97.35	97.80	0.45		0.19		0.72
12	97.80	99.80	2.00		0.78		4.22
12	99.80	101.30	1.50		0.12		0.99

WEIGHTED AVERAGES:
75.85 to 79.00m = 0.59 % Cu, 3.49 gmt Au/3.15m
97.35 to 101.30m = 0.46% Cu, 2.59 gmt Au/3.95m

HOLE #							
13	135.25	136.70	1.45		1.16		9.15
13	157.40	158.00	0.60		0.56		2.13
13	158.00	159.00	1.00		0.09		0.34
13	159.00	159.95	0.95		0.02		0.21
13	159.95	161.65	1.70		1.30		9.36

WEIGHTED AVERAGES:
157.40 TO 161.65 = 0.58 % Cu, 4.17 gmt Au/4.25m

TABLE 1 cont.

HOLE #						
14	95.40	96.35	0.95		0.61	3.02
14	111.10	111.25	0.15		0.97	7.65
HOLE #						
15	80.70	81.50	0.80		1.84	4.18
15	101.00	102.75	1.75		0.03	1.17
15	102.75	103.60	0.85		0.28	2.26
HOLE #						
16	43.55	44.00	0.45		0.32	6.34
16	44.00	44.80	0.80		0.03	0.48
16	44.80	45.85	1.05		0.57	5.93
16	60.15	60.45	0.30		0.25	2.91
16	60.45	61.80	1.35		0.05	0.38
16	61.80	62.20	0.40		0.53	6.31

WEIGHTED AVERAGES:
43.55 to 45.85m = 0.33 % Cu, 4.12 gmt Au/2.30m
60.15 to 62.20m = 0.17 % Cu, 1.91 gmt Au/2.05m

HOLE #						
17	25.30	26.80	1.50	3500	1748	
17	26.80	28.30	1.50	2086	2270	
17	28.30	30.00	1.70	1334	1829	
17	30.00	31.50	1.50	765	1948	

WEIGHTED AVERAGE:
25.30 TO 31.50m = 0.19 % Cu, 1.95 gmt Au/6.20m

HOLE #						
18	40.40	41.90	1.50	983	3370	
18	41.90	43.40	1.50	840	1626	
18	43.40	44.30	0.90		0.06	0.24
18	44.30	44.65	0.35		0.62	5.42

WEIGHTED AVERAGE:
40.40 to 44.65m = 0.13% Cu, 2.26 gmt Au/4.25m

HOLE #					
19	59.50	61.25	1.75	0.78	7.95
19	61.25	62.45	1.20	0.06	0.14
19	62.45	62.95	0.50	0.05	0.38
19	62.95	64.45	1.50	0.02	0.21
19	64.45	66.10	1.65	0.03	0.17
19	66.10	66.75	0.65	0.51	2.47
19	66.75	67.25	0.50	0.08	0.45
19	67.25	69.10	1.85	0.47	5.35
19	69.10	70.10	1.00	0.22	6.21
19	70.10	71.10	1.00	0.02	<0.07
19	71.10	72.80	1.70	0.08	0.38
19	72.80	73.10	0.30	0.60	5.07
19	73.10	74.10	1.00	0.12	6.34
19	74.10	75.10	1.00	0.17	4.77

TABLE 1 cont.

HOLE #					
19	75.10	76.10	1.00	0.03	0.38
19	76.10	77.10	1.00	0.08	0.69
19	77.10	78.10	1.00	0.08	6.29
19	78.10	79.10	1.00	0.18	9.29
19	79.10	80.10	1.00	0.30	4.35
19	80.10	81.10	1.00	0.07	2.64
19	81.10	82.10	1.00	0.03	2.33
19	82.10	83.00	0.90	0.01	0.69
19	83.00	84.00	1.00	0.98	9.26
19	84.00	85.25	1.25	1.02	17.21
19	85.25	86.25	1.00	0.12	1.13
19	86.25	87.75	1.50	0.17	0.55
19	87.75	89.25	1.50	0.64	1.27
19	96.75	98.25	1.50	0.02	1.17

WEIGHTED AVERAGES:
59.50 to 89.25m = 0.27 % Cu, 3.61 gmt Au/29.75m
includes 67.25 to 70.10m = 0.38 % Cu, 5.65 gmt Au/2.85m
" 72.80 to 75.10m = 0.20 % Cu, 5.49 gmt Au/2.30m
" 77.10 to 85.25m = 0.36 % Cu, 6.91 gmt Au/8.15m

HOLE #					
26	50.30	52.70	2.40	1.03	8.06
26	52.70	54.25	1.55	0.04	0.14
26	54.25	56.45	2.20	0.93	4.11

WEIGHTED AVERAGES:
50.30 to 56.45 = 0.74 % Cu, 4.65 gmt Au/6.15m

HOLE #					
27	63.40	66.35	2.95	1.05	6.34
27	66.35	67.85	1.50	0.16	1.23
27	67.85	69.35	1.50	0.07	0.86
27	69.35	71.10	1.25	0.07	0.45
27	71.10	71.65	0.55	1.01	5.55

WEIGHTED AVERAGES:
63.40 to 71.65m = 0.50 % Cu, 3.09 gmt Au/8.25m

HOLE #					
28	114.95	115.20	0.25	1.30	5.97

HOLE #					
29	90.60	91.60	1.00	0.05	1.20
29	91.60	92.60	1.00	0.03	1.23
29	92.60	93.60	1.00	0.41	3.50

WEIGHTED AVERAGES:
90.60 to 93.60m = 0.16 % Cu, 1.98 gmt Au/3.00m

HOLE #					
30	112.00	112.85	0.85	0.54	5.04

TABLE 1 cont.

HOLE #	FROM	TO	WIDTH	Cu ppm	Cu %	Au ppb	Au gmt
31	79.70	81.45	1.75	3420			2.19
HOLE #							
33	40.25	41.15	0.90	8800			4.59
HOLE #							
34	49.30	50.90	1.60	8400			3.63
34	50.90	51.85	0.95	159			0.07
34	51.85	52.65	0.80	10500			7.99
34	52.65	53.90	1.25	2700			0.86
34	53.90	54.90	1.00	780			0.31
34	54.90	55.90	1.00	730			1.71
34	55.90	56.90	1.00	69			0.55
34	56.90	57.90	1.00	1100			1.06
34	57.90	58.90	1.00	1250			0.48
34	58.90	59.45	0.55	3800			1.61
HOLE #							
35	76.00	76.95	0.95	7590			15.98
35	76.95	78.05	1.10	3550			8.47
35	78.05	79.25	1.20	1942			0.65
35	79.25	80.05	0.80	7420			19.58
35	80.05	81.20	1.15	703			2.57
35	81.20	82.20	1.00	7770			11.55
35	82.20	83.20	1.00	4390			9.46
35	83.20	84.20	1.00	3530			10.70
35	84.20	85.20	1.00	3470			6.89
35	85.20	86.20	1.00	5930			5.73
35	86.20	87.20	1.00	5560			10.15
35	87.20	87.70	0.50	3070			4.94

WEIGHTED AVERAGES:
76.00 to 87.70m = 0.45 % Cu, 8.83 gmt Au/11.70m
includes 79.25 to 84.20m = 0.45 % Cu, 10.17 gmt Au/4.95m

HOLES #							
37	109.30	109.80	0.50	1525			3.36
37	109.80	111.30	1.50	29			0.10
37	111.30	112.20	0.90	876			0.72
37	112.20	113.45	1.25	8500			14.54
37	113.45	114.95	1.50	399			1.65
37	114.95	116.35	1.40	521			1.27
37	116.35	118.30	1.95	4890			7.65

WEIGHTED AVERAGES:
109.30 to 118.30m = 0.26 % Cu, 4.43 gmt Au/9.00m
includes 112.20 to 118.30m = 0.35 % Cu, 6.12 gmt Au/6.10m

HOLE #							
38	150.00	151.40	1.40	1988			2.02
HOLE #							
39	102.45	103.80	1.35	6720			5.62

8.01.04 **South Zone Extension** - As mentioned previously the structure hosting the South Zone mineralization has been traced for 900m(Figure 4). North of trench #3, for a distance of 350m, the structure becomes more diffuse and is marked by an area of moderate to strong quartz-sericite-pyrite altered feldspar porphyry. Within this section mineralization consists of fine grained disseminated pyrite and local pyrite veins. To the north this altered area is bounded by an east-west north dipping fault. There appears to be approximately 75 to 100m of right lateral displacement along this fault. The offset feldspar porphyry section is dramatically thinner, only 25 to 50m wide, and is bounded to the west by a north trending, steeply west dipping fault and to the east by andesite flows. Chalcopyrite and pyrite mineralization occurs in a .5 to 1m wide quartz-chlorite-hematite breccia vein and a 3 to 5m wide quartz stockwork zone immediately along the western boundary of the porphyry. The mineralization is exposed along strike for 100m to where it disappears in the Todd Creek gravels. Table 2 lists the results from this years sampling.

TABLE 2 : SOUTHZONE EXTENSION SAMPLE RESULTS

SAMPLE	TYPE	Au oz/t	Cu %
46455	rock	.003	.21
46456	rock	.022	.91
46457	rock	.027	2.10

The gold values on surface are generally low but are definately anomalous. In light of the fact that a) both on the South and North Zones gold values have, at least locally, improved with depth and that b) this zone remains wide open to the north, this zone should be further tested by drilling.

8.01.05 **Recon Sampling** - Only one pan sample was collected from the South Zone area. This sample, collected below the BY glacier(Figure 4), was anomalous in gold, copper and lead. The results are listed below.

SAMPLE	TYPE	Au ppb	Cu	Zn	Pb	Ag
78182	pan	120	280	80	150	3.0

8.02 Midzone/Rhyolite Creek

8.02.01 Geology - The Midzone/Rhyolite Creek area roughly covers the area from the northwest corner of TOC 10 to the north central part of TOC 9(Figure 4,5). The area is predominantly underlain by andesite flows and agglomerates with lesser amounts of rhyolite, dacite flows and volcaniclastics and local areas of feldspar porphyry flows similar to the South Zone. The felsic volcanics, which occur along the top of the north-south ridge running through TOC 9 and 10 and have been traced from the BY glacier to the Fall Creek Zone. The rhyolite, dacite and porphyry are locally moderately to strongly quartz-sericite-pyrite altered and the volcaniclastics are moderately to strongly carbonate +/- sericite altered. Bedding in the volcaniclastics generally trends northwest with moderate to steep northeast dips.

8.02.02 Mineralization - Mineralization consists of east-west to northwest trending quartz-pyrite +/- chalcopyrite veins ranging from 1cm to 6m wide and 1 to 108m long. No significant precious metal values have been obtained from these veins to date. Follow up in 1988 of several copper-gold talus anomalies on the Ridge Grid located several new 1 to 2cm pyrite-chalcopyrite veins. These veins appear to be the source of the talus anomaly.

Several prominent gossans in the creeks draining the Mid Zone were prospected and sampled and proved to have only trace precious metals.

8.02.03 Geochemistry - A 1.5 km by 300m grid was established to cover the area of the gossans below the Mid Zone(Figure 4). A total of 101 soil samples, 2 silt samples, 1 pan sample and 10 rock samples were collected. Refer to Appendix III for the soil sampling technique and analytical procedure. The results, aside from one pan and rock sample, were uniformly low. Table 3 lists the samples from this area.

TABLE 3: MID ZONE/RHYOLITE CREEK SAMPLE RESULTS

(All values in ppm except as noted)

SAMPLE	TYPE	Mo	Cu	Pb	Zn	Ag	As	Cd	Sb	Au ppb
25657	rock	1	34	20	55	.3	6	1	3	1
25658	rock	2	18	20	47	.3	2	1	2	2
25659	rock	2	16	10	100	.2	11	1	2	1
25660	rock	1	18	7	120	.2	17	1	4	1
25661	silt	2	34	14	98	.1	14	2	2	1
31957	silt		130	10	98	.8	38			10
31984	rock		26	1	58	.6	1			10
31985	rock		28	4	88	.4	1			10
31986	rock		24	4	130	.4	4			10
31987	rock		32	4	58	.4	4			10
31988	rock		20	4	92	.4	2			10
31989	rock		2500	16	150	1.0	550			330
32003	pan		400	32	110	1.0				870
78248	rock	4	12	9	3	.1	7	1	2	4
78249	rock	1	29	17	124	.3	6	1	2	1

8.03 North Zone

8.03.01 **Geology:** During 1988 a grid was established over the North Zone and this was mapped at a scale of 1:250(Figure 19a,b).

The area of interest is underlain by a sequence of andesite flows, agglomerates/flow breccias, tuffs and andesite-dacite fragmental flows and flow breccias. These units are cut by local narrow fine grained mafic dykes.

The andesites, unit #2, are generally dark green-grey. The flows are generally fine grained with local hornblende and/or feldspar porphyry sections. The fragmental units contain subangular to angular homolithic fragments which are locally porphyritic. Local minor grey to black subangular chert or tuff fragments were also observed. One to two percent pyrite is ubiquitous within the andesites and is locally as high as five percent. Chlorite+/- carbonate alteration is also ubquitous.

The andesite-dacite, unit #3, is a pale green-grey brown. The unit is composed of a fine grained chlorite+/-sericite-carbonate altered matrix in which a variety of fragments occur. Compositionally the fragments range from andesite flows to siliceous felsic tuffs and they range in size from <1cm to 1m. The fragments range in color from light brown to grey to pale green and are locally chlorite-sericite altered. Pyrite occurs as fine disseminated grains and locally forms up to five percent of the rock.

The mafic dykes, unit #5, are medium to dark grey-green and are generally very fine grained with only local hornblende phenocrysts to 2mm observed. The dykes are distinctly magnetic whereas the volcanics are not. The margins of the dykes are usually gradational with the surrournding volcanics. Thus the dykes probably represent coeval feeders for the surrounding volcanics.

Only one contact has been observed on the ground (Figure 19a) and that contact, between the andesite and dacite, had a north-northwest trend with an apparent vertical dip.

Deformation of the units consists of local strong shearing and joint development in the andesites parallel to the andesite-dacite contact. The dacites locally show some development of an incipient foliation.

8.03.02 **Mineralization** - The North Zone mineralization consists of several north-northwest to northwest trending,vertical to steeply southwest dipping, 0.1 to 2m wide quartz-chalcopyrite-pyrite-hematite veins and breccia veins which have been designated the "A"and "B" zones. On surface the "A" zone consists of two parallel veins separated by a quartz-chalcopyrite-hematite stringer zone. The veins are commonly banded and brecciated and the sulphides are distributed throughout the vein.

On surface the veins have been traced for up to 320m. To the south the veins were observed to eventually "pinch" down to 10 to 20 cm and to the north along strike the veins are covered by coarse glacial till. On the south side of Fall Creek the stringer zone largely disappears leaving only the main veins.

Further chip sampling was completed on the veins in 1988, Table 4 lists the results. As in previous sampling the gold values were again low.

TABLE 4: NORTH ZONE ROCK SAMPLE RESULTS

SAMPLE	WIDTH(m)	TRENCH #	Cu ppm	Cu %	Au ppb	Au oz/t	Au gnt
5383	grab	-	149				0.27
5384	1.0	7	362				0.10
5385	1.0	7	3570				0.55
5386	1.0	7	117				0.10
5387	1.0	7	2104				0.14
78179	grab	-		2.46		0.261	
78180	grab	-		6.71		0.367	
78181	grab	-		1.13		0.016	
78183	1.0	7		0.05		0.027	
78184	1.0	7		0.35		0.024	
78185	1.0	7		0.04		0.001	
78186	1.0	7		0.02		0.002	
78187	1.0	7		0.01		0.002	
78188	1.0	7		0.01		0.001	
78189	1.0	7		0.02		0.002	
78190	1.0	7		0.04		0.014	
78191	1.0	7		0.70		0.015	
78192	1.0	6		0.32		0.030	
78193	1.0	6		0.01		0.003	
78194	1.0	6		0.02		0.002	
78195	1.0	6		0.01		0.002	
78196	1.0	6		0.03		0.002	
78197	1.0	6		0.01		0.001	
78198	1.0	6		0.38		0.021	
78199	1.0	6		0.17		0.046	
78200	1.0	6		0.01		0.001	
78226	grab	-	55145		3920		

The "B" zone veins, 120 to 225 meters east of the "A" zone, are identical in character to the "A" zone veins but generally lack the stringer-type mineralization. At least one "B" zone vein has been traced 170 meters to the south of Fall Creek where it pinches down to 10 to 20cm. chip samples collected in 1987 from this vein returned values up to 9.53 gmt Au and 0.35% Cu/1.0m.

8.03.03 Drilling - During 1988 a total of 11 drill holes, NTC-88-20 to 25 and 40 to 44, tested the North "A" Zone along a strike length of 150m.(Figures 20-24) Significant results are listed in Table 5.

TABLE 5: SIGNIFICANT NORTH ZONE DRILLING RESULTS

HOLE #	FROM(m)	TO(m)	WIDTH(m)	Cu ppm	Cu %	Au ppb	Au gmt
20	64.95	66.15	1.20	2098		1352	
20	78.15	79.65	1.50	1069		1133	
HOLE #							
22	29.30	30.00	0.70		0.04		0.96
22	30.00	31.00	1.00		1.05		3.46
22	31.00	32.00	1.00		1.30		1.27
22	32.00	33.00	1.00		0.79		1.34
22	33.00	34.00	1.00		3.00		1.82
22	34.00	35.00	1.00		0.34		0.62
22	35.00	36.00	1.00		1.22		0.96
22	36.00	37.00	1.00		2.16		4.18
22	37.00	38.00	1.00		1.69		12.17
22	38.00	39.00	1.00		1.34		7.78
22	39.00	40.00	1.00		1.84		21.33
22	40.00	41.00	1.00		2.17		16.25
22	41.00	41.95	0.95		3.20		25.65
22	41.95	43.50	1.55		0.18		0.93
22	48.50	50.25	1.75		0.69		1.13
22	58.15	59.65	1.50		0.41		2.09
22	59.65	61.15	1.50		0.13		3.46

WEIGHTED AVERAGES:
29.30 to 36.00m = 1.15 % Cu, 1.51 gmt Au/6.70m
36.00 to 41.95m = 2.06 % Cu, 14.47 gmt Au/ 5.95m
58.15 to 61.15m = 0.27 % Cu, 2.78 gmt Au/3.00m

HOLE #							
25	81.15	82.15	1.00	4320		705	
25	82.15	83.15	1.00	6330		543	
25	84.15	85.15	1.00	9490		4360	
25	85.15	86.10	0.95	1976		1218	
25	86.10	89.10	3.00	1289		163	

WEIGHTED AVERAGES:
84.14 to 86.10m = 0.58 % Cu, 2.83 gmt Au/1.95m

HOLE #							
40	51.50	52.60	1.10	3400			1.13
40	52.60	53.60	1.00	6500			0.41
40	53.60	54.90	1.30	2100			1.27
40	54.90	55.70	0.80	2600			2.64
40	84.60	85.60	1.00	4500			6.00
40	85.60	86.60	1.00	636			1.89
40	86.60	87.35	0.75	180			1.20
40	87.35	89.00	1.65	46			1.95
40	89.00	90.50	1.50	40			0.55

TABLE 5 cont.

HOLE #						
40	90.50	92.00	1.50	198		0.14
40	92.00	93.50	1.50	118		1.06
40	117.50	118.50	1.00	4670		1.17
40	121.00	122.00	1.00	>20000	3.46	1.51
40	124.50	125.50	1.00	7670		1.82

WEIGHTED AVERAGES:
51.50 to 55.70m = 0.34% Cu, 1.29 gmt Au/4.20m
84.60 to 93.50m = 0.07% Cu, 1.64 gmt Au/8.90m
includes 84.60 to 86.60m = 0.22% Cu, 3.95 gmt Au/2.00m

HOLE #						
41	54.00	55.70	1.70	7620		1.92
41	55.70	56.70	1.00	1514		0.58
41	56.70	57.70	1.00	4750		1.20
41	57.70	59.20	1.50	566		0.07
41	59.20	60.30	1.10	2550		0.10
41	60.30	62.00	1.70	7300		3.43
41	62.00	63.00	1.00	3310		0.96
41	63.00	64.50	1.50	759		0.79
41	64.50	66.75	2.25	2046		0.34
41	66.75	69.00	2.25	677		0.17
41	69.00	70.75	1.75	6010		6.21

WEIGHTED AVERAGES:
54.00 to 70.75m = 0.34% Cu, 1.51 gmt Au/16.75m

HOLE #						
42	44.75	45.75	1.00	382		1.10

HOLE #						
43	15.70	16.90	1.20	2660		0.69
43	16.90	20.40	3.50	4100		2.74

HOLE #						
44	24.90	25.80	0.90	6740		2.09
44	78.00	81.00	3.00	23		2.57

In general the drilling indicates that the zone is discontinuous along strike and down dip. The zone appears to consist of several irregular pods or lenses ranging in width from trace to 29.75m. The wide intersection encountered in hole 22 could not be duplicated in hole 23, below hole 22, or in stepout holes on either side, holes 20,21,24 and 25. Hole 40,which was drilled back toward holes 22 and 23, appears to have confirmed that the zone is actually dipping vertical or steeply southwesterly and that the zone narrows, at least locally, with depth. The mineralization encountered toward the bottom of hole 40 appears to be either a separate, new zone which does not appear to have a surface expression or a splay of the main zone.

Holes 41-42 and 43-44(Figures 23,24) were further stepouts along strike to test the continuity of the mineralization. Holes 41-42 appear to indicate that to the south, at least locally, the tenor and grade of the mineralization increases with depth. Holes 43-44 confirmed that the mineralized structure, albeit somewhat narrower, continues to the north.

8.03.04 **Geophysics** - During September 18 to September 26 a Mise-a-la-masse survey was completed on the North Zone. The work was completed under contract by Pacific Geophysical of Vancouver, B.C.(Figures 25-27) The survey employed a 10 meter receiver dipole with the current electrode attached to the mineralization at various drill hole intersections. Holes 25, 40 and 42 were used for the survey because holes 22 and 41 were plugged part way down the hole. The following is a summary of the survey results:

NTC-88-25: The results of this survey have defined a very uniform circular anomaly which is indicative of a point source (i.e the electrode). There is a definite offset observed between the electrode location and the anomaly center which is probably a result of steeply dipping geology, lack of conductive source and topography. The conclusion of this survey is that no conductive source/horizon was mapped. It is possible that the electrode failed to make electrical contact with the sulphide intersection due to mislocation.

NTC-88-40: As for above this survey has also produced a circular and offset response indicating a lack of continuity.

NTC-88-42: This survey has mapped a clear anomaly of short strike length (25+ meters) extending between (lines) 10065E and 10010E. It appears that topography is influencing the contour presentation somewhat and forcing the position of the anomaly towards the south.

8.04 *Fall Creek Zone*

The Fall Creek Zone is located on the south side of Fall Creek on TOC 9(Figure 28). In 1986 several silt samples collected from this area returned weakly anomalous Cu-Au results. This was followed up in 1987 with two lines of soil samples which identified an area of strong coincidental Cu-Au soil geochemistry. In 1988 a 200m x 700m grid was established and subsequent detailed soil sampling and prospecting lead to the discovery of a significant zone of copper-gold mineralization. The area of work to the south side of the grid was restricted by steep terrane.

8.04.01 Geology: The Fall Creek grid area is underlain by andesite flows and breccias which are intruded by 1 to 3m fine grained mafic dykes(Figure 28). The andesites are pervasively altered to chlorite +/-sericite-quartz-pyrite. Several of the more strongly quartz-sericite-pyrite altered zones appear to be related to easterly and northly trending structures. The andesites locally have a weak northwesterly trending foliation.

On the ridge to the south, overlooking the Fall Creek grid, the andesites become interbedded with a sequence of carbonate altered felsic volcaniclastics. These volcaniclastics could come through the grid area but have not been observed possibly due to a lack of outcrop in several areas.

Prominent structural elements in the area consist of local north to northwest trending, vertically dipping fractures, shears/faults.

8.04.02 Mineralization: Mineralization observed to date consists of disseminated pyrite, ranging from 1 to 5%, pyrite +/- quartz veins to 1m and pyrite-chalcopyrite-quartz-calcite +/- barite veins to 3m. Table 6 lists the samples from the Fall Creek grid area(Figure 28). The main zone of interest to date is located at the eastern end of the grid from 20200N 20590E to 20350N 205000E. This zone consists of quartz-pyrite-chalcopyrite+/- barite veins and breccias within a northwest trending, vertical to steeply west dipping shear/fracture zone. The zone occurs in the bottom of a creek and thus it is impossible to determine it's true surface width although indications are that the zone is at least 3m wide. To the south of line 20200N this zone follows a prominent north-south trending fracture and has been traced up onto the ridge where it appears to die out. Thus to date this zone has been traced over a 400m horizontal distance and a 300m vertical distance. Values on surface from this zone have ranged from trace to over 24 grams/t Au.

Grab samples collected from other areas of the grid indicate that there are at least several other areas with anomalous gold values(i.e. sample # 38786).

TABLE 6: FALL CREEK/ ORANGE MT. SAMPLE RESULTS
all values in ppm except where noted)

SAMPLE	TYPE	Mo	Cu	Pb	Zn	Ag	As	Au(ppb)	Cu%	Au(oz/t)	Au(gm
5376	rock		6080								5.9
5377	rock		1681								1.1
5378	rock		621								1.9
5379	rock		4150								3.6
5380	rock		328								0.3
5381	rock		24400								17.0
5382	rock		5650								11.6
10701	silt	1	71	32	117	0.2	29	14			
10702	silt	1	27	13	76	0.1	13	3			
10703	silt	1	60	42	138	0.4	44	75			
10704	silt	1	138	59	136	0.5	43	19			
10705	silt	3	117	27	99	0.3	57	65			
10706	silt	2	249	35	104	0.4	30	29			
10707	silt	3	515	17	65	0.2	38	204			
10708	silt	1	1917	23	82	0.2	32	290			
10709	silt	2	418	22	73	0.2	47	420			
10710	silt	1	318	23	69	0.3	48	270			
10711	silt	2	172	25	73	0.1	39	17			
10712	silt	3	325	40	126	0.3	15	82			
10713	silt	3	633	24	106	0.1	42	131			
10714	silt	1	88	22	115	0.2	47	33			
10715	silt	1	55	20	90	0.1	37	35			
10716	silt	1	63	21	91	0.1	35	16			
10717	silt	1	278	17	85	0.3	36	106			
10718	silt	1	278	24	76	0.2	51	280			
10719	silt	1	558	27	87	0.3	54	250			
10720	silt	2	448	34	92	0.4	70	1050			
10721	silt	2	643	38	118	0.3	106	660			
10722	silt	4	260	59	337	0.3	521	41			
19721	rock								0.24	0.023	
19722	rock								1.20	0.124	
19723	rock								0.01	0.001	
19724	rock								0.10	0.018	
19725	rock								0.28	0.011	
25580	rock								0.43	0.018	
25581	rock								0.50	0.012	
25582	rock								1.05	0.096	
25583	rock								2.23	0.005	
25584	soil	1	28	26	67	0.4	23	3			
25585	soil	2	20	46	71	0.5	21	2			
25586	rock	1	1243	2	56	0.2	18	11			
25587	silt	2	77	21	93	0.1	25	100			
25588	silt	3	229	23	76	0.2	70	140			
25589	silt	13	413	384	771	7.4	229	10			
25590	silt	7	62	113	458	1.8	108	10			
25591	rock	6	292	1331	1521	5.7	85	2			
25592	rock	1	314	17540	977	106.7	33	1			
25593	soil	13	319	557	1176	9.5	497	30			
25594	rock	4	321	1803	1021	20.3	180	2			
25595	rock	1	563	1676	781	18.3	19	1			

TABLE 6 cont.

31953	silt		52	38	260	0.8	14	10		
31954	silt		28	18	130	1.0	22	10		
31955	silt		54	18	280	1.4	76	10		
31956	silt		20	44	300	1.0	50	10		
31965	silt		18	14	170	0.2	18	10		
31976	rock	3	12	9	5	2.5	69	41		
31977	"	1	80	27	64	1.3	183	549		
31978	"	2	34267	17	95	5.8	140	5214		0.148
31979	"	2	71	23	71	0.5	53	102		0.004
31980	"	1	139	13	59	0.6	17	47		0.001
31981	"	1	9352	11	62	3.4	61	4596		0.124
31982	"	1	48	220	31	4.2	595	1098		0.030
31983	rock	4	6843	24	34	1.8	541	1201		0.034
32001	pan		28	82	160	1.4		10		
32002	pan		100	180	220	1.6		170		
38758	rock	2	4358	36	120	2.4	85	617		0.019
38759	rock	3	40	13	13	0.5	76	13		0.002
38760	rock	15	3317	525	330	3.2	7210	823		0.026
38761	rock	6	33284	26	213	4.9	22	823		0.025
38762	silt	1	124	28	116	0.3	78	205		
38763	rock	2	32	10	32	0.1	16	8		
38764	rock	1	52	25	127	0.5	14	1		
38765	rock	1	20	7	30	0.1	24	1		
38766	rock	6	94	15	13	0.4	74	207		
38767	rock	1	210	19	20	0.8	456	161		
38768	rock	1	31	13	41	0.1	14	6		
38769	rock	1	21	10	35	0.1	24	21		
38770	rock	1	37	7	14	0.1	37	39		
38771	rock	1	14	15	24	0.1	79	4		
38772	rock	3	8	3	6	0.2	15	65		
38773	rock	1	10	10	25	0.4	98	93		
38774	rock	1	65	9	28	0.1	31	24		
38775	rock	1	44	7	63	0.1	7	1		
38785	rock	1	33	13	26	0.1	26	51		
38786	rock	1	581	13	32	0.3	105	3640		0.088
38787	rock	1	20	15	38	0.1	37	87		
38788	rock	1	36	16	48	0.1	15	19		
38789	rock	1	21556	15	179	10.0	74		2.24	0.706
38790	rock	1	26679	15	218	6.5	72		2.52	0.378
38791	rock	2	14	10	30	0.1	136	25		
38792	rock	1	15	8	30	0.2	27	1		
38793	rock	1	11	6	22	0.1	21	11		
38794	rock	3	14	12	16	0.1	6	21		
38795	rock	1	384	14	27	0.9	149	4980		0.172
38796	rock	1	402	17	29	0.8	252	750		0.024
38797	rock	1	127	17	27	0.6	115	480		0.015
38798	rock	1	113	17	49	0.3	82	970		0.029
38799	rock	1	35528	19	177	3.4	153	19200		0.498
38800	rock								0.57	0.002
78201	rock	2	4	4	44	0.1	2	2		
78202	rock	1	23	15	73	0.3	2	1		
78203	rock	1	44	13	121	0.1	15	1		
78204	rock	5	6	2	12	0.1	2	1		
78205	rock	1	30	23	148	0.2	28	2		

TABLE 6 cont.

78206	rock	1	27	2	7	0.1	2	2
78207	rock	1	29	12	58	0.1	5	1
78208	rock	2	43	35	231	0.1	28	10
78209	pan		34	24	150	0.2		10
78210	rock	10	5	19	2	0.5		10
78211	silt	10	24	19	119	0.1	90	10
78212	pan		32	38	180	0.2		10
78213	rock	4	121	2	21	0.3	8	3
78214	rock	1	2	4	17	0.2	6	1

8.04.03 Soil Geochemistry - A total of 150 soil samples were collected on the Fall Creek grid. Samples were collected from the B horizon at 25m intervals and were then shipped to Noranda Labs in Vancouver. The samples were analayzed for gold geochem and 30 element ICP. Samples analyzed for ICP were sent to Acme Analytical Laboratories Ltd. of Vancouver. Refer to Appendix III for the sampling technique and analytical procedure.

Soil sampling has outlined a large coincident Cu-Au anomaly 200m x 350m covering most of the eastern half of the grid, from 20250E to20600E, and which is open to the north and south. Gold values range up to 2600 ppb and Cu values up to 7087 ppm (Figure 29). There appear to be at least several distinct zones within the main anomaly. These are anomalies A,B,C,D,and E on Figure 29. Anomalies A and C, the northern ends, and D are directly coincident with areas of known mineralization. The slope of the land, which is 30 to 35 degrees to the north, does not appear to have greatly affected the dispersal of the gold geochemistry. Anomalies F,G and H, to the west of the main anomaly, are isolated anomalies consisting of one to five samples. Anomalies F and G possibly represent the same zone.

The soil samples were also locally anomalous in lead, to 234 ppm, zinc, to 253 ppm, silver, to 20.5 ppm, and arsenic, to 1693 ppm. These elements however were quite spotty and did not warrant contouring. Of these arsenic appears to have the best correlation with the anomalous copper-gold.

8.04.04 Drilling - As a follow up on the favorable rock and soil sample results a limited drill program was completed in September 1988.This program consisted of 4 drill holes,(NTC-88-45 to 48) 2 holes from each of 2 setups(Figures 30,31). Due to the steep terrane the setups and helicopter pads had to be blasted out. The selected targets were 100m apart along strike and were tested to a depth of 50m below surface. Table 7 lists the significant results.

TABLE 7: FALL CREEK SIGNIFICANT DRILL RESULTS

HOLE #	SAMPLE	WIDTH (m)	FROM (m)	TO (m)	Cu ppm	Cu %	Au gmt
45	49776	1.45	37.90	39.35	6810		6.72
46	25678	1.25	50.50	51.75	5820		12.10
47	49663	1.00	36.65	37.65	>20000	3.79	24.14
47	49664	1.50	37.65	39.15	925		0.58
47	49665	1.75	39.15	40.90	1157		0.17
47	49523	1.50	40.90	42.40	1821		2.06
47	49667	1.50	42.40	43.90	303		0.14
47	49668	1.75	43.90	45.65	305		0.10
47	49669	1.00	45.65	46.65	>20000	2.44	5.18
47	49670	1.00	46.65	47.65	>20000	3.72	3.50
47	49671	1.00	47.65	48.65	7450		0.65
47	49672	1.00	48.65	49.65	2010		0.21
48	49707	1.50	43.00	44.50	500		4.66
48	49708	1.65	44.50	46.15	126		1.06
48	49709	0.65	46.15	46.80	5370		9.84
48	49710	1.50	46.80	48.30	73		0.17
48	49711	1.60	48.30	49.90	279		0.31
48	49712	1.00	49.90	50.90	19680		15.22

WEIGHTED AVERAGES:

\# 47 - 49663 to 49672 = 0.59 % Cu, 2.73 gmt Au/ 13.00m
includes 49663 to 49523 = 0.50 % Cu, 5.41 gmt Au/5.25m
includes 49669 to 49670 = 3.08 % Cu, 4.34 gmt Au/2.00m
\# 48 - 49707 to 49712 = 0.31 % Cu, 3.94 gmt Au/ 7.90m
includes 47909 to 47912 = 0.50 % Cu, 4.71 gmt Au/4.75m

The zone as intersected in the drill holes varied from 1.25m to 11m wide. The zone consisted of chlorite-sericite-quartz altered andesite with blebs and veins of chalcopyrite-pyrite, quartz-calcite-chalcopyrite +/- barite veins and breccias. The barite appears to be a late, crosscutting feature in the zone, possibly the last phase of mineraliztion.

The surrounding andesites are pervasively altered, the main alteration assemblage being sericite-pyrite- chlorite-quartz with local sections of chlorite +/- sericite. Pyrite content ranges up to 10%. The mafic dykes observed on surface were also intersected in the drill holes. In section the contacts were more gradational and the dykes locally had a narrow alteration rim with increased concentrations of sulphides. It is possible that the dykes are either a) associated with the minerlaization and were generally resistant to alteration by the mineralizing fluids or b) the dykes postdate the mineralization and the alteration rim due to heat and fluids accompanying the dyke.

8.04.05 Induced Polarization - During September 18 to 26, 1988 I.P. surveys were completed on the Fall Creek grid. The work was completed under contract by Pacific Geophysical of Vancouver, B.C. The Frequency Domain survey employed a 25 meter dipole-dipole array with readings recorded to the fourth separation. Only the eastern portions of lines 20200N to20350N were surveyed(Figures 32-35). Refer to appendix V for the instrumentation and I.P. profiles.

LINE 20200N: Three prounced PFE anomalies are identified on this section at 20362.5E, 20450E and 20575E. All these targets have well defined shapes and low resistivity signatures. The target located at 20450E occurs at a depth of approximately 40to 50 meters and is considered a "buried" target. The west and east anomalies should be exposed at bedrock surface. All three of these responses present themselves as attractive geophysical targets.

LINE 20250N: Two anomalies are mapped on this line which are the extensions of the East and West zones described above. The mid anomaly is barely evident at 20462.5E/n=4. For both the East and West anomalies their respective resistivity signatures have changed from a pronounced low resistivity to a high, but relative to background low, resistivity. The East zone does however have a surficial "cap" of low resistivity.

LINE 20300N: The East anomaly is the sole response on this line of data. The signature indicates that the source has increased in width and has a lower source resistivity.

LINE 20350N: One well developed I.P. response is recorded at station 20425E and it's character suggests that it is sourced by the East zone as the resistivity and PFE responses are of a very similar nature. Indeed the PFE response that the north end of this source is nearby (50+ meters ?). Two additional PFE anomalies are also mapped at 20512.5E and 20587.5E however they are considered weak responses.

The I.P. anomalies indicated by the survey are clearly coincidental with the known mineralization and the soil geochem anomalies. The I.P. survey also indicates that soil anomaly C and D are related and indeed may be one zone and that the source(s) for the other geochem anomalies have some depth potential.

8.05 Orange Mt.

The Orange Mt. area is located on TOC 8 (Figures 28-30). The area gets it's name from a large gossan which covers most of a mountain. The gossan area was worked extensively by Woodcock Consulting and Riocanex in the early 1980's. Their work indicated that the large gossan area was due to strongly quartz-sericite-pyrite altered trachyte volcanics. Within these altered trachytes numerous barite +/- galena-sphalerite-jasper veins were located. These veins proved to be quite random and very discontinuous with generally low silver values.

Work in 1988 consisted of soil sampling and prospecting along the flanks of the altered trachyte pile. The purpose of this program was to possibly identify mineralized zones in areas of greater overburden and/or vegetation.

8.05.01 Geochemistry - An 800m x 600m grid was established for the purpose of soil sampling and prospecting. A total of 118 samples were collected. These were shipped to Noranda Labs in Vancouver and analyzed for Cu, Zn, Pb, Ag, As and Au. For the sampling technique and analytical procedure refer to appendix III.

Of the six elements only Pb, Zn and Ag produced contourable results(Figures 29). Values ranged up to 220ppm Cu, 1000ppm Zn, 150ppm Pb, 4.8ppm Ag, 160ppm As and 180ppb Au.

COPPER: Copper values were generally very low with only 3 samples over 60ppm. Two of these samples occur on line 39200N at the western end.

ZINC: Zinc results produced two distinct anomalies 1) line 39200N (39700E to 39800E) and 2) line 39400N (39850E to 40000E) to line 39600N (39675E to 40200E). The first anomaly is comprised of five samples ranging from 240 to 900ppm. The anomalous copper values are coincident with this anomaly.

The second anomaly is comprised of thirty five samples. At least part of this anomaly however is probably due to down slope dispersion as several creeks drain down across the anomaly. The best part of this anomaly however is located at the east end of line 39600N, from 39925E to40200E. Values in this area range up to 1000ppm Zn with locally anomalous copper values to 64ppm. This anomaly is open to the north,south and east.

LEAD: Lead values on the grid have a generally high background. Again this would appear to be at least partly due to down slope dispersion as for zinc. Elevated values (> 100ppm) are generally spotty and are locally coincident with the zinc anomaly.

ARSENIC: Arsenic values appear to show a general increase from south to north. The most significant anomaly, from 39925E to40200E on line 39600N is coincident with the core of the zinc anomaly. Values in this section range from 100 to 160ppm

GOLD: Only three samples returned greater than 10ppb gold. Two of these,a 180ppb and a 20ppb, occur proximal to the zinc anomaly on line 39200N.

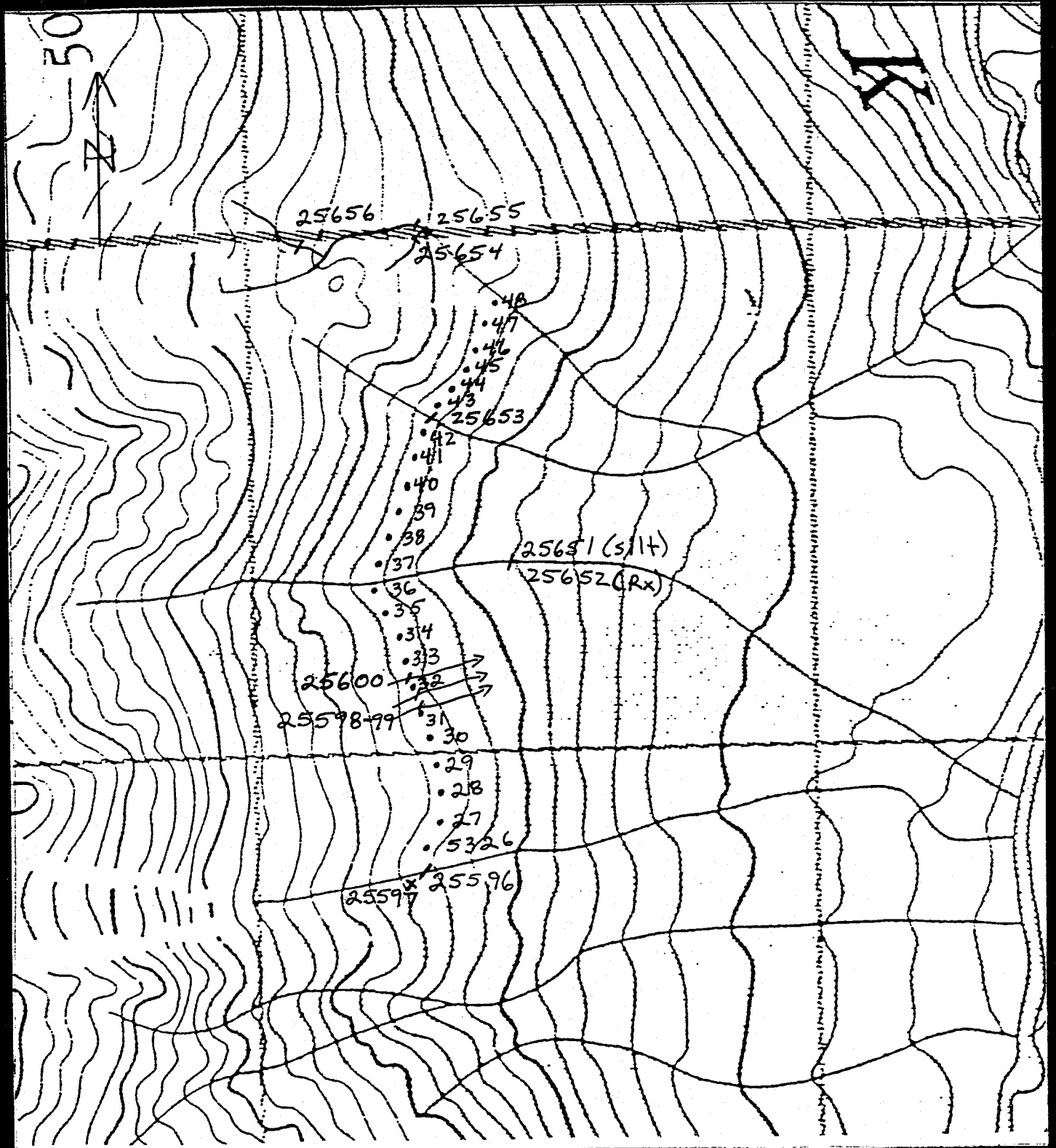
Prospecting to the west of the trachyte pile identified an area of strong quartz-sericite-carbonate alteration (samples 78201-4) in andesitic volcanics. This altered area,which appears to be related to a northwest trending fault structure, was not anomalous in precious metals. Recon sample results for this area are listed in Table 6.

To the north of the altered trachytes a line of contour soil sampling, 1.1km long, was completed(Figure 30). Soil samples were collected at 50m intervals and silt samples were collected from all the streams that were crossed.This line of soil samples runs off the northern boundary of the TOC 7 claim on to the adjoining ground of Catear Resources and thus will not be filed for assessment credit.

The soil samples proved to have a high background in Pb, to 63ppm, and Mn, to 11516ppm. The Pb values locally had associated Ag values to 3.2ppm and As values to 384ppm. It is not clear at present whether these values are due to local weathering of mineralization or to organic contamination as the soil horizons in the area are poorly developed and contain abundant black organic material.

Within this area several large boulders, up to 1.5m, of maroon volcanic-calcite-jasper breccia were located. The calcite-jasper forms white-pink crustiform bands around the angular volcanic fragments. A sample of this material,#25652, returned 3.5ppm Ag and 2206ppm Mn.

At the northern end of the soil line, at the toe of one of the ridgetop glaciers, an area of felsic volcanics was identified. These volcanics are comprised of bedded felsic tuffs, massive rhyolite, rhyolite fragmentals and siliceous feldspar porphyry. No mineralization was observed but the felsic rocks are moderately to strongly carbonate-sericite+/-quartz altered. Silt samples collected from this area, returned slightly anomalous values in Pb, Ag, Mn, As and Ba. Table 8 lists the complete sample results for this area.



1:10,000

0 100 200 300 400 500m

• 5326 Soil Sample

↘ 25596 Silt Sample

x 25597 Rock Sample

REVISED	TODD CREEK
	Orange Mt.
	Recon Sampling
PROJ. No. 281	SURVEY BY: RB DATE: Jan 1989
N.T.S. 104A/5	DRAWN BY: RB SCALE: 1:10,000
DWG. No. 30	NORANDA EXPLORATION
	OFFICE: PG

TABLE 8: NORTH TOC 7 RECON SAMPLE RESULTS

(all values in ppm except as noted)

SAMPLE	TYPE	Mo	Cu	Pb	Zn	Ag	As	Au ppb
5326	soil	2	37	30	86	1.0	21	2
5327	soil	2	27	34	108	0.4	19	1
5328	soil	3	28	26	61	2.3	22	1
5329	soil	3	13	55	71	0.3	17	1
5330	soil	2	12	22	75	0.2	15	2
5331	soil	2	12	23	85	0.3	17	2
5332	soil	1	20	23	92	0.1	16	1
5333	soil	1	18	26	95	0.4	15	1
5334	soil	1	13	49	149	2.0	16	1
5335	soil	1	10	42	145	3.2	15	1
5337	soil	1	49	59	186	2.5	28	1
5338	soil	1	29	54	145	0.9	29	2
5339	soil	1	22	33	182	0.6	16	2
5340	soil	1	10	44	88	0.7	22	1
5341	soil	1	15	29	101	0.1	20	1
5342	soil	4	26	63	251	0.5	125	1
5343	soil	6	37	87	280	0.6	384	3
5344	soil	6	31	57	189	0.1	160	2
5345	soil	1	7	9	36	0.4	9	1
5346	soil	1	14	16	59	0.1	13	1
5347	soil	1	13	16	44	0.1	12	1
5348	soil	1	6	7	26	0.3	7	1
25596	silt	3	27	32	129	0.5	24	1
25597	rock	16	304	801	10338	6.4	50	2
25598	silt	2	30	36	112	0.6	21	2
25599	silt	2	25	32	102	0.4	21	2
25600	silt	2	24	27	74	0.1	16	1
25651	silt	1	30	41	144	1.1	18	1
25652	rock	1	71	64	49	3.5	24	1
25653	silt	19	51	81	277	1.8	494	1
25654	silt	2	32	70	180	1.5	46	1
25655	silt	2	26	31	130	0.9	44	1
25656	silt	3	22	52	189	0.7	63	1

8.06 Virginia Creek Area

The Virginia Creek Area is located on TOC 3-5(Figure 38). 1988 work consisted of followups on the 1987 As-Sb silt anomalies on the south side of the valley and the Pb-Zn-Ag-As-Sb silt-pan anomalies on the north side ofthe valley. Hence forth these two areas are referred to as Virginia Creek South and Virginia Creek North.

8.06.01 Virginia Creek South - Further silt, pan and rock sampling confirmed the As-Sb anomalies but failed to enhance them or better define them. The area is predominantly underlain by clastic sediments with minor interbedded andesite. It appears that the sedimentary rocks in this area are enriched in As-Sb +/- Ag-Au. The steep terrane and extensive glacial ice cover precluded any further followup work. Sample results are listed in Table 9.

8.06.02 Virginia Creek North - Further sampling in 1988 on the north side of the valley also confirmed the 1987 anomalies. A combination of recon silt and soil sampling has defined a coincident Pb-Zn-Ag-Mn +/- As anomaly 350m wide. Values witin this anomaly range up to 1252 ppm Pb, 1939 ppm Zn, 19.5 ppm Ag, 23931 ppm Mn and 206 ppm As. Table 9 lists the silt and rock sample results.

This area, which has only been prospected to date, is largely underlain by northwest trending andesites, banded rhyolite tuffs and massive rhyolite. Boulders of bleached, fractured and/or brecciated rhyolite with disseminated pyrite were locally observed in the area of the geochem anomaly. Samples collected from these boulders and local rhyolite mineralized with disseminated pyrite have returned up to 15 ppm Ag and 140 ppb Au. Further followup work in 1988 was curtailed due to the steep terrane and inclement weather conditions.

TABLE 9: VIRGINIA CREEK SAMPLE RESULTS

(all values in ppm except as noted)

SAMPLE	TYPE	Mo	Cu	Pb	Zn	Ag	As	Sb	Au ppb	Au gmt
31308	silt	3	28	32	157	0.3	217	11	10	
31309	silt	1	41	64	250	0.7	32	5	10	
31310	silt	4	18	42	185	0.3	74	5	10	
31311	silt	3	34	110	328	3.4	42	7	10	
31312	silt	6	40	182	472	6.0	76	6	10	
31313	silt	2	32	170	379	4.2	43	5	10	
31314	silt	3	17	51	183	0.4	28	5	10	
31315	silt	2	24	66	293	0.4	26	4	10	
31316	silt	6	16	66	317	0.4	66	4	10	
31317	silt	6	20	29	196	0.3	76	5	10	
31318	silt	5	23	32	187	0.5	63	3	10	
31319	silt	6	19	24	200	0.2	136	2	10	
31320	silt	3	13	25	84	0.2	47	5	10	
31321	silt	12	23	30	192	0.4	262	6	10	
31322	silt	2	20	34	201	0.5	17	5	10	
31503	rock	63	66	103	420	2.7	356	20	2	
31504	rock	1	16	14	138	0.2	44	2	5	
31505	rock	3	6	27	45	1.4	89	4	1	
31506	rock	2	12	31	15	3.1	113	2	2	
31507	rock	47	13	59	106	3.5	795	2	1	
31508	rock	2	35	69	55	7.9	625	63	3	
31509	rock	19	19	62	4	15.4	782	43	1	
31510	rock	1	8	956	16	1.8	4	2	1	
31511	rock	4	7	8	14	0.3	325	2	1	
31512	rock	6	15	64	91	3.7	141	2	2	
46451	rock	1	67	19	28	0.3	4	2		<0.07
46452	rock	1	20	11	13	0.1	4	2		<0.07
46453	rock	2	25	27	11	2.0	75	6		<0.07
46454	rock	6	34	29	21	1.9	91	13		0.14
78215	rock	27	30	52	58	5.9	215	2	6	
78216	rock	13	32	42	108	4.2	4784	20	86	
78217	rock	1	22	14	96	0.7	87	2	19	
78218	rock	1	29	18	127	0.6	216	10	9	
78219	rock	13	49	101	62	3.0	2829	39	24	
78220	rock	4	20	23	109	0.6	1672	25	21	
78221	rock	1	3	4	57	0.2	24	2	6	
78222	rock	1	13	13	86	0.3	34	2	22	
78223	rock	4	28	30	159	0.1	354	13	10	
78224	rock	1	4	6	52	0.3	11	2	7	
78225	silt	3	26	25	139	0.1	457	14	20	
78227	rock	1	56	18	93	0.2	24	2	6	
78228	rock	119	167	76	74	1.6	1962	33	19	
78229	silt	3	30	16	127	0.1	246	7	10	
78230	silt	6	42	52	229	0.2	411	12	10	
78231	pan		22	38	140	0.2			60	
78232	silt	2	36	42	168	0.1	107	7	10	
78233	pan		28	30	150	0.2			30	
78234	silt	4	49	48	185	0.2	86	9	10	
78235	rock	3	20	72	4	0.6	78	2	3	
78236	rock	1	25	14	80	1.9	26	2	7	
78237	silt	3	24	12	73	0.1	46	2	10	
78238	pan		70	110	240	1.4			770	

TABLE 9 cont.

78239	rock	67	106	77	13	2.7	542	4	1
78240	silt	11	24	19	129	0.1	68	3	10
78241	rock	42	16	45	10	2.5	171	3	3
78242	pan		24	300	400	0.4			10
78243	silt	4	20	46	227	0.3	54	5	10
78244	pan		26	150	570	1.4			10
78245	silt	2	28	47	202	0.6	45	10	10
78246	silt	12	24	32	150	0.1	125	6	10
78247	silt	6	19	17	115	0.1	83	5	10

8.07 TOC 13-15

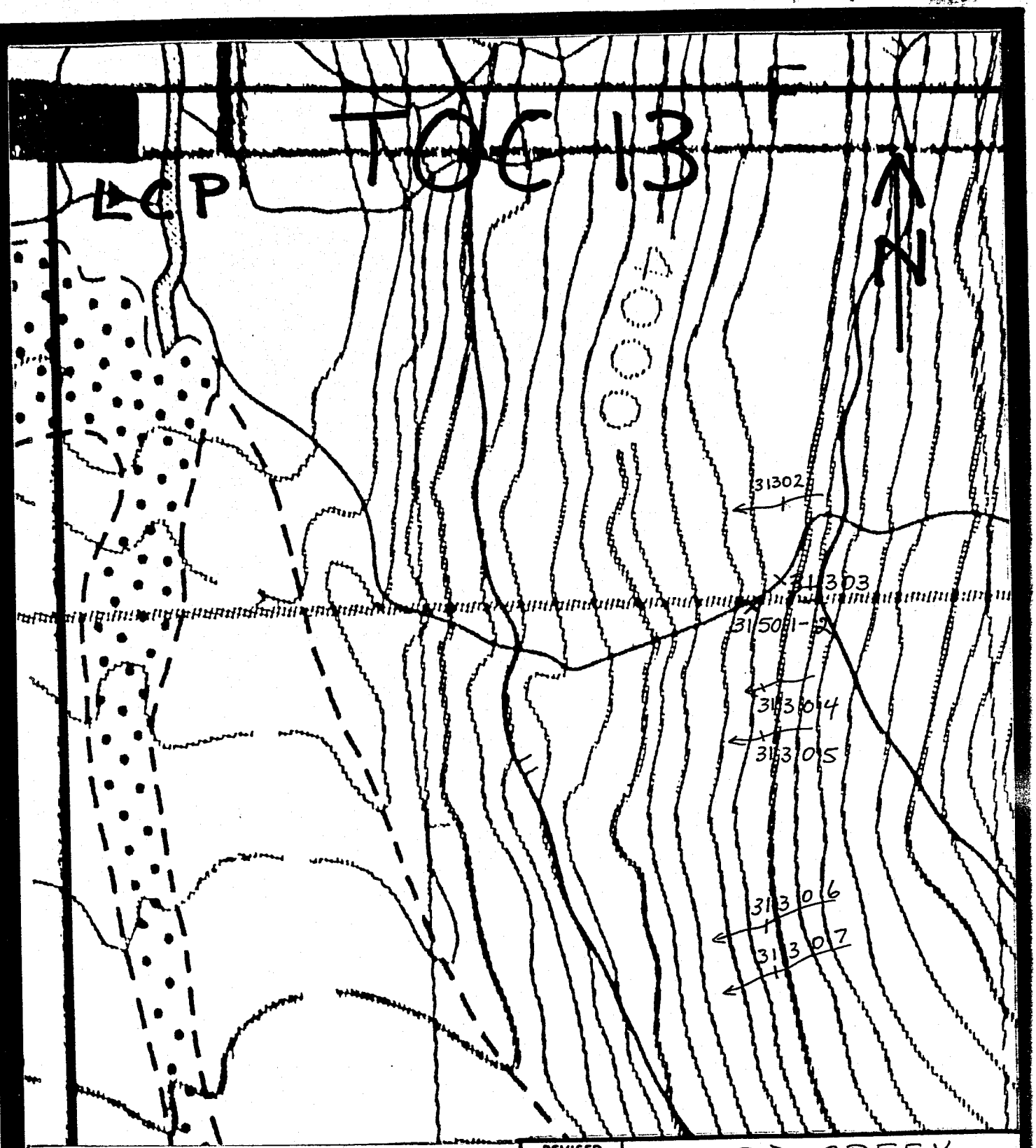
The TOC 13-15 claims are located on the east side of the Todd Creek valley(Figure 39, 40). During 1988 portions of this area were prospected, the focus being several NE to N trending prominent linear features and an area of patchy quartz-sericite-pyrite altered trachyte(?) volcanics also known as the Knob Zone.(described in the 1987 report.)

8.07.01 **Geology** - The TOC 13-15 claims are underlain by an apparently thick sequence of fine grained, locally porphyritic, green to maroon andesitic volcanics. Weak chlorite +/- epidote alteration is ubiquitous, probably indicating an episode of lower greenschist facies regional metamorphism.

8.07.02 **Mineralization** - New mineralization located during the 1988 program consisted of several very widely separated quartz-carbonate- galena+/- tetrahedrite veins to 50cm, which do not warrant further work.

8.07.03 **Geochemistry** - A total of 26 silt samples, 14 rock samples, 5 pan samples and 68 soil samples were collected during the 1988 program. Complete sample results are listed in Table 10. The silt and pan sampling program identified several weak to moderate Zn-Pb+/-Ag-As anomalies(samples 31958 to 31968). The only rock samples which returned anomalous results were those of the narrow mineralized veins mentioned above, the best value being 33.1 ppm Ag.

A small soil grid, 1200m x 300m, was established in the western portion of TOC 15 to cover the southward extension of the Knob Zone mineralization. The soil sample results indicate several spotty Au +/- As anomalies. These anomalies however occur in areas of abundant outcrop and as on line 10600N are locally coincident with areas of weak pyrite mineralization similar to the Knob Zone. Thus these anomalies do not warrant further followup.



1:10,000

0 100 200 300 400 500m

↘ 31302 Silt sample

× 31501 Rock sample

REVISED	TODD CREEK
	TOC 13
	Sample Locations
PROJ. No. 281	SURVEY BY: RB DATE: Jan/89
N.T.S. 104A/4	DRAWN BY: RB SCALE: 1:10,000
DWG. No. 40	NORANDA EXPLORATION
	OFFICE: PG

TABLE 10: TOC 13-15 SAMPLE RESULTS

SAMPLE	TYPE	Mo	Cu	Pb	Zn	Ag	As	Sb	Au ppb	
31301	silt	3	25	25	117	0.3	10	2	10	
31302	silt	2	34	27	161	0.1	11	2	10	
31303	silt	2	27	30	158	0.1	11	2	10	
31304	silt	4	20	33	129	0.1	20	2	10	
31305	silt	4	33	48	138	0.4	31	4	10	
31306	silt	2	21	24	110	0.1	7	2	10	
31307	silt	3	41	40	254	0.5	23	3	10	
31501	rock	95	99	82	251	5.4	214	2	11	
31502	rock	17	11	33	47	0.7	42	3	1	
31951	silt	2	8	27	56	0.1	9	4	10	
31952	silt		40	24	170	0.2	20		10	
31958	silt		44	180	390	1.4	44		10	
31959	silt		40	74	310	1.0	18		10	
31960	silt		42	40	320	0.8	12		10	
31961	silt		30	28	230	0.8	6		10	
31962	silt		26	36	210	0.4	12		10	
31963	silt		34	46	310	0.6	36		10	
31964	silt		24	38	250	0.6	54		10	
31966	silt	2	32	42	210	0.2	14	4	10	
31967	silt	3	35	47	213	0.1	31	4	10	
31968	silt	2	26	32	150	0.1	14	5	10	
31969	silt	2	30	30	180	0.2	22	3	10	
31970	silt	2	36	32	208	0.3	30	3	10	
31971	silt	3	65	22	143	0.1	29	2	10	
31972	silt	1	46	31	132	0.3	16	9	10	
31973	silt	2	33	31	138	0.7	19	4	10	
31974	silt	2	21	15	105	0.1	17	3	10	
31975	silt	4	28	16	109	0.1	35	4	10	
31976	rock	3	12	9	5	2.5	69	2	41	
31990	rock		8	20	110	0.6	150		10	
31991	rock	5	26	25	44	1.1	74	4	21	
31992	rock	1	3	7	146	0.1	6	2	3	
31993	rock	1	6	7	21	0.8	17	2	11	
31994	rock	1	32	229	162	12.4	175	23	2	104 A4
31995	rock	1	3	4	15	0.1	2	2	4	
31996	rock	1	35	2303	323	0.7	13	3	9	
31997	rock	1	8	19	44	0.3	7	2	31	
31998	rock	1	59	21	23	8.2	6	36	2	
31999	rock	1	165	13	64	0.2	2	2	3	
32000	rock	1	1817	1205	228	33.1	347	273	1	104A4
32004	pan		18	18	130	0.2			10	
32005	pan		28	44	260	0.2			10	
32006	pan		40	42	180	3.8			10	
32007	pan		26	16	120	0.2			10	
32008	pan		58	28	180	2.6			10	
32009	pan		42	20	120	0.6			10	

9.0 Conclusions:

9.01 South Zone:

This years drilling program on the South Zone has confirmed the continuity of the mineralized zone to depth, up to 160m below surface, along a strike length of 325m. This years drilling also identified a "core" zone from 9996N to 10116N , a distance of 120m, in which the mineralization is generally higher grade and the veins are either more numerous or of greater width. The mineralized zone south of NTC-88-31,32 remains open to depth although to the south of holes 8,9 the veins, at least locally, appear to be narrowing with depth.

Potential for the South Zone therefore lies at depth or possibly along strike to the south. Another target which also warrants further testing is the South Zone Extension.Although the gold values on surface were low they were definitely anomalous. In light of the fact that 1)both on the North and South Zones gold values have at least locally been low on surface and have improved with depth and that 2) this zone remains wide open to the north, this zone warrants further testing.

9.02 Midzone/Rhyolite Creek:

This years sampling and prospecting program failed to identify any new target areas.

9.03 North Zone:

Drilling and geophysical results indicate that the North Zone mineralization, at least from holes 20,21 to 43,44, is discontinuous along strike and down dip (ie) the mineralized zones do not correlate from section to section. Values, aside from hole 22, in the above area are generally low and are over narrow widths. Holes 41,42, 45m grid east of holes 20,21 encountered increasing mineralization with depth with an associated increase in gold values. After hole 22 the best intersection to date was 6.21 gmt Au/1.75m in hole 41. Surface gold values from this area were again low but anomalous. This opens up potential for the North Zone at depth and along strike to the south from holes 41,42. This also opens up potential for the "B" Zone portion of the North Zone where, low but distinctly anomalous gold values have been encountered in previous surface sampling.

9.04 Fall Creek Zone:

The Fall Creek Zone consists of nothwest trending pyrite-chalcopyrite-quartz-calcite-barite veins hosted by altered andesitic volcanics. Surface mapping and sampling has identified at least two mineralized zones, one of which has been traced for 400m horizontally and 300m vertically. Soil geochemistry has delineated 8 copper-gold anomalies of which two are known to have coincident copper-gold mineralization, the remainder as yet are untested. As well, the soil anomalies and mineralized zones covered by the limited I.P. survey are almost all marked by distinct I.P. anomalies.

Drilling on the main mineralized zone has confirmed it's continuity to a depth of at least 50m, with the intersections ranging from 1.25m to 11.0m. Values from this zone have ranged up to 24.14 gmt.

9.05 **Orange Mt.:**

The Orange Mt. area is largely underlain by extensively altered trachytic volcanics. Within these altered volcanics are numerous discontinuous barite+/-galena-sphalerite veins. Soil sampling on the flanks of this altered trachyte pile has delineated two distinct zinc-silver+/-lead-copper-gold anomalies. At present it is unclear whether these anomalies are due in whole or part to physical weathering and concentration of minerals from the many barite-galena-sphalerite veins upslope from the anomalies or whether the anomalies are due to in-situ weathering of mineralization as yet unidentified. Further sampling and prospecting is required.

9.06 **Virginia Creek Area:**

On the south side of Virginia Creek recon sampling has indicated an area of anomalous As-Sb which is coincident with a sequence of clastic sediments. Prospecting has identified local areas of disseminated pyrite-arsenopyrite with trace precious metal values in the clastic sediments. This mineralization appears to be the source of the geochem anomalies. These areas however lack continuity and much of the prospective area to the south is extremely steep and has considerable ice cover. To date no other mineralization or alteration has been located on the south side of the valley.

On the north side of Virginia Creek recon silt-soil sampling has identified an area of anomalous lead-zinc-silver-arsenic to 350m wide. Within this area numerous rhyolite boulders, some of which were brecciated and bleached with disseminated sulphides, were located. Locally the rhyolite was observed to contain trace amounts of galena. Further work is required to evaluate this area for it's base-precious metal potential.

9.07 TOC 13-15:

To date the only mineralization located consists of narrow, discontinuous quartz-pyrite or quartz-carbonate-galena veins. Silt geochemistry has identified several weak to moderate Zn-Pb+/- Ag-As anomalies which warrant further follow-up.

10.0 Recommendations:

The following work is proposed for the 1989 program on the Todd Creek property:

South Zone

1) Drill the "core" zone, between 9996N and 10116N, at depth. This would involve 3 to 4 deep drill holes (180+ meters each).
2) Drill at least one(1) more hole south of NTC-87-1 to determine if indeed the mineralization dies out in that direction.
3) Drill at least two(2) holes under the South Zone Extension, one under the known mineralization and one as a stepout to the north where the zone disappears under the Todd Creek gravels.
4) Survey in all drill collars.

Midzone/Rhyolite Creek

1) Extend the recon soil grid to the east.

North Zone

1) Drill two(2) setups on the "A" Zone, 2 to 4 holes, southeast of holes 41,42, one setup on each side of Fall Creek.
2) Drill two(2) setups on the "B" Zone, 2 to 4 holes, one setup on each side of Fall Creek.
3) Extend the grid in the area of the "B" Zone and on to the south side of Fall Creek and tie the North Zone grid in with the Fall Creek grid.
4) Survey in all drill collars.

Fall Creek Zone

1) Drill a minimum of three(3) setups, 6 holes, along the"Main" Zone.
2) Extend the grid to the north and south for mapping, sampling and geophysics.
3) Complete I.P. coverage on the grid.
4) Drill test coincident I.P.-geochem anomalies, 4 to 6 holes.
5) Survey in all drill collars.

Orange Mt.

1) Add fill-in lines, at 100m spacing, for further sampling and prospecting. Also extend the grid to southwest.

Virginia Creek

1) No further work is recommended for the Virginia Creek South area.
2) Map and sample the Virginia Creek North area using grid or contour lines where possible.

TOC 13-15

1) Further prospecting, silt and rock sampling in the area of the anomalous silt samples.

11.0 References

Alldrick, D. J., (1983) Salmon River Project, Stewart, B.C. B.C.D.M. Paper 83-1

Baerg, R. J., (1987) Geological, Geochemical Report on the Todd Creek Property (TOC 1-12 Claims). Assessment Report.

Baerg, R. J., (1988) Geological, Geochemical and Drilling Report on the Todd Creek Property (TOC 3-15 Claims). Assessment Report.

Gorc, D., (1982) Todd Creek Property, B.C.D.M. Assessment Report # 10404

Grove, E. W., (1982) Geology of the Unuk River-Salmon River-Anyox Map Area.

Hodgson, A. G., (1971) Geological Report on the Todd Group of Claims, B.C.D.M. Assessment Report #3428.

Osborne, T. C., (1960) Todd Creek Project, Newmont Mining Corp., Company Report.

APPENDIX I

COST STATEMENT

CLAIM: TOC 3-5 (TODD 1 GROUP)
TYPE OF REPORT: Geological, Geochemical
DATE: February 27, 1989

a) WAGES:
No. of days - 17
Rate per day - $ 165.29
Dates from - June 1 - Dec 31, 1988
Total Cost: $ 2,809.93

b) FOOD & ACCOMMODATIONS:
No. of days - 17
Rate per day - $ 92.69
Dates from - June 1 - Dec 31, 1988
Total Cost: $ 1,575.73

c) TRANSPORTATION:
206B Helicopter - $ 676.00
205 Helicopter - $1,206.00
500D Helicopter - $1,904.00
Fuel $ 684.03
Total Cost: $ 4,472.03

d) GEOCHEMICAL ANALYSES:

88 silt/soil	(30 element ICP)	$1,108.80
27 rock	(30 element ICP)	$ 421.20
5 pan	(Cu,Pb,Zn,Ag,Au)	$ 40.75

Total Cost: $ 1,570.75

e) COST OF REPORT PREPARATION:
Author $ 300.00
Drafting $ 100.00
Typing $ 50.00
Total Cost: $ 450.00

TOTAL COST: $ 10,878.44

APPENDIX I
COST STATEMENT

CLAIM: TOC 6, 7, 8 (TODD 2 GROUP)
TYPE OF REPORT: Geological, Geochemical, Drilling
DATE: February 27, 1989

a) WAGES:
No. of days - 91
Rate per day - $ 165.29
Dates from - June 1 - Dec 31, 1988
Total Cost: $ 15,041.39

b) FOOD & ACCOMMODATIONS:
No. of days - 91
Rate per day - $ 92.69
Dates from - June 1 - Dec 31, 1988
Total Cost: $ 8,432.97

c) TRANSPORTATION:
206B Helicopter - $31,887.00
205 Helicopter - $19,321.00
500D Helicopter - $16,688.00
Fuel $ 8,534.15
Total Cost: $ 76,430.19

d) GEOCHEMICAL ANALYSES:
Rock Samples-

353	(ICP & Au geochem)	$5,506.80
2	(ICP & Au assay)	$ 42.70
82	(Cu-Au assay)	$1,484.20
403	(Cu geochem-Au assay)	$5,783.05
190	(Cu,Ag,Au geochem)	$2,204.00
7	(Cu,Pb,Zn,Ag,As,Au geo)	$ 72.80

Silt/Soil Samples-

82	(ICP & Au geochem)	$1,033.20
133	(Cu,Pb,Zn,Ag,As,Au geo)	$1,117.20

Total Cost: $ 17,243.95

e) DRILLING:
Footage Costs (4,137 ft @ $20/ft) $82,740.00
Supplies & Labour $13,350.31
Total Cost: $ 96,090.31

f) COST OF REPORT PREPARATION:
Author $ 600.00
Drafting $ 200.00
Typing $ 100.00
Total Cost: $ 900.00

TOTAL COST: $214,138.81

APPENDIX I
COST STATEMENT

CLAIM: **TOC 9 - 12 (TODD 3 GROUP)**
TYPE OF REPORT: Geological, Geochemical, Drilling
DATE: February 27, 1989

a) WAGES:
No. of days - 253
Rate per day - $ 165.29
Dates from - June 1 - Dec 31, 1988
Total Cost: $ 41,818.37

b) FOOD & ACCOMMODATIONS:
No. of days - 253
Rate per day - $ 92.69
Dates from - June 1 - Dec 31, 1988
Total Cost: $ 23,450.57

c) TRANSPORTATION:
206B Helicopter - $12,948.00
205 Helicopter - $38,480.00
500D Helicopter - $ 9,128.00
Fuel $11,585.26
Total Cost: $ 72,141.26

d) GEOCHEMICAL ANALYSES:
Rock Samples-

3	(Cu-Au assay)	$ 36.20

Core Samples-

452	(Cu,Ag,Au Assay)	$11,232.20
251	(Cu,Ag,Au Geochem)	$ 2,911.60
352	(Cu-Ag Geo, Au Assay)	$ 5,051.20
79	(Cu Geochem, Au Assay)	$ 1,054.65

Total Cost: $ 20,285.85

e) DRILLING COSTS:

Footage Costs (9766 ft @ $20/ft)	$195,320.00
Drill Pads	$ 1,625.00
Supplies & Labour	$ 28,326.88

Total Cost: $225,271,86

f) COST OF REPORT PREPARATION:

Author	$ 600.00
Drafting	$ 200.00
Typing	$ 100.00

Total Cost: $ 900.00

TOTAL COST: $383,867.91

APPENDIX I

COST STATEMENT

CLAIM: TOC 13 - 15 (TODD 4 GROUP)
TYPE OF REPORT: Geological, Geochemical
DATE: February 27, 1989

a) WAGES:
No. of days - 24
Rate per day - $ 165.29
Dates from - June 1 - Dec 31, 1988
Total Cost: $ 3,966.96

b) FOOD & ACCOMMODATIONS:
No. of days - 24
Rate per day - $ 92.69
Dates from - June 1 - Dec 31, 1988
Total Cost: $ 2,224.56

c) TRANSPORTATION:
206B Helicopter - $ 520.00
205 Helicopter - $2,010.00
500D Helicopter - $3,136.00
Fuel $ 861.00
Total Cost: $ 6,527.00

d) GEOCHEMICAL ANALYSES:
26 silt (ICP & Au) $327.60
14 rock (ICP & Au) $218:40
6 pan (Cu,Pb,Zn,Ag,Au) $ 48.90
Total Cost: $ 594.90

e) COST OF REPORT PREPARATION:
Author $100.00
Drafting $100.00
Typing $ 50.00
Total Cost: $ 250.00

TOTAL COST: $ 13,563.42

APPENDIX II

STATEMENT OF QUALIFICATIONS

I, Robert J. Baerg of the city of Prince George, Province of British Columbia, do certify that:

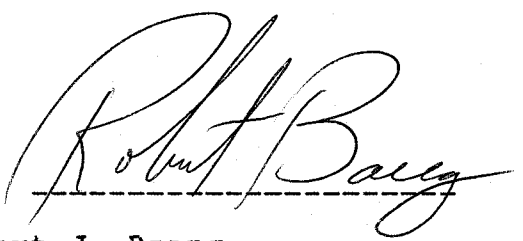
1. I have been employed as a geologist by Noranda Exploration Company, Limited since May, 1984.

2. I am a graduate of the University of British Columbia with a Bachelor of Science (Honors) in Geology (1984).

3. I am an Associate Fellow of the Geological Association of Canada.

4. I am a member of the Canadian Institute of Mining and Metallurgy.

5. I supervised and assisted with the work described in this report.



Robert J. Baerg
Geologist
Noranda Exploration Company, Limited
(No Personal Liability)

STATEMENT OF QUALIFICATIONS

I, Lyndon Bradish of Vancouver, Province of British Columbia, do hereby certify that:

1. I am a Geophysicist residing at 1826 Trutch Street, Vancouver, B.C.

2. I am a graduate of the University of British Columbia with a B.Sc. (geophysics).

3. I am a member in good standing in the Society of Exploration Geophysicists, European Association of Exploration Geophysicists and the Prospector's and Developer's Association.

4. I presently hold the position of Regional Geophysicist with Noranda Exploration Company, Limited and have been in their employ since 1973.

L. Bradish.

APPENDIX III

SAMPLING AND ANALYTICAL PROCEDURES

SAMPLING PROCEDURE

Soil samples were collected from the "B" soil horizon, with the use of a grub hoe. The depth of the sample holes varied from 25 to 50 cm. The samples were placed in Kraft wet strength paper bags, dried and then shipped to Noranda Labs in Vancouver, B.C. for analysis.

ANALYTICAL METHOD DESCRIPTIONS FOR GEOCHEMICAL ASSESSMENT REPORTS

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver.

Preparation of Samples

Sediments and soils are dried at approximately 80°C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for geochemical analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples * from constant volume), are analysed in its entirety, when it is to be determined for gold without further sample preparation.

Analysis of Samples

Decomposition of a 0.200 g sample is done with concentrated perchloric and nitric acid (3:1), digested for 5 hours at reflux temperature. Pulps of rock or core are weighed out at 0.4 g and chemical quantities are doubled relative to the above noted method for digestion.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn can be determined directly from the digest (dissolution) with a conventional atomic absorption spectrometric procedure. A Varian-Techtron, Model AA-5 or Model AA-475 is used to measure elemental concentrations.

Elements Requiring Specific Decomposition Method:

Antimony - Sb: 0.2 g sample is attacked with 3.3 ml of 6% tartaric acid, 1.5 ml conc. hydrochloric acid and 0.5 ml of conc. nitric acid, then heated in a water bath for 3 hours at 95°C. Sb is determined directly from the dissolution with an AA-475 equipped with electrodeless discharge lamp (EDL).

Arsenic - As: 0.2 - 0.3 g sample is digested with 1.5 ml of perchloric 70% and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL is used to measure arsenic content in the digest.

Barium - Ba: 0.1 g sample digested overnight with conc. perchloric, nitric and hydrofluoric acid; Potassium chloride added to prevent ionization. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

Bismuth - Bi: 0.2 g - 0.3 g is digested with 2.0 ml of perchloric 70% and 1.0 ml of conc. nitric acid. Bismuth is determined directly from the digest with an AA-475 complete with EDL.

Gold - Au: 10.0 g sample is digested with aqua regia(1 part nitric and 3 parts hydrochloric acid). Gold is extracted with MIBK from the aqueous solution. AA is used to determine Au.

Magnesium - Mg: 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the

range of atomic absorption. The AA-475 with the use of a nitrous oxide flame determines Mg from the aqueous solution.

Tungsten – W: 1.0 g sample sintered with a carbonate flux and thereafter leached with water. The leachate is treated with potassium thiocyanate. The yellow tungsten thiocyanate is extracted into tri-n-butyl phosphate. This permits colourimetric comparison with standards to measure tungsten concentration.

Uranium – U: An aliquot from a perchloric-nitric decomposition, usually from the multi-element digestion, is buffered. The aqueous solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

* N.B. If additional elemental determinations are required on panned samples, state this at the time of sample submission. Requests after gold determinations would be futile.

LOWEST VALUES REPORTED IN PPM

Ag – 0.2	Mn – 20	Zn – 1	Au – 0.01
Cd – 0.2	Mo – 1	Sb – 1	W – 2
Co – 1	Ni – 1	As – 1	U – 0.1
Cu – 1	Pb – 1	Ba – 10	
Fe – 100	V – 10	Bi – 1	

EJvL/ie
March 14, 1984