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**GEOLOGICAL, GEOCHEMICAL, GEOPHYSICAL
AND DRILLING REPORT
ON THE
WARATAH PROPERTY**

**Liard Mining Division, British Columbia
NTS 104B/10W & 11E
Latitude: 56° - 41'N
Longitude: 130° - 59'W**

Prepared for
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**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

21,301

PART 1 of 2

January 11, 1991

Keewatin Engineering Inc.

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INTRODUCTION

The Waratah property is located within the 'Iskut Gold Camp' which hosts the mesothermal, shear/vein Snip and Skyline deposits. The Snip deposit presently has ore reserves, cut and diluted, of 1.032 million tons grading 0.875 oz/t gold (Vancouver Stockwatch, November 7, 1989). The Waratah is situated, approximately, 5 km northeast of the Snip deposit and is partly underlain by similar stratigraphy. The Waratah property adjoins the Snippaker Mountain property to the north which also hosts shear/vein gold mineralization. During the late 1980's numerous gold occurrences have been discovered on the Waratah property.

During May of 1990, Keewatin Engineering Inc. was engaged by Big M Resources Ltd., the project operator, for the purpose of conducting an exploration program on selected areas of the property. The target was economic \pm silver \pm base metal mineralization, in particular a Snip-type deposit.

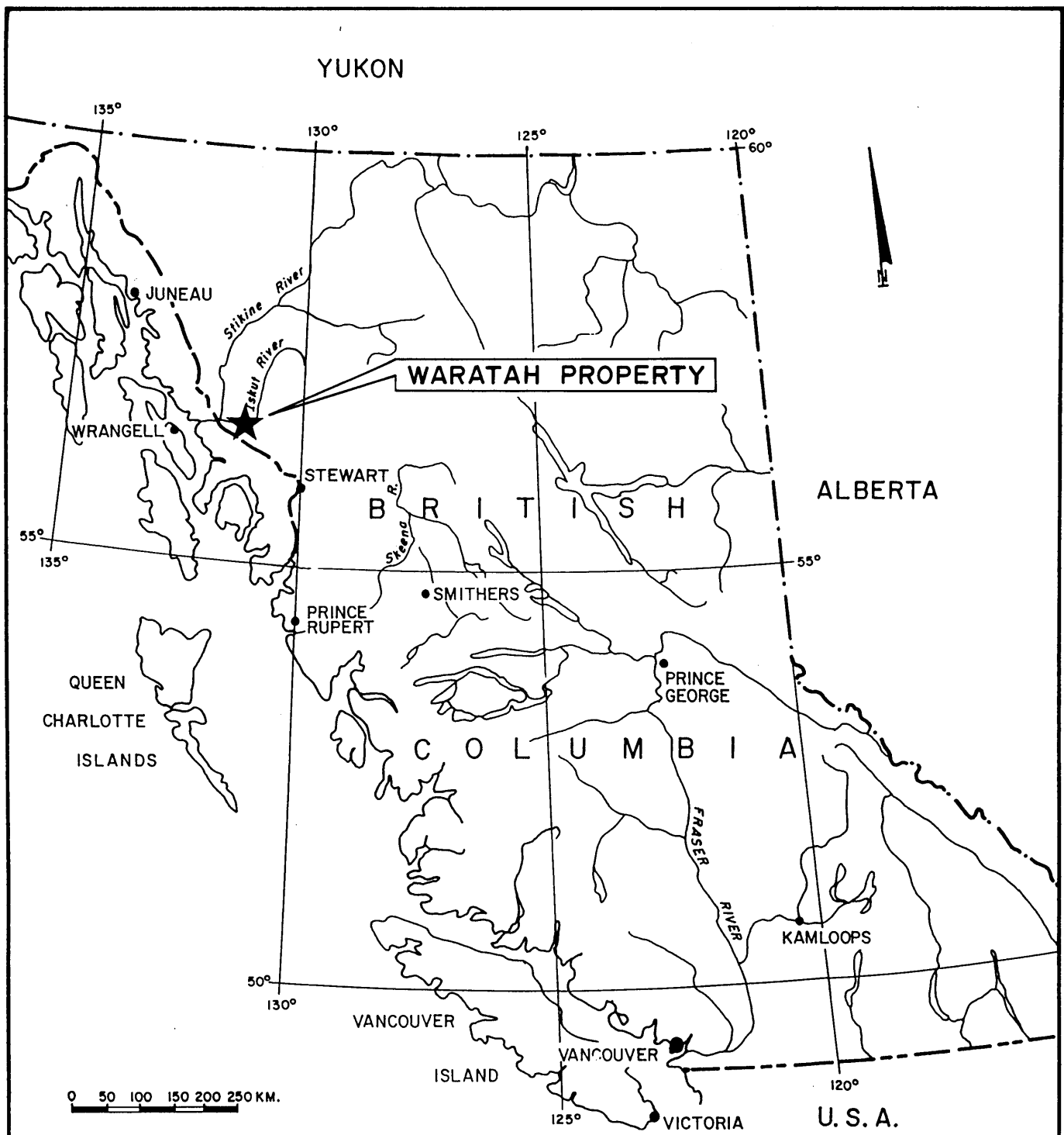
1. Location, Access, Physiography and Climate

The Waratah property is situated in northwestern British Columbia, approximately 100 km northwest of the town of Stewart (Figure 1). The property is centred upon 56° - 41' North latitude and 130° - 59' West longitude. This is within the 104B/10W and 11E map sheets.

Access is by fixed-wing aircraft from Smithers or Terrace (290 km to the southeast) to the Bronson Creek airstrip, located 0.9 km west of the property. Transprovincial Airlines Ltd. of Terrace provided daily scheduled trips into the area and would land at Bronson Creek on request. Central Mountain Airlines of Smithers serviced the area with trips on Monday, Wednesday and Friday, as well as numerous unscheduled supply flights. Alternate fixed-wing access is from Wrangell, Alaska which is located at tidewater, 80 km to the west of the property. The Bronson Creek airstrip was lengthened to 1600 metres during 1988 and is now capable of accommodating Hercules aircraft.

Access throughout the property is via helicopter from the airstrip to the numerous helipads constructed during 1987, 1988 and 1990.

Future road access to the area will follow the Iskut River Valley from Bob Quinn Lake on the Stewart-Cassiar Highway to Bronson Creek. This road will pass through the Waratah property.



**PROPERTY LOCATION MAP
WARATAH PROPERTY**

Figure 1

The northern portion of the property is dominated by the flats and gravel bars of the Iskut River. The central part of the claims cover some very hummocky ground with some precipitous bluffs and steeply incised drainages. The southern portion of the property covers the north facing slopes of Snippaker Mountain which are dominated by talus fans.

Elevations range from 90 m along the Iskut River to over 740 m near the southeast corner of the Waratah 7 claim.

The majority of the property is covered by mature spruce and hemlock, with devils club and slide alder common in several areas.

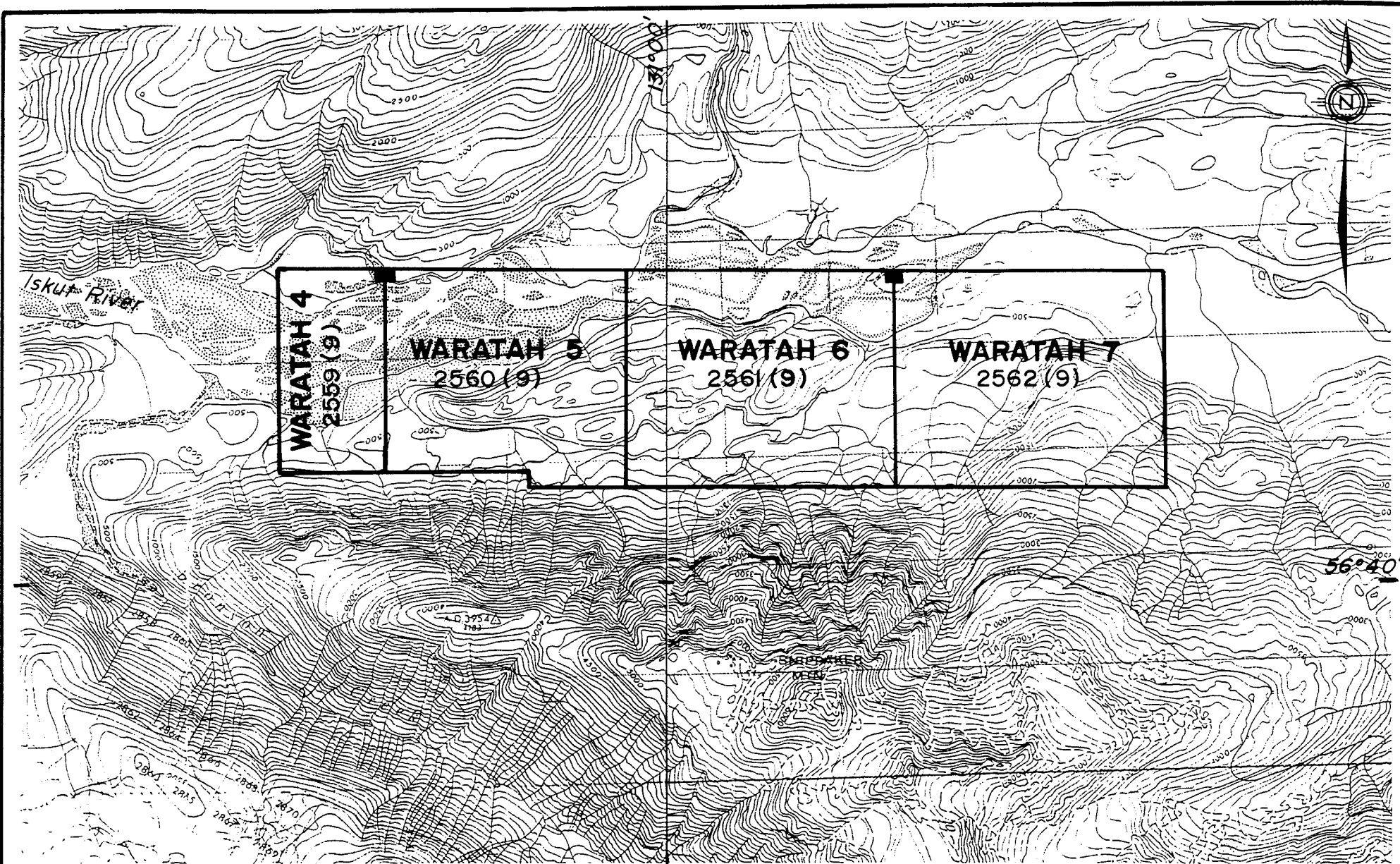
The climate is typified by cold, snowy winters and warm, wet summers. Snow accumulations at higher elevations normally exceed 5 metres, whilst 1 to 2 metres occur near the Iskut River.

2. Property Status

The property comprises four contiguous mineral claims (80 units) located within the Liard Mining Division. Details of these claims (see Figure 2) are recorded as follows:

Claim Name	Record No.	No. of Units	Date of Record	Expiry Year	Owner
Waratah 4	2559	20	Sept. 13, 1982	2001	Tungco Resources Corp.
Waratah 5	2560	20	Sept. 13, 1982	2001	Tungco Resources Corp.
Waratah 6	2561	20	Sept. 13, 1982	2001	Tungco Resources Corp.
Waratah 7	2562	20	Sept. 13, 1982	2001	Tungco Resources Corp.

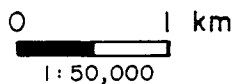
The above claims are apparently subject to an option agreement between the Royal Bay Gold Corporation (nee Tungco Resources Corp.) and Big M Resources Ltd. Skyline Gold Corporation has apparently retained a 1% net smelter royalty.



NTS 104B/10W, 11E

WARATAH PROPERTY CLAIM MAP

Figure 2



3. History of Exploration

The area drained by the upper reaches of the Stikine, Iskut, Unuk and Bell-Irving Rivers has been explored since the late 1800's when prospectors passed through the region on their way to the interior. In the 1950's and 1960's, the porphyry copper-molybdenum boom brought numerous mining companies to the area. During this time, the Galore Creek porphyry copper-gold deposit was discovered.

Intense exploration began again in the early 1980's, and was then, as now, primarily for gold. At that time the Johnny Mountain property was acquired by Skyline Exploration Ltd. (now Skyline Gold Corp.), the Snip property by Cominco Ltd. (now owned 60/40 Cominco/Prime Resources and operated by Cominco), and the Sulphurets property by Esso Minerals Ltd. (now owned by Newhawk Gold Mines Ltd./Corona Corporation/Granduc Mines Ltd.). Since 1980, well over 100 new gold prospects have been found in the Iskut-Unuk-Sulphurets-Stewart areas, establishing the entire region as a major gold 'camp'.

The Waratah property was first staked in 1982 by Skyline Explorations Ltd. In 1983, a Skyline-Placer Development joint venture contracted an airborne Dighem III survey over the claims' area. Skyline then optioned the property to Gulf International Minerals Ltd., in 1984, who carried out linecutting, soil sampling, prospecting and trenching. Additional linecutting, trenching and a Pulse-EM survey were completed during 1985. This option was subsequently dropped.

In 1987, Skyline optioned the ground to the Tungco Resources Corp. Tungco carried out linecutting, geochemical, geological and geophysical surveys, prospecting, trenching and diamond drilling during 1987 and 1988. This included 33.025 km of linecutting, 45.7 km of Mag and VLF-EM, 4.0 km of Max-Min and the blasting of 40 trenches. A total of 2,025 soil, 7 heavy mineral, 4 silt and 509 rock samples were collected and analyzed during this period. Diamond drilling of gold occurrences consisted of 50 holes which totalled 3,545.64 metres. Over 17 gold occurrences were located during this time, most of which were investigated through trenching and/or drilling. An Aerodat Limited airborne VLF-EM and Mag survey was flown over the property during the spring of 1988.

No exploration work was recorded during 1989.

4. 1990 Work Program Summary

During the period of May through November, Keewatin Engineering personnel carried out extensive geological, geochemical and prospecting surveys (see Table 2) over the Waratah 7 claim, especially the southeastern portion. This relatively unexplored part of the claim was designated as the focus of exploration due to four previously obtained anomalous gold (100 - 780 ppb) results from heavy mineral samples collected from creeks draining this area. Two of the three rock samples taken from this ground also contained anomalous gold values (0.032 and 0.074 oz/ton). Keewatin's discovery of gold mineralization, known as the Cooper zone, in this area (southeast grid) led to trenching and subsequent diamond drilling (see Table 3).

All of the drill core was split/cut and sent for analysis. The remaining core has been stored in core racks at Keewatin's Bronson Creek camp site.

Geochemical and geological surveys were also conducted over the northwestern to north-central portion (northeast grid) of the Waratah 7 claim, see Figure 6. This was completed in order to extend geological mapping and soil sampling coverage to the east of the 1987 and 1988 work.

Several of the previously discovered gold occurrences in the northern and western sections of the property were re-mapped and sampled.

A re-interpretation of the 1988 airborne VLF-Em and Mag survey was completed prior to all of the field work.

TABLE 2: Summary of 1990 Field Work	
Type of Work	Description
Linecutting	2.725 line-km compassed, cut, chained and flagged (NE grid B/L 12+75N & 16+00N; SE grid L5+00N and B/L 0+00)
Grid Establishment	23.750 line-km compassed, flagged and hip chained
Helipads Established	2
Helicopter Toe-ins Established	4
Blasted Trenches	4
Soil Sampling	1427

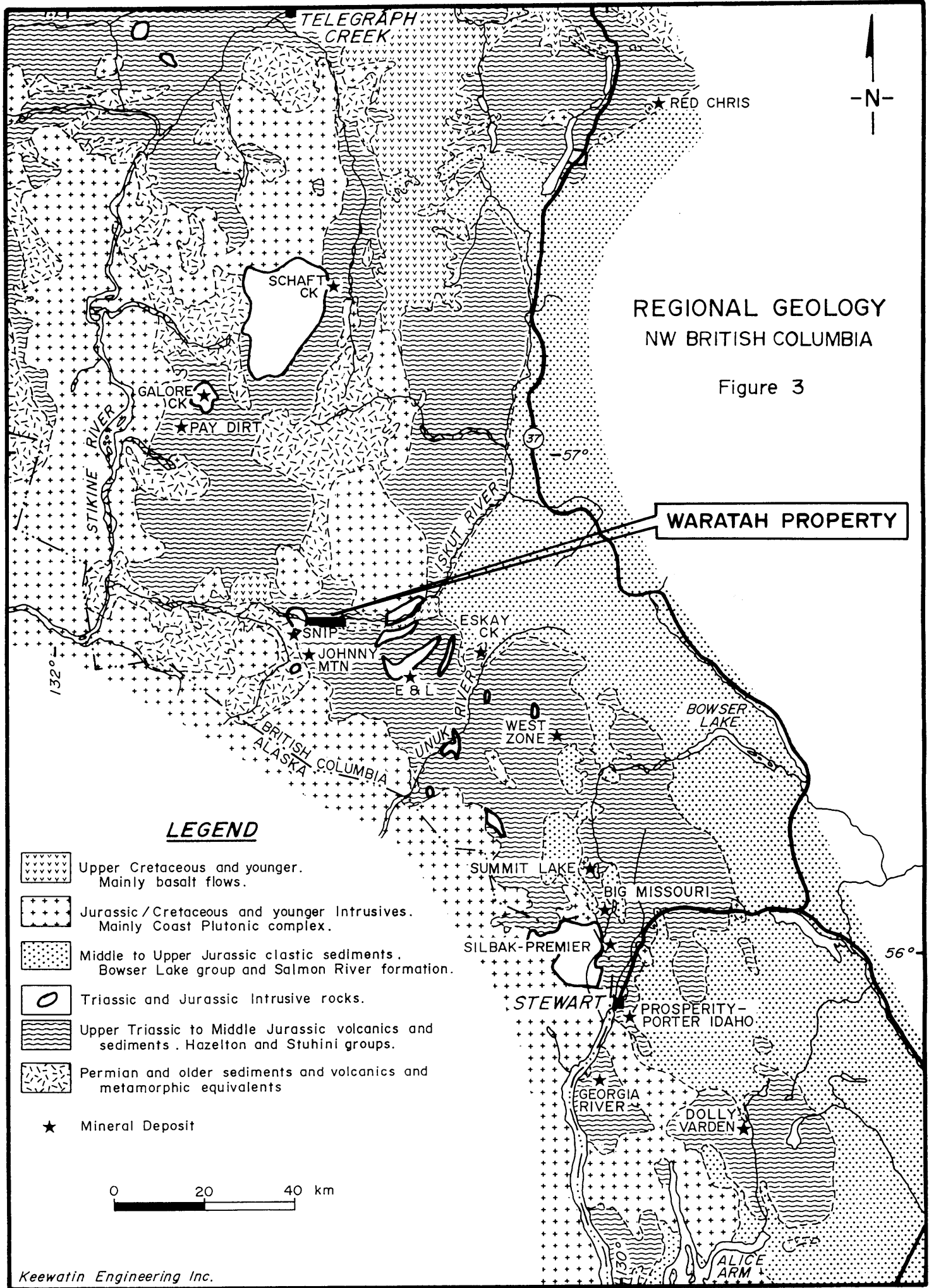
Type of Work	Description
Silt Sampling	4
Rock Sampling	136
Core Sampling	415
Soil Anomaly Investigations	70 (38 in SE grid and 32 in NE grid)
Airborne Geophysics	Re-interpretation of 1988 VLF-EM and Mag
Geological Mapping & Prospecting	Extensive in the southeast portion of property (1:5,000; 1:1,000; 1:100)
Diamond Drilling	7 holes (539.8 m BQ core)

Hole No.	Azimuth	Dip	Length (m)	Casing (m)
W90-1	210°	-45°	102.10	1.52
W90-2	210°	-45°	102.72	2.13
W90-3	030°	-60°	65.84	3.05
W90-4	030°	-60°	80.47	1.52
W90-5	030°	-56°	62.79	1.52
W90-6	030°	-57°	62.79	2.13
W90-7	030°	-55°	63.09	0.61

GEOLOGY

1. Regional Geology (Figure 3)

The Iskut River area lies within the Intermontane tectono-stratigraphic belt - one of five, parallel, northwest/southeast trending belts which comprise the Canadian Cordillera. This belt of Permian to Middle Jurassic volcanic and sedimentary rocks defines the Stikinia/Stikine terrane. This is bounded on the west by the Coast Plutonic Complex and overlapped on the east by younger sediments of the Bowser Basin. The belt has been intruded by at least four episodes of plutonic rocks, from Late Triassic to Oligocene-Miocene.









**REGIONAL GEOLOGY
NW BRITISH COLUMBIA**

Figure 3

WARATAH PROPERTY

LEGEND

-  Upper Cretaceous and younger. Mainly basalt flows.
-  Jurassic/Cretaceous and younger Intrusives. Mainly Coast Plutonic complex.
-  Middle to Upper Jurassic clastic sediments. Bowser Lake group and Salmon River formation.
-  Triassic and Jurassic Intrusive rocks.
-  Upper Triassic to Middle Jurassic volcanics and sediments. Hazelton and Stuhini groups.
-  Permian and older sediments and volcanics and metamorphic equivalents
- ★ Mineral Deposit

0 20 40 km

2. Property Geology (Figure 4 and Map 1)

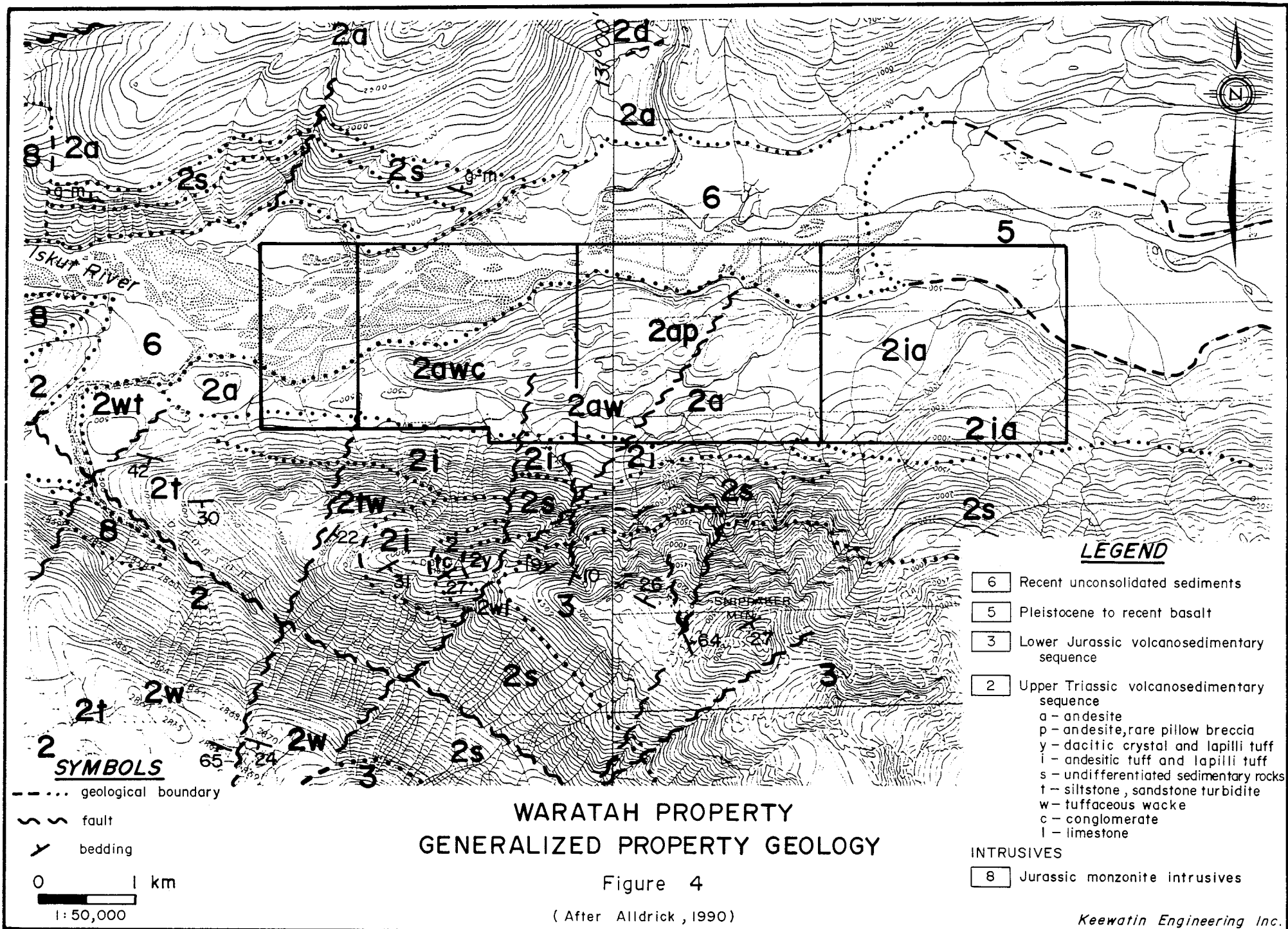
The main stratigraphic unit in the area of the property appears to be the Upper Triassic Stuhini Group (Anderson, 1989 and Alldrick, 1990). This group is characterized by basic to intermediate volcanics which underlie andesitic volcanoclastics and flows which are overlain by interbedded dark siltstones and fine to medium grained greywackes.

The eastern side of the Waratah property is generally underlain by tuffs and flows of apparent andesitic composition. Plagioclase phyric flows which grade into ash to crystal to lapilli tuffs and tuff breccias dominate this portion of the property. These flows contain rounded, monolithic porphyry fragments, up to 45 cm but generally less than 15 cm in diameter, and plagioclase phenocrysts, to 7 mm, in a fine grained dark green-grey matrix. The lapilli tuffs exhibit subangular to subrounded, porphyritic fragments, generally less than 2 cm across, but up to 5 cm locally, in a dark green matrix. The crystal tuffs display up to 60% euhedral to anhedral plagioclase phenocrysts, 1 to 3 mm long, in a dark to light grey-green groundmass. The volcanic rocks are commonly interfingered and exhibit gradational contacts. A few scattered exposures of black, banded and argillaceous siltstones were observed within the northeast grid area. Sediments dominate the northwestern portion of the property.

The volcanics are cut by a number of equigranular monzodiorite to diorite sills, plugs and dykes. Orthoclase porphyry was noted in the northeast corner of the southeast grid. Locally, narrow aplite dykes were also observed.

Propylitic alteration of the volcanic section is widespread, especially within the northeast grid area. Locally, silicified pods were observed associated with shear zones throughout the target area. In the Cooper zone area, ankerite/siderite alteration was noted to the west of the trenches.

The eastern portion of the property is cut by numerous lineaments and narrow, discontinuous topographic depressions. These generally trend northeast and northwest and probably reflect underlying shears and/or fracture zones. The majority of these gullies within the northeast grid trend at 070°, with a lesser number trending at 150°. Observed shear zones within the southeast grid were measured at 110° - 120° / 58° - 85° NE.



LEGEND

- 6 Recent unconsolidated sediments
 - 5 Pleistocene to recent basalt
 - 3 Lower Jurassic volcanosedimentary sequence
 - 2 Upper Triassic volcanosedimentary sequence
 - a - andesite
 - p - andesite, rare pillow breccia
 - y - dacitic crystal and lapilli tuff
 - i - andesitic tuff and lapilli tuff
 - s - undifferentiated sedimentary rocks
 - t - siltstone, sandstone turbidite
 - w - tuffaceous wacke
 - c - conglomerate
 - l - limestone
- INTRUSIVES
- 8 Jurassic monzonite intrusives

- SYMBOLS**
- - - geological boundary
 - ~ ~ ~ fault
 - > > bedding

**WARATAH PROPERTY
GENERALIZED PROPERTY GEOLOGY**

Figure 4

(After Alldrick, 1990)

3. Mineralization

Nearly all of the rock types within the mapped portion of the property carry ubiquitous, fine grained disseminations of magnetite and fracture fillings and/or disseminations of pyrite in amounts of trace to 1%. Narrow (<30 cm) quartz (\pm carbonate) veins/shears, carrying minor pyrite and very locally, chalcopyrite, magnetite and arsenopyrite, are common. Local concentrations in the form of irregular, semi-massive to massive sulphide lenses/pods, were observed at several sites (see Economic Geology section). Shear/fracture zones, with up to 20% pyrite in the form of fracture fillings and pods, were also noted at several localities within the southeast grid (eg. Cooper zone).

At 0+75N/2+87.5E, localized, narrow (\leq 25 cm) barite veining with up to 3% chalcopyrite and malachite and trace amounts of pyrite were observed cutting lithic tuffs.

GEOCHEMISTRY

1. Sampling

A total of 1,427 soil, 4 silt, 136 rock and 415 core samples were collected during the 1990 field season.

The majority of the soils were collected at 25 metre intervals along the grid lines in the northeast and southeast grids. Follow-up soil sampling of anomalous results included the collection of duplicate samples and surrounding soils at 12.5 and 25 metre intervals. Generally, the soils were collected from the 'B' horizon with the use of a long handled shovel. During the course of the follow-up investigations, a total of 30 test pits were dug in an attempt to reach possible mineralized bedrock and to study the property's soil horizon development (Table 5 and Appendix 7).

The silt samples were collected from the active portion of the creek drainages.

The rocks represent grab, chip or channel samples of mineralized and/or altered outcrops and boulders observed during the course of geological mapping and prospecting.

The core represents split or cut samples which were taken according to lithology, with a maximum two metre sample length. All of the 1990 drill core was sampled and sent for analysis.

2. Analysis

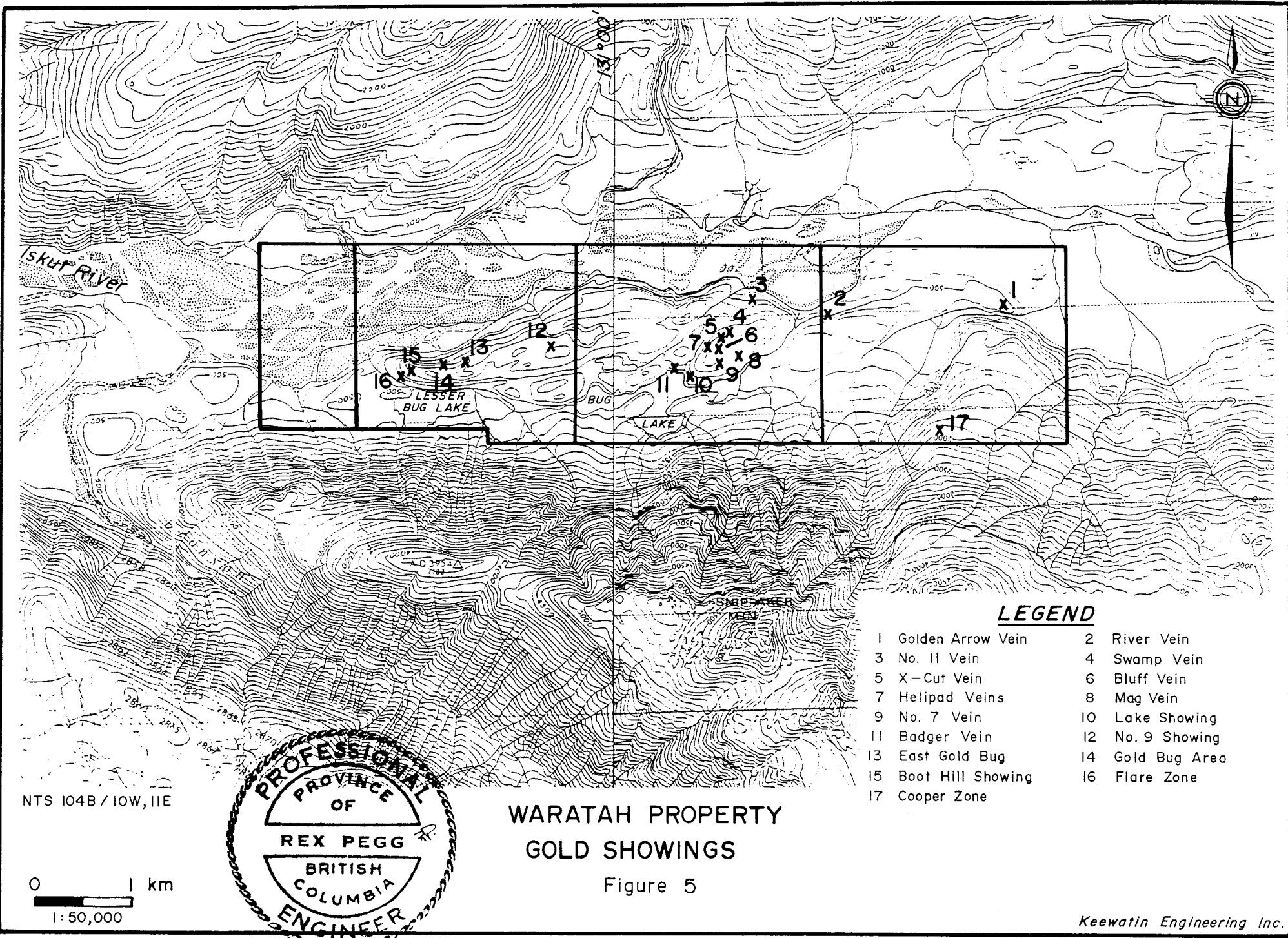
All of the samples were shipped to Min-En Laboratories in Smithers for preparation and then to their lab in North Vancouver for analysis. This analysis consisted of fire assay preparation-atomic absorption finish gold and an eight element ICP package (Ag, As, Cu, Mo, Pb, Sb, Zn and Hg). Fourteen of the rock samples were also fire assayed for gold. Eight of the core samples and fourteen of the rock samples were also fire assayed for gold-silver.

3. Discussion of Soil Horizon Development

Generally, the soil horizons in the southeast and northeast portions of the Waratah property are moderately to well developed. Local areas of swamp and talus exhibit poor development, while some of the steeper slopes display mixing of the 'A' and 'B' horizons. Typically, the 'A' horizon is 1 to 15 cm thick, while the 'B' ranges from 15 to 75 cm thick. The 'B' horizon is usually orange-brown to red-brown in colour. At a few sites within the southeast grid, a narrow (<1 cm) charcoal layer was noted at the bottom of the 'A' horizon. A grey ash layer, 1 to 8 cm thick, was also observed, locally, at the top of or within the 'B' horizon. In the area of the Cooper zone, in the southeast grid, a substantial clay component was noted in the soils directly overlying the bedrock. Clays may be common in the soils covering the numerous gullies which cut the property. This would, to some degree, mask the geochemical signature of the underlying bedrock.

4. Description and Discussion of Surface Results

Soil samples collected from the eastern portion of the Waratah property returned numerous significant results. Significant "first pass" results from the southeast grid include 12 in gold (>30 ppb), 24 in silver (>3.0 ppm), 2 in lead (>100 ppm) and 14 in arsenic (>20 ppm). Significant results from the northeast grid include 2 in gold and 30 in silver. The majority of these results were followed up with prospecting, detailed mapping and the collection of a duplicate soil sample and up to 8 surrounding soil samples (see Table 4 and Appendix 6). Soil results from these surveys range up to 480 ppb gold, 7.4 ppm silver, 326 ppm copper, 239 ppm lead, 441 ppm zinc, 643 ppm arsenic, 23 ppm antimony, 11 ppm molybdenum and 2,250 ppb mercury. In the vast majority of the follow-up investigations, sources for the anomalous soil results were not located. In many cases, field personnel observed topographic depressions which may be reflecting mineralized(?) structures near the soil anomaly sites. In several instances, the anomalous results were collected near a volcanic-intrusion contact. In other instances, the duplicate sample results do not correspond to those from the original



NTS 104B / 10W, 11E

0 1 km
1:50,000



**WARATAH PROPERTY
GOLD SHOWINGS**

Figure 5

LEGEND

- | | |
|----------------------|------------------|
| 1 Golden Arrow Vein | 2 River Vein |
| 3 No. 11 Vein | 4 Swamp Vein |
| 5 X-Cut Vein | 6 Bluff Vein |
| 7 Helipad Veins | 8 Mag Vein |
| 9 No. 7 Vein | 10 Lake Showing |
| 11 Badger Vein | 12 No. 9 Showing |
| 13 East Gold Bug | 14 Gold Bug Area |
| 15 Boot Hill Showing | 16 Flare Zone |
| 17 Cooper Zone | |

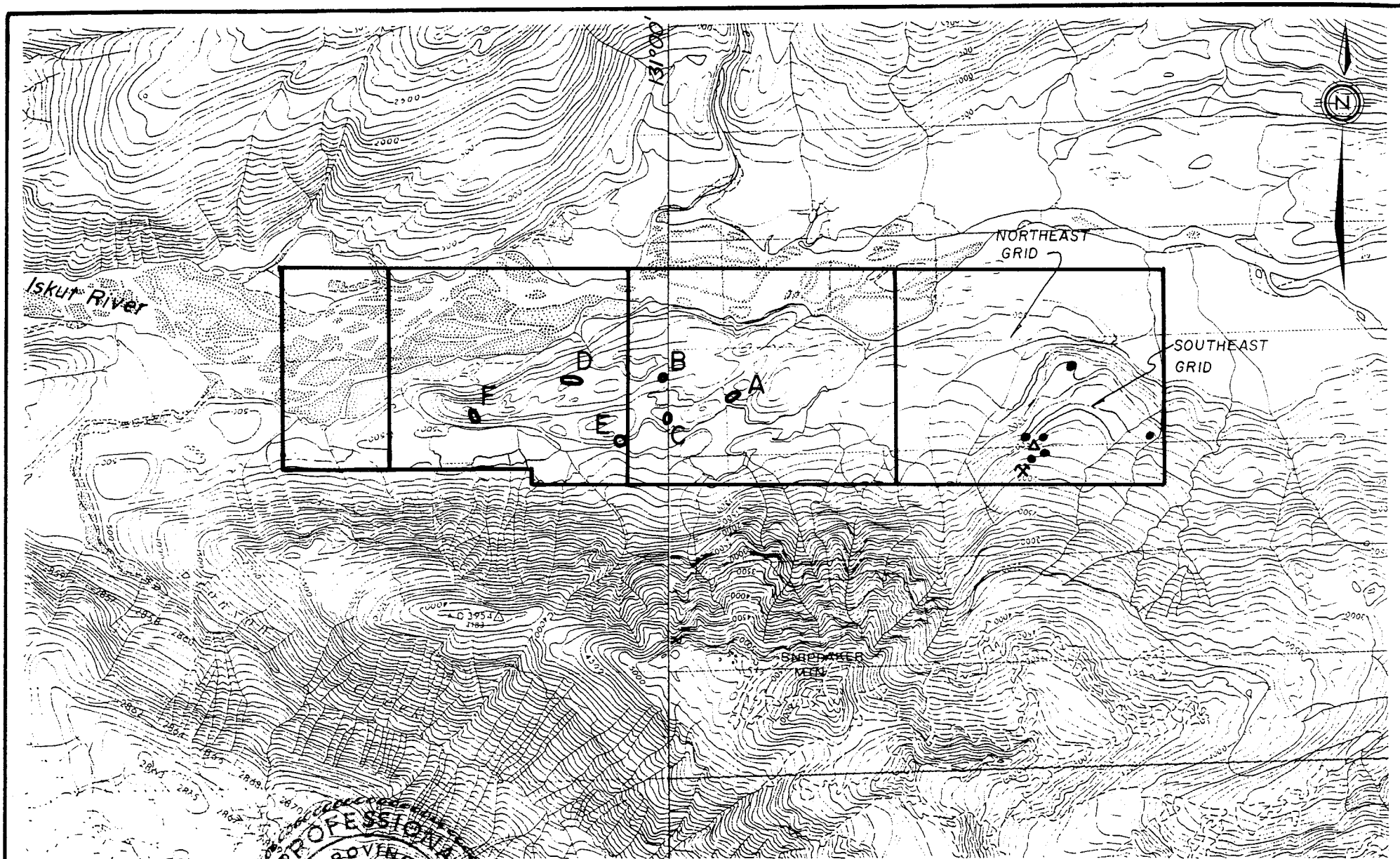
samples, indicating erratic soil contents. This may be due, at least in part, to local colluvial concentrations. The follow-up investigations did appear to locate mineralized sources at two locations.

The best follow-up success resulted in the discovery of the Cooper zone. This began as an investigation of a 76 ppb gold-in-soil anomaly. The initial follow up program revealed a duplicate result of 4 ppb gold but a nearby soil ran 480 ppb. In addition, a grab sample from a quartz lens in altered tuff returned 3,500 ppb gold. A subsequent investigation uncovered the silicified mineralization at, what is now, the Cooper zone's middle trench. The discovery of clay rich soils overlying the Cooper mineralization and the low gold values returned from most of the nearby soil samples indicates at least local masking of underlying, mineralized bedrock. Thus, low level gold and arsenic-in-soil anomalies should be thoroughly investigated, see Figure 6.

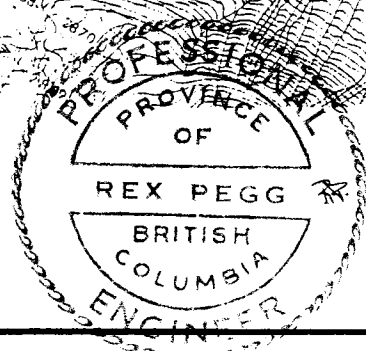
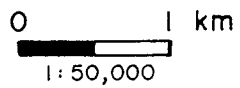
Upon completion of the Cooper zone trenching, three soil lines were run north-south in an attempt to further define possible, auriferous structures in this area. Anomalies from these lines, the arsenic-in-soil anomalies along L0+00 and the anomalous results obtained from both grids, during the follow-up studies, all require further investigation.

Results from the four silt samples range up to 1,115 ppb gold, 2.9 ppm silver, 226 ppm copper, 43 ppm lead, 161 ppm zinc, 1 ppm arsenic, 1 ppm antimony, 5 ppm molybdenum and 1,820 ppb mercury. The highest gold and copper results were returned from a creek on the west end of line 3+00N (southeast grid).

Rock sample results, with the exclusion of the northern showings' samples, range up to 3.033 oz/ton gold, 71.7 ppm silver, 116,152 ppm copper, 805 ppm lead, 1,418 ppm zinc, 13,634 ppm arsenic, 126 ppm antimony, 80 ppm molybdenum and 355 ppb mercury. The majority of the significant rock sample results are from the Cooper zone (see economic geology section). In addition to the Cooper showing, two other areas returned anomalous rock sample results (Table 6). The first of these is to the west, along strike, of the Cooper zone. Sample results up to 0.496 oz/ton gold were obtained from fracture/shear zones within intermediate volcanics. This area has only received cursory exploration to date. The second location is in the area of 2+00N/3+00W where two float and one grab sample were collected during the preliminary investigation of the gold-copper bearing silt sample mentioned above. The grab sample of a 15 cm wide quartz vein assayed 0.363 oz/ton gold. The float samples returned up to 0.446 oz/ton gold, 50.9 ppm silver and 116,152 ppm copper. These three samples have not, as yet, been subject to further investigation (Figure 6).



NTS 104B / 10W, 11E



WARATAH PROPERTY GEOCHEMICAL COMPILATION

Figure 6

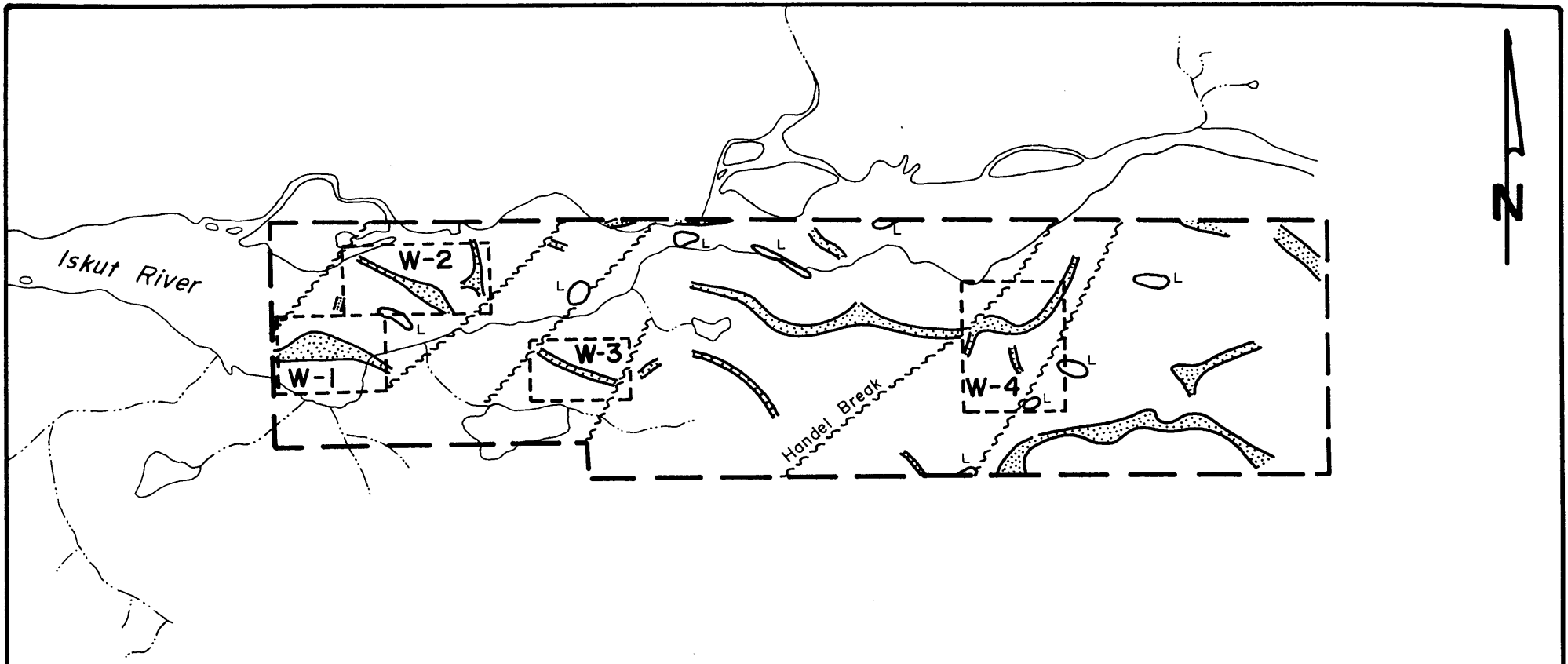
LEGEND

- (1988 A - F)
- soil anomaly to be investigated
- ▲ rocks (0.363 - 0.446 oz/t Au)
- ✕ COOPER ZONE








TABLE 6: Anomalous Rock Sample Results (excludes showings)			
Sample No.	Location	Anomalous Results(s)	Description
90L113R-015 (grab)	Cooper Grid 0+04S/1+05W	0.496 oz/ton Au 0.58 oz/ton Ag	10 cm wide white quartz vein (082° / 50°S) with 1-7% dissem. Py; Cooper zone area
90AD113R-001 (grab)	Cooper Grid 0+10S/1+50W	0.049 oz/ton Au	Gossanous and sheared (080° /68°S?) andesite; 2-5% Py; 0.5 m wide; Cooper zone area
90AD113R-002 (grab)	Cooper Grid 0+10S/1+58W	0.046 oz/ton Au	Gossanous and sheared (078° /72°S?) andesite; 2-5% Py; 1 m wide; Cooper zone area
90AD113R-004 (grab)	Cooper Grid 0+40S/2+20W	256 ppb Au	Silicified and fractured (084° /74°S?) andesite; 2-5% Py; 1 m wide; Cooper zone area
90T113R-073 (float)	480 m elev'n; in creek north of 2+00N/3+00W	520 ppb Au, 50.9 ppm Ag, 116,152 ppm Cu	Fist sized boulder with 50% CPy, 45% barite and 5% quartz
90T113R-074 (grab)	505 m elev'n in creek north of 2+00N/3+00W	0.363 oz/ton Au, 0.16 oz/ton Ag, 1,067 ppm Cu	15 cm wide quartz vein with 3-5% Py; trends 095°; host of lapilli tuff
90T113R-075 (float)	same as R-074	0.446 oz/ton Au, 0.25 oz/ton Ag, 3,414 ppm Cu, 534 ppm As	angular (15 x 20 cm) quartz boulder; gossanous and fractured; 5-7% Py, 1% AsPy

GEOPHYSICS

The re-interpretation of the 1988 airborne Aerodat VLF-EM and Magnetometer survey data by the Geotest Corp. indicated four areas of geophysical interest (Figure 6). These are summarized as follows:



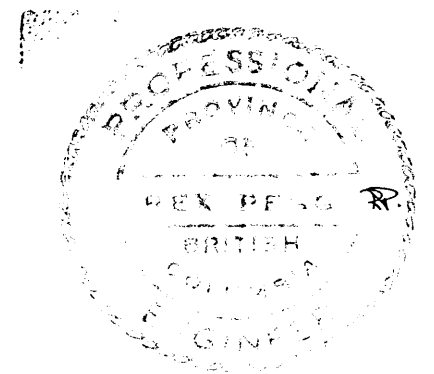
LEGEND

-  Positive Magnetic Anomaly
-  Negative Magnetic Anomaly
-  Interpreted Fault
-  VLF Conductor
-  EM Anomaly (Positive Bedrock)
-  EM Negative IN-Phase (Magnetite)
-  Target Area for Followup



**WARATAH PROPERTY
AIRBORNE GEOPHYSICAL COMPILATION**

Figure 6a



W-1

This target covers a positive magnetic anomaly which is apparently similar to the Snip deposits' Twin Zone. The anomaly dips to the south. The location of this, within the Iskut River, precludes any investigation.

W-2

This feature is very similar to 'W-1' but again its' location indicates no possibility of follow-up.

W-3

The target area envelopes another positive magnetic anomaly which is similar to W-1 and 2, although narrower and weaker.

W-4

This target was selected to evaluate an east-west trending, positive magnetic anomaly located in an area of complex faulting.

ECONOMIC GEOLOGY**1. Surface Showings (Figure 5)**

Four of the previously discovered auriferous veins from the northern and western portions of the property were investigated during the 1990 field season. These and the Cooper zone are summarized as follows:

i) River Vein (Figure 7)

This vein, which was originally discovered in 1987, was described as a 2 to 25 cm wide quartz-chlorite vein containing pyrite, magnetite and chalcopyrite. It was reported to be oriented at 140° -150° /45° -90°SW, exposed for 50 metres and hosted by agglomerates.

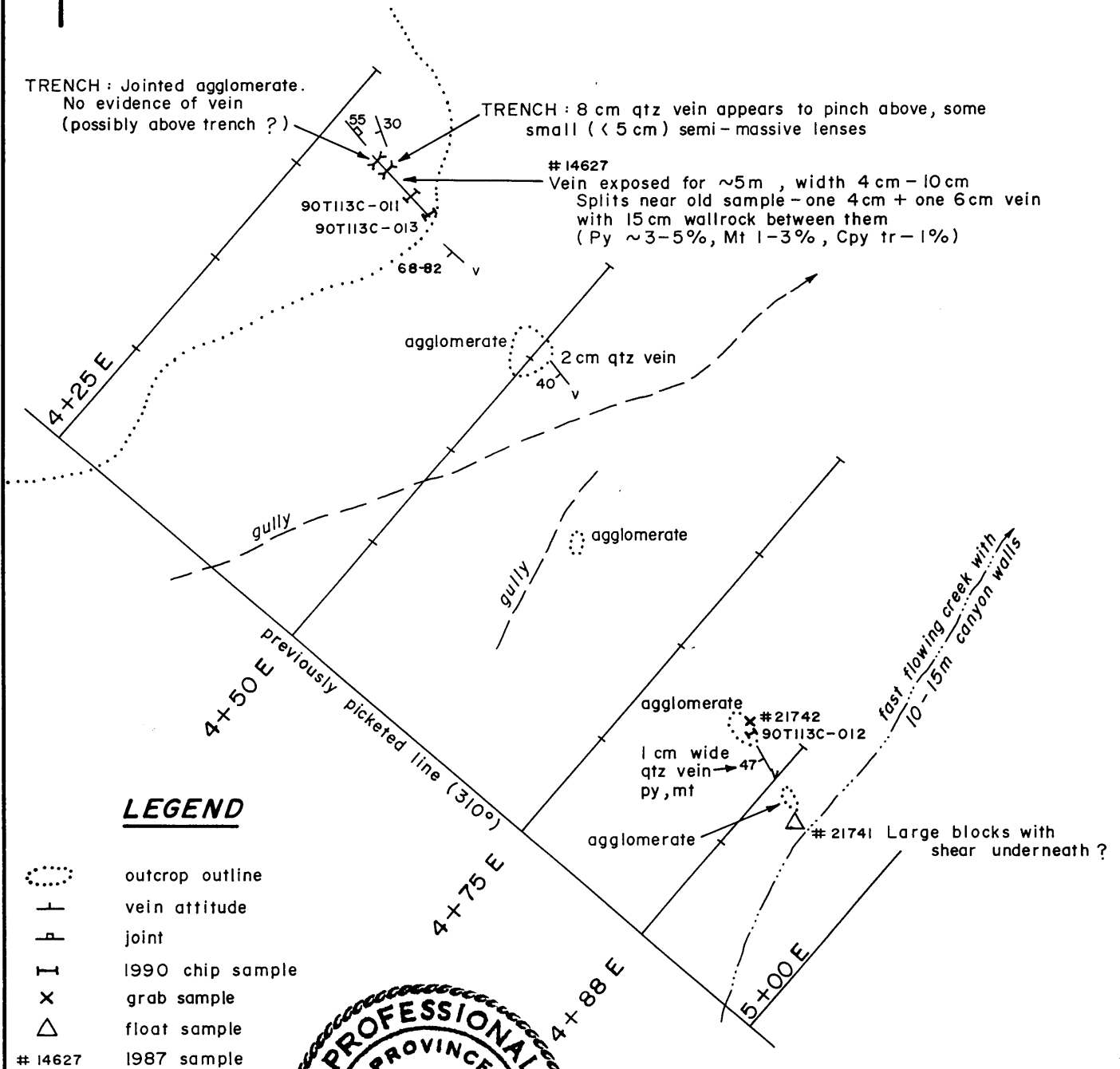


SAMPLE NO.	(M) LENGTH	(oz/ton) ppb Au	(oz/ton) ppm Ag	(%) ppm Cu	(%) ppm Pb	(%) ppm Zn	(%) ppm As
14627	GRAB	(1.074)	(0.52)	(0.05)	(0.01)	(<0.01)	(0.01)
21741	FLOAT	(0.614)	(0.35)	(0.03)	(0.02)	(<0.01)	----
21742	GRAB	(0.110)	(0.16)	(0.05)	(<0.01)	(0.01)	----
90T113C-011	1.00	(0.035)	4.4	227	27	98	106
-012	0.50	(0.028)	3.1	178	22	101	49
-013	1.00	(0.152)	6.0	194	18	68	30

TRENCH: Jointed agglomerate.
No evidence of vein
(possibly above trench?)

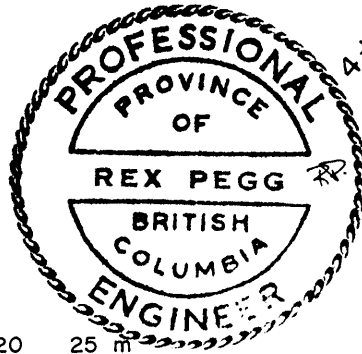
TRENCH: 8 cm qtz vein appears to pinch above, some
small (< 5 cm) semi-massive lenses

#14627
Vein exposed for ~5m, width 4cm - 10cm
Splits near old sample - one 4cm + one 6cm vein
with 15cm wallrock between them
(Py ~3-5%, Mt 1-3%, Cpy tr-1%)



LEGEND

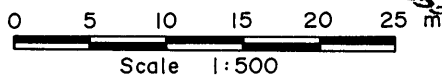
- (dotted) outcrop outline
- v vein attitude
- h joint
- I 1990 chip sample
- x grab sample
- Δ float sample
- # 14627 1987 sample



**WARATAH PROPERTY
RIVER VEIN AREA**

GEOLOGY & GEOCHEMISTRY

Figure 7



The 1990 investigation revealed sheared and locally gossanous quartz veins which carry 5 to 7% pyrite, 1 to 5% magnetite and trace to 3% chalcopyrite. The mineralization is generally found in the form of small lenses of semi-massive to massive sulphides. The structure is oriented at 140-148°/68°-82°SW and averages 7 cm wide. At one point it reaches a width of 25 cm and contains two quartz veins, 4 and 6 cm thick. The main showing revealed the structure for a 5 metre strike length. Along strike to the southeast a narrow (1-2 cm) quartz vein(s) with minor pyrite and magnetite was observed.

Chip samples from the main showing revealed very erratic gold values along strike. The chip samples taken across the exposure to the southeast returned only anomalous gold values. It appears that the original grab samples were 'high graded' from the narrow quartz veins which hold little potential for economic mineralization.

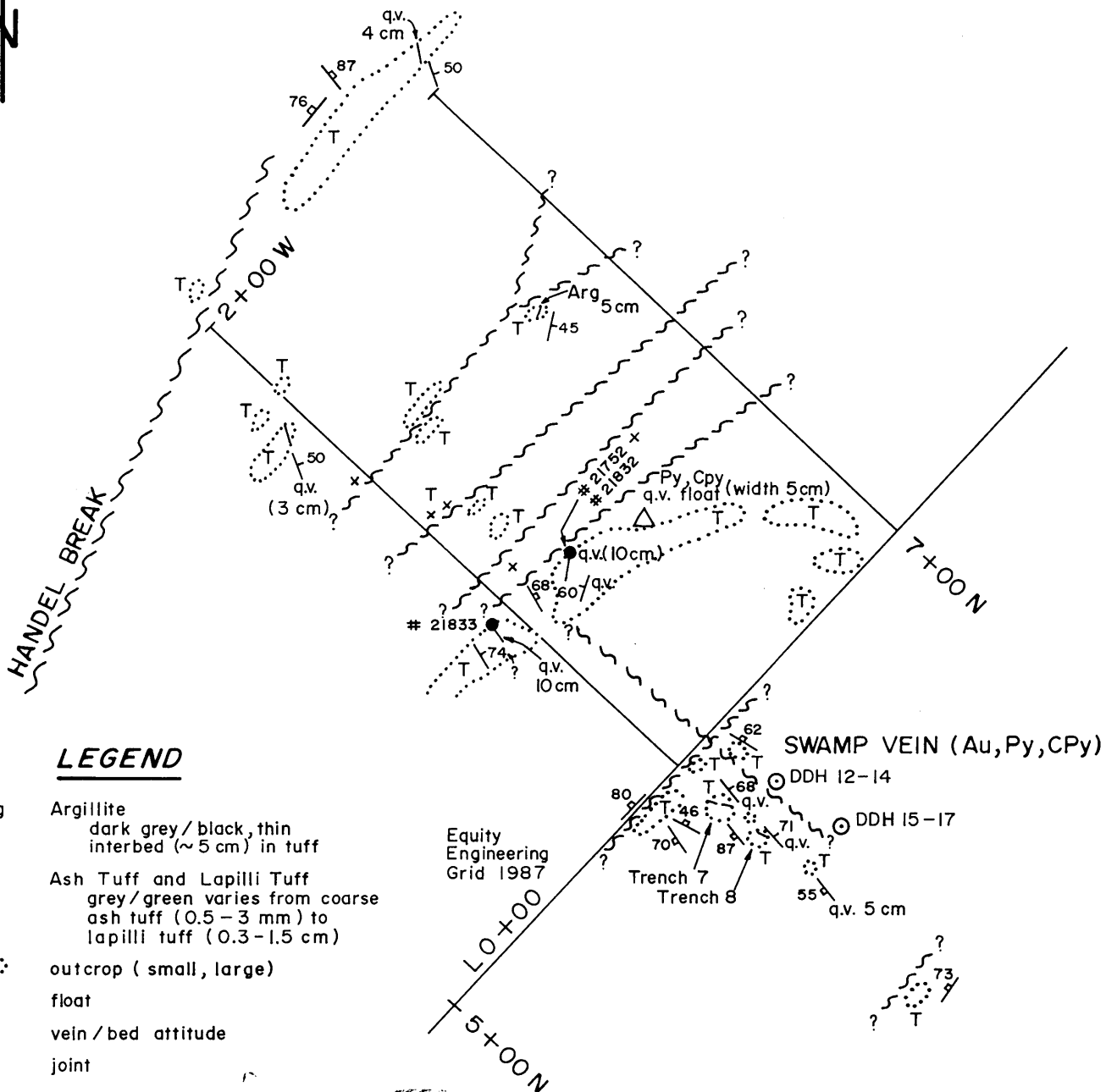
ii) Swamp Vein (Figure 8)

The Swamp vein was tested by 2 trenches and 6 drill holes (251.5 metres) during 1987. This work indicated that the poddy auriferous mineralization is discontinuous and erratic both along strike to the southeast and at depth. Chip sample results ranged up to 6.251 oz/ton gold across 1.90 metres from trench 7 and 1.458 oz/ton gold over 0.34 metres in trench 8. The best drill intercept was 0.367 oz/ton gold over 0.25 metres in hole H87-14.

During 1990, one day was spent checking for a possible northwest extension of the Swamp vein mineralization. A brief visit to trenches 7 and 8 revealed irregular, semi-massive to massive sulphide (pyrite > magnetite > chalcopyrite) pods which vary in width from 30 to 70 cm. The ground northwest of the trenches is underlain, primarily, by ash to lapilli tuffs. The ash tuffs are light grey-green in colour and carry minor 0.5 to 3.0 mm size fragments. The lapilli tuffs are the most common rock type. They are a slightly darker grey-green colour and contain fragments 0.3 to 1.5 cm across. Magnetite, in minor amounts, is ubiquitous, while trace to 1% disseminated pyrite is widespread. A number of narrow (<15 cm) quartz veins with up to 1% pyrite and traces of magnetite and chalcopyrite were observed with the tuffs. This area is cut by numerous northeast-southwest trending depressions which probably represent underlying structures.

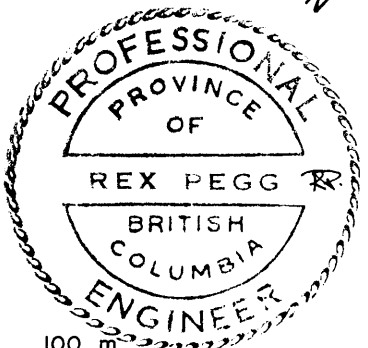
No significant mineralization was found along strike to the northwest of the Swamp vein trenches. Only the very narrow, gold bearing quartz veins, which were sampled

SAMPLE NO.	(M) LENGTH	oz/ton Au	oz/ton Ag	% Cu	% Pb	% Zn
21752	GRAB	0.296	0.04	0.14	0.02	<0.01
21832	GRAB	0.388	0.48	0.13	0.01	0.01
21833	GRAB	0.018	0.08	0.05	<0.01	0.01



LEGEND

- Arg Argillite
dark grey/black, thin
interbed (~5 cm) in tuff
- T Ash Tuff and Lapilli Tuff
grey/green varies from coarse
ash tuff (0.5-3 mm) to
lapilli tuff (0.3-1.5 cm)
- x, o outcrop (small, large)
- △ float
- T vein/bed attitude
- P joint
- ~ shear/fault
- q.v. quartz vein
- 1987 drill hole collar
- 1987 grab sample



**WARATAH PROPERTY
SWAMP VEIN AREA
GEOLOGY & GEOCHEMISTRY**

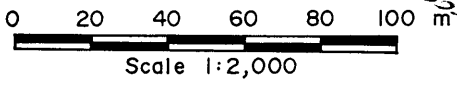


Figure 8

previously, were located. It is possible that the buried structures, which are subparallel to the Handel Break, have either cut off or offset the Swamp vein mineralization. Additional prospecting to the northwest should be carried out.

iii) No. 9 Vein (Figures 9 and 10)

During 1988, prospecting in the vicinity of gold-in-soil anomalies near the west end of line 9+00S returned a grab sample result of 0.279 oz/ton gold. This was collected from a zone reported to be 2 metres wide. Two trenches were excavated across this zone and revealed very erratic and discontinuous mineralization. The chip sample results from the trenches did not corroborate those obtained from the grab sample.





During 1990, field personnel attempted to locate the auriferous grab sample (#149825) site and determine the potential of the vein. The area is underlain by andesitic lapilli tuffs and agglomerates. Propylitic alteration, especially epidote, is very pronounced in the vicinity of the vein. The zone itself displays extensive but discontinuous silicification, bleaching and fracturing and local limonitic patches. Minor amounts ($\leq 1\%$) of pyrite were observed throughout the fractured and bleached tuffs within the trenches. In trench #33, field personnel noted a 20 cm wide shear composed of oxidized and bleached siliceous material with 2% pyrite. This shear was not found in trench #34, only 14 metres along strike to the southeast. The two trenches were chip sampled and their results confirmed very low gold values. Sample #149825 could not be located. No significant mineralization was noted along strike to the northwest and the zone's potential appears to be extremely low.

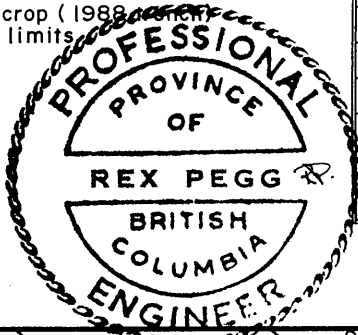
iv) Flare Zone (Figure 11)

In 1988, trenching (TR-29) on what is known as the Flare vein revealed a 1.7 metre wide quartz (\pm chlorite) vein hosted by greywacke. The initial grab sample from the vein assayed 1.41% zinc, 0.004 oz/ton gold and 0.17 oz/ton silver. Subsequent chip sampling returned values up to 0.89% zinc, 0.10% lead, 0.024 oz/ton gold and 0.60 oz/ton silver across 0.50 metres. A float sample (#149924), reportedly collected 27 metres to the south, assayed 0.753 oz/ton gold, 4.62 oz/ton silver, 5.24% lead and 17.90% zinc.

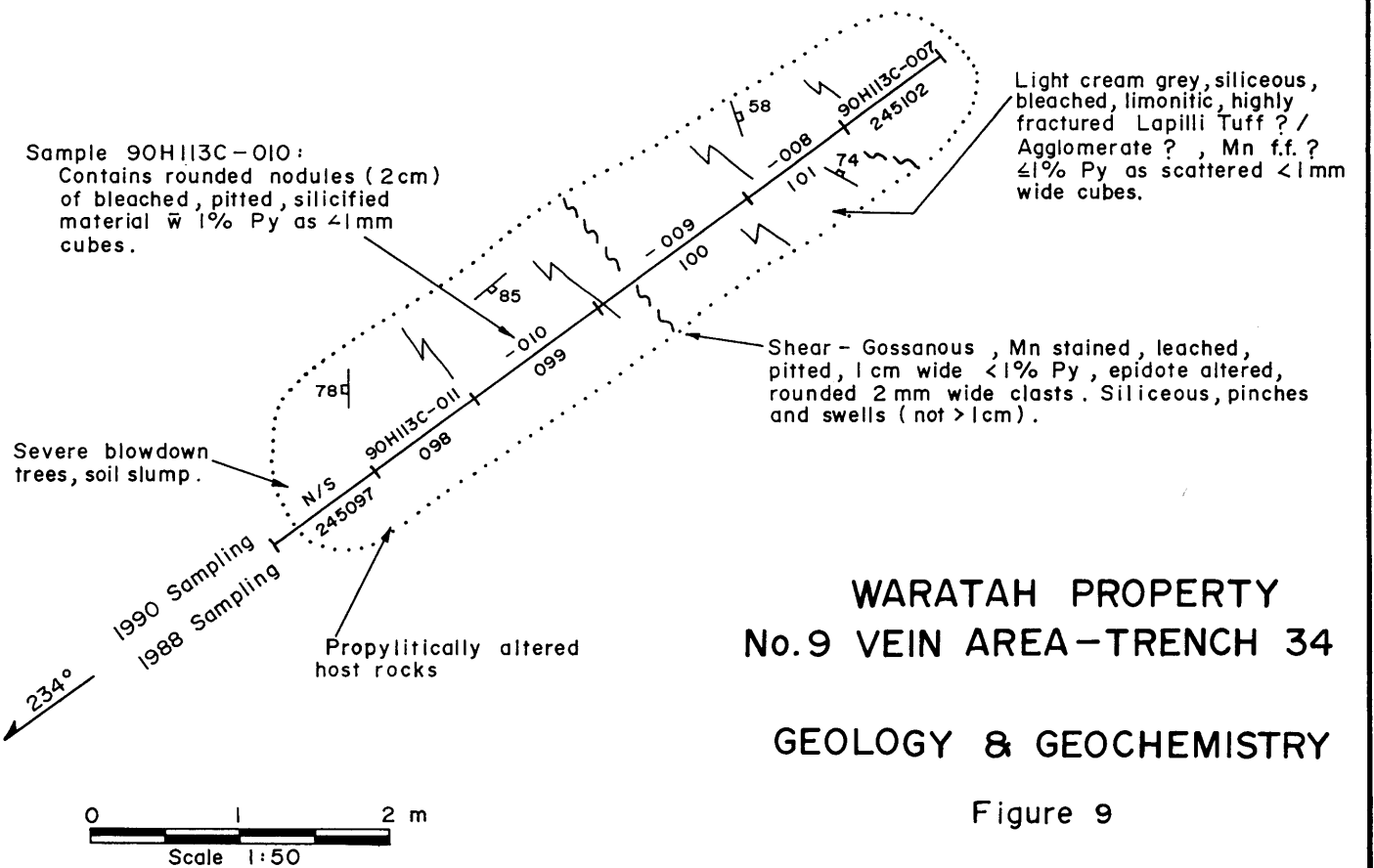
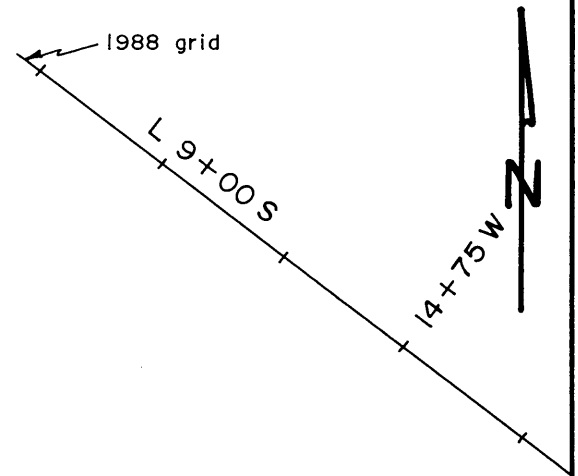
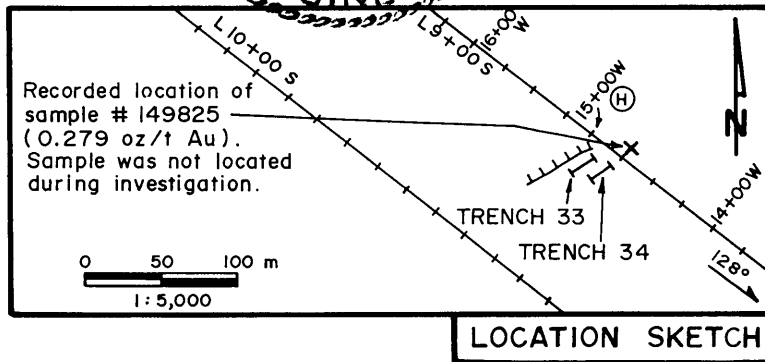
During 1990, field personnel re-chip sampled trench #29. The quartz vein was described as 0.70 metre wide and traced for 8 metres along strike. Up to 1% sphalerite and

LEGEND

-  chip sample
-  shear
-  fracture
- N/S no sample
-  outcrop (1988 trench limits)



SAMPLE NO.	(M) LENGTH	(oz/ton) ppb Au	(oz/ton) ppm Ag	(%) ppm Cu	(%) ppm Pb	(%) ppm Zn	ppm As
245097	0.90	(<0.002)	(<0.01)	(<0.01)	(<0.01)	(0.01)	----
245098	0.85	(<0.002)	(<0.01)	(<0.01)	(<0.01)	(0.01)	----
245099	1.00	(0.002)	(<0.01)	(<0.01)	(<0.01)	(0.01)	----
245100	1.25	(<0.002)	(<0.01)	(<0.01)	(<0.01)	(0.01)	----
245101	0.80	(<0.002)	(<0.01)	(<0.01)	(<0.01)	(0.01)	----
245102	0.80	(0.006)	(<0.01)	(<0.01)	(<0.01)	(0.01)	----
90H113C-007	0.80	108	0.7	58	19	55	122
-008	0.80	50	1.0	48	17	92	48
-009	1.25	11	1.0	48	23	76	42
-010	1.00	57	0.5	52	17	73	58
-011	0.85	9	1.0	46	19	75	49



**WARATAH PROPERTY
No.9 VEIN AREA-TRENCH 34**






GEOLOGY & GEOCHEMISTRY

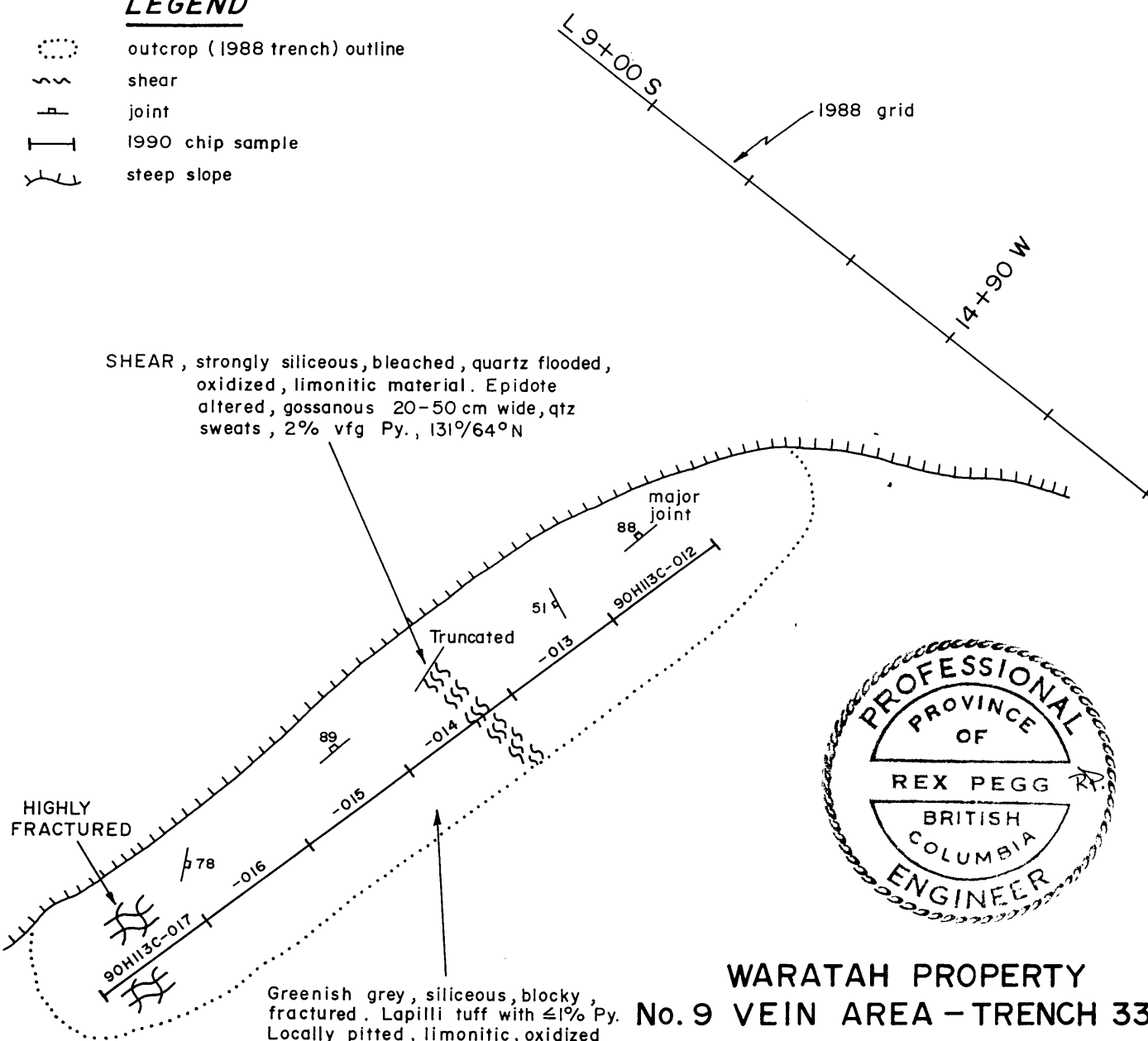
Figure 9



SAMPLE NO.	(M) LENGTH	ppb Au	ppm Ag	ppm Cu	ppm Pb	ppm Zn	ppm As	ppm Sb
90H113C-012	1.00	3	1.0	61	25	71	34	1
-013	1.00	72	1.8	127	35	103	42	1
-014	1.00	160	3.9	167	312	363	40	1
-015	1.00	107	1.4	67	24	86	47	1
-016	1.00	6	1.6	77	18	63	38	1
-017	1.00	10	1.6	91	15	50	29	1

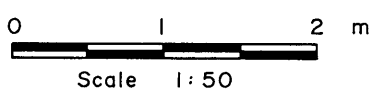
LEGEND

-  outcrop (1988 trench) outline
-  shear
-  joint
-  1990 chip sample
-  steep slope



WARATAH PROPERTY
No. 9 VEIN AREA - TRENCH 33
GEOLOGY & GEOCHEMISTRY

Figure 10



galena, in the form of 0.3 cm wide pods, and minor pyrite, as 3 to 4 cm wide lenses, are found concentrated along the vein's margins. The vein is hosted by intensely, biotitically altered sandstone which carries up to 9% very fine grained, disseminated pyrite. The highest chip sample result, 597 ppb gold, 60.6 ppm silver, 2,445 ppm lead and 2,950 ppm zinc over 0.70 metres, was obtained from the vein. The auriferous float sample was located and described as a 1.2 x 0.6 metre boulder with a 15 to 20 cm quartz-carbonate vein containing up to 20% sphalerite, 8% galena and trace amounts of arsenopyrite and chalcopyrite. The duplicate sample collected essentially confirmed the boulder's initial high results. No source for this boulder could be established. Significant zinc, lead and silver values were returned from previous grab sample #149919, which was collected from a small exposure 14 metres north the auriferous float sample. This exposure revealed narrow (2 to 15 cm) quartz-carbonate-chlorite veining, with sphalerite, galena and pyrite. The veining is controlled by a narrow shear (160°/50° NE) and a fracture set (020°/90°). Narrow quartz-carbonate veining to the east, the "Boot Hill" area returned low to moderate zinc values, but gold at background levels.

Trenching northwest and southeast from sample #149919 and southeast from sample #90A113R-014 should be carried out, so as to try and locate the source of the auriferous boulder.

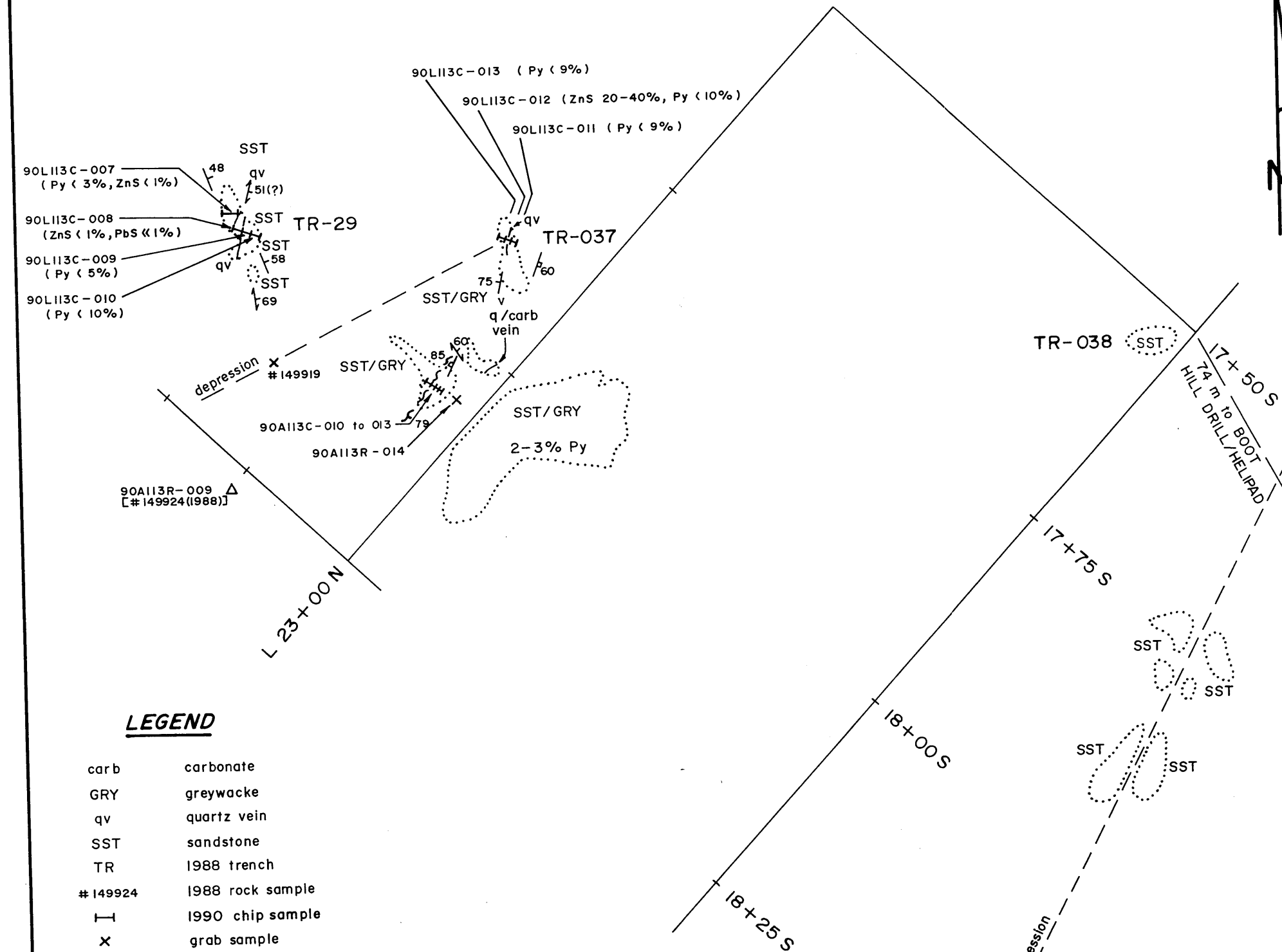
v) Cooper Zone (Figures 12 to 20)

Mineralization in the area of 1+00S/4+75W was discovered as a result of several investigations of a 76 ppb gold-in-soil anomaly. Prospecting and hand trenching revealed pyritic fracture fillings, stringers and pods, up to 10%. These are commonly associated with, but not restricted to, narrow (~1 cm) quartz veinlets and lenses (≤30 x 30 cm). The zone is hosted by andesitic tuffs (Figure 14) and appeared to have an attitude of 110°-120°/steep north.

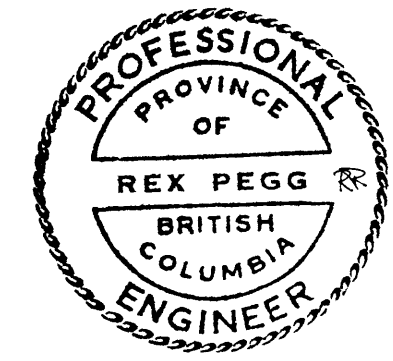
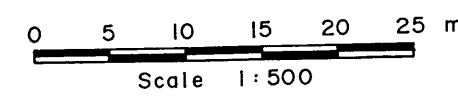
Three trenches (Figure 12) were blasted across the zone over an apparent strike length of, approximately, 75 metres. The trenches were subsequently mapped and channel/chip sampled.

The upper trench (Figures 15 and 16) was blasted at the site where a previously collected grab sample (90A113R-018) returned 0.031 oz/ton gold. The trenching revealed variably jointed, fractured or sheared andesitic tuff. Mineralization consists, primarily, of

SAMPLE NO.	(M) LENGTH	(oz/ton) ppb Au	(oz/ton) ppm Ag	(%) ppm Cu	(%) ppm Pb	(%) ppm Zn	ppm As	ppm Sb
149919	GRAB	(0.034)	(1.41)	(0.04)	(1.28)	(13.90)	---	---
149924	FLOAT	(0.753)	(4.62)	(0.04)	(5.24)	(17.90)	---	---
90A113R-009	FLOAT	(0.755)	83.8	297	24,728	95,297	5,542	125
C-010	0.50	(0.035)	5.7	157	984	4,030	195	5
-011	0.25	78	2.4	93	215	1,068	76	1
-012	0.75	79	2.5	155	90	450	50	1
-013	0.40	159	2.7	211	9	78	1	1
R-014	GRAB	42	2.5	143	213	1,312	1,177	5
90L113C-007	1.20	37	4.2	235	238	1,919	55	1
-008	0.70	597	60.6	155	2,445	2,950	62	4
-009	1.00	187	4.8	140	106	346	25	1
-010	1.00	18	2.5	175	25	83	45	1
-011	0.40	54	2.8	226	31	219	45	1
-012	0.15	98	6.5	184	342	59,644	202	14
-013	0.80	20	2.9	203	38	1,314	19	1



- LEGEND**
- carb carbonate
 - GRY greywacke
 - qv quartz vein
 - SST sandstone
 - TR 1988 trench
 - # 149924 1988 rock sample
 - I 1990 chip sample
 - X grab sample
 - Δ float sample
 - vein
 - ~ shear
 - ⋯ outcrop
 - bedding
 - ↗↘ foliation
 - joint



WARATAH PROPERTY
FLARE ZONE AREA
GEOLOGY & GEOCHEMISTRY

Figure II

Geology by A. Muirhead and P. Lutynski

Keewatin Engineering Inc.

pyritic stringers and fracture fillings, up to 10%. The pyrite is concentrated in a 3.6 metre wide zone of fractured andesite which contains abundant narrow (<0.5 cm) quartz veinlets and trace amounts of magnetite and arsenopyrite. The footwall(?) tuffs carry minor pyrite but locally, pyrite fracture filling, up to 20%, and small semi-massive pods and veinlets were observed. The hangingwall(?) tuffs are sheared, jointed, altered and leached. A narrow shear, dipping 30° to the north, was observed within the apparent hangingwall section. Chip sample results from this trench (Figure 16 and Table 7) indicate that the mineralized zone is at least geochemically anomalous in gold. Results range from 740 ppb to 0.141 oz/ton gold. The hangingwall samples returned gold values ranging from 164 ppb to 0.443 oz/ton. A portion of the mineralized zone and its' immediate hangingwall returned a weighted average grade of 0.156 oz/ton gold across a sample length of 4.4 metres. The gold grades drop off dramatically in the footwall. They range from 2 to 454 ppb. The two geochemically anomalous results from the footwall, 302 and 454 ppb gold, were from the section hosting the semi-massive pyrite pod and veinlet. Copper results from the upper trench vary from 43 to 818 ppm. Arsenic results range from 1 to 218 ppm. There does not appear to be a correlation between the gold and the copper or arsenic.

The middle trench (Figures 17 and 18) was blasted at the site where significant results were obtained from 2 grab and 1 chip sample. The grab sample gold results included 1.073 and 0.070 oz/ton. The chip sample returned 0.209 oz/ton gold across 2.00 metres. The trenching revealed a silicified and well mineralized andesitic tuff with shallow and steep, north dipping shears. Mineralization consists of stringers and fracture fillings of pyrite, up to 10%, and arsenopyrite, up to 5%. This is generally associated with quartz stringers and pods. Along strike to the west the zone consists of sheared and jointed andesitic tuff with only trace to 1% pyrite. To the east, the zone is only partially silicified and is structurally complex, with shears dipping to both the north and the south. The andesitic tuffs in the apparent hangingwall are jointed, propylitically altered and contain up to 3% disseminated pyrite. Several shears, dipping steeply north and south, cut the hangingwall section. The footwall tuffs are weakly fractured and contain up to 3% pyrite and trace amounts of magnetite and arsenopyrite. Four channel/chip sample sections were collected from the middle trench (Figure 18 and Table 7). The centre channel section results from the mineralized zone returned a weighted average grade of 0.254 oz/ton gold across a sample length of 3.05 metres. The eastern sample section across the zone returned gold values ranging from 0.047 to 0.279 oz/ton. The zone's weighted average grade across this section is 0.142 oz/ton gold over a sample length of 2.80 metres. The western sample section returned a weighted average grade of 0.590 oz/ton gold across a sample

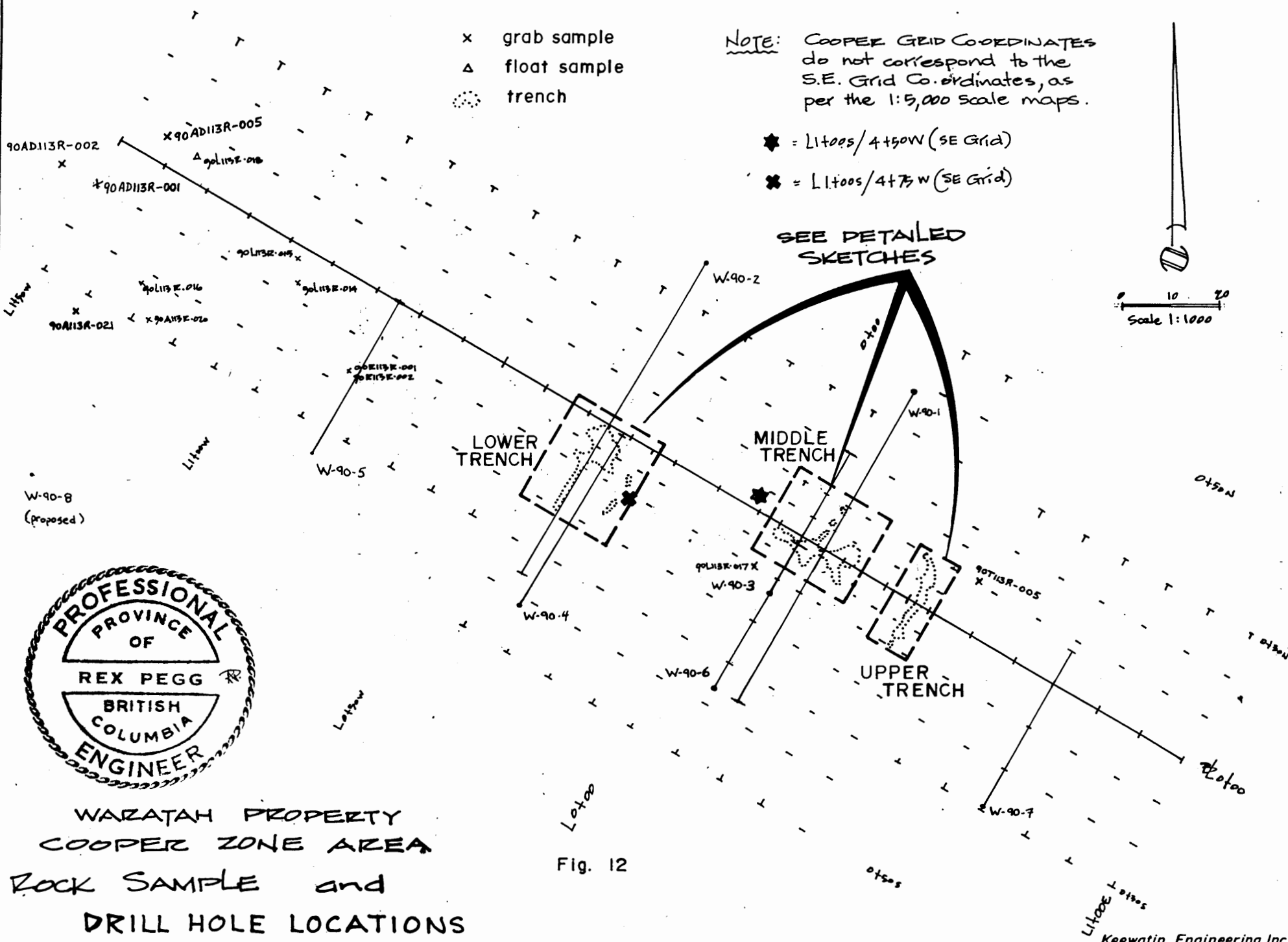
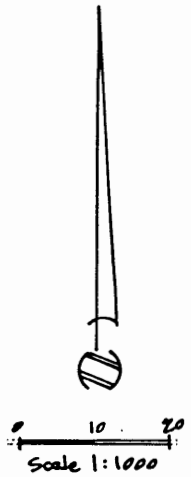
length of 1.45 metres. This portion of the trench does not appear to have exposed the full extent of the zone, as neither the footwall nor hangingwall tuffs have been exposed. The chip sample from the western end of the middle trench returned 575 ppb gold over a 1.20 metre sample length. Sample results from the hangingwall section of the middle trench are very low, ranging from 6 to 59 ppb gold. The footwall results are, at best, geochemically anomalous, varying from 46 to 192 ppb gold. The gold results from the middle trench indicate that significant values are restricted to the mineralized zone and that they are erratic along strike. The copper results range from 77 to 5,689 ppm and indicate an erratic, rough correlation with gold. The arsenic results vary from 1 to 13,634 ppm and also indicate an erratic, rough correlation with gold.

The lower trench (Figures 19 and 20) was blasted at the site where five grab and one chip sample were collected. The grab sample (90T113R-003, 90L113R-002, 90A113R-005, 7 and 17) results range from 90 ppb to 0.471 oz/ton gold. The chip sample (90A113C-006) assayed 0.111 oz/ton gold over a sample length of 1.00 metre. Blasting at this site proved to be problematic due to blocky ground, an excessive overburden depth and the presence of groundwater, mud and clay. The trench revealed a 1.00 metre wide mineralized zone. This zone consists of fractured and sheared tuff with 10% pyrite and 5% arsenopyrite(?) in quartz stringers and a 0.5 metre wide, leached quartz pod with up to 15% pyrite and 7% arsenopyrite(?). The zone is bounded on the north by a shear which dips 85° to the north. The quartz pod is bounded on the south by a shear which dips 35° to the south. The southern extent of the zone is demarked by a shear which dips 18° to the south. Variably jointed and fractured andesitic tuffs with trace to 1% pyrite are found on the south side of the zone. These tuffs are cut by a few narrow quartz stringers and pods, with up to 10% pyrite. A 2.70 metre wide fracture zone with up to 10% pyrite in quartz veinlets is found within this section. To the north of the main zone, andesitic tuffs with up to 1% pyrite were observed. Chip sample results from this trench (Figure 20 and Table 7) indicate that most of the entire section is at least geochemically enhanced in gold. The main zone averages 1.552 oz/ton gold across 1.00 metre. This includes an assay of 3.033 oz/ton gold from the gossanous quartz pod. Results from the adjoining northern section (hangingwall?) range from 0.199 to 0.029 oz/ton gold. This section averages 0.108 oz/ton gold over a sampled length of 2.50 metres. The crystal tuffs, exposed further to the north, returned gold values of up to 303 ppb. Chip sample results from the southern section (footwall?) range from 21 ppb to 0.041 oz/ton gold. The highest gold result from this section is from a portion of the pyritic fracture zone. Copper results from the lower trench range from 46 to 1,100 ppm and do not appear to

- x grab sample
- △ float sample
- ⊗ trench

NOTE: COOPER GRID COORDINATES do not correspond to the S.E. Grid Co. ordinates, as per the 1:5,000 scale maps.

- ★ = L1005/4+50W (SE Grid)
- ✱ = L1005/4+75W (SE Grid)



WAZATAH PROPERTY
 COOPER ZONE AREA
 ROCK SAMPLE and
 DRILL HOLE LOCATIONS

Fig. 12

correlate with the gold values. The arsenic results range from 1 to 158 ppm and also do not correlate with the gold.

TABLE 7: Summary of Cooper Zone Trench Results - Weighted Average Grades		
	oz/ton Gold	Sample Length (m)
Upper Trench includes	0.156 0.443	4.40 1.00
Middle Trench East section includes	0.142 0.279	2.80+ 1.00+
Centre section includes	0.254 0.443	3.05 1.00
West Section	0.590	1.45+
Lower Trench includes	0.717 3.033	2.50 0.50

+ full extent of zone not exposed

Prospecting along the Cooper zone's apparent strike, to the west, resulted in the discovery of a number of mineralized exposures. These consist of fracture zones, quartz veinlets and irregular lenses hosted by crystal and lapilli tuffs. The crystal tuffs are variably ankerite altered (Figure 14) which may have some unknown importance. Significant grab sample results (Figure 13) range from 0.042 to 0.496 oz/ton gold. If these samples are all part of the Cooper zone then the strike length from the upper trench to the westernmost grab sample would be, approximately, 195 metres. It should be noted that a grab sample (90AD113R-004) collected during the course of preliminary prospecting, to the west of the Cooper detailed grid, returned a result of 256 ppb gold. This sample was collected at Cooper detailed grid station 2+50W/0+50N and may indicate the presence of additional auriferous mineralization, even further to the west.

2. Diamond Drilling - Cooper Zone

The initial phase of drill testing the Cooper zone consisted of four holes (W90-1 to 4), see Table 3. The first two holes were drilled assuming a northerly dip to the zone. As no mineralization, similar to that encountered on surface was observed, the last two holes were drilled back, towards the

north. Mineralization encountered in hole W90-3 appears to indicate that the zone dips fairly steeply to the south. Significant results (Table 8) from that hole led to a second phase of drilling which consisted of three holes (W90-5 to 7). One of these holes tested hole W90-3's auriferous section at depth. The other two holes tested the Cooper zone further along its' apparent strike, to the east and west. Results from the four drill sections are summarized as follows:

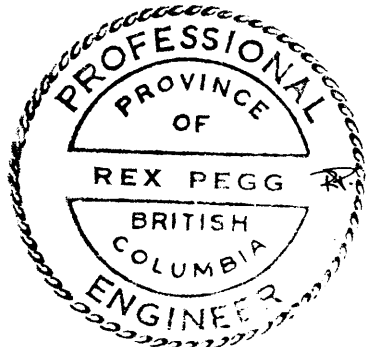
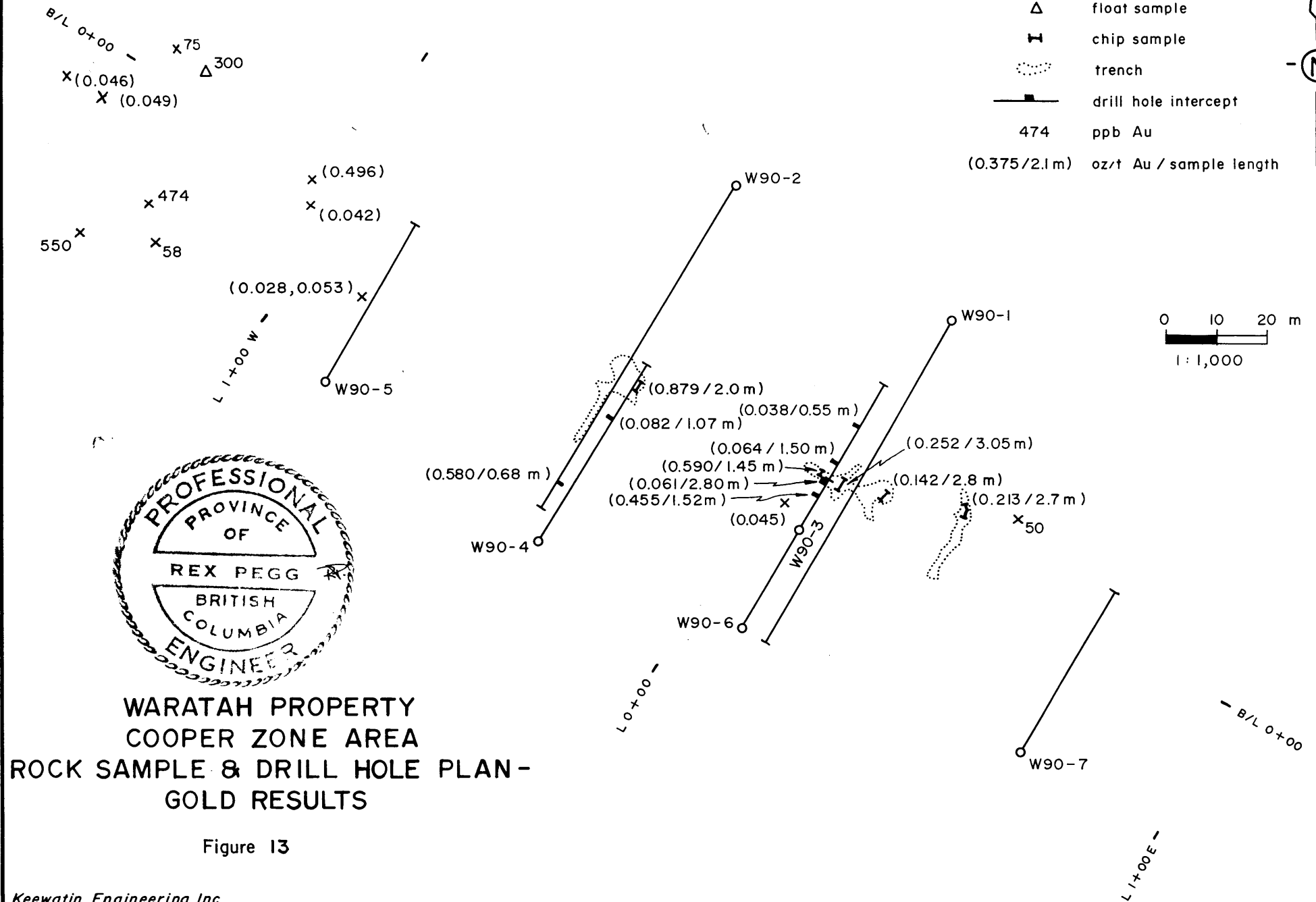
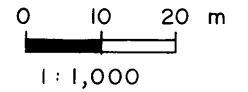
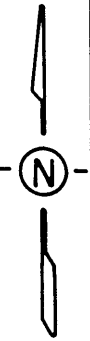
Drill Section W90-1, 3 and 6 (Figures 21 to 24)

Hole W90-1, drilled toward the south, under the middle trench, revealed a section of andesites, crystal tuffs and polyolithic lapilli tuffs to tuff breccias. Two chaotic alteration zones were encountered within this section. The two zones are 3.41 and 1.81 metres wide and consist mainly of quartz, sericite (\pm chlorite) and carbonate, with up to 8% disseminated pyrite. Mineralization in the rest of the hole generally consists of trace to 5% pyrite, although very minor arsenopyrite and sphalerite were noted near the bottom of the hole. The arsenical section returned 6 ppb gold, 1.4 ppm silver, 549 ppm arsenic, 155 ppm copper, 105 ppm lead and 788 ppm zinc. The rest of the hole's results range from 1 to 439 ppb gold, 0.5 to 3.1 ppm silver, 1 to 149 ppm arsenic, 8 to 306 ppm copper, 5 to 97 ppm lead and 7 to 581 ppm zinc.

Hole W90-3, drilled towards the north, under the middle trench, revealed a variably altered section of ash, crystal and lapilli tuffs. Included within this section is a 0.45 metre wide (14.38 - 14.83 m) zone of semi-massive sulphides, comprised of 40% pyrite, 10 to 15% magnetite, 3 to 5% arsenopyrite, 1 to 2% chalcopyrite and a quartz-chlorite gangue. The lapilli tuffs above the semi-massive sulphides generally host <1% pyrite, but over the bottom 22 cm, the pyrite content increases up to 7%. Variably altered (chlorite \pm sericite) and fractured/sheared tuffs are found below the semi-massive sulphides, down to 46.77 metres. The more intensely altered and fractured units contain more abundant sulphides. Sulphide content varies from 1-20% pyrite, zero to 5% arsenopyrite, zero to <1% chalcopyrite and sphalerite. Andesitic ash tuffs and lapilli tuffs with only minor pyrite are found to the bottom of the hole. The semi-massive sulphide zone returned 1.009 oz/ton gold, 59.4 ppm silver, 39,472 ppm arsenic, 7,953 ppm copper, 502 ppm lead and 1,614 ppm zinc over 0.45 metres. The section above this zone returned fairly low values, although the sample at the bottom of the section displays dramatic increases in geochemical gold, arsenic, copper, lead and zinc numbers. The variably altered and fractured tuffs below the zone returned numbers ranging from 9 ppb to 0.382 oz/ton gold, 1.2 to 19.8 ppm silver, 1 to 20,635 ppm arsenic, 72 to 3,330 ppm copper, 16 to 180 ppm lead and 190 to 8,494 ppm zinc. Within this section, the relatively unaltered portions returned low values while the more intensely altered and fractured zones returned the higher numbers. The andesitic ash and

LEGEND

- X grab sample
- △ float sample
- chip sample
- ⋯ trench
- drill hole intercept
- 474 ppb Au
- (0.375/2.1 m) oz/t Au / sample length



**WARATAH PROPERTY
COOPER ZONE AREA
ROCK SAMPLE & DRILL HOLE PLAN -
GOLD RESULTS**

Figure 13

lapilli tuffs at the bottom of the hole returned only low values. Results from the W90-3 core appear to indicate a very rough and erratic correlation between gold and copper.

Hole W90-6 was drilled towards the north, under hole W90-3, in an attempt to test the previous hole's auriferous section at depth. The gold bearing zone encountered in the middle trench and hole W90-3 is accompanied by high arsenic and copper values. It was felt that the dramatic increase in arsenic and copper near the bottom of hole W90-1 may have been indicating that the hole was stoped just short of auriferous mineralization. Hole W90-6 encountered a section of ash, crystal and lapilli tuffs with trace to 3% pyrite and magnetite. Moderately fractured and altered crystal to lapilli tuffs with sericite, carbonate and chlorite fracture fillings were observed between 22.72 and 32.00 metres. Several narrow quartz - sericite (\pm chlorite) - carbonate zones were noted between 16.60 and 25.93 metres. At 16.60 metres, one of these zones, measuring 0.90 metres, hosts 5-7% specularite, 3-5% pyrite and trace to 1% chalcopyrite and magnetite. This zone returned 219 ppb gold, 4.0 ppm silver, 78 ppm arsenic, 1,270 ppm copper, 34 ppm lead and 344 ppm zinc. Analyses from the rest of the hole range from 1 to 16 ppb gold, 0.5 to 2.6 ppm silver, 1 to 62 ppm arsenic, 34 to 190 ppm copper, 7 to 29 ppm lead and 71 to 260 ppm zinc.

If the auriferous section encountered in hole W90-3 corresponds to the mineralization revealed in the middle trench, the Cooper zone would have a dip of 71° to the south. The zone should have been intersected by hole W90-6 but was not. The numerous shears and fractures observed in the middle trench exposure and the core may be terminating or offsetting the mineralization at depth.

Drill Section W90-2 and 4 (Figure 25 to 28)

Hole W90-2, drilled towards the south, under the lower trench, revealed a section of andesites and crystal to lapilli tuffs. Mineralization consists, generally, of trace to 3% pyrite and magnetite and trace amounts of chalcopyrite and pyrrhotite. Several narrow fracture/shear zones with quartz and/or carbonate fracture fillings, chlorite, sericite and up to 10% pyrite were observed. One such zone, 0.68 metres wide (93.57 to 94.25 m), returned 0.580 oz/ton gold, 18.3 ppm silver, 200 ppm arsenic, 1,031 ppm copper, 69 ppm lead and 74 ppm zinc. The 2.05 metre section below this zone contains some similar mineralization and averages 300 ppb gold, 1.8 ppm silver, 4 ppm arsenic, 258 ppm copper, 14 ppm lead and 153 ppm zinc. With the exception of a 0.94 metre (89.20 to 90.14 m) zone that ran 448 ppb, other gold results are low, ranging from 1 to 98 ppb. Additional analyses vary from 0.7 to 2.0 ppm silver, 1 to 33 ppm arsenic, 16 to 240 ppm copper, 6 to 149 ppm lead and 30 to 844 ppm zinc.

Hole W90-4, drilled towards the north, under the lower trench, intersected a section of crystal to lapilli tuffs and andesites. Mineralization consists, generally, of trace to 8% pyrite and trace to <1% magnetite. Several narrow fracture zones with up to 15% pyrite fracture fillings were noted. One of these is found within the sample at 55.13 to 56.20 metres which returned 0.082 oz/ton gold, 8.5 ppm silver, 51 ppm arsenic, 1,219 ppm copper, 116 ppm lead and 1,196 ppm zinc. Analyses from the rest of the hole range from 1 to 198 ppb gold, 0.6 to 3.6 ppm silver, 1 to 67 ppm arsenic, 41 to 817 ppm copper, 4 to 67 ppm lead and 54 to 660 ppm zinc.

The two auriferous intercepts from these drill holes are both hosted by fracture zones in an andesitic lapilli tuff unit. These intercepts do not line up with the Cooper mineralization found in the lower trench, but numerous low angle fracture filling and slip measurements from the core and the trench appear to indicate a possibility of segmented mineralization. The lack of distinctive marker horizons hampers any definitive resolution to this question.

Drill Section W90-5 (Figures 29 to 32)

This hole was drilled towards the north, approximately 50 metres to the north west of the lower trench. This hole revealed a section of tuffs and lapilli tuffs. A 0.66 metre alteration/fracture zone comprised of carbonate, sericite and quartz was noted within this section. Mineralization consists of 1 to 6% pyrite, trace to <1% chalcopyrite and traces of magnetite. Results from this hole are low, ranging from 1 to 317 ppb gold, 0.2 to 2.3 ppm silver, 1 to 152 ppm arsenic, 25 to 533 ppm copper, 11 to 39 ppm lead and 5 to 217 ppm zinc.

Drill Section W90-7 (Figure 33 to 36)

Hole W90-7 was drilled towards the north, approximately 31 metres southeast of the upper trench. This hole revealed a section of ash, crystal and lapilli tuffs, tuff breccias and andesites. Mineralization consists of <1 to 5% pyrite, trace to <1% magnetite and a trace amount of chalcopyrite. Results are at background levels, ranging from 1 to 18 ppb gold, 0.8 to 3.7 ppm silver, 1 to 76 ppm arsenic, 24 to 201 ppm copper, 6 to 78 ppm lead and 54 to 298 ppm zinc.

TABLE 8: Summary of Diamond Drilling - Significant Results (uncut weighted average grades)				
Hole No.	Interval		Sample Length (m)	Au (oz/ton)
	From (m)	To (m)		
W90-1	--	--	--	--
W90-2	93.57	94.25	0.68	0.580
W90-3	14.38 includes 14.38 and 15.29 19.60 28.61 46.12	15.90 14.83 15.90 22.40 30.11 46.77	1.52 0.45 0.61 2.80 1.50 0.55	0.455 1.009 0.382 0.061 0.064 0.038
W90-4	55.13	56.20	1.07	0.082
W90-5	--	--	--	--
W90-6	--	--	--	--
W90-7	--	--	--	--

CONCLUSIONS

Re-evaluations of four, previously discovered, gold bearing occurrences on the north and west sides of the property were conducted during 1990. The River Vein was determined to be a very narrow quartz vein which holds very little potential. The Swamp Vein could not be traced along strike to the northwest and unless it has been subjected to a substantial fault offset, it does not appear to be of further interest. The No. 9 Vein investigation revealed low gold values from the showing, with little potential along strike. The exposed Flare zone contains narrow mineralization which displays poor potential. In addition, no source could be established for the Flare area float sample that assayed 0.753 oz/ton gold, 4.62 oz/ton silver, 5.24% lead and 17.90% zinc. Overburden covered areas to the north and northeast of this sample may be masking its' source. This possibility has not, as yet, been investigated.

Extensive geological, geochemical and prospecting surveys were carried out over most of the eastern portion of the property. Follow-up investigations on a 76 ppb gold-in-soil anomaly led to the discovery of an auriferous structure, now called the Cooper zone. Blasting of three trenches and chip sampling revealed erratic but significant gold mineralization over a distance of some 75 metres.

Weighted average gold grades from these three trenches vary from 0.156 oz/ton over 4.40 metres to 0.717 oz/ton across 2.50 metres. Prospecting to the west resulted in the discovery of several auriferous bedrock exposures. One of which, located some 75 metres along the zone's apparent strike from the trenching, assayed 0.496 oz/ton gold. Two grab samples collected 20 to 25 metres further west, returned gold values of 0.049 oz/ton and 0.046 oz/ton. The Cooper zone's significant gold results across substantial widths and its' apparent continuity along strike led to a small diamond drill program. This drill program appears to indicate that the Cooper zone is a complex structure which displays a lack of continuity at depth. Although several of the drill holes returned auriferous intercepts, only hole W90-3 appears to have intersected the Cooper zone. This would give the Cooper zone, at this location, an attitude of 110°-120°/71°S. The absence of "Cooper zone" intercepts in the other holes indicates that the shallow dipping shears noted in the trenches may be terminating or offsetting the mineralization at depth. A lack of obvious, distinctive marker horizons hampers a definitive resolution to this question. Detailed correlation studies between drill sections and between the core and surface exposures have not, as yet, been completed. Detailed mapping and prospecting west of the Cooper zone grid has also not been carried out.

Nearly all of the other anomalous soil results from the northeast and southeast grids were investigated, but potential bedrock sources were not located. Topographic depressions, which may be reflecting mineralized structures, were noted near many of the soil anomaly sites. In a number of cases, duplicate soil results did not correspond to those from the original, anomalous sample. A few of the follow-up soil results warrant additional investigation. Late season soil sampling also revealed several gold-in-soil anomalies to the north of the Cooper zone, which have not, as yet, been followed-up. Prospecting, some 350 metres to the north of the Cooper zone, located a narrow shear/vein which assayed 0.363 oz/ton gold. One float sample from this area assayed 0.446 oz/ton gold, while another returned 50.9 ppm silver and 116,152 ppm copper. The results from this area warrant additional work.

Several gold-in-soil anomalies, obtained during 1988, from the western portion of the property have not, as yet, been followed up.

It should be noted that colluvial and alluvial cover throughout the Waratah property necessitates the investigation of all low level soil anomalies. This point is well illustrated by the eventual discovery of the Cooper zone.

RECOMMENDATIONS

It is recommended that the Waratah property be subjected to a two phase exploration program that would focus, primarily, on the southeast portion of the property. Phase I would be initiated in order to locate targets worthy of trenching and drill testing. Initiation of the Phase II drilling program would be contingent upon obtaining favourable results from Phase I.

Phase I

This program should include:

- i) a review of the Cooper zone drill core with respect to its' surface expression. Special attention should be paid to possible flat faults which may have offset the mineralization at depth;
- ii) more extensive prospecting, geological mapping and trenching along the apparent strike extent of the Cooper zone;
- iii) investigation of the narrow, gold bearing shear, the copper-silver bearing barite-quartz float and the auriferous quartz float discovered north of the Cooper zone;
- iv) follow-up of all unexplained, previously obtained soil anomalies throughout the property. This should include detailed soil sampling, geological mapping and prospecting with special attention paid to possible structures in the southeast portion of the property;
- v) prospecting and mapping of the relatively unexplored, steep slopes along the south side of the Iskut River (Waratah 4-6 claims);
- vi) a provision made for trenching of any showings which might be discovered during the Phase I program.

Phase II

The contingent proposed Phase II program would comprise a drilling program to test any viable targets delineated during Phase I.

Respectfully submitted,

KEEWATIN ENGINEERING INC.



Rex Pegg, B.A.Sc., P.Eng.



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- Vancouver Stockwatch, November 7, 1989.

APPENDIX 1

Statement of Qualifications

STATEMENT OF QUALIFICATIONS

I, REX STEPHEN PEGG, of #1 - 410 Mahon Avenue in the District of North Vancouver in the Province of British Columbia, do hereby certify that:

- 1) I am a graduate of the University of Toronto, BA.Sc. (1976) in Geological Engineering (Exploration option) and have practised my profession continuously since graduation.
- 2) I have over 14 years of experience in exploration for base and precious metals in the Canadian Cordillera.
- 3) I am a member in good standing of the Association of Professional Engineers of British Columbia.
- 4) I am an independent consulting geologist with an office at #1-410 Mahon Avenue, North Vancouver, British Columbia.
- 5) I am presently under contract to Keewatin Engineering Inc. with offices at Suite 800 - 900 West Hastings Street, Vancouver, British Columbia.
- 6) I the author of the report entitled "Geological, Geochemical, Geophysical and Drilling Report on the Waratah Property, Liard Mining Division, British Columbia", dated January 11, 1991.
- 7) I have personally performed or supervised the work referenced in this report and I am familiar with the regional geology and geology of nearby properties.
- 8) I do not own or expect to receive any interest (direct, indirect or contingent) in the property described herein nor in the securities of Big M Resources Ltd., in respect of services rendered in the preparation of this report.
- 9) I consent to and authorize the use of the attached report and my name in the Company's Statement of Material Facts or other public document.

Dated at Vancouver, British Columbia this 11th day of January, 1991.



Respectfully submitted,



Rex S. Pegg, BA.Sc., P.Eng.

Keewatin Engineering Inc.

APPENDIX 2

Summary of Field Personnel

SUMMARY OF FIELD PERSONNEL

R. Pegg, Senior Geologist	May 29-31; June 29; July 22; August 6, 28; September 2, 6, 14, 15, 23, 27, 28, 30; October 22-27; November 4-7.
R. Honsinger, Project Geologist	May 28-31; July 24, 25, 27, 28; August 7, 10, 13-16, 20; September 14.
A. Travis, Project Geologist	May 28-31; June 15, 19, 21, 23, 29; July 1, 8, 13, 24-26, 28-30; August 15, 16, 20; September 2, 15, 20-25, 27-29; October 14, 24-30; November 2-10.
P. Lutynski, Geologist	May 29-31; June 15, 19, 21, 23, 24; July 1, 11, 24-26, 28-30; August 13; September 2, 28-30; October 3, 14.
A. Muirhead, Prospector	May 28-31; June 15, 19, 21, 23, 29; July 2, 8, 12, 17, 18, 27, 30; August 20, 21; September 6, 8, 9, 12-16; October 10, 14, 20.
A. Dupras, Prospector	September 12-16; October 3, 14.
S. Novak, Technician	August 10, 20; September 2, 15, 17, 24, 25; October 14, 24, 27, 28; November 2-5.
C. Kauss, Technician	September 18, 20, 21, 23-25, 27; October 3, 14, 23-29; November 6-8.
R. Geszler, Assistant	May 29 -31; June 15, 19, 21; July 1-4; August 10, 20; September 2.
S. Sheffield, Assistant	May 29-31; June 15, 19, 21, 23; July 1, 6-9, 26, 28-30; August 13, 20.
K. Burk, Assistant	May 28-31; June 19.
T. Mortison, Assistant	May 29-31; June 15, 19; July 2-4, 6, 8.
V. Malo, Assistant	May 28-31; June 15, 19, 22, 23; July 7-9; August 20.
J. Leonard, Assistant	May 28-31; June 15, 23; July 6-9.
A. Kaplan, Assistant	May 29-31; June 19, 21; July 24-26, 28-30; August 20.
T. Paquette, Assistant	June 29; July 7, 8; August 20.
S. McTague, Assistant	June 29; July 1, 17, 24-27; August 15, 16, 20; September 5, 6, 8, 21, 23; October 10, 14.
D. Barker, Assistant	August 7, 13, 15, 16, 20; September 2, 12-16, 18, 21, 22, 24, 25; October 14.
J. Cleland, Assistant	August 15, 16, 20.

Summary of Field Personnel - Cont'd

P. Dunlevy, Assistant September 8, 9, 14-17, 22, 25-27; October 10, 14, 20.

C. Davies, Assistant September 9, 15, 21, 22, 26, 28, 29; October 3.

S. Creelman, Assistant October 18, 20-24.

V. Hutchings, Draftswoman August 26; September 2, 15, 28, 30.

H. Norris, Cook/1st Aid Attendant July 6

S. Patterson, Cook/1st Aid Attendant September 15, 25.

S. Chandler, Cook/1st Aid Attendant May 27-31; June 15, 19, 23; July 3, 25, 26, 28; August 7, 13, 20; September 2, 6, 27, 29; October 14, 25, 26.

J. Lund, Cook/1st Aid Attendant November 4, 5.

F. Ferguson, Technician May 28-30.



APPENDIX 3

Statement of Expenditures

STATEMENT OF EXPENDITURES

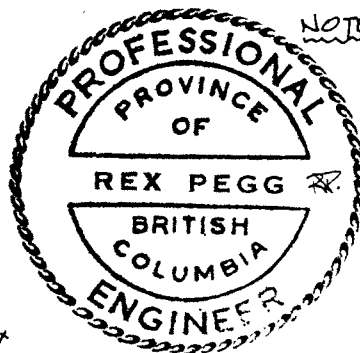
i)	Pre- Field		\$ 611.03
ii)	Labour		
	R. Nichols	4.75 days @ \$425/day	\$ 2,018.75
	D. DuPre	1.25 days @ \$425/day	531.25
	R. Pegg	27.00 days @ \$400/day	10,800.00
	R. Honsinger	12.50 days @ \$335/day	4,187.50
	A. Travis	44.50 days @ \$325/day	14,462.50
	P. Lutynski	20.00 days @ \$325/day	6,500.00
	A. Dupras	7.00 days @ \$325/day	2,275.00
	A. Muirhead	23.50 days @ \$300/day	7,050.00
	S. Novak	14.00 days @ \$225/day	3,150.00
	C. Kauss	19.00 days @ \$225/day	4,275.00
	R. Geszler	9.00 days @ \$250/day	2,250.00
	S. Sheffield	14.50 days @ \$200/day	2,900.00
	K. Burk	1.00 days @ \$190/day	190.00
	T. Mortison	7.00 days @ \$190/day	1,330.00
	V. Malo	7.50 days @ \$(185/215)/day	1,402.50
	J. Leonard	6.00 days @ \$165/day	990.00
	A. Kaplan	8.50 days @ \$160/day	1,360.00
	T. Paquette	4.00 days @ \$(160/175)/day	655.00
	S. McTague	15.50 days @ \$(160/175)/day	2,585.00
	D. Barker	16.50 days @ \$(160/175)/day	2,820.00
	J. Cleland	2.50 days @ \$160/day	400.00
	P. Dunlevy	13.00 days @ \$175/day	2,275.00
	C. Davies	8.00 days @ \$200/day	1,600.00
	S. Creelman	6.00 days @ \$190/day	1,140.00
	V. Hutchings	5.00 days @ \$225/day	1,125.00
	H. Norris	1.00 days @ \$260/day	260.00
	S. Patterson	2.00 days @ \$260/day	520.00
	S. Chandler	17.00 days @ \$260/day	4,420.00
	S. Chandler (+18)	7.00 days @ \$ 30/day	210.00
	J. Lund	2.00 days @ \$260/day	<u>520.00</u>
			84,202.50
iii)	Geochemical Analysis (faa Au + 8 element I.C.P. + assays)		
	Soils	1,427 samples @ \$11.30 each	\$16,125.10
	Silts	4 samples @ \$11.30 each	45.20
	Rocks	136 samples @ \$13.75 each	1,870.00
	Core	415 samples @ \$13.75 each	5,706.25
	Au Assays	14 assays @ \$ 8.80 each	123.20
	Au-Ag Assays	22 assays @ \$11.51 each	<u>253.22</u>
			24,122.97
iv)	Helicopter (Hughes 500D)		
		56.4 hours @ \$705/hour	39,762.00
v)	Room & Board	392.5 man days @ \$60/day (includes pilot)	23,550.00

vi)	Rentals (binocular microscope, radios, rock saw, generator, field equipment, truck, ATV, copier, etc. - split)	10,474.87
vii)	Consumables (sample bags, tags, copies, paint, flagging, etc.)	5,904.62
viii)	Fixed Wing Support (split)	7,906.64
ix)	Maps and Supplies	1,259.21
x)	Expediting (split)	1,459.78
xi)	Telephone	39.28
xii)	Travel (split)	947.24
xiii)	Camp Costs (fuel, etc. - split)	4,020.68
xiv)	Geophysics (split)	246.63
xv)	Courier Charges (split)	160.54
xvi)	Drilling	50,059.85
xvii)	Mobilization/Demobilization (split)	701.55
xiv)	Report (writing, drafting, processing, copying)	<u>13,000.00</u>
	TOTAL EXPENDITURES:	<u>\$268,429.39</u>

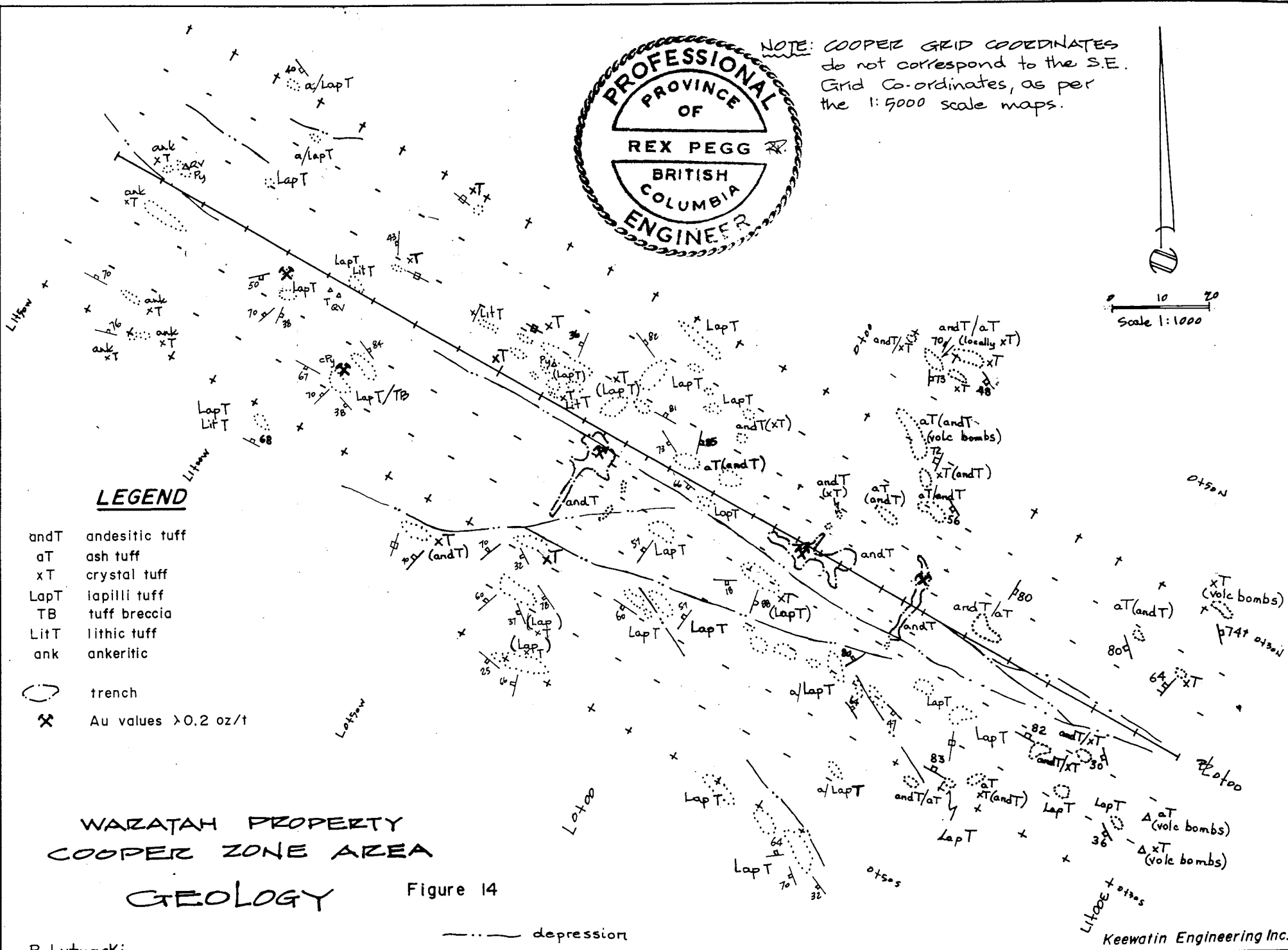
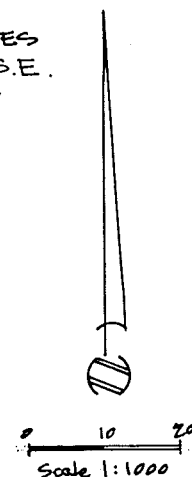


APPENDIX 4

Cooper Zone Figures



NOTE: COOPER GRID COORDINATES do not correspond to the S.E. Grid Co-ordinates, as per the 1:5000 scale maps.



LEGEND

- andT andesitic tuff
- aT ash tuff
- xT crystal tuff
- LapT lapilli tuff
- TB tuff breccia
- LitT lithic tuff
- ank ankeritic
- trench
- x Au values >0.2 oz/t

**WAZAJAH PROPERTY
COOPER ZONE AREA**

GEOLOGY

Figure 14

— — — — — depression

LEGEND

- alt alteration
- andT andesitic tuff
- goss gossan
- jtd jointed
- prop propylitic
- shr shear
- silic silicified
- str stringers
- vnlt veinlets
- xT crystal tuff

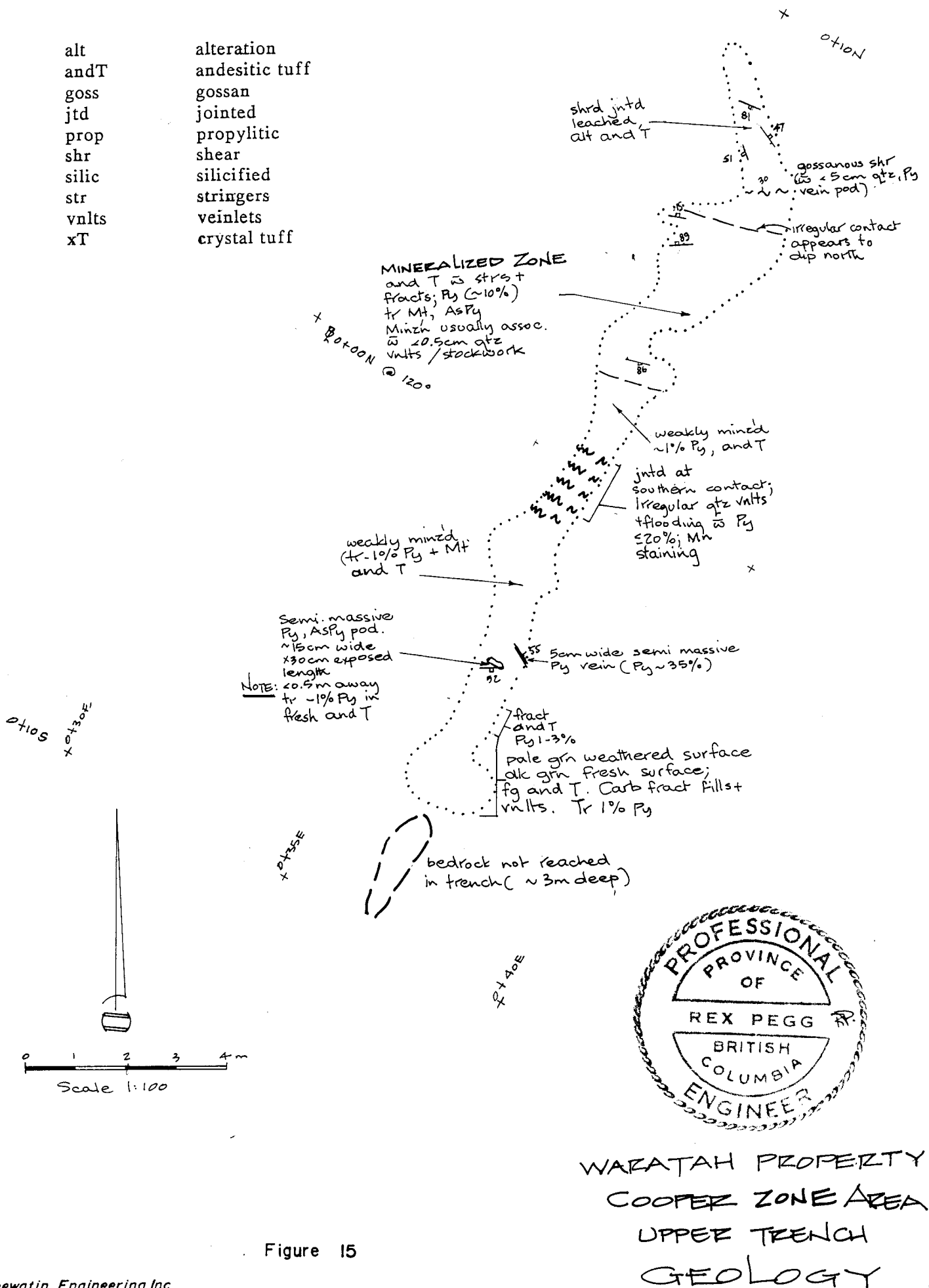


Figure 15



01700
01700 +

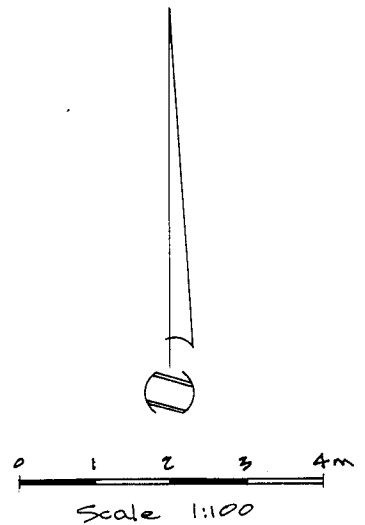
01700
01700 +

0135E

0140E

0110N

Sample No.	Width (m)	ppb Au	oz/t Au	ppm Cu	ppm As
90T113C-017	1.10	2		84	1
-018	1.00	4		84	1
-019	0.70	10		43	1
-020	0.75	454		162	1
-021	0.80	302		122	1
-022	1.00	3		93	1
-023	1.00	1		99	1
-024	1.00	4		818	1
-025	1.00	2		63	20
-026	0.80	19		139	1
-027	1.00	2		74	1
-028	1.00	1,160	0.033	233	111
-029	1.00	3,100	0.091	234	26
-030	0.70	740		269	1
-031	0.70	4,000	0.141	637	218
-032	1.00	1,100	0.034	296	1
-033	1.00	15,000	0.443	189	1
-034	1.00	164		106	1

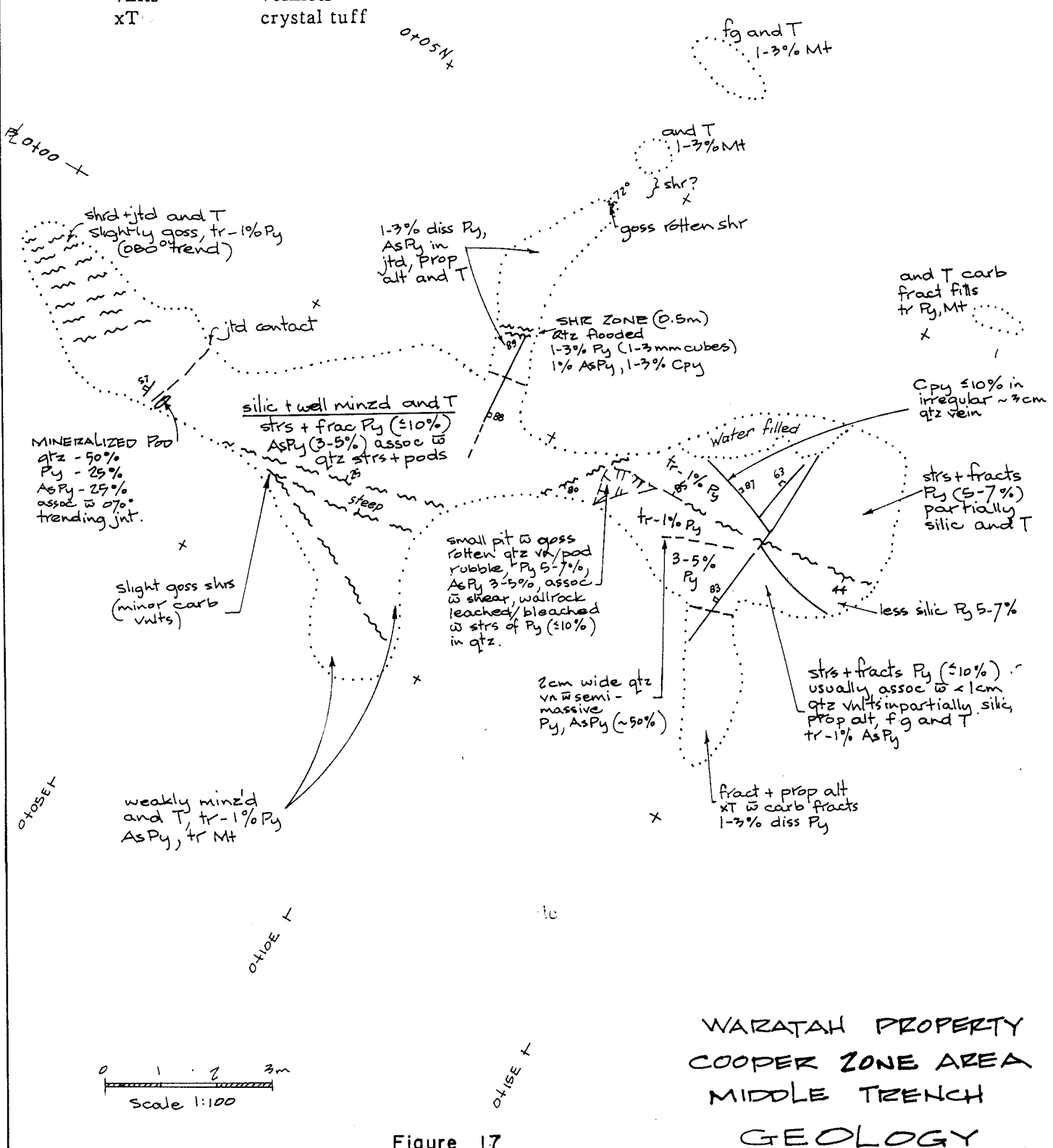


WARATAH PROPERTY
COOPER ZONE AREA
UPPER TRENCH
ROCK SAMPLE LOCATIONS

Figure 16

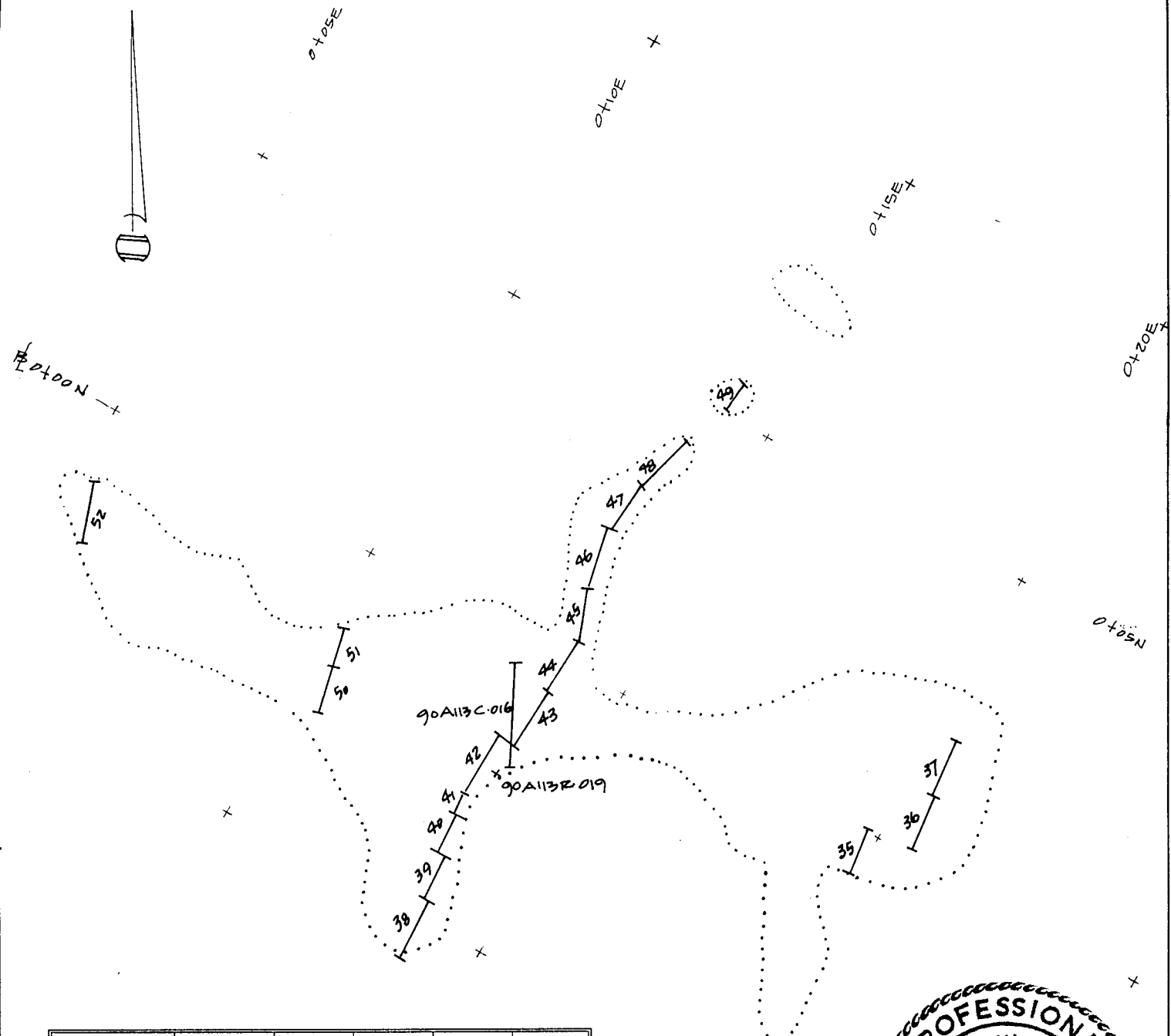
LEGEND

alt	alteration
andT	andesitic tuff
goss	gossan
jtd	jointed
prop	propylitic
shr	shear
silic	silicified
str	stringers
vnlt	veinlets
xT	crystal tuff



**WARATAH PROPERTY
COOPER ZONE AREA
MIDDLE TRENCH
GEOLOGY**

Figure 17



Sample No.	Width (m)	ppb Au	oz/t Au	ppm Cu	ppm As
90A113C-016	2.00		0.209	327	1,840
90A113R-019	grab		0.07	735	400
90T113C-035	0.80	1,580	0.047	567	1
-036	1.00	2,230	0.080	569	256
-037	1.00	10,000	0.279	1,270	862
-038	1.10	134		86	1
-039	0.80	192		128	1
-040	0.70	46		91	1
-041	0.50	82		128	1
-042	1.00	7,000	0.215	704	1,889
-043	1.05	3,150	0.105	665	2,672
-044	1.00	12,000	0.443	1,941	3,911
-045	1.20	59		127	1
-046	1.00	74		577	26
-047	1.00	10		167	1
-048	1.20	9		189	264
-049	0.55	6		77	1
-050	0.70	22,500	0.709	5,689	13,634
-051	0.75	17,500	0.478	1,680	10,707
-052	1.20	575		224	369



Scale 1:100

WARATAH PROPERTY
COOPER ZONE AREA
MIDDLE TRENCH

ROCK SAMPLES LOCATIONS

Figure 18

LEGEND

- alt alteration
- andT andesitic tuff
- goss gossan
- jtd jointed
- prop propylitic
- shr shear
- silic silicified
- str stringers
- vnlts veinlets
- xT crystal tuff

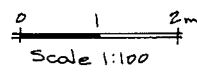
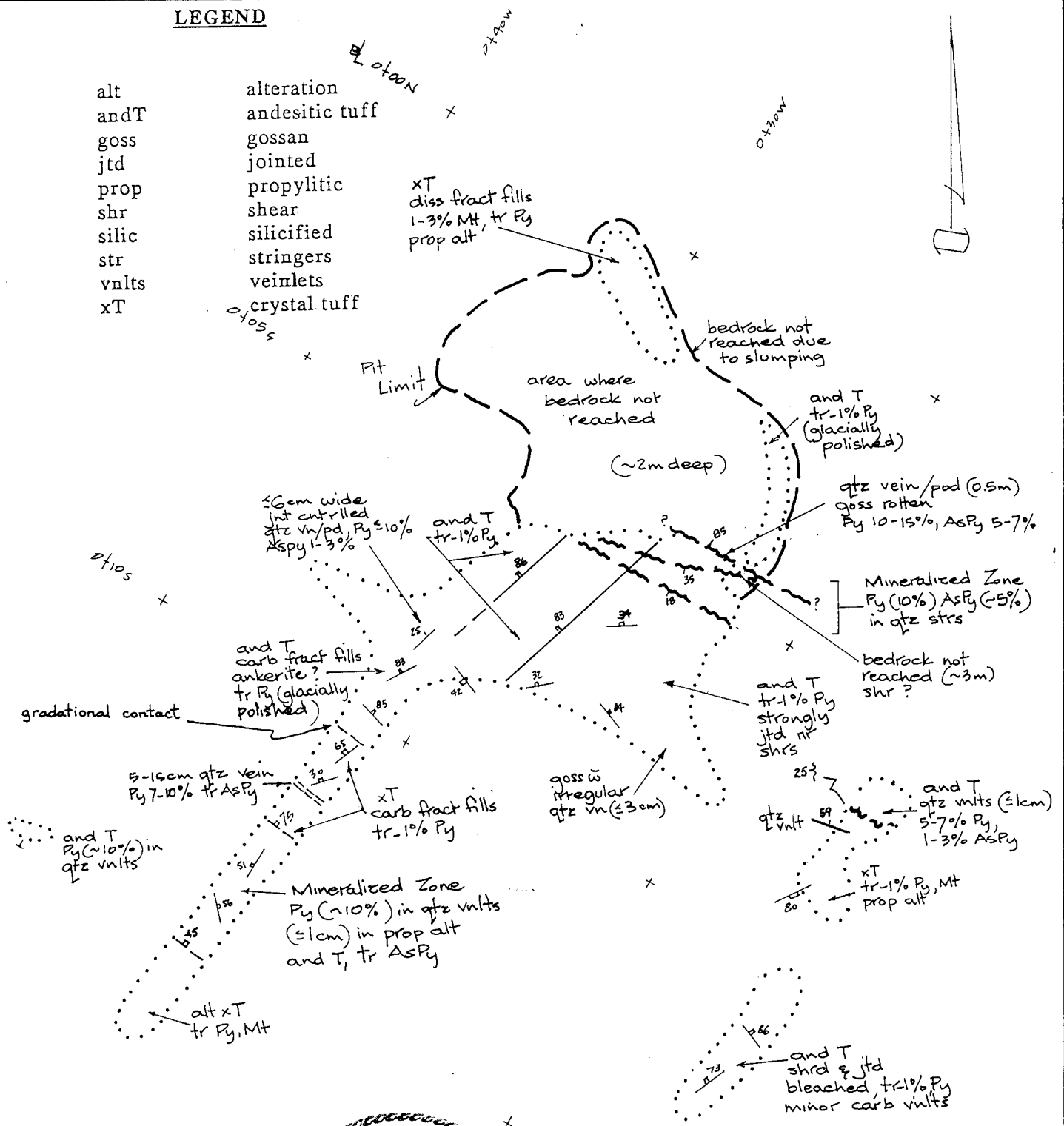
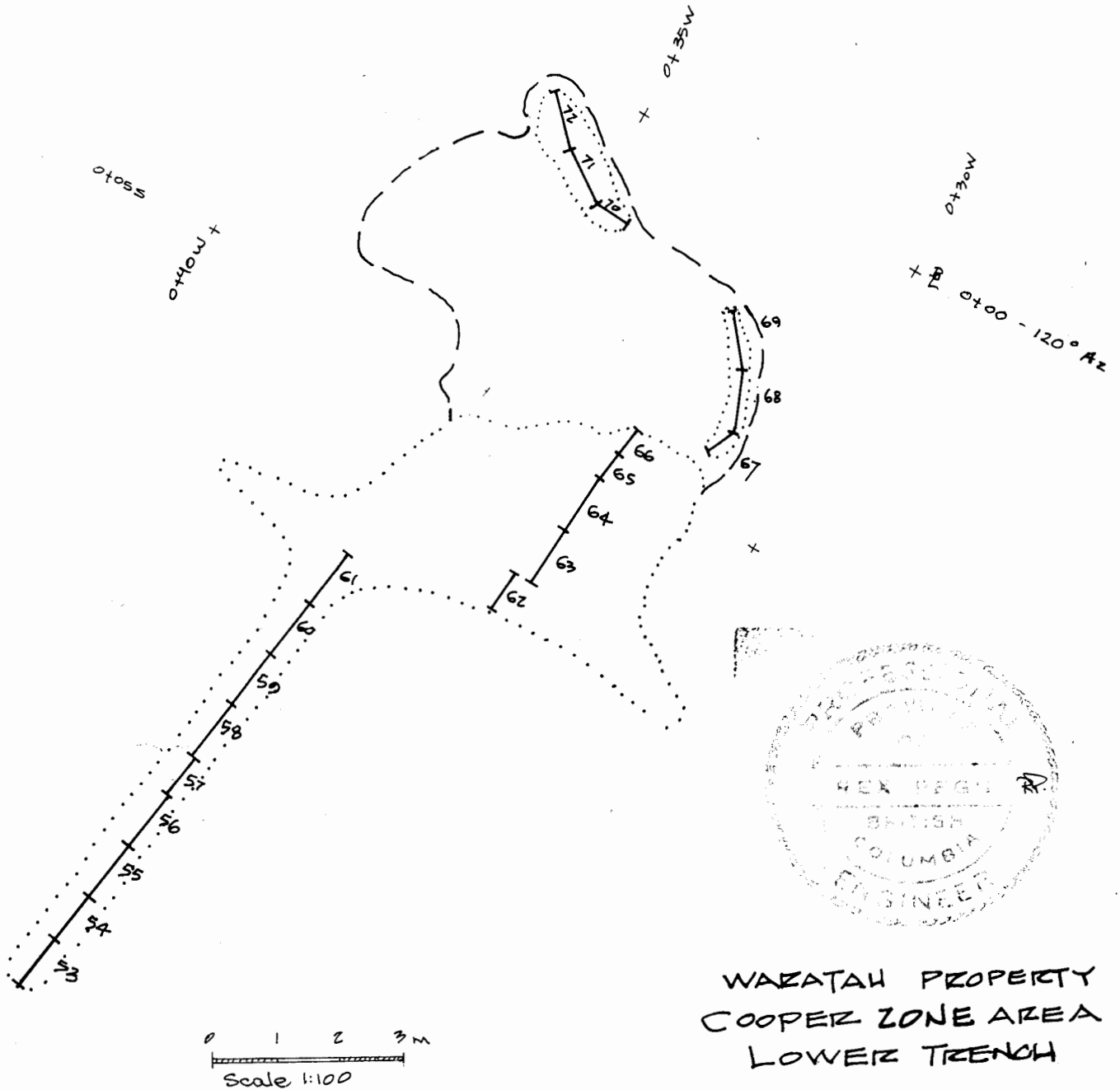


Figure 19

**WAZATAH PROPERTY
COOPER ZONE AREA
LOWER TRENCH
GEOLOGY**

Sample No.	Width (m)	ppb Au	oz/t Au	ppm Cu	ppm As
90T113C-053	1.00	211		86	96
-054	0.80	44		65	1
-055	1.00	1,390	0.041	168	1
-056	1.00	442		235	1
-057	0.70	300		151	1
-058	1.00	540		135	1
-059	1.00	723		136	54
-060	1.10	21		110	24
-061	1.10	258		331	117
-062	0.75	1,390	0.040	254	26
-063	1.00	1,000	0.028	155	55
-064	1.00	412		282	68
-065	0.50	2,390	0.071	426	123
-066	0.50	100,000	3.033	1,100	158
-067	0.50	7,000	0.199	225	30
-068	1.00	3,210	0.141	156	26
-069	1.00	1,000	0.029	74	10
-070	0.60	303		66	7
-071	1.00	100		46	13
-072	1.00	41		49	1



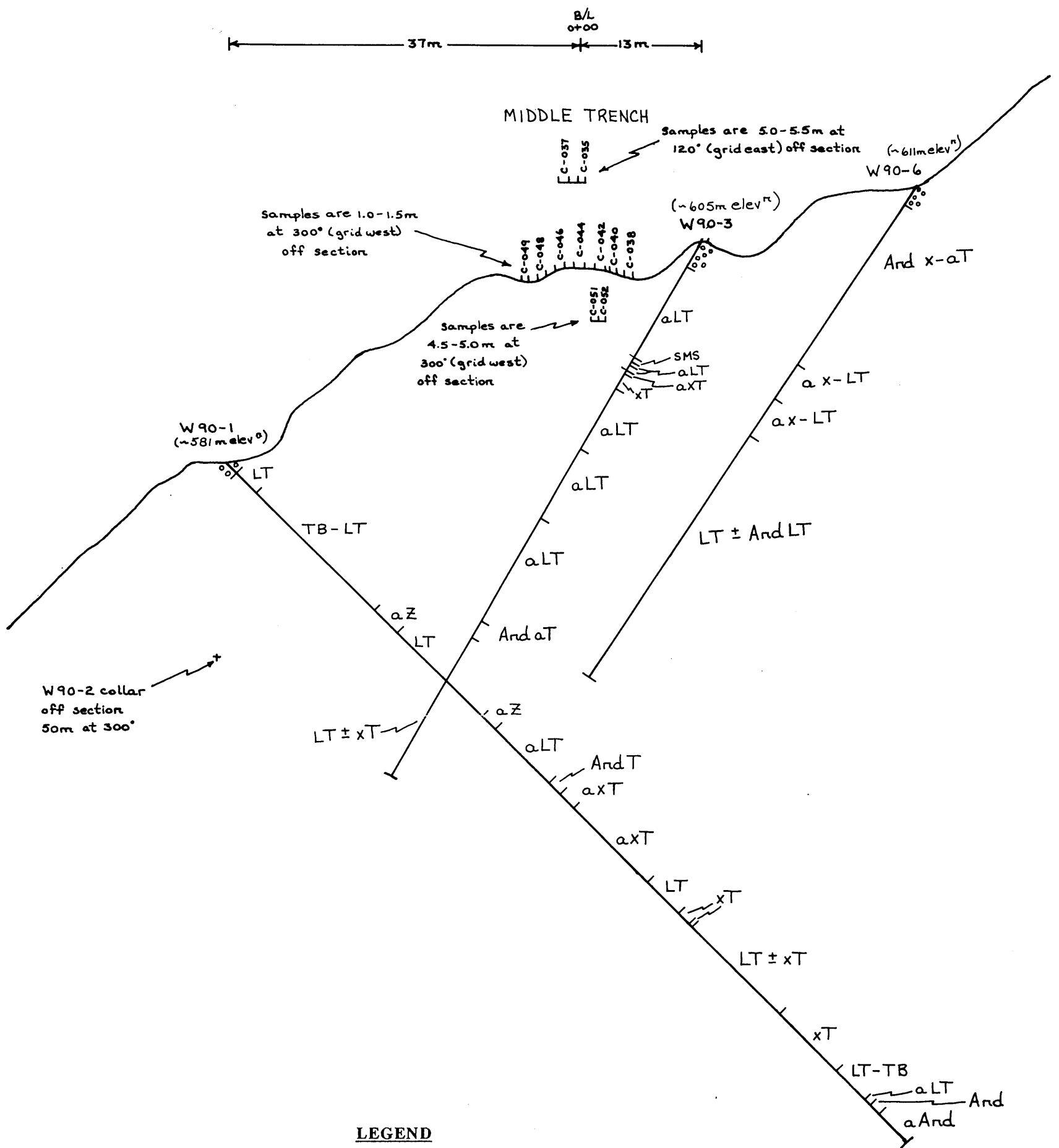
WAZATAH PROPERTY
COOPER ZONE AREA
LOWER TRENCH
ROCK SAMPLE LOCATIONS

Figure 20

NE

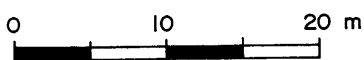
SW

Note: W90-3+6 are approx. 5m at 300° (grid west) off section.



LEGEND

- a altered
- And andesite
- And T andesitic tuff
- aT ash tuff
- aZ altered zone (sericitic, silica and carbonate)
- LT lapilli tuff
- SMS semi-massive sulphides
- TB tuff breccia
- xT crystal tuff
- o o o overburden

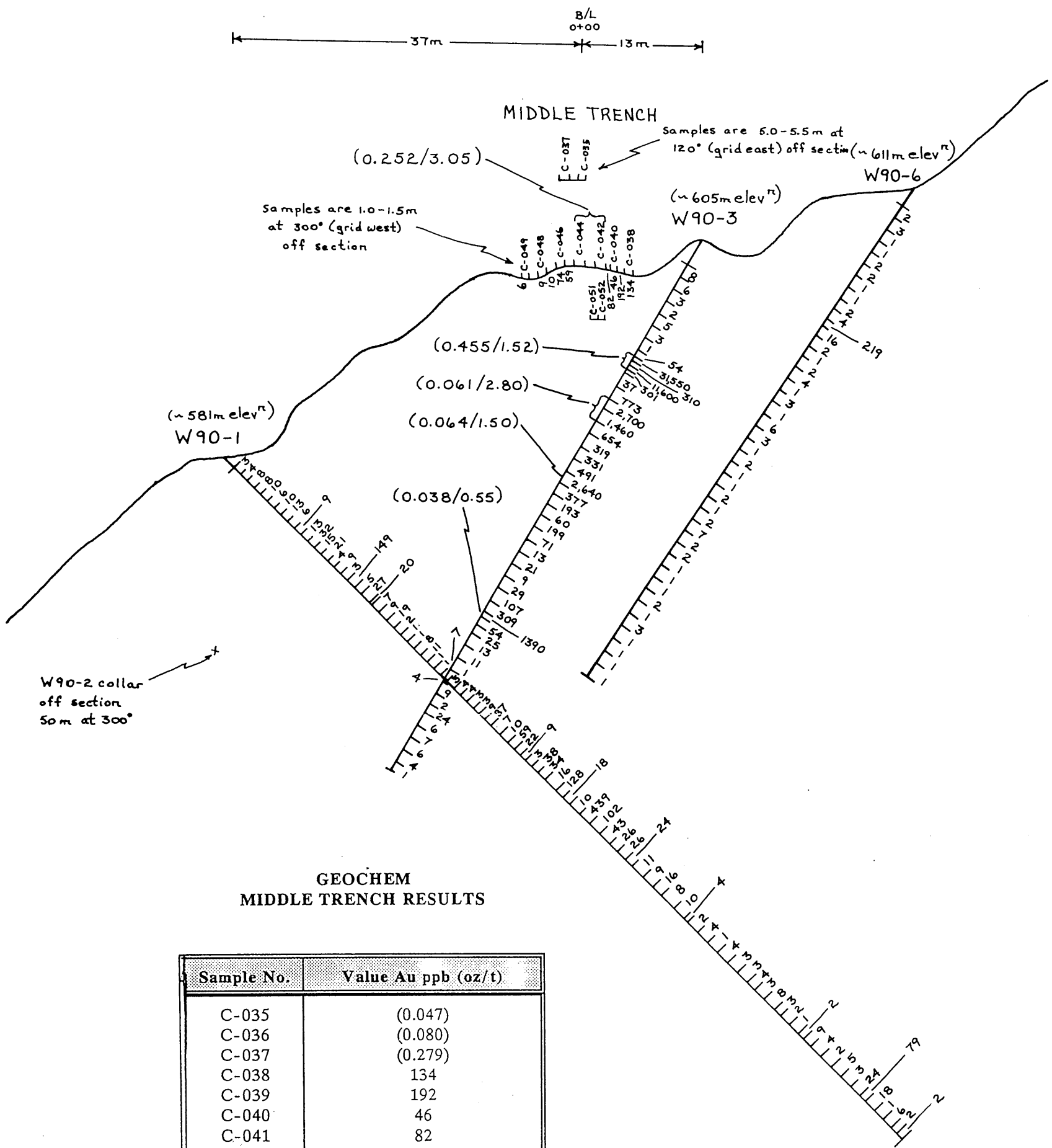


WARATAH PROJECT	
COOPER ZONE DRILL SECTION W90-1, W90-3 AND W90-6 (LOOKING SOUTHEAST) GEOLOGY	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL.:
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 21	

NE

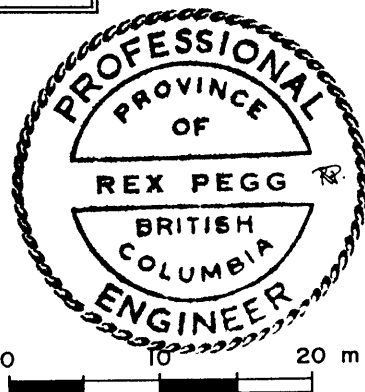
SW

Note: W90-3+6 are approx. 5m at 300° (grid west) off section



**GEOCHEM
MIDDLE TRENCH RESULTS**

Sample No.	Value Au ppb (oz/t)
C-035	(0.047)
C-036	(0.080)
C-037	(0.279)
C-038	134
C-039	192
C-040	46
C-041	82
C-042	(0.215)
C-043	(0.105)
C-044	(0.443)
C-045	59
C-046	74
C-047	10
C-048	9
C-049	6
C-050	(0.709)
C-051	(0.478)
(0.252/3.05)	Weighted Average Grade (Au-oz/t/Length, m)

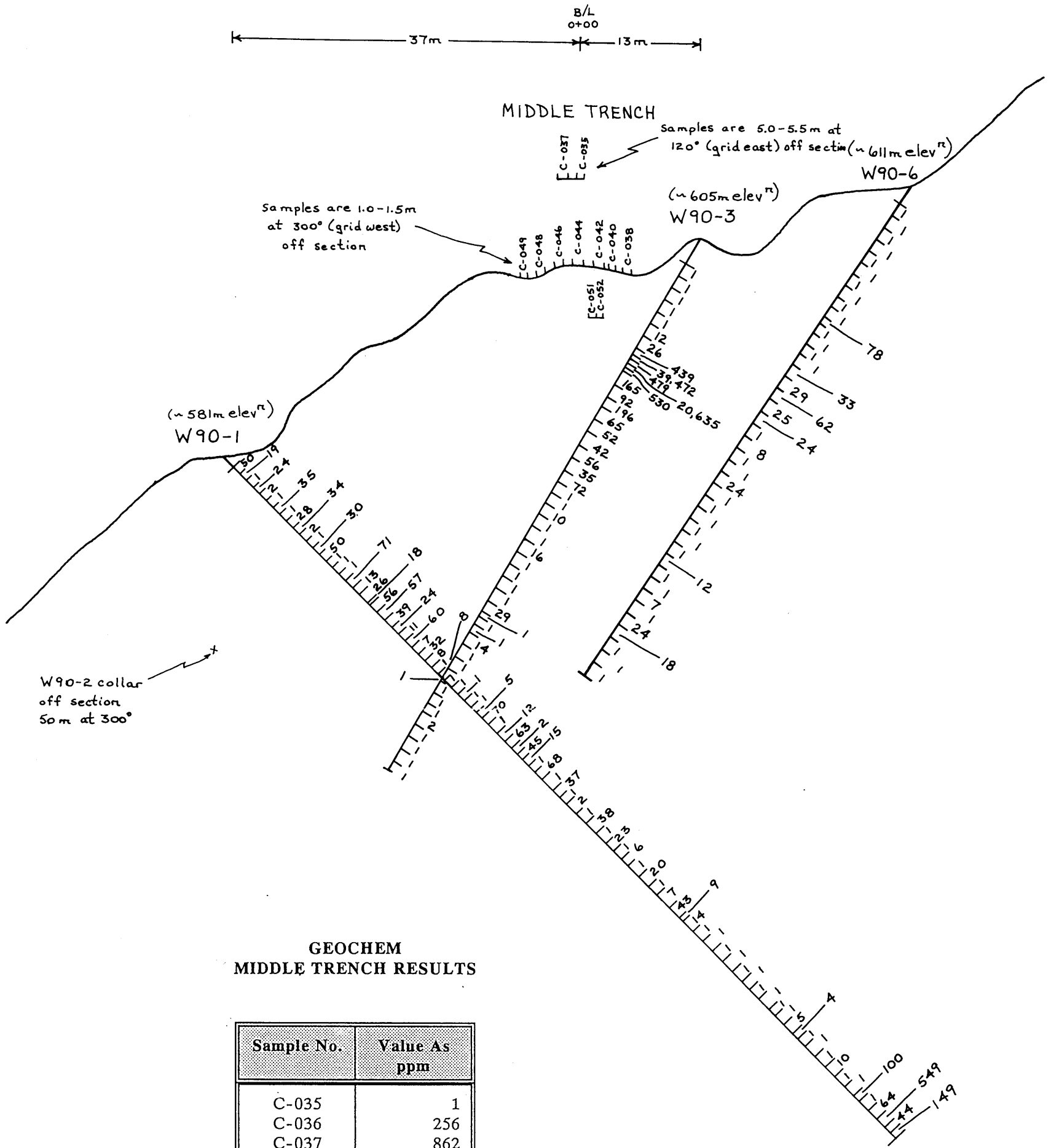


WARATAH PROJECT	
COOPER ZONE DRILL SECTION W90-1, W90-3 AND W90-6 (LOOKING SOUTHEAST)	
Au (ppb)	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL:
SCALE: 1:500	
<i>Keewatin Engineering Inc.</i> FIG. No.22	

NE

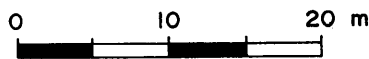
SW

Note: W90-3+6 are approx. 5m at 300° (grid west) off section



**GEOCHEM
MIDDLE TRENCH RESULTS**

Sample No.	Value As ppm
C-035	1
C-036	256
C-037	862
C-038	1
C-039	1
C-040	1
C-041	1
C-042	1,889
C-043	2,672
C-044	3,911
C-045	1
C-046	26
C-047	1
C-048	264
C-049	1
C-050	13,634
C-051	10,707

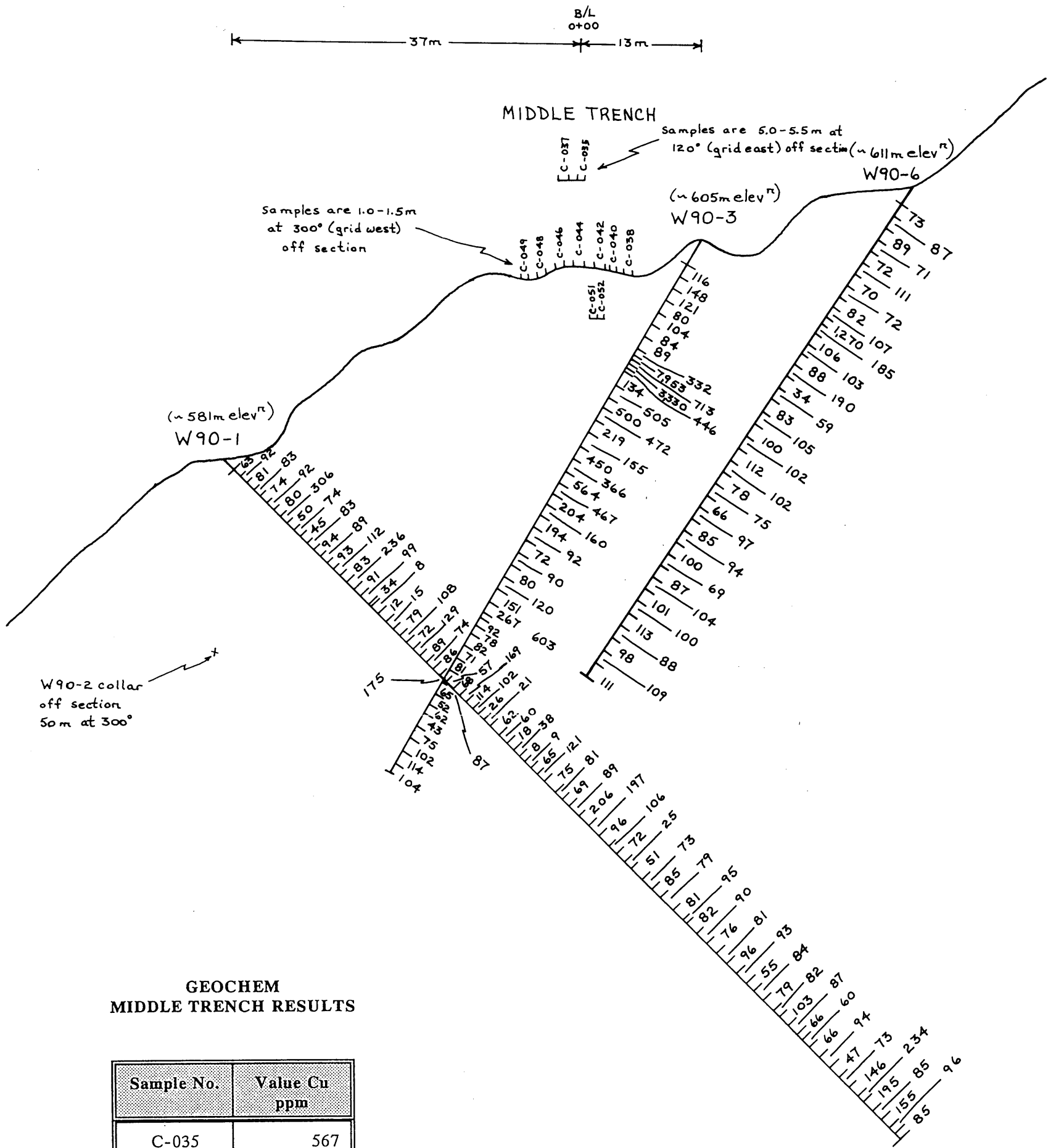


WARATAH PROJECT	
COOPER ZONE DRILL SECTION W90-1, W90-3 AND W90-6 (LOOKING SOUTHEAST)	
As (ppm)	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL:
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 23	

NE

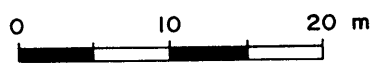
SW

Note: W90-3+6 are approx. 5m at 300° (grid west) off section



**GEOCHEM
MIDDLE TRENCH RESULTS**

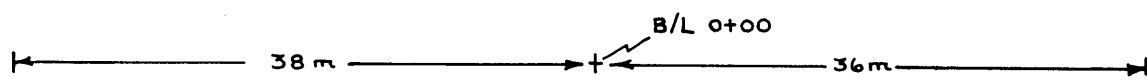
Sample No.	Value Cu ppm
C-035	567
C-036	569
C-037	1,270
C-038	86
C-039	128
C-040	91
C-041	128
C-042	704
C-043	665
C-044	1,941
C-045	127
C-046	577
C-047	167
C-048	189
C-049	77
C-050	5,689
C-051	1,680



WARATAH PROJECT	
COOPER ZONE DRILL SECTION W90-1, W90-3 AND W90-6 (LOOKING SOUTHEAST)	
Cu (ppm)	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PRD. GEOL.
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 24	

NE

SW



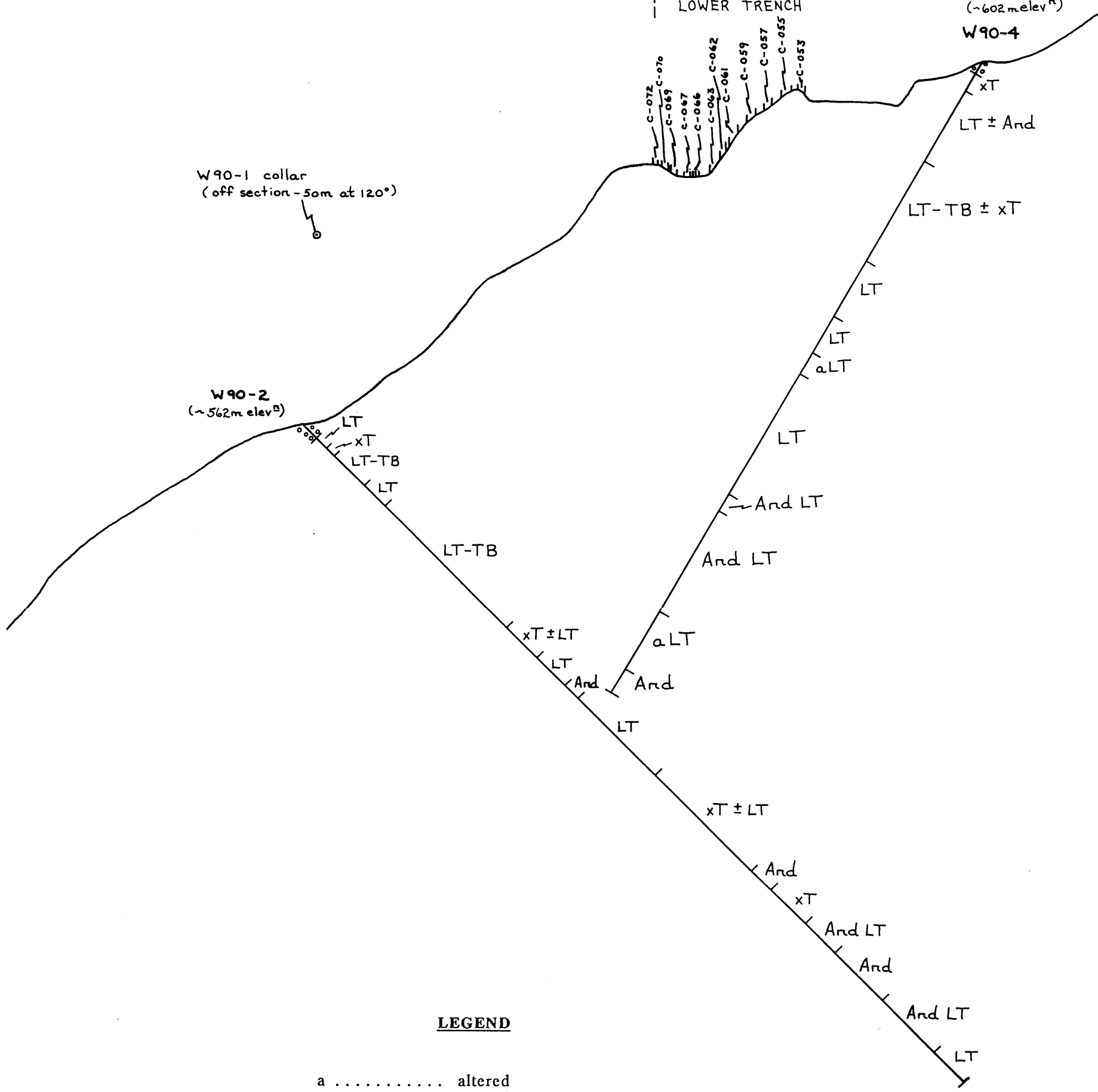
LOWER TRENCH

W90-4 (~602m elevⁿ)



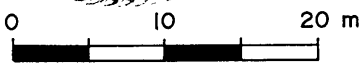
W90-1 collar (off section - 50m at 120°)

W90-2 (~562m elevⁿ)



LEGEND

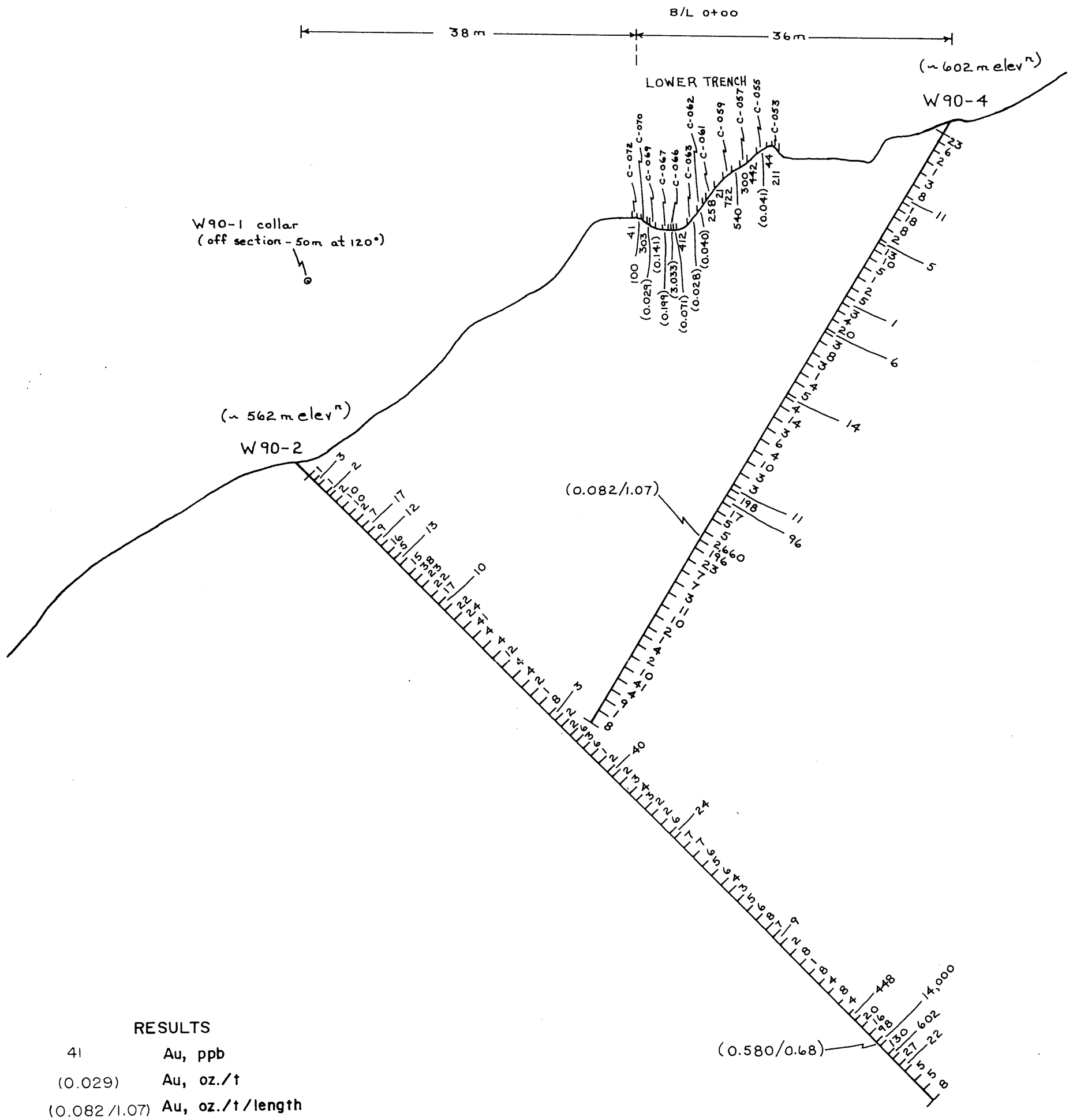
- a altered
- And andesite
- And T andesitic tuff
- aT ash tuff
- aZ altered zone (sericitic, silica and carbonate)
- LT lapilli tuff
- SMS semi-massive sulphides
- TB tuff breccia
- xT crystal tuff
- o/o/o overburden



WARATAH PROJECT	
COOPER ZONE DRILL SECTION W90-2 AND W90-4 (LOOKING SOUTHEAST) GEOLOGY	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL:
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 25	

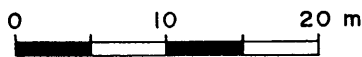
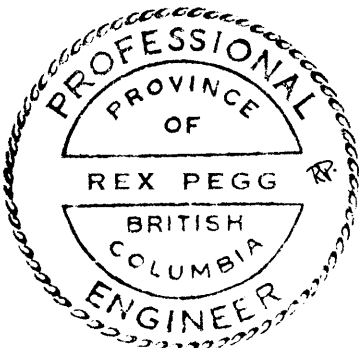
NE

SW



RESULTS

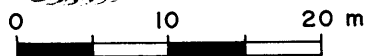
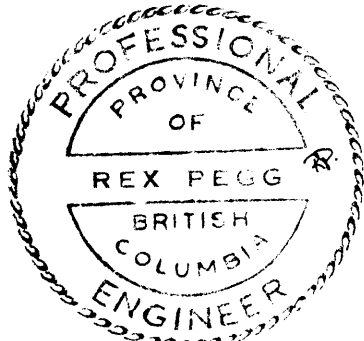
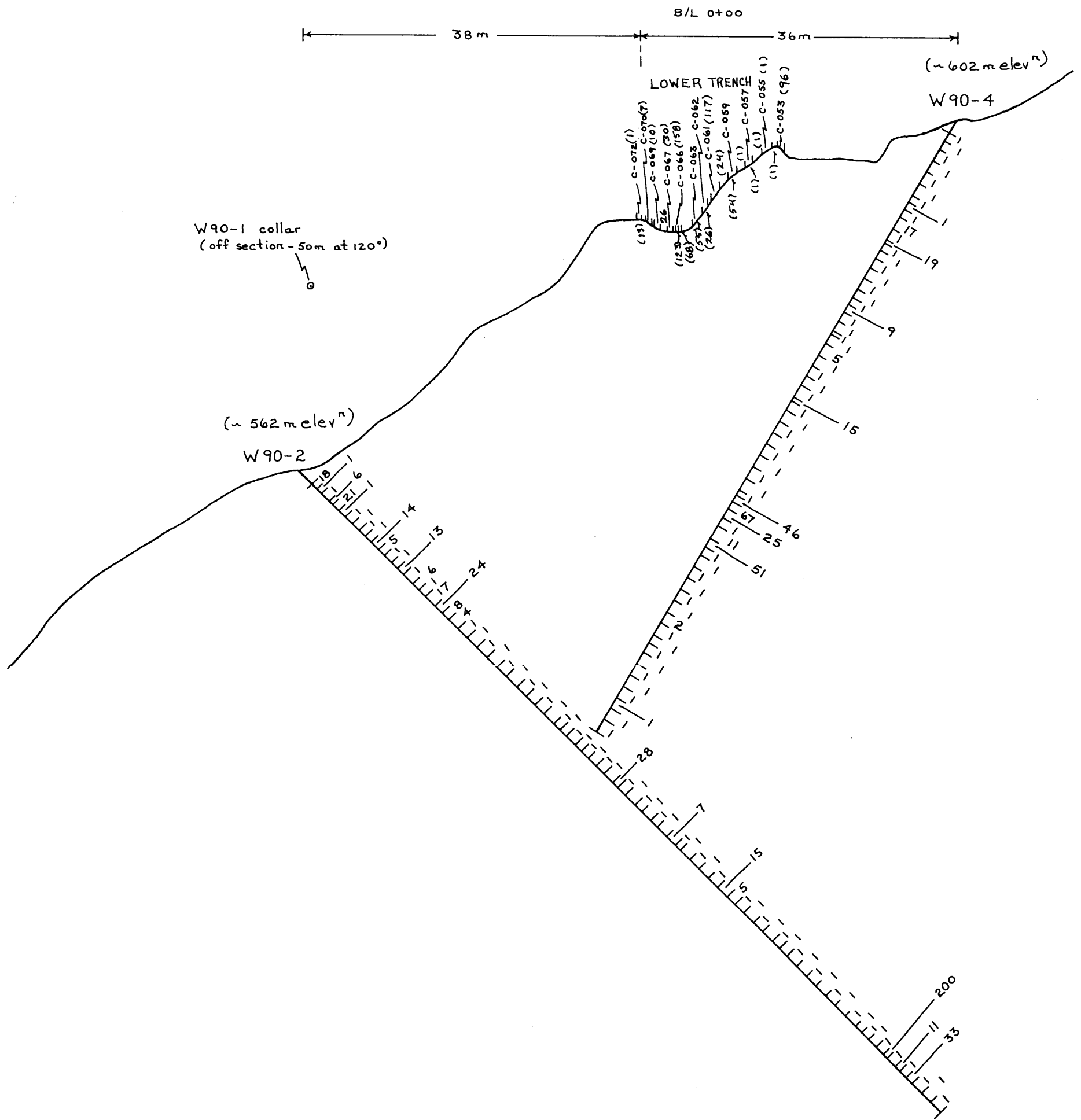
- 41 Au, ppb
- (0.029) Au, oz./t
- (0.082 / 1.07) Au, oz./t / length



WARATAH PROJECT	
COOPER ZONE DRILL SECTION W90-2 AND W90-4 (LOOKING SOUTHEAST)	
Au (ppb)	
DATE: Jan. 1991	NTS: 104B / 10W
PROJECT: 113	PRJ. GEDL.
SCALE: 1:500	
Keewatin Engineering Inc.	FIG. No. 26

NE

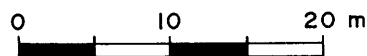
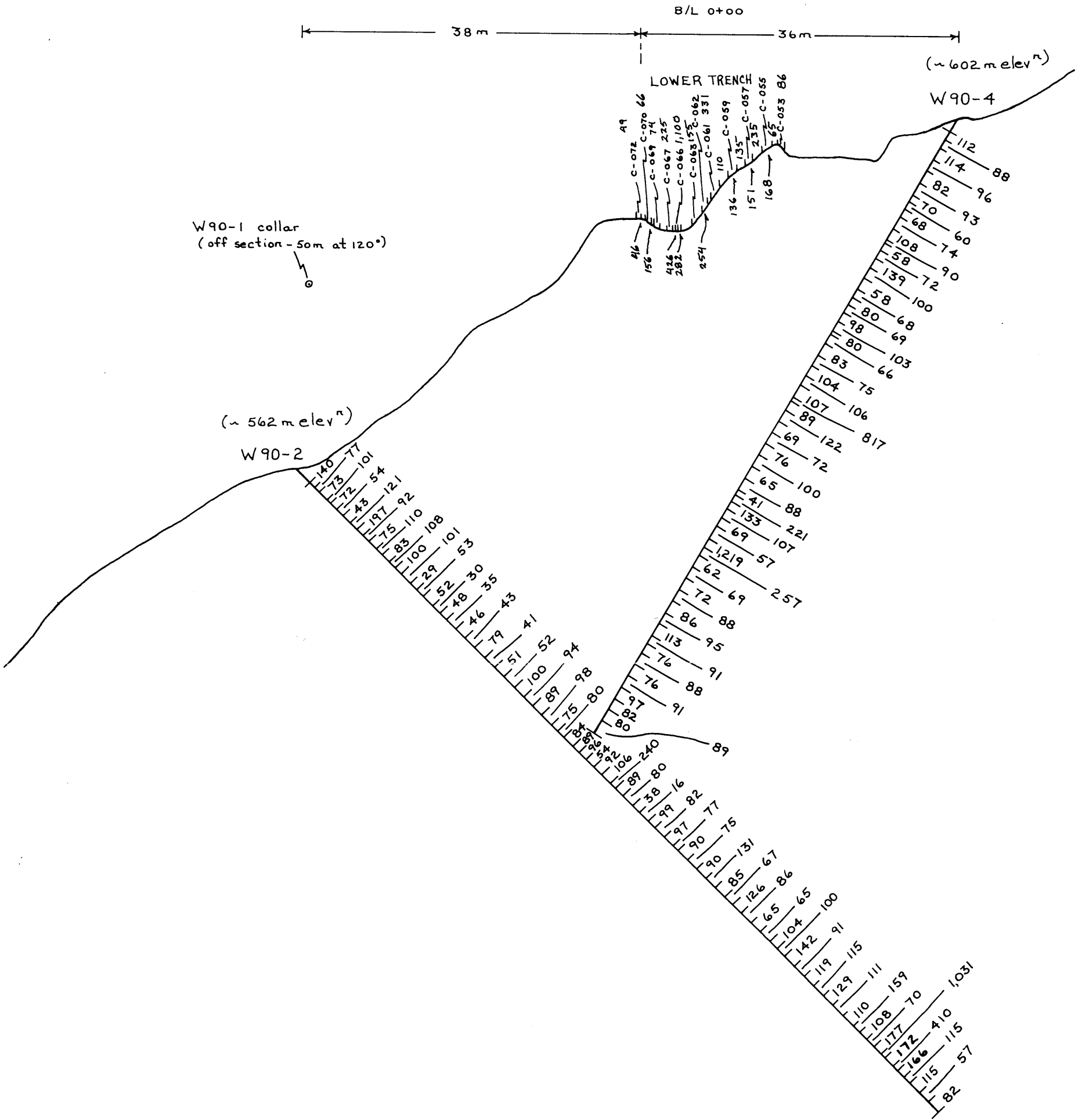
SW



WARATAH PROJECT	
COOPER ZONE DRILL SECTION W90-2 AND W90-4 (LOOKING SOUTHEAST)	
As (ppm)	
DATE: Jan. 1991	NTS: 104B / 10W
PROJECT: 113	PRJ. GEOL.
SCALE: 1:500	
<i>Keewatin Engineering Inc.</i> FIG. No: 27	

NE

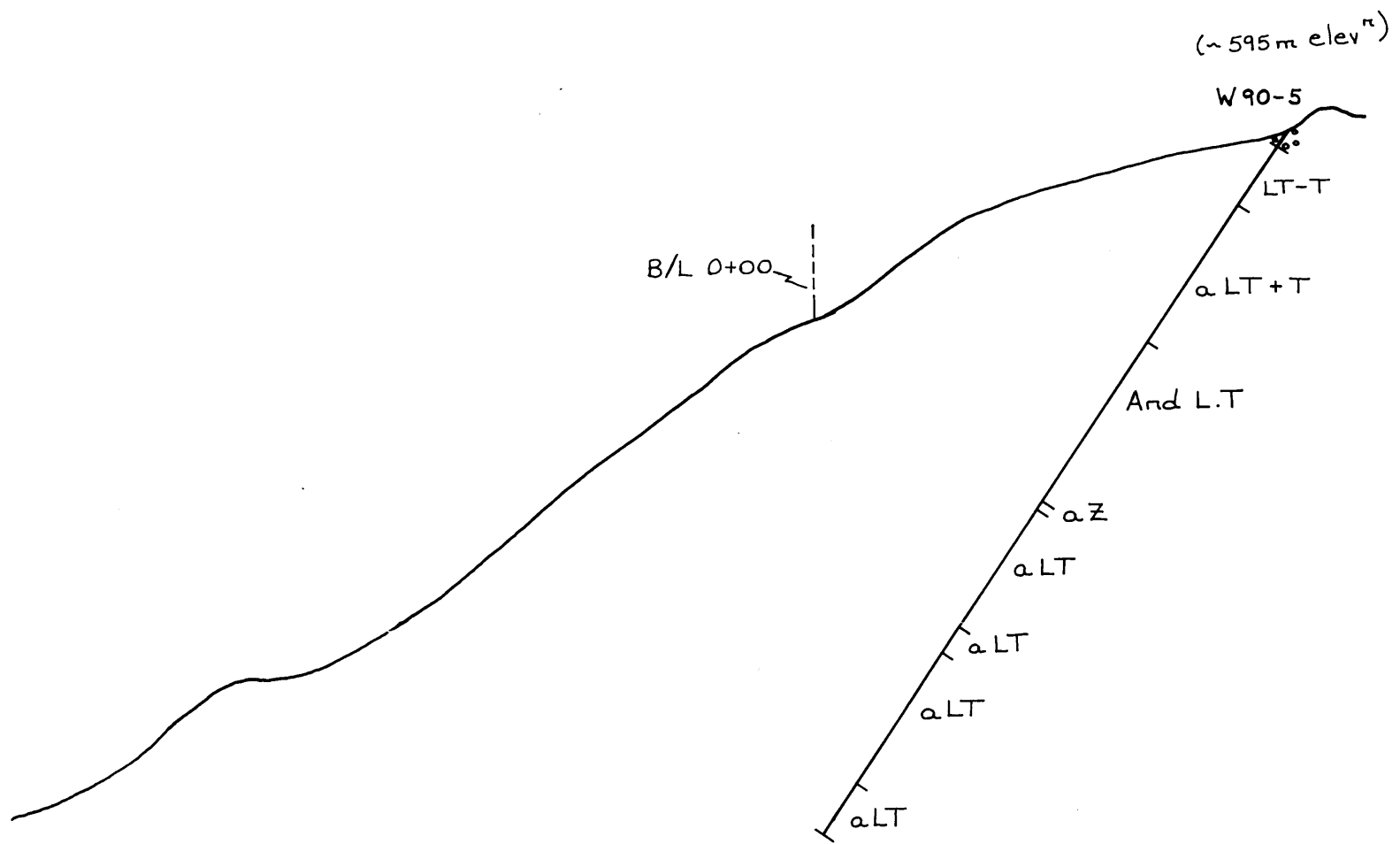
SW



WARATAH PROJECT	
COOPER ZONE DRILL SECTION W90-2 AND W90-4 (LOOKING SOUTHEAST)	
Cu (ppm)	
DATE: Jan. 1991	NTS: 104B / 10W
PROJECT: 113	PRJ. GEOL.
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 28	

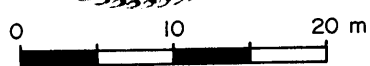
NE

SW



LEGEND

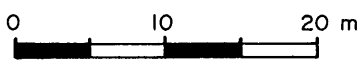
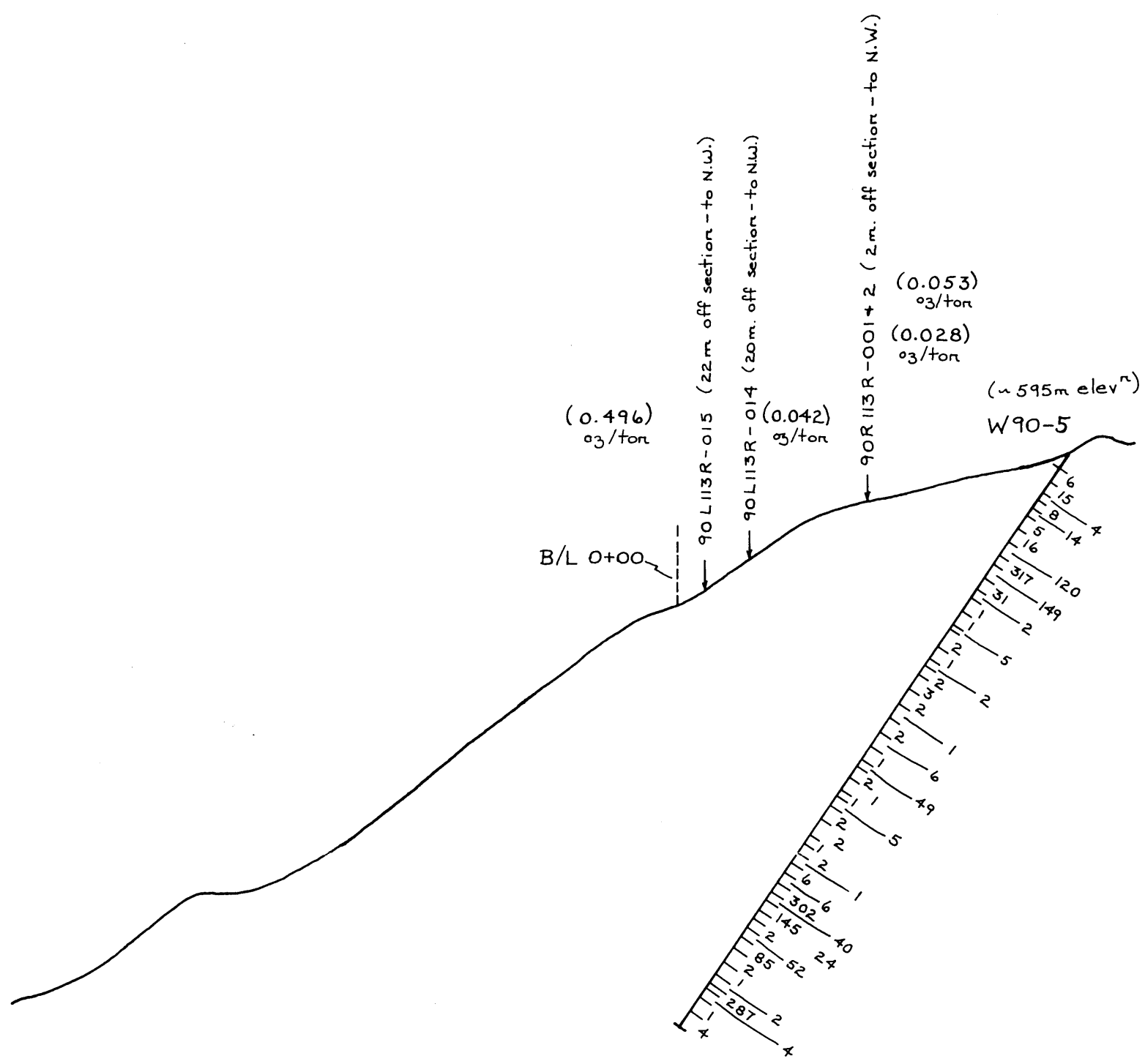
- a altered
- And andesite
- And T andesitic tuff
- aT ash tuff
- aZ altered zone (sericitic, silica and carbonate)
- LT lapilli tuff
- SMS semi-massive sulphides
- TB tuff breccia
- xT crystal tuff
- o o o o overburden



WARATAH PROJECT	
COOPER ZONE	
DRILL SECTION W90-5 (LOOKING SOUTHEAST)	
GEOLOGY	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PRDJ. GEOL:
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 29	

NE

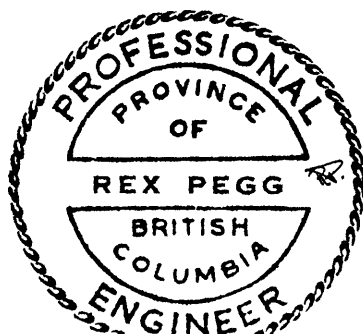
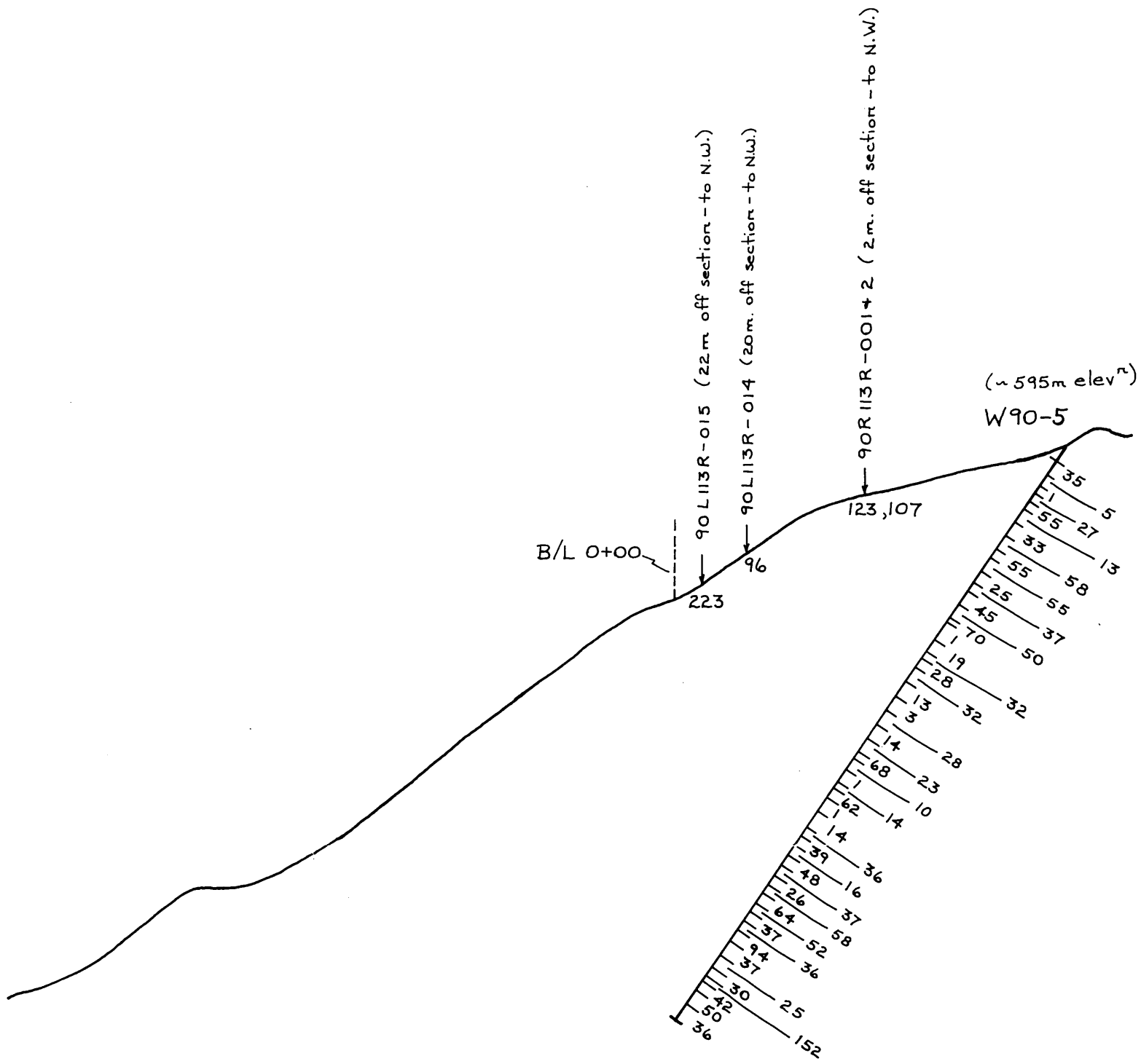
SW



WARATAH PROJECT	
COOPER ZONE	
DRILL SECTION W90-5 (LOOKING SOUTHEAST)	
Au (ppb)	
DATE: Jan. 1991	NTS: 1048/10W
PROJECT: 113	PRDJ. GEOL.
SCALE: 1:500	
Keewatin Engineering Inc.	FIG. No. 30

NE

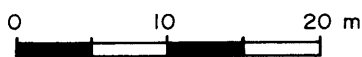
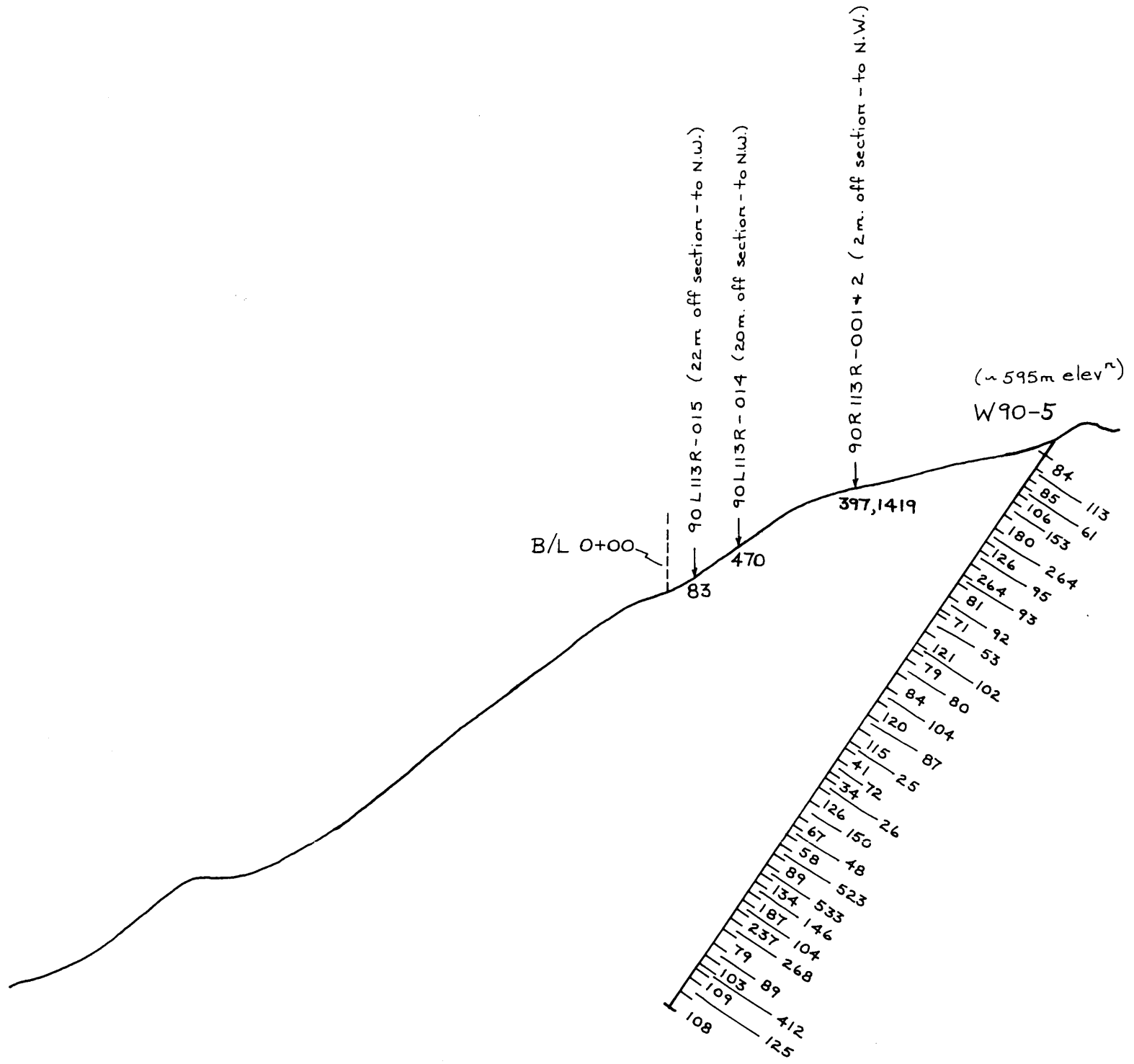
SW



WARATAH PROJECT	
COOPER ZONE	
DRILL SECTION W90-5 (LOOKING SOUTHEAST)	
As (ppm)	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL.
SCALE: 1 : 500	
Keewatin Engineering Inc. FIG. No. 31	

NE

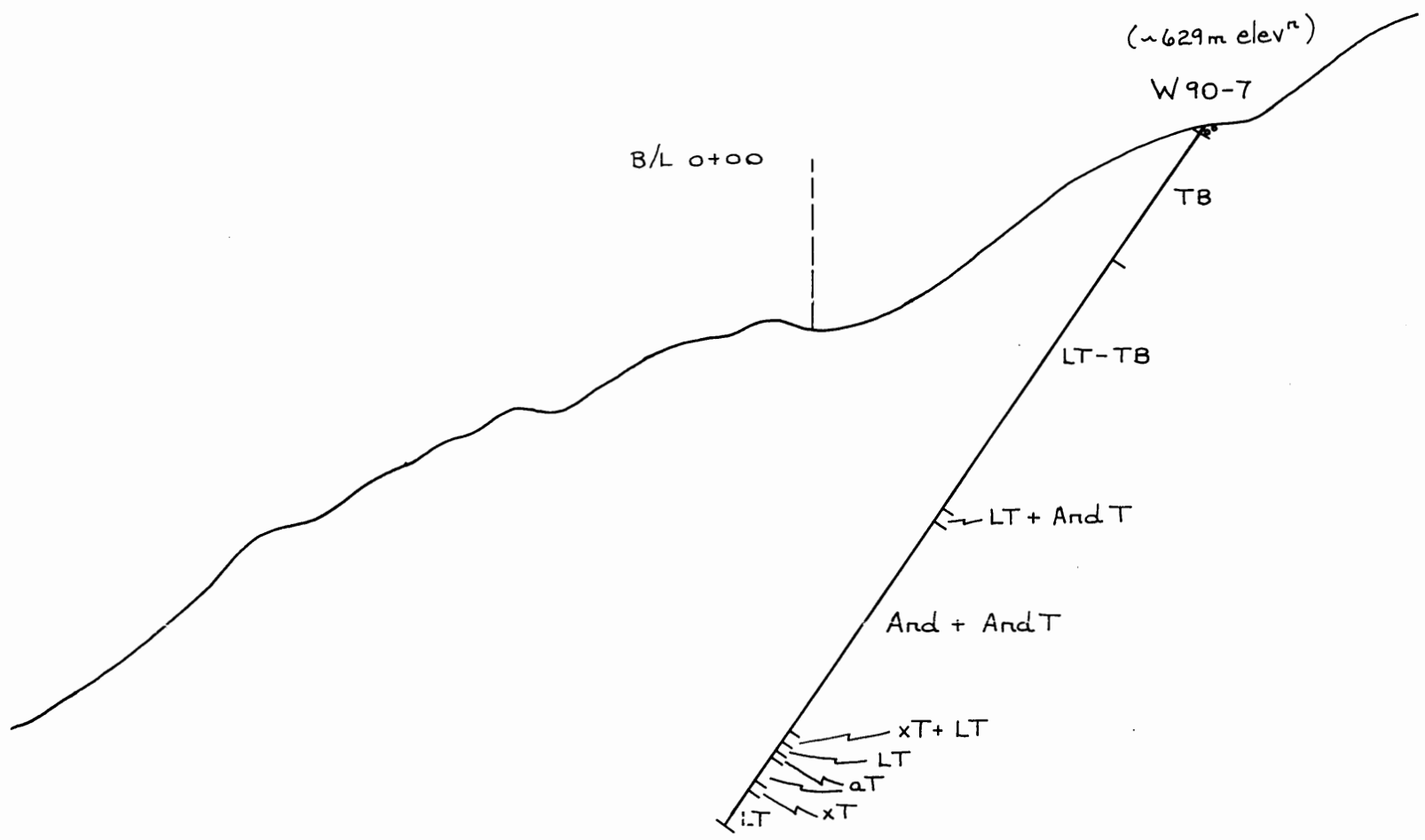
SW



WARATAH PROJECT	
COOPER ZONE	
DRILL SECTION W90-5 (LOOKING SOUTHEAST)	
Cu (ppm)	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL:
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 32	

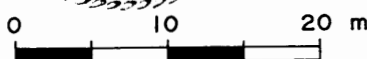
NE

SW



LEGEND

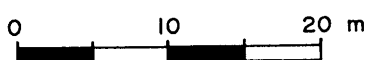
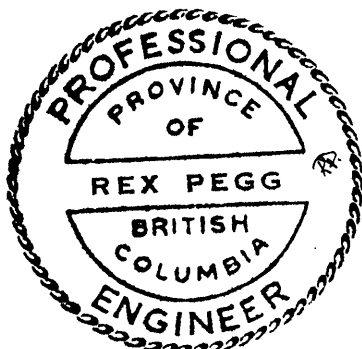
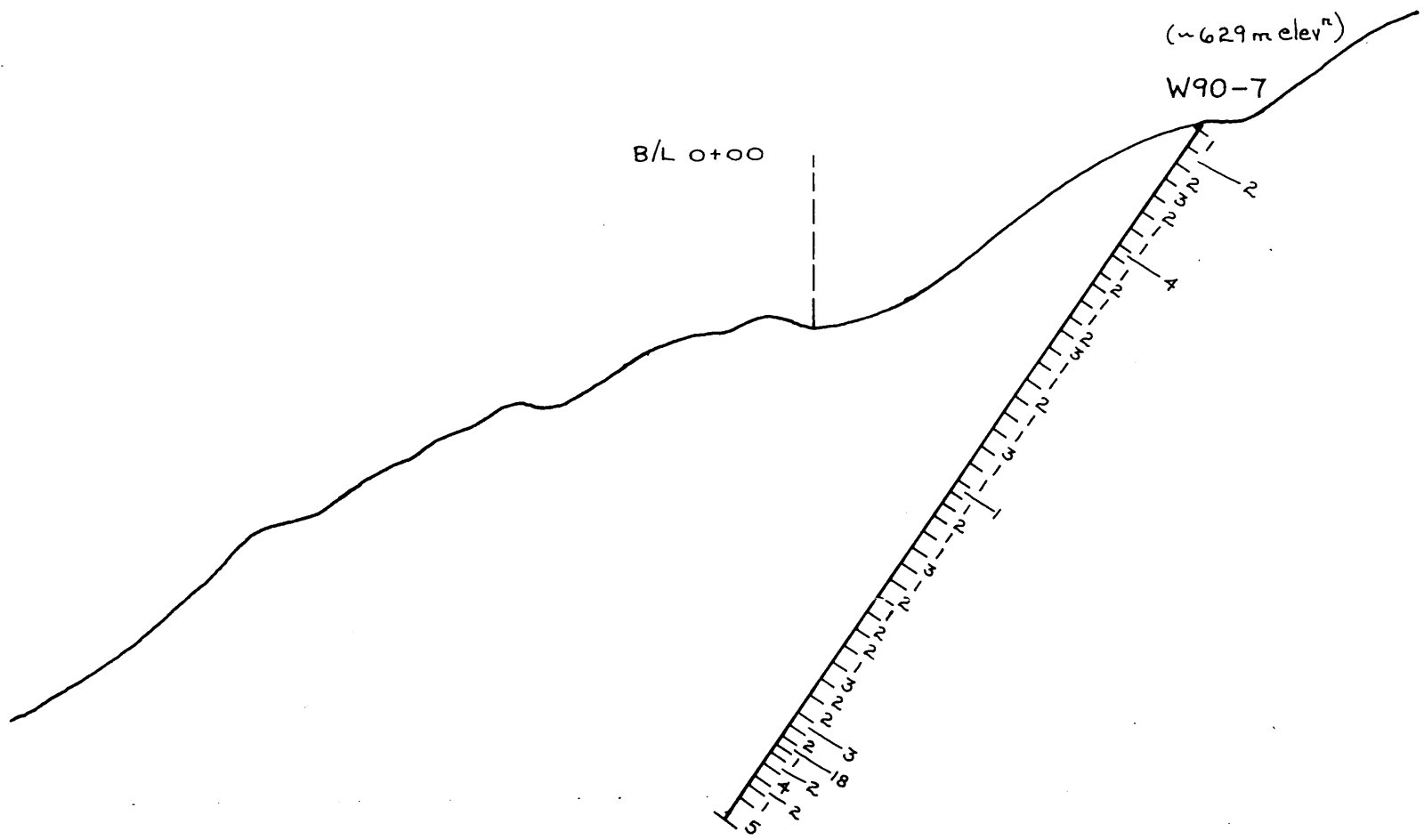
- a altered
- And andesite
- And T andesitic tuff
- aT ash tuff
- aZ altered zone (sericitic, silica and carbonate)
- LT lapilli tuff
- SMS semi-massive sulphides
- TB tuff breccia
- xT crystal tuff
- o o o overburden



WARATAH PROJECT	
COOPER ZONE	
DRILL SECTION W90-7	
(LOOKING SOUTHEAST)	
GEOLOGY	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL.
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 33	

NE

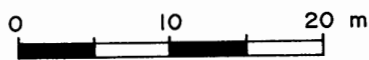
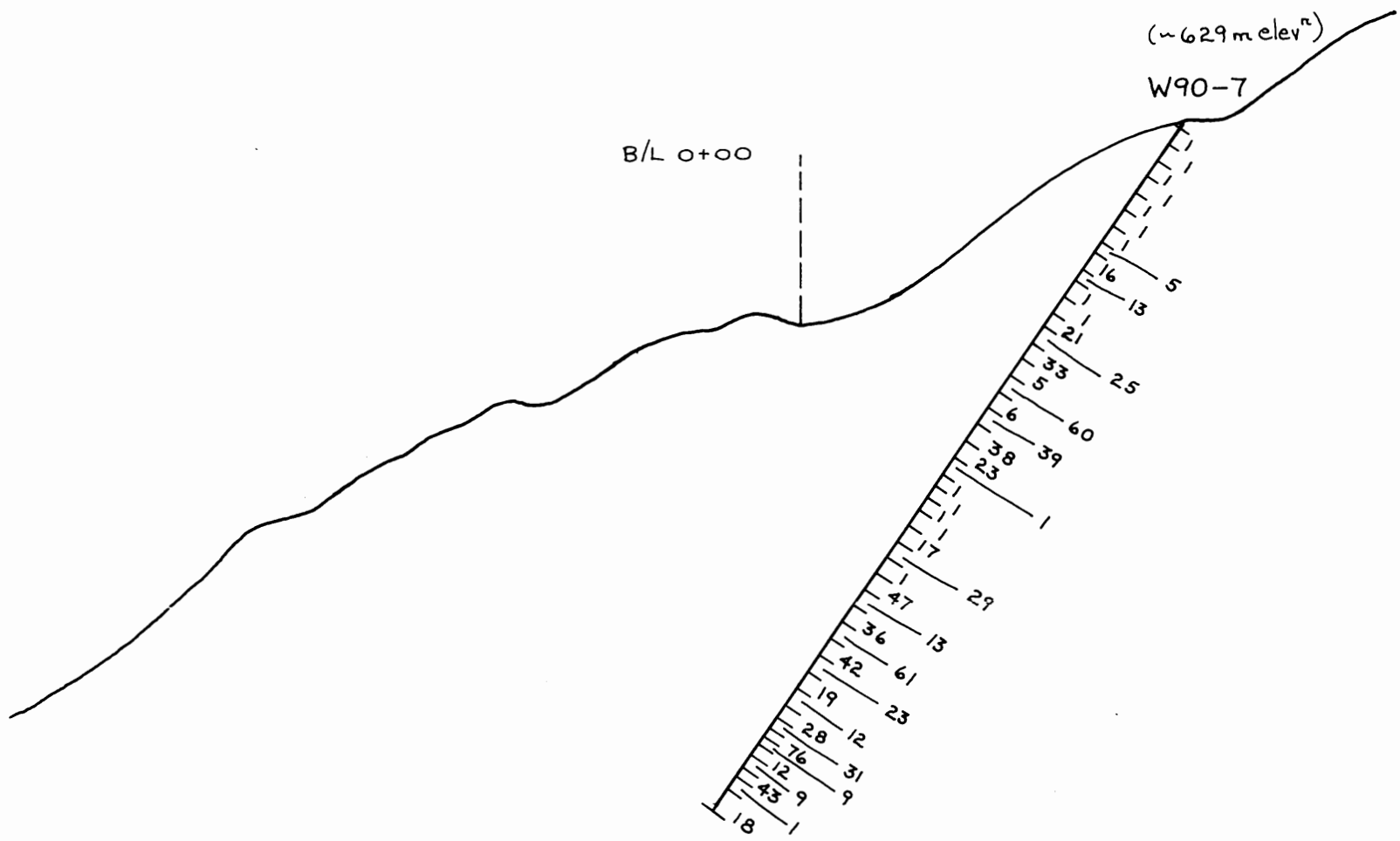
SW



WARATAH PROJECT	
COOPER ZONE	
DRILL SECTION W90-7 (LOOKING SOUTHEAST)	
Au (ppb)	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL.
SCALE: 1:500	
Keewatin Engineering Inc.	FIG. No. 34

NE

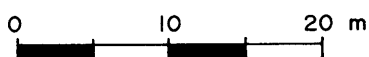
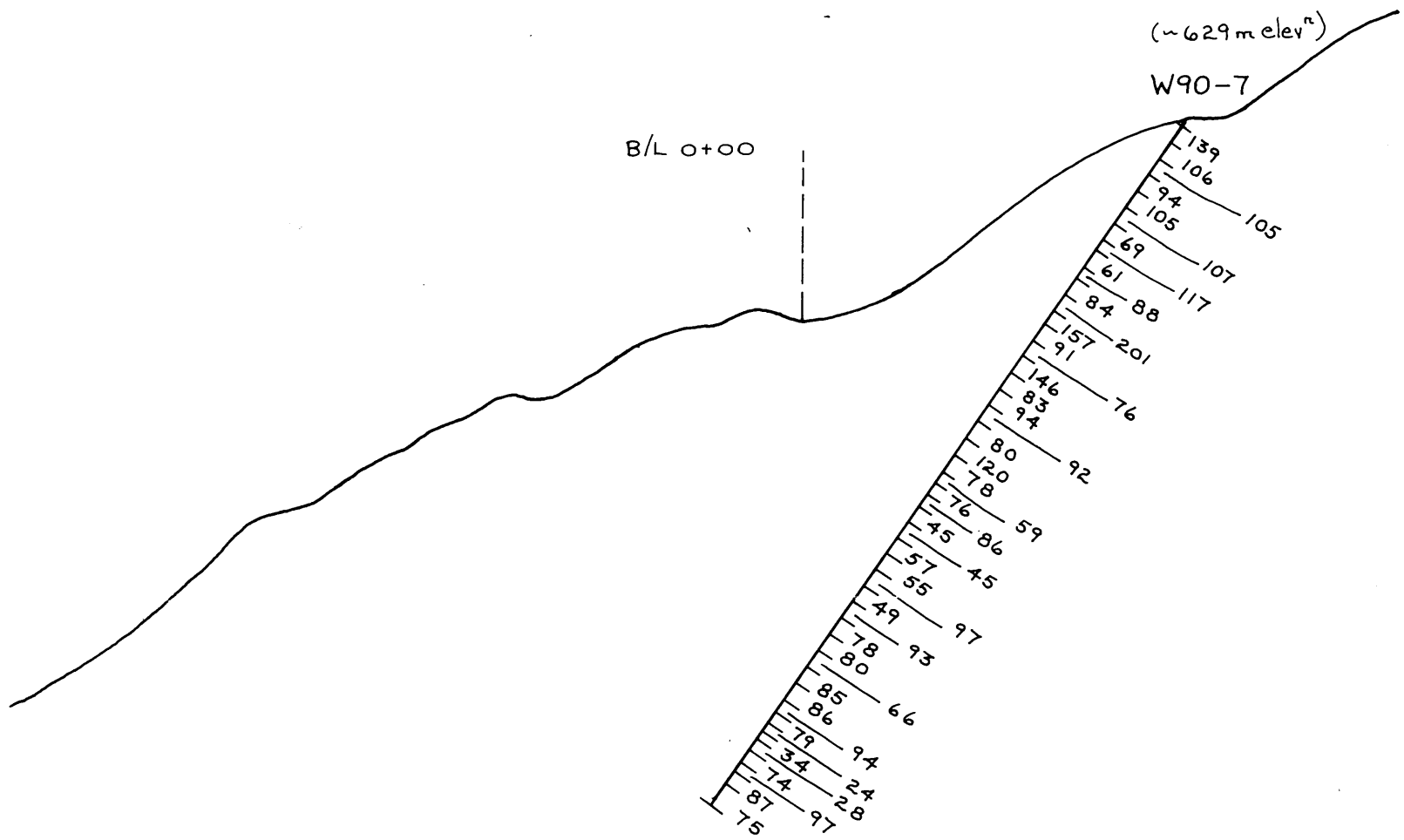
SW



WARATAH PROJECT	
COOPER ZONE	
DRILL SECTION W90-7 (LOOKING SOUTHEAST)	
As (ppm)	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL.
SCALE: 1:500	
Keewatin Engineering Inc. FIG. No. 35	

NE

SW



WARATAH PROJECT	
COOPER ZONE	
DRILL SECTION W90-7 (LOOKING SOUTHEAST)	
Cu (ppm)	
DATE: Jan. 1991	NTS: 104B/10W
PROJECT: 113	PROJ. GEOL.
SCALE: 1:500	
Keewatin Engineering Inc.	FIG. No. 36

APPENDIX 5

Diamond Drill Logs

METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
0.00	1.52	Casing									
1.52	4.57	Lapilli Tuff (poly lithic)	30301	1.52	2.58	1.06	3		1.2	50	63
		- medium grey-green									
		- moderate to >moderate fractures	30302	2.58	3.58	1.00	4		0.9	19	92
		- minor fracture filling and small tension gashes									
		- most fragments 2-4mm (some to 1cm)	30303	3.58	4.57	0.99	8		0.9	1	81
		- minor chlorite alteration (mafic fragments)									
		- moderate sericite alteration (some concentrations). 1-2%									
		- very fine grained to fine grained disseminated pyrite									
		- gradational lower contact									
		- sericite (\pm carbonate) sections @ 1.72 - 1.94m, 2.18 - 2.58m									
		- broken core to 1.74m									
		- ground core @ 2.44m									
		3.05-3.08m - sheared section (upper contact 40°)									
		3.52-3.88m - fractured and oxidized (minor remnant carbonate)									
4.57	22.22	Tuff Breccia to Lapilli Tuff	30304	4.57	5.57	1.00	8		1.2	24	83
		- medium grey-green; poly lithic	30305	5.57	6.57	1.00	10		1.3	2	74
		- purplish grey porphyry, grey-green porphyry with chlorite (minor hornblende)	30306	6.57	7.57	1.00	6		1.0	1	92
		- fragments to 12cm	30307	7.57	8.57	1.00	10		1.0	35	80
		- moderate fractures; very minor sericite alteration	30308	8.57	9.57	1.00	13		1.0	1	306
		- moderate carbonate (\pm minor quartz) fracture filling and gashes	30309	9.57	10.57	1.00	6		0.9	28	50
		- minor chlorite alteration and <minor chlorite fracture filling	30310	10.57	11.57	1.00	9		1.2	34	74
			30311	11.57	12.57	1.00	13		1.1	2	45
			30312	12.57	13.57	1.00	32		1.3	1	83

DRILL HOLE LOG

HOLE NO. W90-1

PAGE 2 OF 12

METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
4.57	22.22 Cont.	~20% subhedral feldspar phenocrysts/fragments, 1-3% fine grained pyrite disseminations, blebs and fracture filling 4.97m - carbonate fracture filling (40°) 9.00m - quartz fracture filling (53°) offset of 1cm 9.00m - carbonate fracture filling (36°) 10.70m - carbonate fracture filling (26°) 13.78m - mud slip (77°) 13.88-13.96m - silicification section + moderate carbonate and 5% disseminated pyrite (25°-35° upper contact) (light green-grey), gradational lower contact 14.34-14.53m - dirty white to grey carbonate; fracture filling approximately 2cm wide; ~20° 14.61-15.44m - increase in carbonate fracture filling (narrow) and gashes 18.57-19.63m - shallow carbonate fracture filling and patches, 5-7% pyrite associated with the carbonate concentration at the bottom; trace specularite 20.43-20.61m - well fractured and sheared section with abundant iron carbonate (oxidized); upper contact 50° minor leaching; slips @ 37°-45°; trace pyrite, irregular lower contact 21.83-22.22m - altered lapilli tuff; > minor carbonate, > minor sericite; 6-8% disseminated pyrite Lower contact @ approximately 30° (sheared)									
			30313	13.57	14.57	1.00	15		1.3	30	94
			30314	14.57	15.57	1.00	21		1.6	50	89
			30315	15.57	16.57	1.00	4		1.2	1	93
			30316	16.57	17.57	1.00	9		1.6	1	112
			30317	17.57	18.57	1.00	3		1.4	1	83
			30318	18.57	19.63	1.06	149		2.8	71	236
			30319	19.63	20.63	1.00	5		1.4	13	91
			30320	20.63	21.83	1.20	27		1.5	26	99
			30321	21.83	22.22	0.39	20		1.3	18	34
22.22	25.63	Altered Chaotic Zone - light greenish grey colour. Approximately 35% sericite, 35% silica and 20% carbonate patches and fracture filling white to grey to pink carbonate - minor remnant fragments (to 7mm) altered to sericite - minor open fractures; minor chlorite alteration - > minor dull white hydrothermal altered specks - 5-8% fine grained to very fine grained disseminated pyrite and minor patches, traces of chalcopyrite 23.01-23.14m - concentration of white/pink carbonate 25.29-25.42m - low angle white carbonate fracture filling (open fractures/vugs) - increase in chlorite alteration to bottom - irregular lower contact	30322	22.22	23.36	1.14	7		1.4	56	8
			30323	23.36	24.50	1.14	9		1.4	57	12
			30324	24.50	25.63	1.13	19		1.4	39	15

DRILL HOLE LOG							HOLE NO. W90-1		PAGE 3 OF 12		
METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
25.63	38.46	Lapilli Tuff	30325	25.63	26.63	1.00	2		1.2	24	79
		- greyish green colour; polyolithic	30326	26.63	27.63	1.00	1		1.2	11	108
		- 30% subhedral white feldspar grains	30327	27.63	28.63	1.00	1		1.1	60	72
		- moderate fractures; > minor carbonate (\pm minor quartz) fracture filling	30328	28.63	29.63	1.00	8		1.1	7	129
		- > minor chlorite alteration and minor sericite alteration	30329	29.63	30.63	1.00	11		1.2	32	89
		- partially sheared	30330	30.63	31.63	1.00	1		1.0	8	74
		- largest fragment approximately 14cm; most 1-3cm (light grey felsic and mafic)	30331	31.63	32.63	1.00	1		1.2	1	86
		- sharp lower contact @ 35°-45°; 2-5% very fine grained to fine grained disseminated pyrite (minor fracture filling)	30332	32.63	33.63	1.00	7		1.1	8	175
			30333	33.63	34.63	1.00	3		1.0	1	57
			30334	34.63	35.63	1.00	4		1.3	1	68
			30335	35.63	36.63	1.00	4		1.8	1	169
			30336	36.63	37.63	1.00	3		1.2	1	114
			30337	37.63	38.46	0.83	3		1.8	1	102
		30.40m - iron carbonate fracture filling (35°)									
		31.64m - iron carbonate fracture filling (30°) \pm quartz									
		34.03m - iron carbonate fracture filling and quartz (vuggy) - 11mm wide with crystalline quartz and carbonate (15°)									
		38.07-38.10m - carbonate and quartz fracture filling (40°)									
38.46	40.27	Altered Chaotic Zone	30338	38.46	39.36	0.90	9		1.6	5	26
		- 40% silica, 15% chlorite, 20% carbonate, 10% sericite	30339	39.36	40.27	0.91	87		1.6	70	21
		- light to dark greyish green									
		- minor small white hydrothermal specks									
		- minor partially open carbonate fractures									
		- white, lesser purplish grey and very minor pink carbonate									
		- patchy chlorite alteration at 38.66-38.90m, 39.87-40.02m;									
		- 5-7% very fine grained to fine grained disseminated pyrite (very minor blebs)									
		Lower contact at approximately 30°-35°									
40.27	48.39	Altered Lapilli Tuff	30340	40.27	41.52	1.25	7		1.3	1	62
		- medium greyish green									
		- moderate fractures and some shearing									
		- moderate chlorite alteration and <moderate sericite alteration									
		- a few sericite-quartz sections	30341	41.52	42.78	1.26	10		1.2	12	60
		- moderate carbonate fracture filling and gashes	30342	42.78	43.67	0.89	59		3.1	63	18
		- sericitically altered felsic fragments									
		- bull quartz (\pm carbonate) sections	30343	43.67	44.54	0.87	22		1.8	2	38
		- 3-5% fine grained pyrite disseminations	30344	44.54	45.44	0.90	9		2.4	45	8

DRILL HOLE LOG

HOLE NO. W90-1

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METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
40.27	48.39 Cont.	42.28m - 1cm wide carbonate-quartz fracture filling (65°) with metallic manganese grains	30345	45.44	46.35	0.91	3		1.9	15	9
		42.78-43.67m - sericite-carbonate ± minor quartz and carbonate chaotic zone; disjointed carbonate veining; sericitically altered feldspar porphyry fragments; 5-7% fine grained pyrite	30346	46.35	47.37	1.02	38		1.2	1	65
		44.54-46.35m - altered lapilli tuff with 20% quartz-carbonate patches and gashes; fragments altered to sericite; 3-5% pyrite fracture filling and disseminations; quartz-carbonate is barren	30347	47.37	48.39	1.02	34		1.5	68	121
48.39	50.00	Andesitic Tuff (Intrusive?) - dark greyish green - < moderate carbonate and chlorite fracture filling (very minor iron carbonate fracture filling) - chlorite alteration of fine mafic grains - fractures (mostly) at 60°-70° - slips at 65°-85° - upper contact at 60° (sharp and somewhat irregular) - lower contact at approximately 50° (sheared over 5cm - chlorite and carbonate); trace pyrite and minor magnetite (especially lower 77cm)	30348	48.39	50.00	1.61	16		2.0	1	75
50.00	52.07	Altered Crystal Tuff - medium greyish green - > > minor carbonate (± minor quartz) fracture filling - > minor sericite alteration and > minor chlorite alteration; moderate amount of white hydrothermal specks - moderately well fractured and minor shearing - all of the crystals altered; 1-2% disseminated pyrite	30349	50.00	51.03	1.03	128		1.4	37	81
		50.87-51.00m - sericitically alteration with shearing; moderate carbonate patches and fracture filling and chlorite fracture filling; 5-7% pyrite fracture filling; upper contact at 50°; lower contact at 45°	30350	51.03	52.07	1.04	18		1.2	1	69
52.07	63.11	Altered Crystal Tuff - light to medium greenish grey - 30% feldspar phenocrysts nearly all altered (sericite and chlorite)	30351	52.07	53.57	1.50	10		1.1	2	89

DRILL HOLE LOG							HOLE NO. W90-1		PAGE 5 OF 12		
METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
52.07	63.11 Cont.	- patchy irregular bleaching	30352	53.57	55.07	1.50	439		1.8	1	206
		- moderate fractures; minor sericite alteration									
		- < moderate carbonate fracture filling and a few quartz-carbonate ± chlorite fracture filling	30353	55.07	56.57	1.50	102		1.4	38	197
		- minor iron carbonate fracture filling; a few low angle fractures; trace chalcopyrite; 1% disseminated magnetite (irregular distribution); ≤1% pyrite	30354	56.57	58.07	1.50	43		1.6	1	96
		- irregular upper contact (gradational); lower contact sericitically altered and carbonate fracture filling with slip at 84° (over bottom 20cm)	30355	58.07	59.28	1.21	26		1.1	23	106
		54.15m - quartz ± carbonate and chlorite (45°) 3cm wide	30356	59.28	60.48	1.20	26		1.2	1	72
		54.73-54.80m - quartz-carbonate ± iron carbonate and chlorite (30°-35°) 4-7.5cm wide	30357	60.48	61.47	0.99	24		1.4	6	25
		55.58m - carbonate and iron carbonate ± quartz fracture filling (16°) vuggy; trace chalcopyrite									
		56.08m - quartz ± carbonate ± minor iron carbonate fracture filling (16°) 2cm wide	30358	61.47	63.11	1.64	11		1.3	1	51
		60.48-61.47m - well fractured and altered section with > moderate carbonate ± minor quartz fracture filling and sericitically altered, especially in upper 28cm and lower 31cm; central portion is dark green (chlorite) with abundant carbonate fracture filling and minor sericite alteration; irregular upper contact; slip (60°) lower contact; 7-10% very fine grained to fine grained pyrite disseminations and fracture filling - more concentrated in the carbonate sericite alteration									
63.11	67.83	Lapilli Tuff	30359	63.11	64.60	1.49	9		0.9	20	73
		- greenish grey; polyolithic									
		- moderately fractured and sheared									
		- < moderate hydrothermal specks									
		- > moderate carbonate fracture filling and patches									
		- a few quartz-carbonate sections									
		- mafic fragments altered to chlorite									
		- locally can see 20-30% feldspar phenocrysts but in most of unit altered overprint and shearing makes identification of fragments difficult									
		- 1-3% pyrite disseminations and fracture filling									

DRILL HOLE LOG

HOLE NO. W90-1

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METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
63.11	67.83 Cont.			64.60-65.95m - light to medium grey colour; abundant carbonate fracture filling, relatively siliceous, especially to bottom; 65.51-65.61m increase in carbonate and pyrite (7-10% with some patches but mostly disseminated); overall 3-5% pyrite 65.95-66.26m - tan coloured silicification and carbonate ± iron carbonate patch; irregular upper contact, >minor vugs, minor chlorite; ≤1% disseminated pyrite Lower contact at 20° (sheared)	30360 30361		64.60 65.95	65.95 67.83	1.35 1.88	16 8	
67.83	69.33	Crystal Tuff - light to medium grey (silicified?) - moderate fractures - >moderate carbonate fracture filling and fine grained patches - 30% altered feldspar phenocrysts - minor white hydrothermal specks; 1-3% disseminated pyrite; 1-2% disseminated magnetite - irregular and silicified upper contact; gradational lower contact	30362	67.83	69.33	1.50	10		0.8	43	81
69.33	69.80	Crystal Tuff - medium grey colour; 30-40% white to light grey feldspar phenocrysts (1-4mm) - moderate fractures and moderate carbonate fracture filling - minor chlorite alteration - may be same unit as above but no magnetite and feldspar phenocrysts more abundant and easy to identify; 2-3% pyrite disseminations and fracture filling	30363	69.33	69.80	0.47	4		1.1	9	95
69.80	82.90	Lapilli Tuff and minor Crystal Tuff - medium to dark greenish grey colour - moderate fractures with minor sheared sections - <moderate carbonate fracture filling and minor quartz-chlorite fracture filling - polyolithic with some light grey felsic fragments with minor magnetite - >minor chlorite and sericite alteration	30364 30365 30366	69.80 71.30 72.80	71.30 72.80 74.30	1.50 1.50 1.50	2 4 1		0.8 0.7 0.6	14 1 1	82 90 76

DRILL HOLE LOG

HOLE NO. W90-1

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METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
69.80	82.90 Cont.			- most fragments fairly vague - minor bleaching enveloping a few fractures - 1-2% pyrite, minor magnetite	30367 30368		74.30 75.80	75.80 77.30	1.50 1.50	4 3	
		72.97-73.24m - > minor carbonate fracture filling (28°) and sericite, chlorite and silicified; irregular upper and lower contact	30369	77.30	78.80	1.50	3		0.8	1	93
		73.91m - quartz-chlorite fracture filling (35°) - 2.5-5.0cm	30370	78.80	79.97	1.17	4		0.7	1	55
		79.97-81.37m - mostly grey crystal tuff with minor disseminated magnetite; very fine grained disseminated pyrite concentration (3-5%) in bottom 10cm	30371	79.97	81.37	1.40	3		0.8	1	84
		81.13m - fault gouge 21°									
		81.37-82.90m - lapilli tuff and minor crystal tuff with abundant carbonate fracture filling and patches; 4-6% fine grained pyrite dissemination and fracture filling and chlorite alteration; gouge (60°) @ 81.76m	30372	81.37	82.90	1.53	8		1.3	1	79
82.90	91.46	Crystal Tuff	30373	82.90	83.82	0.92	3		0.6	1	82
		- greenish grey colour									
		- 30-40% altered feldspar phenocrysts (1-3mm)	30374	83.82	85.15	1.33	2		0.7	1	103
		- minor lapilli tuff and andesitic tuff (irregular bands and patches)	30375	85.15	86.49	1.34	1		0.8	5	87
		- minor chlorite ± carbonate bands and patches									
		- minor sericite-carbonate-quartz bands and patches									
		- moderate fractures with < moderate carbonate fracture filling									
		- irregular upper contact; 1-3% disseminated magnetite (concentrated in the crystal tuff); < 1% pyrite									
		83.82-86.49m - irregular andesitic patches (non-magnetic), 20-30%									
		86.50-86.64m - chlorite and minor iron carbonate fracture filling (38°)									
		87.41-87.72m - sericite-quartz-carbonate zone with 5-8% fine grained disseminated and fine to medium grained fracture filling pyrite and 1% magnetite associated with carbonate fracture filling/patches. Upper contact at ~35°; lower contact at ~35°	30376 30377	86.49 87.41	87.41 88.41	0.92 1.00	2 9		0.7 1.0	4 1	66 60
		89.02m - quartz-carbonate fracture filling (50°); minor sericitic alteration; above is 7mm of carbonate and 5% magnetite and 3-5% pyrite	30378 30379	88.41 89.91	89.91 91.46	1.50 1.55	4 2		0.6 0.7	1 1	66 94

DRILL HOLE LOG

HOLE NO. W90-1

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METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
91.46	95.74			Lapilli Tuff to Tuff Breccia - medium greenish grey to grey - moderate fractures, moderate carbonate fracture filling and gashes - moderate patchy chlorite alteration - polyolithic with largest fragments of light to medium grey crystal tuff with 1-3% disseminated magnetite, lower contact @ 75°-85°; 1-2% disseminated and fracture filling pyrite 91.46-91.67m - chlorite ± carbonate and minor quartz; sheared lapilli tuff; irregular upper contact, lower contact @ 25° - increase in carbonate fracture filling and pyrite fracture filling over bottom 23cm	30380		91.46	92.96	1.50	5	
			30381	92.96	94.46	1.50	3		0.5	1	73
			30382	94.46	95.74	1.28	24		0.9	1	146
95.74	96.55	Altered and Mineralized Lapilli Tuff - medium grey-green to dirty white - upper 22cm is quartz and minor carbonate and sericite; shearing @ 50°; 7-10% pyrite fracture filling and patches - rest is altered Lapilli Tuff with <moderate chlorite and minor sericite; >minor carbonate and iron carbonate fracture filling; 10-15% pyrite fracture filling and patches - overall 8-12% pyrite fracture filling - lower contact at 50°, fractured/slip	30383	95.74	96.55	0.81	79		1.0	100	234
96.55	97.99	Andesite - light to medium greenish grey - granular texture - moderately fractured and moderate carbonate ± chlorite fracture filling - most fracture filling at 45°-70°; a few low angle - gradational lower contact - 1-3% pyrite fracture filling and disseminations	30384	96.55	97.99	1.44	18		1.2	1	195
97.99	102.10	Altered Andesite - light to medium greyish green with brownish patches - granular to fine grained groundmass (irregular) - rare exotic fragments (chlorite)	30385	97.99	99.24	1.25	1		0.9	64	85
97.99	102.10	- >moderate fractures and shearing	30386	99.24	100.49	1.25	6		1.4	549	155

DRILL HOLE LOG

HOLE NO. W90-1

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METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au (ppb)	Au (opt)	Ag (ppm)	As (ppm)	Cu (ppm)
	Cont.			<ul style="list-style-type: none"> - > moderate iron carbonate fracture filling and patches - < moderate carbonate fracture filling and patches - > minor local sericitic alteration - 1-3% disseminated and minor fracture filling pyrite, > trace magnetite, trace sphalerite and arsenopyrite <p>99.06m 3cm iron carbonate at 50°</p> <p>99.24-100.49m - intense iron carbonate and patchy carbonate fracture filling; well sheared; strong fractures (13°) and some carbonate fracture filling @ 80°</p> <p>100.49-102.10m - patchy sericite alteration and fine grained patches with 5-8% fine grained disseminated pyrite with moderate carbonate and iron carbonate; iron carbonate fracture filling @ 50°-60° but at 101.86-101.95m, iron carbonate fracture filling @ 25°; trace sphalerite</p> <ul style="list-style-type: none"> - @ last 10cm is 1-2% disseminated fine grained arsenopyrite and minor magnetite <p>END OF HOLE</p>	30387		100.49	101.30	0.81	2	
			30388	101.30	102.10	0.80	2		0.9	149	85

Keewatin Engineering Inc.				DRILL LOG				Sample Data					
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS						
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb
30301	1.52	2.58	1.06		85	-0.16	3		1.2	50	63	15	34
30302	2.58	3.58	1.00		95	-0.05	4		0.9	19	92	22	47
30303	3.58	4.57	0.99		98	-0.02	8		0.9	1	81	15	77
30304	4.57	5.57	1.00		99	-0.01	8		1.2	24	83	14	79
30305	5.57	6.57	1.00		102	+0.02	10		1.3	2	74	7	99
30306	6.57	7.57	1.00		103	+0.03	6		1.0	1	92	9	86
30307	7.57	8.57	1.00		98	-0.02	10		1.0	35	80	9	83
30308	8.57	9.57	1.00		89	-0.11	13		1.0	1	306	15	60
30309	9.57	10.57	1.00		99	-0.01	6		0.9	28	50	28	62
30310	10.57	11.57	1.00		94	-0.06	9		1.2	34	74	12	78
30311	11.57	12.57	1.00		96	-0.04	13		1.1	2	45	22	78
30312	12.57	13.57	1.00		94	-0.06	32		1.3	1	83	22	79
30313	13.57	14.57	1.00		100	0.00	15		1.3	30	94	22	53
30314	14.57	15.57	1.00		99	-0.01	21		1.6	50	89	24	63
30315	15.57	16.57	1.00		99	-0.01	4		1.2	1	93	19	62
30316	16.57	17.57	1.00		100	0.00	9		1.6	1	112	9	86
30317	17.57	18.57	1.00		103	+0.03	3		1.4	1	83	12	88
30318	18.57	19.63	1.06		100	0.00	149		2.8	71	236	36	69
30319	19.63	20.63	1.00		99	-0.01	5		1.4	13	91	23	111
30320	20.63	21.83	1.20		98	-0.02	27		1.5	26	99	28	96
30321	21.83	22.22	0.39		103	+0.01	20		1.3	18	34	17	68
30322	22.22	23.36	1.14		98	-0.02	7		1.4	56	8	30	7
30323	23.36	24.50	1.14		96	-0.05	9		1.4	57	12	24	8
30324	24.50	25.63	1.13		99	-0.01	19		1.4	39	15	26	9
30325	25.63	26.63	1.00		100	0.00	2		1.2	24	79	17	81
30326	26.63	27.63	1.00		101	+0.01	1		1.2	11	108	15	74
30327	27.63	28.63	1.00		98	-0.02	1		1.1	60	72	11	65
30328	28.63	29.63	1.00		101	+0.01	8		1.1	7	129	12	79
30329	29.63	30.63	1.00		100	0.00	11		1.2	32	89	19	90
30330	30.63	31.63	1.00		100	0.00	1		1.0	8	74	16	80
30331	31.63	32.63	1.00		96	-0.04	1		1.2	1	86	20	77
30332	32.63	33.63	1.00		80	-0.20	7		1.1	8	175	8	89
30333	33.63	34.63	1.00		124	+0.24	3		1.0	1	57	13	84
30334	34.63	35.63	1.00		100	0.00	4		1.3	1	68	27	73
30335	35.63	36.63	1.00		100	0.00	4		1.8	1	169	15	84

SAMPLE					CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS						
Number	From	To	Total Metres	Sp.Gr.	%	Amt. Lost		ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
30336	36.63	37.63	1.00		103	+0.03		3		1.2	1	114	19	96
30337	37.63	38.46	0.83		100	0.00		3		1.8	1	102	14	102
30338	38.46	39.36	0.90		103	-0.06		9		1.6	5	26	32	29
30339	39.36	40.27	0.91		100	0.00		87		1.6	70	21	35	16
30340	40.27	41.52	1.25		93	+0.02		7		1.3	1	62	9	104
30341	41.52	42.78	1.26		102	+0.04		10		1.2	12	60	26	74
30342	42.78	43.67	0.89		100	0.00		59		3.1	63	18	41	29
30343	43.67	44.54	0.87		100	-0.06		22		1.8	2	38	28	40
30344	44.54	45.44	0.90		102	+0.02		9		2.4	45	8	39	34
30345	45.44	46.35	0.91		100	0.00		3		1.9	15	9	22	46
30346	46.35	47.37	1.02		98	-0.02		38		1.2	1	65	14	72
30347	47.37	48.39	1.02		96	-0.04		34		1.5	68	121	43	335
30348	48.39	50.00	1.61		106	+0.09		16		2.0	1	75	7	98
30349	50.00	51.03	1.03		100	0.00		128		1.4	37	81	26	60
30350	51.03	52.07	1.04		90	-0.10		18		1.2	1	69	24	61
30351	52.07	53.57	1.50		100	0.00		10		1.1	2	89	25	49
30352	53.57	55.07	1.50		97	-0.04		439		1.8	1	206	97	581
30353	55.07	56.57	1.50		95	-0.07		102		1.4	38	197	46	163
30354	56.57	58.07	1.50		99	-0.02		43		1.6	1	96	33	113
30355	58.07	59.28	1.21		106	+0.07		26		1.1	23	106	25	83
30356	59.28	60.48	1.20		98	-0.02		26		1.2	1	72	24	90
30357	60.48	61.47	0.99		100	0.00		24		1.4	6	25	26	75
30358	61.47	63.11	1.64		100	0.00		11		1.3	1	51	26	78
30359	63.11	64.60	1.50		95	-0.07		9		0.9	20	73	21	72
30360	64.60	65.95	1.35		101	+0.01		16		1.0	1	85	22	42
30361	65.95	67.83	1.88		102	+0.02		8		1.0	7	79	20	71
30362	67.83	69.33	1.50		97	-0.04		10		0.8	43	81	24	46
30363	69.33	69.80	0.47		100	0.00		4		1.1	9	95	16	54
30364	69.80	71.30	1.50		93	-0.10		2		0.8	14	82	19	55
30365	71.30	72.80	1.50		95	-0.08		4		0.7	1	90	21	61
30366	72.80	74.30	1.50		87	-0.20		1		0.6	1	76	15	65
30367	74.30	75.80	1.50		93	-0.10		4		0.9	1	81	7	71
30368	75.80	77.30	1.50		100	0.00		3		1.0	1	96	18	69
30369	77.30	78.80	1.50		100	0.00		3		0.8	1	93	10	74
30370	78.80	79.97	1.17		97	-0.04		4		0.7	1	55	14	85

Keewatin Engineering Inc.					DRILL LOG			Sample Data						
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
30371	79.97	81.37	1.40		98	-0.03		3		0.8	1	84	7	74
30372	81.37	82.90	1.53		92	-0.13		8		1.3	1	79	10	64
30373	82.90	83.82	0.92		100	0.00		3		0.6	1	82	10	55
30374	83.82	85.15	1.33		95	-0.06		2		0.7	1	103	22	53
30375	85.15	86.49	1.34		100	0.00		1		0.8	5	87	5	57
30376	86.49	87.41	0.92		100	0.00		2		0.7	4	66	16	58
30377	87.41	88.41	1.00		96	-0.04		9		1.0	1	60	19	47
30378	88.41	89.91	1.50		102	+0.03		4		0.6	1	66	9	63
30379	89.91	91.46	1.55		100	0.00		2		0.7	1	94	9	58
30380	91.46	92.96	1.50		99	-0.01		5		0.6	10	47	9	83
30381	92.96	94.46	1.50		100	0.00		3		0.5	1	73	16	59
30382	94.46	95.74	1.28		103	+0.04		24		0.9	1	146	16	124
30383	95.74	96.55	0.81		101	+0.01		79		1.0	100	234	47	75
30384	96.55	97.99	1.44		100	0.00		18		1.2	1	195	43	413
30385	97.99	99.24	1.25		108	+0.10		1		0.9	64	85	33	245
30386	99.24	100.49	1.25		99	-0.02		6		1.4	549	155	105	788
30387	100.49	101.30	0.81		99	-0.01		2		1.1	44	96	70	520
30388	101.30	102.10	0.80		100	0.00		2		0.9	149	85	37	121

DRILL HOLE LOG							HOLE NO. W90-2		PAGE NO. 1 of 18														
LOCATION: COOPER ZONE (0+35W/0+38N)			ELEV: Approximately 562m LENGTH: 102.72m			DIP TEST		PROPERTY: WARATAH CLAIM NO: WARATAH 7 SECTION:															
AZIM: 210° DIP: -45°			CORE SIZE: BQ			<table border="1"> <thead> <tr> <th>METREAGE</th> <th>AZIMUTH</th> <th>INCLINATION</th> <th>CORR. INCLIN.</th> </tr> </thead> <tbody> <tr> <td>0.00</td> <td>210°</td> <td>-56°</td> <td>-45.0°</td> </tr> <tr> <td>102.72</td> <td></td> <td></td> <td>-46.5°</td> </tr> </tbody> </table>		METREAGE	AZIMUTH	INCLINATION	CORR. INCLIN.	0.00	210°	-56°	-45.0°	102.72			-46.5°	LOGGED BY: A. Travis DATE LOGGED: October 24-28, 1990 DRILLING CO: Falcon ASSAYED BY: Min-En			
METREAGE	AZIMUTH	INCLINATION	CORR. INCLIN.																				
0.00	210°	-56°	-45.0°																				
102.72			-46.5°																				
STARTED: October 23, 1990 COMPLETED: October 24, 1990 PURPOSE: To test the Cooper Zone at depth below the lower trench CORE RECOVERY: 99.8%																							
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES																
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm												
0.00	2.13	Casing/overburden																					
2.13	3.68	Lapilli Tuff																					
		- greyish-green colour	37001	2.13	2.93	0.80	1		0.9	18	140												
		- 20% white feldspar phenocrysts (1-3mm)	37002	2.93	3.68	0.75	3		0.9	1	77												
		- 3-5% creamy white (1mm) hydrothermal mineralization																					
		- ≥ moderate fracture, broken core																					
		- very minor fragments (approximately 0.5cm, polyolithic)																					
		- siliceous, minor chlorite, iron carbonate, sericite																					
		- moderate carbonate fracture filling and gashes																					
		- minor quartz ± carbonate, partially open fractured veinlets																					
		- trace to 1% very fine grained to fine grained disseminated pyrite																					
		- trace specularite, magnetite																					
		- ground core to 2.3m																					
		2.44m - part open irregular quartz ± carbonate fracture veinlets																					
		2.52m - slip @ 55° and 70°																					
		3.13-3.24m - iron carbonate alteration along part open irregular quartz ± carbonate fractured veinlets																					
		3.38-3.68m - iron carbonate alteration along part open irregular quartz ± carbonate fractured veinlets																					
		3.68m - lower contact @ "30°?" (broken core), 1% specularite																					

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
3.68	4.94	Crystal Tuff - greyish-green colour - 35% white feldspar phenocrysts (1-3mm) - > moderate fracture and broken core to 4.22m - moderately siliceous towards upper contact (30°), chlorite and sericite alteration especially towards lower contact (gradation), iron carbonate along fracture - 1-3% creamy white soft hydrothermal mineralization (1mm) - moderate carbonate ± quartz fracture filling and gashes - moderate part open quartz fractured veinlets - trace very fine grained to fine grained disseminated pyrite and specularite, concentrated towards upper contact and lower contact 3.68-4.22m - part open irregular quartz fractured veinlets, one 4mm veinlet @ 35°, broken core 4.50m - slip @ 25° 4.79m - slip @ 60°	37003	3.68	4.94	1.26	1		1.1	1	73
4.94	9.63	Lapilli Tuff - Tuff Breccia - greyish-green colour - grey feldspar porphyry fragments (1-7cm) - < moderate fractures - sericite and chlorite alteration associated with carbonate ± quartz fracture fillings and gashes especially towards upper contact and in fragments, minor iron carbonate - minor partial open quartz ± carbonate fractured veinlets - 1-3% very fine to medium grained pyrite concentrations associated with fracture filling and veinlets - 3-5% < 1mm blebs of magnetite, usually associated with fragments 4.94-5.14m - abundant carbonate ± quartz fracture fillings and veinlets; veinlets @ 30°, part open; one 3cm fragment (sericite altered); 1-3% fine grained pyrite; slip/lower contact ? 25° 6.13m - 2mm quartz/carbonate veinlet, @ 33°, 1cm wide sericite alteration envelope, slip @ 70° 6.49m - 8mm ribboned quartz veinlet @ 30° 6.57m - 1-2mm subhedral - euhedral pyrite 6.60-6.78m - siliceous, iron carbonate altered zone, upper contact 45°, lower contact 13° 6.78-7.03m - quartz/carbonate veinlet; 3cm wide, upper	37004 37005 37006	4.94 5.44 6.44	5.44 6.44 7.44	0.50 1.00 1.00	2 2 10		1.1 1.0 1.4	6 21 1	101 72 54

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES						
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm		
4.94	9.63 Cont.	contact 13°, lower contact 20°, moderately pitted, iron carbonate at upper contact											
		7.38m - 2mm carbonate veinlet @ 25°	37007	7.44	8.54	1.10	10		1.2	1	43		
		7.73m - 2mm carbonate veinlet @ 22°											
		7.85m - 5mm partial opening quartz/carbonate veinlet @ 20°											
		8.38m - slip @ 15°											
		8.58-9.10m - slips @ 50° - 80°	37008	8.54	9.63	1.09	2		0.9	1	121		
		9.30-9.63m - > moderate carbonate ± quartz fracture filling and gashes											
9.63	12.79	Lapilli Tuff											
		- pale greenish-grey, light brown patches and fractures broken core along shallow (3-7°) shears and fractures, which are partially open carbonate, iron carbonate, minor quartz, fracture filling											
		- moderate irregular carbonate ± quartz fracture filling and gashes											
		- minor fragments (0.5cm - 2.5cm)											
		- abundant sericite and chlorite altered along shallow (approximately 5°) convoluted (± 1cm) bands											
		- iron carbonate along fractures, gouge on shallow fault (approximately 5°)											
		- trace very fine grained - fine grained disseminated pyrite, trace to 1% magnetite, trace pyrrhotite, trace arsenopyrite?	37009	9.63	10.63	1.00	7		0.9	1	197		
		9.72m - slip 62°											
		9.98-11.78m - shallow (03 - 07°), slightly convoluted, partially open carbonate/quartz fracture filling, sericite and chlorite along irregular bands and concentrated along fracture with manganese, fault gouge towards lower contact, 1-3% magnetite (concentrated towards upper contact), trace to 1% pyrite (concentrated towards lower contact), trace pyrrhotite, trace arsenopyrite? (along fault plane)	37010	10.63	11.63	1.00	17		1.0	1	92		
		37011	11.63	12.79	1.16	9		0.7	14	75			
		11.78-11.97m - 0.3 - 1.0cm carbonate/quartz fracture filling											
		10-13°											
		12.23m - slips and carbonate fracture filling @17-20°											
		12.39-12.64m - part open - open carbonate/quartz fracture filling and veinlets @ 15-50°	37012	12.79	13.79	1.00	12		1.0	5	110		

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
12.79	31.70	Lapilli Tuff - Tuff Breccia - greyish green - minor fragments (0.4 - 8.0cm) - 25% feldspar phenocrysts (1-3cm) - pervasive chlorite altered; minor sericite, minor iron carbonate - moderate to > moderate carbonate and quartz fracture filling, gashes and veinlets (\leq 0.8cm), trace to 1% very fine grained to fine grained disseminated pyrite, trace magnetite, trace pyrrhotite, trace arsenopyrite?									
		12.93m - slip @ 45°	37013	13.79	14.79	1.00	16		1.1	1	83
		13.31m - slip @ 55°									
		13.71-14.07m - convoluted slip (0-15°), carbonate-quartz fracture filling	37014	14.79	15.79	1.00	5		1.2	1	108
		14.53m - slip @ 21°									
		14.98m - slip @ 13-20°									
		15.38m - slip @ 22°									
		15.38-15.48m - 3-5% disseminated pyrite (subhedral 0.3 - 5mm), trace to 1% disseminated magnetite, slip @ lower contact 47°									
		15.60m - carbonated breccia, irregular < 1cm 1-3% @ selvage	37015	15.79	16.77	0.98	13		1.3	13	100
		15.76m - carbonate veinlet (0.5cm) @ 38°									
		15.87-15.97m - quartz/carbonate veinlet (3cm? broken core) @ 32° partially open	37016	16.77	18.27	1.50	15		1.2	1	101
		16.07-16.12m - slips @ 52-75°									
		16.59m - slip @ 33°									
		17.28m - slip @ 42°									
		17.39-18.01m - minor quartz veinlets (3-5mm) @ 33-52°, partially open	37017	18.27	19.27	1.00	38		1.0	6	29
		18.45-18.89m - 5-7% pyrite stringers and blebs, trace magnetite (0.3mm blebs), upper contact 38° @ 0.8cm carbonate \pm quartz veinlet, lower contact 23° @ 0.3-0.7cm quartz veinlet	37018	19.27	20.27	1.00	23		1.0	1	53
		19.04-19.14m - irregular quartz veinlet (\leq 3cm), fractures, minor carbonate, 1-3% fine grained disseminated pyrite, trace pyrrhotite, upper contact @ 45°, lower contact @ 30°									
		19.54-19.63m - quartz veinlet, minor carbonate, 3-5% pyrite and trace to 1% pyrrhotite, ribboned and along selvages, upper contact and lower contact 28°									

DRILL HOLE LOG								HOLE NO. W90-2		PAGE 5 OF 18	
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
12.79	31.70 Cont.	19.63-19.89m - carbonate ± quartz fracture filling and gashes (< 0.5cm), 1-3% disseminated pyrite, trace to 1% disseminated magnetite	37019	20.27	21.77	1.50	22		1.0	17	52
		19.90m - broken and ground core	37020	21.77	23.00	1.23	17		1.2	24	30
		19.94-22.98m - 1-3% fine to medium grained disseminated pyrite, moderate to > moderate carbonate ± quartz fracture filling veinlets, larger ones (approximately 0.5cm) @ 30-55°	37021	23.00	24.00	1.00	10		1.3	8	48
		23.22-23.55m - abundant carbonate ± quartz fracture filling and veinlets (approximately 35%), iron carbonate altered @ upper contact (gradational), sericite and chlorite altered @ lower contact (approximately 35°), 3-5% disseminated pyrite, trace pyrrhotite	37022	24.00	25.50	1.50	22		1.1	4	35
		24.00-24.77m - > moderate carbonate ± quartz fracture filling and veinlets (< 0.5cm), @ 28-45°, trace to 1% fine grained disseminated pyrite	37023	25.50	27.00	1.50	24		1.2	1	46
		25.49m - slip @ 26°, trace fracture pyrrhotite	37024	27.00	28.50	1.50	41		1.0	1	43
		25.54-26.72m - 1-3% fine grained disseminated pyrite									
		27.30-27.39m - 8cm fragment, angular, sericite altered feldspar porphyry (1-3mm), 1-3% disseminated fine grained to medium grained pyrite	37025	28.50	30.10	1.60	4		0.7	1	79
		27.39-29.80m - slips @ 65-85°, trace to 1% fine grained to medium grained disseminated pyrite	37026	30.10	31.70	1.60	4		0.8	1	41
		29.80-30.10m - quartz, sericite and chlorite altered, upper contact gradational, lower contact @ 40°, trace to 1% disseminated pyrite, 1-3% magnetite (approximately 0.5mm blebs), trace arsenopyrite?									
		30.59-31.70m - > moderate sericite and chlorite altered, moderate iron carbonate, upper contact and lower contact gradational, moderate carbonate ± quartz, fracture filling, stringers (part open), trace pyrite (disseminated), trace arsenopyrite?, trace fractured pyrrhotite, lower contact of approximately 10cm wide iron carbonate zone @ 40°									
		31.70	36.45	Crystal Tuff with Interbeds of Lapilli Tuff - grey-green - 30% white-pale green feldspar phenocrysts (1-3mm) - < moderate fractures							

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
31.70	36.45 Cont.			<ul style="list-style-type: none"> - minor fragments in lapilli tuff horizons (0.5cm-6.0cm) - moderate sericite and chlorite, <moderate iron carbonate, manganese on fractures - moderate carbonate ± quartz fracture filling and gashes (concentrated toward upper contact) - moderate carbonate ± quartz veinlets (approximately 1cm), shallow (0-15°) - 1-3% very fine to fine grained disseminated pyrite (concentrated toward upper contact) - tract to 1% disseminated magnetite, trace specularite 	37027		31.70	33.20	1.50	12	
		32.17-32.74m - shallow carbonate ± quartz veinlet, upper contact @ 08°, lower contact @ 05°, approximately 1cm wide, part open, slip @ 14°, 1-3% disseminated pyrite, 1-3% specularite	37028	33.20	34.80	1.60	4		1.1	1	52
		33.70-34.00m - part open carbonate/quartz veinlet, upper contact @ 25°, lower contact @ 11°, broken core at lower contact, 1-3% disseminated pyrite	37029	34.80	36.45	1.65	4		1.0	1	100
		34.96-35.69m - andesitic lapilli tuff, moderate fragments (0.5-4.0cm), trace very fine grained disseminated pyrite, magnetite									
		35.69-36.45m - pale green crystal tuff with 3-5% disseminated (blebs approximately 0.5cm) magnetite, 1-3% disseminated medium grained pyrite, near lower contact (gradational), quartz/carbonate veinlet @ 16° approximately 11mm wide									
36.45	40.73	Lapilli Tuff	37030	36.45	37.85	1.40	2		1.0	1	94
		<ul style="list-style-type: none"> - grey/green - moderate light grey/green fragments (0.3-5.0cm) - <moderate sericite and chlorite alteration - slips @ 48-86° - minor carbonate ± quartz fracture filling and gashes (concentrated toward lower contact) - trace fine grained disseminated pyrite, 1-3% disseminated magnetite (approximately 3-5% in fragments) 									
		37.74-37.94m - broken core	37031	37.85	39.25	1.40	1		1.0	1	89
		38.95-39.19m - broken core									

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
36.45	40.73 Cont.	39.43-39.57m - 3-5% very fine grained disseminated pyrite associated with carbonate/quartz fracture filling and veinlets at 24-43° 39.87-40.06m - >moderate sericite and chlorite alteration, >moderate carbonate fracture filling, gashes and veinlets @ approximately 55°, 1-3% disseminated fine grained pyrite, trace to 1% magnetite 40.06-40.73m - dark green/grey lapilli tuff, 1-3% disseminated pyrite toward top, sharp lower contact @ 27-34°, 5-7% disseminated 0.5mm hydrothermal mineralization	37032	39.25	40.73	1.48	8		1.2	1	98	
40.73	42.79	Andesite - dark green/grey - > moderate fractures - < moderate chlorite alteration - approximately 25% feldspar phenocrysts (< 1mm) - chilled contacts, upper contact @ 27-34°, lower contact @ 50-54° - slips @ 50-73° - very minor carbonate fracture filling and gashes - trace very fine grained to fine grained disseminated pyrite, 1-3% very fine grained disseminated magnetite	37033	40.73	41.73	1.00	3		2.0	1	75	
		40.78-40.95m - broken core 41.04-41.36m - broken core 42.48m - 2mm part open carbonate/quartz veinlet @ 19°	37034	41.73	42.79	1.06	2		1.8	1	80	
42.79	54.93	Lapilli Tuff - grey/green - moderate pale green-grey fragments (0.2-4.0cm) - moderate fractures - moderate to > moderate sericite and chlorite alteration especially towards lower contact @ 66°, upper contact @ 50-54°, minor iron carbonate on fractures, quartz/sericite associated with fracture filling veinlets, trace to 1% creamy white hydrothermal mineralization - moderate carbonate ± quartz fracture filling, gashes and veinlets increasing down hole										

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
42.79	54.93 Cont.	1-3% disseminated fracture pyrite, locally up to 5-7%, trace to 1% disseminated magnetite (\leq 3-5% in fragments near middle of interval), trace chalcopyrite, trace arsenopyrite?, trace specularite									
		42.79-43.08m - 1-3% disseminated, fracture pyrite, trace magnetite, 5-7% creamy white hydrothermal mineralization, upper contact @ 50-54°	37035	42.79	44.29	1.50	2		0.7	1	84
		43.50-43.55m - broken core									
		43.61-43.82m - minor chalcodonic fills in fragments, 1-3% disseminated fine grained pyrite, trace arsenopyrite?									
		44.17-44.74m - slips @ 19-71°									
		45.82-45.94m - pale green irregular sericite altered fragment?	37036	44.29	45.29	1.00	6		0.8	1	89
		46.42-46.87m - mineralized envelope of 8cm wide strong quartz/carbonate veining, > moderate sericite and chlorite, minor iron carbonate, partially open, upper contact @ 63°, lower contact @ 44°, 1-3% disseminated and fractured pyrite at selvages, trace chalcopyrite, magnetite, arsenopyrite?	37037 37038	45.29 46.42	46.42 47.52	1.13 1.10	3 6		0.8 0.8	1 1	96 54
		47.16-47.42m - 3-5% pyrite, fractured, disseminated and veinlet, > moderate quartz and carbonate fracture filling and gashes									
		47.42-50.28m - 1-3% disseminated 0.2-1.0mm blebs magnetite (\leq 3-5% in fragments), trace to 1% very fine grained to fine grained disseminated pyrite, slips @ 18-82°	37039 37040 37041	47.52 48.90 50.28	48.90 50.28 50.98	1.38 1.38 0.70	1 2 40		0.7 0.8 0.9	1 1 28	92 106 240
		50.28-50.96m - 5-7% fracture and veinlet pyrite, > moderate sericite and quartz, > moderate carbonate \pm quartz fracture filling and gashes, trace to 1% magnetite, trace specularite, contacts gradational									
		50.96-51.86m - 3-5% disseminated hydrothermal mineralization, trace magnetite, trace to 1% very fine grained to fine grained disseminated pyrite, slips @ 21°, 53°, 81°	37042 37043	50.98 52.28	52.28 53.78	1.30 1.50	2 3		0.8 0.8	1 1	89 80
		52.37-52.66m - 3-5% very fine grained disseminated pyrite, quartz/sericite altered, > moderate carbonate \pm quartz fracture filling and gashes									
		52.66m-53.14m - < intense chlorite and sericite, partially open carbonate/quartz veinlets @ 55-58°, trace to 1% disseminated fine grained pyrite, trace									

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
42.79	54.93 Cont.	magnetite, specularite, 3-5% disseminated hydrothermal mineralization 53.48-53.64m - approximately 0.5cm carbonate/quartz veinlet @ 05°, 1% to 3% disseminated pyrite 53.82m - 0.4cm partially open quartz/carbonate veinlet @ 25°, trace to 1% very fine grained disseminated pyrite and specularite, > moderate carbonate fracture filling and gashees 54.64-54.93m - > moderate quartz/sericite altered, 3-5% disseminated and fracture medium grained pyrite, < intense carbonate and quartz fractures and veinlets @ approximately 24°, trace magnetite, specularite	37044	53.78	54.93	1.15	4		0.8	1	38
54.93	69.70	Crystal Tuff with Minor Lapilli Tuff - pale green/grey - ≤30% white-pale green feldspar phenocrysts (0.5-3.0mm) - < moderate fractures - moderate to > moderate sericite and chlorite, minor iron carbonate on fractures, 1-3% disseminated creamy white hydrothermal mineralization - < moderate carbonate ± quartz fracture filling and gashees - trace to 1% disseminated fine grained pyrite, trace specularite, trace pyrrhotite, trace sphalerite? 55.57m - approximately 1 cm carbonate/quartz veinlet @ 25°, offset @ 75°, 1-3% disseminated medium grained pyrite, trace to 1% magnetite, specularite 55.75m - 7mm carbonate/quartz veinlet @ 29° offset @ 10° 55.93-56.13m - partially open carbonate/quartz veinlets (approximately 50%) @ 24-35°, > moderate iron carbonate on fractures and feldspar phenocrysts, moderate sericite and chlorite, 1-3% disseminated medium grained pyrite, trace to 1% specularite 56.39-56.69m - > moderate sericite and chlorite iron carbonate alteration, trace to 1% specularite, trace pyrrhotite 56.69-56.81m - broken core	37045	54.93	56.39	1.46	3		0.8	1	16
			37046	56.39	57.40	1.01	2		0.8	1	99
			37047	57.40	58.90	1.50	2		0.8	1	82

DRILL HOLE LOG										HOLE NO. W90-2	PAGE 10 OF 18
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
54.93	69.70 Cont.	57.10-57.29m - 1-3% specularite and trace magnetite associated with carbonate/quartz fracture filling and veinlets	37048	58.90	60.35	1.45	6		1.0	7	97
		57.40-59.70m - > moderate patchy pale green sericite and chlorite alteration associated with carbonate fracture filling and veinlets, 1-2% specularite, trace magnetite in veinlets, 1-3% disseminated fine grained pyrite, slips 54-83°									
		60.35-61.04m - 3-5% disseminated and fracture pyrite, > moderate quartz/sericite alteration, minor iron carbonate, > moderate carbonate ± quartz fracture filling and gashes, > moderate quartz ± carbonate veinlets, 3-5% hydrothermal specks, trace specularite	37049	60.35	61.04	0.69	24		0.9	1	77
		61.04-62.04m - 1-3% disseminated and fracture filling pyrite, trace sphalerite?, trace specularite; > moderate to < intense carbonate ± quartz fracture filling and gashes, minor carbonate breccia at end	37050 37051	61.04 62.54	62.54 64.04	1.50 1.50	7 7		1.3 1.3	1 1	90 75
		62.62-62.81m - > moderate sericite and chlorite alteration, moderate carbonate fracture filling and gashes									
		63.05-63.76m - coarser grained feldspar porphyry phenocrysts ≤ 0.5cm; > moderate carbonate fracture filling and gashes, > moderate quartz/carbonate veinlets with sericite alteration, trace to 1% disseminated and fracture pyrite, trace specularite									
		63.76-64.12m - > moderate sericite and chlorite alteration, 1-3% specularite associated with carbonate ± quartz veinlets, slips @ 26°	37052	64.04	65.54	1.50	6		1.1	1	90
		64.32-65.73m - minor 0.1 - 0.5cm fragments < moderate carbonate fracture filling and gashes, trace to 1% disseminated fine grained pyrite, trace magnetite, slips @ 65-73°	37053	65.54	67.04	1.50	5		1.4	1	131
		65.73-67.11m - > moderate carbonate ± quartz fracture filling and gashes, minor 0.1 - 0.5cm fragments, trace to 1% very fine grained to fine grained disseminated pyrite, trace magnetite	37054	67.04	68.54	1.50	6		1.7	15	85
		67.36-68.13m - pale green > moderate sericite alteration, upper contact gradational, lower contact @ 41°, 1-3% disseminated medium grained pyrite	37055	68.54	69.70	1.16	4		1.6	5	67
		68.65-68.76m - > moderate iron carbonate on fractures and									

DRILL HOLE LOG

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
54.93	69.70 Cont.			feldspar phenocrysts, 1-3% disseminated medium grained pyrite 69.03m - part open quartz/carbonate \leq 0.5cm gash veinlet @ 39°, 1-3% specularite 69.20-69.70m - > moderate quartz/sericite alteration, > moderate carbonate \pm quartz fracture filling and gashes, upper contact @ 23°, lower contact @ 67°							
69.70	72.73	Andesite - grey/green - fine grained (possible crystal tuff?) possible fragments (\leq 2mm) - 30% feldspar phenocrysts (approximately 1mm) - > moderate carbonate \pm quartz fracture filling and gashes - moderate sericite and chlorite alteration, minor iron carbonate; slips @ 46-82° - trace very fine grained - fine grained disseminated pyrite 70.60-70.85m - > moderate sericite and quartz alteration 72.35-72.73m - > moderate carbonate \pm quartz fracture filling and gashes, 1-3% fine grained to medium grained disseminated pyrite	37056	69.70	71.20	1.50	3		1.3	1	126
			37057	71.20	72.73	1.53	5		1.3	1	86
72.73	78.11	Crystal Tuff - greenish-grey, bleached appearance - > moderate carbonate fracture filling and gashes, > moderate quartz/sericite and chlorite alteration, > moderate iron carbonate - slips @ 33°-90° - trace very fine grained to fine grained disseminated pyrite 73.60-73.82m - > moderate iron carbonate alteration, broken core @ lower contact 73.90-74.05m - > moderate carbonate \pm quartz veinlets @ 43°, > moderate iron carbonate at lower contact 74.69-75.16m - > moderate iron carbonate alteration, trace to 1% fine grained disseminated pyrite 76.23-76.70m - > moderate iron carbonate alteration, trace to 1% fine grained disseminated pyrite	37058	72.73	74.23	1.50	6		1.3	1	65
			37059	74.23	75.73	1.50	8		1.4	1	65
			37060	75.73	76.93	1.20	7		1.2	1	104
			37061	76.93	78.11	1.18	9		1.6	1	100

DRILL HOLE LOG

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES						
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm		
72.73	78.11 Cont.	76.64-77.23m - 0.1 - 0.2cm filled vesicles, possible reworked lapilli tuff fragments?, partially open 0.3cm quartz/carbonate veinlet, trace very fine grained disseminated pyrite, sericite alteration at lower contact @ 73° 77.59-78.11m - > moderate iron carbonate alteration, > moderate sericite and chlorite alteration; upper contact @ approximately 55°, lower contact @ 53°, 1-3% fine grained disseminated pyrite											
78.11	82.80	Andesitic Lapilli Tuff - greenish grey, very minor ≤ 0.5cm fragments - 25% feldspar phenocrysts (< 1mm) - < moderate carbonate fracture filling and gashes - > moderate sericite and chlorite, very minor iron carbonate - slips @ 52 - 90°, gradational upper contact - trace very fine grained disseminated pyrite, 1-3% disseminated hydrothermal mineralization 78.11-79.00m - gradational contact, moderate carbonate fracture filling and gashes, minor iron carbonate 79.10-79.75m - moderate quartz/sericite alteration, 1-3% fine grained disseminated pyrite, 3-5% disseminated hydrothermal mineralization 80.48-81.32m - > moderate sericite/quartz alteration, > moderate carbonate fracture filling and gashes 81.50m - 1mm carbonate veinlet at 11°, offset @ 30° 81.63-82.02m - > moderate sericite alteration, 1.6cm carbonate veinlet @ 16° 82.52-82.59m - > moderate sericite alteration, minor iron carbonate, upper contact @ 73°, lower contact @ 56°	37062	78.11	79.61	1.50	2		1.5	1	142		
			37063	79.61	81.32	1.71	8		1.4	1	91		
			37064	81.32	82.80	1.48	1		1.5	1	119		
82.80	90.14	Andesite - grey-green - granular texture, very minor ≤ 0.5cm fragments (exotic?) - > moderate - < moderate carbonate fracture filling and gashes increasing to lower contact, < moderate - > moderate sericite and chlorite, increasing to lower											

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
82.80	90.14 Cont.	- trace fine grained disseminated pyrite, trace magnetite, trace - 1% specularite - narrow tuffaceous horizons within	37065	82.80	84.30	1.50	8		1.2	1	115
		82.80-83.85 - slips @ 43-65°	37066	84.30	85.80	1.50	4		1.3	1	129
		83.85-84.35m - abundant ≤ 0.2cm fragments									
		84.90m - 3mm carbonate/quartz veinlet @ 62°	37067	85.80	87.50	1.70	8		1.3	1	111
		85.85-86.11m - > moderate iron carbonate alteration, > moderate carbonate ± quartz veinlets (0.1-0.6cm) @ 29-52°, trace to 1% fine grained disseminated pyrite, 1-3% magnetite @ selvages	37068	87.50	89.20	1.70	4		1.4	1	110
		87.99-88.76m - > moderate sericite ± quartz alteration, > moderate carbonate ± quartz, fracture filling and gashes, > moderate iron carbonate, upper contact @ 72°, lower contact @ 53°, trace fine grained disseminated pyrite, 1-3% specularite in quartz/carbonate veinlets									
		88.76-89.12m - 1-3% disseminated fine grained pyrite									
		89.20-89.80m - > moderate carbonate ± quartz fracture filling and gashes, 5-7% fracture and disseminated pyrite associated with > moderate quartz veinlets @ 55-70°, > moderate chlorite and sericite alteration	37069	89.20	90.14	0.94	448		2.0	1	159
90.14	98.27	Andesitic Lapilli Tuff - greenish grey, orange brown iron carbonate and white quartz/carbonate zones - < moderate fragments (felsic and mafic) ≤ 0.5cm - > moderate carbonate ± quartz fracture filling and gashes - > moderate quartz ± carbonate veinlets @ approximately 70° - > moderate sericite and chlorite alteration, > moderate iron carbonate associated with shears - 1-3% fractures, veinlet and disseminated pyrite, locally ≤ 7-10%, trace to 1% specularite, trace magnetite, trace chalcopyrite? 90.30m - slip @ 26° 90.30-91.40m - trace to 1% disseminated pyrite, trace magnetite and specularite, moderate carbonate ± quartz fracture filling and gashes	37070	90.14	91.40	1.26	20		1.4	1	108

DRILL HOLE LOG

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
90.14	98.27 Cont.			91.40-91.83m - > moderate carbonate fracture filling and gashes, > moderate iron carbonate alteration, trace to 1% pyrite, trace specularite slip @ 15°	37071		91.40	92.49	1.09	16		1.3
		91.93 - 92.49-93.53m - 1-3% fracture pyrite, > moderate carbonate fracture filling and gashes, > moderate chlorite and sericite alteration, (bands @ approximately 70°), > moderate iron carbonate, > moderate partial open quartz/carbonate veinlets	37072	92.49	93.57	1.08	98		1.6	1	177	
		93.57-94.25m - 7-10% fracture pyrite, associated with quartz veinlets and quartz flooding, < intense chlorite alteration, moderate sericite, manganese on fractures, trace to 1% specularite, banding @ 50-87°, upper contact gradational, lower contact @ 42°	37073	93.57	94.25	0.68	14000	0.580	18.3	200	1031	
		94.25-94.93m - < intense chlorite alteration, moderate sericite alteration, > moderate carbonate fracture filling and gashes, 1-3% disseminated and fracture pyrite; 94.61m - iron carbonate healed fractured/sheared broken core, slicks @ 28-36°	37074	94.25	95.56	1.31	130		1.6	1	172	
		95.70-96.17m - shear, intense iron carbonate and sericite alteration, upper contact @ 48°, lower contact @ 20°, quartz/carbonate fracture filling and gashes, 1-3% disseminated pyrite?, trace to 1% magnetite	37075	95.56	96.30	0.74	602		2.1	11	410	
		96.17-98.27m - pale green-grey, > moderate - < intense sericite alteration, > moderate iron carbonate alteration, trace to 1% disseminated pyrite, 1-3% fracture filling and veinlet specularite, trace chalcopyrite?	37076 37077	96.30 97.30	97.30 98.27	1.00 0.97	27 22		1.5 1.4	1 33	166 115	
98.27	102.72	Lapilli Tuff - greenish grey - polyolithic fragments (0.2 - 6.0cm) - < moderate carbonate ± quartz fracture filling and gashes - minor sericite, chlorite and iron carbonate decreasing down hole - trace to 1% specularite associated with gashes and veinlets, trace disseminated pyrite										

DRILL HOLE LOG

HOLE NO. W90-2

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
98.27	102.72 Cont.	98.27-98.67m - moderate iron carbonate alteration, trace to 1% disseminated pyrite	37078	98.27	99.77	1.50	5		1.5	1	115
		99.02m - slip @ 42°									
		99.60m - slip @ 31°									
		99.69-100.06m - moderate sericite alteration, 1-3% disseminated pyrite, trace to 1% specularite, partially open carbonate veinlet	37079	99.77	101.27	1.50	5		1.1	1	57
		100.06-100.32m - > moderate iron carbonate alteration on fractures and fragments, upper contact @ 33°, lower contact @ 35°, 1-3% specularite									
		100.80m - 1.1cm quartz carbonate veinlet @ 24°									
		100.80-102.72m- slips @ 26 -70°									
			37080	101.27	102.72	1.45	8		1.2	1	82
		- END OF HOLE -									

Keewatin Engineering Inc.				DRILL LOG				Sample Data						
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37001	2.13	2.93	0.80		71	-0.23		1		0.9	18	140	9	76
37002	2.93	3.68	0.75		97	-0.02		3		0.9	1	77	16	89
37003	3.68	4.94	1.26		95	-0.16		1		1.1	1	73	15	101
37004	4.94	5.44	0.50		120	+0.10		2		1.1	6	101	18	77
37005	5.44	6.44	1.00		95	-0.05		2		1.0	21	72	26	59
37006	6.44	7.44	1.00		106	+0.06		10		1.4	1	54	17	77
37007	7.44	8.54	1.10		104	+0.04		10		1.2	1	43	20	67
37008	8.54	9.63	1.09		101	+0.01		2		0.9	1	121	19	92
37009	9.63	10.63	1.00		100	0.00		7		0.9	1	197	20	82
37010	10.63	11.63	1.00		99	-0.01		17		1.0	1	92	25	67
37011	11.63	12.79	1.16		97	-0.03		9		0.7	14	75	15	80
37012	12.79	13.79	1.00		102	+0.02		12		1.0	5	110	21	72
37013	13.79	14.79	1.00		100	0.00		16		1.1	1	83	19	83
37014	14.79	15.79	1.00		99	-0.01		5		1.2	1	108	19	70
37015	15.79	16.77	0.98		100	0.00		13		1.3	13	100	24	78
37016	16.77	18.27	1.50		100	0.00		15		1.2	1	101	21	93
37017	18.27	19.27	1.00		95	-0.08		38		1.0	6	29	26	59
37018	19.27	20.27	1.00		101	+0.01		23		1.0	1	53	20	70
37019	20.27	21.77	1.50		95	0.00		22		1.0	17	52	26	90
37020	21.77	73.00	1.23		102	+0.03		17		1.2	24	30	21	85
37021	73.00	24.00	1.00		100	0.00		10		1.3	8	48	27	77
37022	24.00	25.50	1.50		97	-0.05		22		1.1	4	35	27	78
37023	25.50	27.00	1.50		99	-0.02		24		1.2	1	46	19	78
37024	27.00	28.50	1.50		101	+0.02		41		1.0	1	43	23	97
37025	28.50	30.10	1.60		98	-0.04		4		0.7	1	79	26	84
37026	30.10	31.70	1.60		98	-0.02		4		0.8	1	41	18	79
37027	31.70	33.70	1.50		97	-0.05		12		1.2	1	51	15	71
37028	33.70	34.80	1.60		99	-0.01		4		1.1	1	52	11	58
37029	34.80	36.45	1.65		100	0.00		4		1.0	1	100	12	57
37030	36.45	37.85	1.40		99	-0.02		2		1.0	1	94	11	67
37031	37.85	39.25	1.40		100	0.00		1		1.0	1	89	6	77
37032	39.25	40.73	1.40		99	-0.02		8		1.2	1	98	10	63
37033	40.73	41.73	1.00		105	+0.05		3		2.0	1	75	6	54
37034	41.73	42.79	1.06		98	-0.02		2		1.8	1	80	6	47
37035	42.79	44.29	1.50		102	+0.03		2		0.7	1	84	9	56

Keewatin Engineering Inc.				DRILL LOG				Sample Data						
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37036	44.29	45.29	1.00		101	+0.01		6		0.8	1	89	14	70
37037	45.29	46.42	1.13		107	+0.08		3		0.8	1	96	15	67
37038	46.42	47.52	1.10		98	-0.02		6		0.8	1	54	10	87
37039	47.52	48.90	1.38		99	-0.01		1		0.7	1	92	13	76
37040	48.90	50.28	1.38		101	+0.02		2		0.8	1	106	18	79
37041	50.28	50.98	0.70		107	+0.05		40		0.9	28	240	27	45
37042	50.98	52.28	1.30		102	+0.01		2		0.8	1	89	26	79
37043	52.28	53.78	1.50		100	0.00		3		0.8	1	80	10	80
37044	53.78	54.93	1.15		94	-0.07		4		0.8	1	38	13	68
37045	54.93	56.39	1.46		104	+0.07		3		0.8	1	16	20	67
37046	56.39	57.40	1.01		96	-0.04		2		0.8	1	99	27	92
37047	57.40	58.90	1.50		101	+0.02		2		0.8	1	82	26	62
37048	58.90	60.35	1.45		100	0.00		6		1.0	7	97	19	59
37049	60.35	61.04	0.69		101	+0.01		24		0.9	1	77	34	45
37050	61.04	62.54	1.50		97	-0.04		7		1.3	1	90	16	82
37051	62.54	64.04	1.50		100	0.00		7		1.3	1	75	12	93
37052	64.04	65.54	1.50		99	-0.01		6		1.1	1	90	14	76
37053	65.54	67.04	1.50		101	+0.01		5		1.4	1	131	149	844
37054	67.04	68.54	1.50		103	+0.02		6		1.7	15	85	41	175
37055	68.54	69.70	1.16		100	0.00		4		1.6	5	67	35	205
37056	69.70	71.20	1.50		96	-0.06		3		1.3	1	126	12	172
37057	71.20	72.73	1.53		103	+0.05		5		1.3	1	86	9	141
37058	72.73	74.23	1.50		93	+0.12		6		1.3	1	65	17	69
37059	74.23	75.73	1.50		100	0.00		8		1.4	1	65	22	64
37060	75.73	76.93	1.20		99	-0.01		7		1.2	1	104	11	78
37061	76.93	78.11	1.18		102	+0.02		9		1.6	1	100	10	102
37062	78.11	79.61	1.50		100	0.00		2		1.5	1	142	10	101
37063	79.61	81.32	1.71		99	-0.02		8		1.4	1	91	8	67
37064	81.32	82.80	1.48		100	0.00		1		1.5	1	119	8	74
37065	82.80	84.30	1.50		103	+0.04		8		1.2	1	115	10	70
37066	84.30	85.80	1.50		99	-0.01		4		1.3	1	129	8	83
37067	85.80	87.50	1.70		101	+0.02		8		1.3	1	111	21	93
37068	87.50	89.20	1.70		97	-0.05		4		1.4	1	110	11	78
37069	89.20	90.14	0.94		100	0.00		448		2.0	1	159	26	164
37070	90.14	91.40	1.26		103	+0.04		20		1.4	1	108	15	136

Keewatin Engineering Inc.					DRILL LOG				Sample Data					
SAMPLE					CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS						
Number	From	To	Total Metres	Sp.Gr.	%	Amt. Lost		ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37071	91.40	92.49	1.09		95	-0.05		16		1.3	1	70	15	165
37072	92.49	93.53	1.08		100	0.00		98		1.6	1	177	15	118
37073	93.53	94.25	0.68		101	+0.01		14000	0.580	18.3	200	1031	69	74
37074	94.25	95.56	1.31		103	+0.04		130		1.6	1	172	8	199
37075	95.56	96.30	0.74		100	0.00		602		2.1	11	410	24	71
37076	96.30	97.30	1.00		100	0.00		27		1.5	1	166	19	77
37077	97.30	98.27	0.97		91	-0.09		22		1.4	33	115	14	30
37078	98.27	99.77	1.50		100	0.00		5		1.5	1	115	9	114
37079	99.77	101.27	1.50		105	+0.08		5		1.1	1	57	20	60
37080	101.27	102.72	1.45		99	-0.01		8		1.2	1	82	10	85

DRILL HOLE LOG							HOLE NO. W90-3		PAGE NO. 1 of 9		
LOCATION: COOPER ZONE (0+10E/0+13S)		ELEV: 605m (approximate) LENGTH: 65.84m		DIP TEST		PROPERTY: WARATAH					
AZIM: 030° DIP: -60°		CORE SIZE: BQ		METREAGE	AZIMUTH	INCLINATION	CORR. INCLIN.	CLAIM NO: WARATAH 7 SECTION:			
STARTED: October 24, 1990 COMPLETED: October 25, 1990 PURPOSE: Test the Cooper Zone at depth (check for a southerly dipping structure)				0.00	030°		-60°	LOGGED BY: R. Pegg and A. Travis DATE LOGGED: October 25 - 29, 1990 DRILLING CO: FALCON ASSAYED BY: MIN-EN			
CORE RECOVERY: 99.6%											
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
0.00	3.05	Casing.									
3.05	14.38	Altered Lapilli Tuff	37215	3.05	4.55	1.50	8		2.4	1	116
		- medium greyish green; polyolithic									
		- moderate fractures (some are low angle), >> minor carbonate fracture fillings	37216	4.55	6.05	1.50	6		2.3	1	148
		- mafic fragments altered to chlorite	37217	6.05	7.55	1.50	3		2.3	1	121
		- minor sericite alteration, approximately 30% small felsic fragments (1 - 3mm); minor sericite alteration of larger fragments (2 -4cm)	37218	7.55	9.05	1.50	2		3.3	1	80
		- abundant broken core (dark brown coatings)	37219	9.05	10.55	1.50	5		2.9	1	104
		- very minor epidote fracture filling	37220	10.55	12.05	1.50	3		2.8	12	84
		- <1% fine grained disseminated pyrite	37221	12.05	13.55	1.50	1		1.9	26	89
		3.05-3.40m broken core	37222	13.55	14.38	0.83	54		2.9	439	332
		6.94-8.38m much broken core with manganese stain on fractures									
		7.39-8.02m >minor magnetite and dirt									
		13.04-13.81m <moderate sericite alteration, fractures @ 60°									
		- bottom 22cm has 5 - 7% fracture filled pyrite									
14.38	14.83	Semi-massive Sulphides	37201	14.38	14.83	0.45	31550	1.009	59.4	39472	7953
		- 40% pyrite, 10 - 15% magnetite, 1 - 2% chalcopyrite, 3 - 5% arsenopyrite; quartz-chlorite gangue, subrounded quartz									
		- top of unit has very narrow fine grained magnetite with the pyrite									
		- pyrite is fine grained - medium grained blebs, sulphides appear brecciated									

DRILL HOLE LOG

HOLE NO. W90-3

PAGE 2 OF 9

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
14.38	14.83 Cont.	- some intermixing of sulphides but magnetite is dominant in a few sections - minor leached vuggy portions, upper contact @ 33°; lower contact @ 80°									
14.83	15.29	Altered Lapilli Tuff - dark grey green - moderate chlorite alteration; sheared - <moderate fractures; very minor carbonate fracture filling - minor sericite alteration - 4 - 6% pyrite fracture fill and gash filling and blebs, trace chalcopyrite	37202	14.83	15.29	0.46	310		3.2	479	713
15.29	15.90	Highly Altered Lapilli Tuff - dirty white and medium greyish green - moderate chlorite and sericite alteration - 20% white quartz (mostly in the upper 37cm) - more sericite to the lower 24cm - sulphides more concentrated in the upper 37cm, 20% pyrite, 3 - 5% arsenopyrite, <1% chalcopyrite, upper contact @ 28°; irregular and gradational lower contact - sulphides appear recrystallized and brecciated	37203	15.29	15.90	0.61	11600	0.382	19.8	20635	3330
15.90	16.35	Altered Crystal Tuff - medium grey green - <moderate chlorite alteration; <moderately fractured ± sheared; minor carbonate and quartz fracture filling - 3 - 5% pyrite fracture fill and minor fine grained disseminations; appear recrystallized and brecciated	37204	15.90	16.35	0.45	301		2.5	530	446
16.35	18.10	Crystal Tuff - greyish green - >minor chlorite alteration - 30% light greyish green felsic fragments (1 - 3mm) - >minor carbonate ± minor quartz (increasing @ top and bottom of unit) - minor dull white hydrothermal specks - 1 - 2% pyrite fracture fill and minor disseminations (slight increase in sulphides @ very bottom)	37205	16.35	18.10	1.75	37		1.5	165	134

DRILL HOLE LOG

HOLE NO. W90-3

PAGE 3 OF 9

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
18.10	25.61	Altered Lapilli Tuff									
		- medium to dark greyish green; slip upper contact (sheared) 45°	37206	18.10	19.60	1.50	773		3.8	92	505
		- >moderate fractures; moderate carbonate ± quartz fracture filling; <moderate sheared	37207	19.60	20.80	1.20	2700	0.083	5.6	196	500
		- >minor white hydrothermal specks									
		- >moderate chlorite alteration and minor sericite alteration									
		- 20-30% light grey-green felsic fragments									
		- mafic fragments to chlorite; 4 - 6% pyrite fracture fill with minor disseminations (recrystallized and brecciated)									
		19.08-19.27m quartz and lesser sericite, minor carbonate and minor chlorite, 15-20% pyrite (fine grained +brecciated grains to 7mm and medium grained patches) irregular upper and lower contact	37208	20.80	22.40	1.60	1460	0.044	4.9	65	472
		19.27-20.25m ≤1% pyrite									
		20.25-20.37m quartz and lesser chlorite and minor carbonate and sericite, 15 - 20% pyrite, upper contact sheared (25°), irregular lower contact	37209	22.40	23.90	1.50	654		2.7	52	219
20.59-20.80m quartz and lesser chlorite and minor carbonate and sericite, 15 - 20% pyrite, upper contact sheared (45°), irregular lower contact	37210	23.90	25.61	1.71	319		1.9	42	155		
20.80-21.38m altered lapilli tuff with 3 - 5% pyrite											
21.38-21.67m quartz and lesser chlorite and minor sericite and carbonate, 10 - 15% pyrite and >trace magnetite; upper contact 30° - 50°, lower contact 40° - 50°											
21.67-22.40m chlorite and sericite alteration with moderate white hydrothermal specks and 6 - 8% pyrite fracture filling, >minor quartz and carbonate fracture filling											
25.61	34.02	Fractured, Sheared and Altered Lapilli Tuff									
		- medium grey green colour	37211	25.61	27.11	1.50	331		3.4	56	450
		- moderate chlorite alteration and white hydrothermal specks									
		- minor sericite alteration (fracture filling)	37212	27.11	28.61	1.50	491		4.0	35	366
		- moderate carbonate ± quartz fracture fill and gashes									
- minor vuggy sections (leached carbonate?)	37213	28.61	30.11	1.50	2640	0.064	8.1	72	564		
- arbitrary contacts; 7-10% pyrite fracture filling and <1% magnetite (disseminated in patches of fine grained, felted chlorite)	37214	30.11	31.49	1.38	377		4.9	1	467		

DRILL HOLE LOG

HOLE NO. W90-3

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
25.61	34.02 Cont.	28.10-29.04m low angle rusty fracture 29.83-30.01m patchy quartz, pyrite and minor chlorite, irregular upper contact and low angle lower contact 30.25m 0.5cm carbonate/quartz veinlet @ 12° 31.49-33.21m larger (0.5 - 1.0cm) quartz, pyrite veinlet at 44°-78° 33.69m 1.4cm carbonate vein @ 15°	37223 37224	31.49 32.76	32.76 34.02	1.27 1.26	193 60		2.3 2.1	1 10	204 160
34.02	46.77	Altered Lapilli Tuff - medium grey green colour - moderately fractured and sheared - moderate chlorite alteration, minor sericite alteration and iron carbonate, moderate hydrothermal mineralization specks - moderate - < moderate carbonate ± quartz fracture filling and gashes - minor vuggy sections - moderate fragments (polylitic), 1 - 3mm occasionally ≤5.0cm - 3 - 5% fracture fill and veinlet pyrite, trace to 1% disseminated magnetite	37225	34.02	35.52	1.50	199		2.1	1	194
34.02	46.77 Cont.	34.76-34.89m patchy quartz; fracture and veinlet pyrite 7 - 10%, > moderate chlorite, irregular contacts @ approximately 70° 36.68-36.87m patchy quartz, fracture and veinlet pyrite 5 - 7%, approximately 2.0cm quartz ± carbonate vein at 26° - 37°, > moderate chlorite, moderate sericite 37.25-38.76m 3 - 5% disseminated pyrite, slips at 37° - 82° shallow angle (02° - 08°) slickensided, manganese-coated; > moderate carbonate ± quartz fracture filling and gashes, > moderate vuggy carbonate/quartz veinlets, > moderate sericite and chlorite alteration, 3 - 5% disseminated and fracture pyrite (concentrated near top of interval) 38.90-39.71m > moderate - < intense part open carbonate ± quartz veinlets @ approximately 33° and approximately 57°, trace to 1% fracture pyrite 43.63-44.52m patchy quartz, pyrite, > moderate chlorite, fracture pyrite 5° - 7°, contacts irregular	37226 37227 37228 37229 37230 37231	35.52 37.12 38.76 40.26 41.76 43.26 44.76	37.12 38.76 40.26 41.76 43.26 44.76	1.60 1.64 1.50 1.50 1.50	71 13 21 9 29 107		1.6 1.8 1.8 2.0 1.6 1.2	1 16 1 1 1 1	92 72 90 80 120 151

DRILL HOLE LOG

HOLE NO. W90-3

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
		45.27-46.12m	>moderate sericite and chlorite alteration, >moderate carbonate and quartz fracture fill and gashes, >moderate iron carbonate, broken 3cm quartz vein, upper contact @ 47°, 5 - 7% fracture pyrite	37232	44.76	46.12	1.36	309		2.0	29	267
		46.12-46.45m	patchy quartz, pyrite, >moderate chlorite and sericite alteration, 7 - 10% fracture pyrite, irregular contacts at approximately 30°	37233	46.12	46.77	0.55	1390	0.038	3.0	1	603
46.77	48.75	Andesitic Ash Tuff/Andesite - pale green-grey in colour - moderate - <moderate carbonate fracture fill and gashes, minor part open carbonate and quartz veinlets - upper contact irregular at 45°, lower contact at 37° - <moderate chlorite fracture fill - trace very fine grained disseminated pyrite	37234	46.77	47.77	1.00	54		2.1	1	92	
		47.25-47.37m	part quartz/carbonate veinlets, broken core	37235	47.77	48.75	0.98	25		2.6	1	78
		48.72-48.75m	2cm carbonate/quartz vein @ 37°, abundant iron carbonate									
48.75	65.48	Lapilli Tuff with Minor Crystal Tuff - greenish grey in colour - moderate carbonate ± quartz fracture fill, gashes and veinlets - moderate - >moderate chlorite and sericite alteration, minor bleached patches and iron carbonate - upper contact @ 37°, lower contact gradational - minor fragments (approximately 0.1 - 1.0cm) occasionally ≤3cm	37236	48.75	50.25	1.50	13		1.4	14	82	
48.75	65.48 Cont.	trace to 1% very fine grained to fine grained disseminated pyrite, trace to 1% specularite, trace magnetite	37237	50.25	51.75	1.50	11		1.1	1	71	
		52.06-53.11m	coarser grained feldspar phenocrysts ≤4mm, >moderate chlorite and sericite alteration, trace to 1% disseminated fine grained pyrite, slickensided @ 17 - 63°									
		53.18m	1.0cm quartz/carbonate vein at 27°, sericite envelope, 3 - 5% pyrite	37239	53.25	54.75	1.50	4		1.3	1	87
		53.70m	one 1cm quartz/carbonate vein and one 1 cm carbonate vein @ approximately 55°, 3 - 5%									

DRILL HOLE LOG

HOLE NO. W90-3

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
48.75	65.84 Cont.	53.94m 54.08m	37240	54.75	56.25	1.50	9		1.3	1	65	
		55.53-55.92m	37241	56.25	57.51	1.26	2		1.4	1	52	
		56.37-56.98m										
		57.42m 57.51-57.94m	37242	57.51	58.65	1.14	24		1.5	1	62	
		58.12m										
		58.20-58.65m 58.65-60.55m	37243 37244	58.65 60.15	60.15 61.65	1.50 1.50	6 7		1.4 1.7	1 1	43 75	
		60.72-61.33m										
		61.33-61.96m	37245	61.65	63.15	1.50	6		1.7	1	102	
		61.97-62.08m										
		62.08-62.79m										

DRILL HOLE LOG

HOLE NO. W90-3

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
				62.97-63.10m	37246		63.15	64.65	1.50	4	
		63.38-64.29m	37247	64.65	65.84	1.19	1		1.9	1	104
		64.29-65.84m									
		- END OF HOLE -									

Keewatin Engineering Inc.					DRILL LOG			Sample Data						
SAMPLE					CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS						
Number	From	To	Total Metres	Sp.Gr.	%	Amt. Lost		ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37215	3.05	4.55	1.50		109	+0.14		8		2.4	1	116	17	72
37216	4.55	6.05	1.50		93	-0.10		6		2.3	1	148	16	76
37217	6.05	7.55	1.50		94	-0.09		3		2.3	1	121	18	90
37218	7.55	9.05	1.50		95	-0.08		2		3.3	1	80	28	262
37219	9.05	10.55	1.50		98	-0.03		5		2.9	1	104	17	82
37220	10.55	12.05	1.50		100	0.00		3		2.8	12	84	14	108
37221	12.05	13.55	1.50		99	-0.02		1		1.9	26	89	22	84
37222	13.55	14.38	0.83		108	+0.07		54		2.9	439	322	45	696
37201	14.38	14.83	0.45		98	-0.01		31550	1.009	59.4	39472	7953	502	1614
37202	14.83	15.29	0.46		100	0.00		310		3.2	479	713	47	348
37203	15.29	15.90	0.61		103	+0.02		11600	0.382	19.8	20635	3330	177	754
37204	15.90	16.35	0.45		98	-0.01		301		2.5	530	446	151	582
37205	16.35	18.10	1.75		110	+0.18		37		1.5	165	134	56	190
37206	18.10	19.60	1.50		100	0.00		773		3.8	92	505	113	540
37207	19.60	20.80	1.20		106	+0.07		2700	0.083	5.6	196	500	97	1369
37208	20.80	22.40	1.60		94	-0.10		1460	0.044	4.9	65	472	99	800
37209	22.40	23.90	1.50		100	0.00		654		2.7	52	219	98	329
37210	23.90	25.61	1.71		101	+0.01		319		1.9	42	155	52	271
37211	25.61	27.11	1.50		100	0.00		331		3.4	56	450	40	853
37212	27.11	28.61	1.50		87	-0.19		491		4.0	35	366	154	8494
37213	28.61	30.11	1.50		99	-0.01		2640	0.064	8.1	72	564	180	6421
37214	30.11	31.49	1.38		101	+0.02		377		4.9	1	467	142	2660
37223	31.49	32.76	1.27		102	+0.03		193		2.3	1	204	49	1180
37224	32.76	34.02	1.26		103	+0.04		60		2.1	10	160	57	1422
37225	34.02	35.52	1.50		103	+0.05		199		2.1	1	194	69	587
37226	35.52	37.12	1.60		104	+0.07		71		1.6	1	92	16	506
37227	37.12	38.76	1.64		98	-0.04		13		1.8	16	72	24	229
37228	38.76	40.26	1.50		98	-0.03		21		1.8	1	90	39	236
37229	40.26	41.76	1.50		103	+0.04		9		2.0	1	80	67	767
37230	41.76	43.26	1.50		100	0.00		29		1.6	1	120	40	385
37231	43.26	44.76	1.50		100	0.00		107		1.2	1	151	23	613
37232	44.76	46.12	1.36		95	-0.06		309		2.0	29	267	35	273
37233	46.12	46.77	0.55		96	-0.02		1390	0.038	3.0	1	603	36	1251
37234	46.77	47.77	1.00		100	0.00		54		2.1	1	92	4	277
37235	47.77	48.75	0.98		102	+0.02		25		2.6	1	78	4	174

SAMPLE					CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS						
Number	From	To	Total Metres	Sp.Gr.	%	Amt. Lost		ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37236	48.75	50.25	1.50		97	-0.04		13		1.4	14	82	4	179
37237	50.25	51.75	1.50		99	-0.01		11		1.1	1	71	8	126
37238	51.75	53.25	1.50		102	+0.02		1		1.4	1	81	10	77
37239	53.25	54.75	1.50		99	-0.02		4		1.3	1	87	11	77
37240	54.75	56.25	1.50		94	-0.07		9		1.3	1	65	14	78
37241	56.25	57.51	1.26		100	0.00		2		1.4	1	52	21	79
37242	57.51	58.65	1.14		96	-0.04		24		1.5	1	62	15	80
37243	58.65	60.15	1.50		100	0.00		6		1.4	1	43	14	80
37344	60.15	61.65	1.50		99	-0.02		7		1.7	1	75	16	94
37245	61.65	63.15	1.50		96	-0.06		6		1.7	1	102	19	67
37246	63.15	64.65	1.50		100	0.00		4		1.9	1	114	10	78
37247	64.65	65.48	1.19		101	+0.01		1		1.9	1	104	5	75

DRILL HOLE LOG							HOLE NO. W90-4		PAGE NO. 1 of 9											
LOCATION: COOPER ZONE (0+32W/0+36S)			ELEV: Approximately 602m LENGTH: 80.47m			PROPERTY: WARATAH		CLAIM NO: WARATAH 7 SECTION:												
AZIM: 030° DIP: -60°			CORE SIZE: BQ			LOGGED BY: R. Pegg and A. Travis DATE LOGGED: October 28 and October 30, 1990 DRILLING CO: Falcon ASSAYED BY: Min-En														
STARTED: October 25, 1990 COMPLETED: October 26, 1990 PURPOSE: Test for possible southerly dip to the Cooper Zone, below the lower trench CORE RECOVERY: 99.7%			DIP TEST																	
		<table border="1"> <thead> <tr> <th>METREAGE</th> <th>AZIMUTH</th> <th>INCLINATION</th> <th>CORR. INCLIN.</th> </tr> </thead> <tbody> <tr> <td>0.00</td> <td>030°</td> <td></td> <td>-60.0°</td> </tr> <tr> <td>80.47</td> <td></td> <td>66</td> <td>-57.5°</td> </tr> </tbody> </table>		METREAGE	AZIMUTH	INCLINATION	CORR. INCLIN.	0.00	030°		-60.0°	80.47		66	-57.5°					
METREAGE	AZIMUTH	INCLINATION	CORR. INCLIN.																	
0.00	030°		-60.0°																	
80.47		66	-57.5°																	
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES													
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm									
0.00	1.52	Casing																		
1.52	3.70	Crystal Tuff																		
		- medium to dark greyish green	37327	1.52	2.61	1.09	23		1.7	1	112									
		- > minor fractures	37328	2.61	3.70	1.09	6		2.0	1	88									
		- > minor carbonate (± quartz) fracture filling and carbonate chlorite blebs																		
		- very minor epidote and chlorite fracture filling																		
		- 30-40% dirty white feldspar phenocrysts (1-3mm), some areas of concentrations																		
		- minor open fractures																		
		- 1% disseminated pyrite																		
		- gradational lower contact																		
		1.52-1.66m - broken and ground core																		
3.70	12.69	Lapilli Tuff and minor Andesite																		
		- medium greenish grey; minor crystal tuff	37329	3.70	5.20	1.50	2		2.4	1	114									
		- moderate fractures	37330	5.20	6.70	1.50	1		1.9	1	96									
		- moderate carbonate (± quartz) fracture filling	37331	6.70	8.30	1.60	3		1.6	1	82									
		- minor chlorite (small mafic fragments) and sericite alternation	37332	8.30	9.90	1.60	8		1.3	1	93									
		- very minor partially open fractures	37333	9.90	10.63	0.73	11		0.9	1	70									
		- polyolithic (felsic to 4.0cm; most ≤ 1cm)	37334	10.63	11.66	1.03	1		0.6	1	60									
		- 20% feldspar phenocrysts	37335	11.66	12.69	1.03	18		1.0	1	68									
		- ≤ 1% disseminated pyrite																		
		- gradational lower contact																		
		8.29-8.38m - chlorite-quartz-carbonate; slips @ 45° and iron carbonate																		
		9.90-10.63m - andesite, moderately well fractured, 2-4% disseminated pyrite; minor silicified																		

DRILL HOLE LOG										HOLE NO. W90-4	PAGE 2 OF 9
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
3.70	12.69 Cont	12.02-12.23m - sheared; ± moderate carbonate fracture filling (29°) abundant (30-40%) white feldspar phenocrysts and chlorite blebs; light to medium greenish grey									
12.69	25.27	Lapilli Tuff to Tuff Breccia and minor Crystal Tuff	37336	12.69	14.19	1.50	8		0.9	17	74
		- dark to light greenish grey	37337	14.19	15.60	1.41	2		1.1	1	108
		- < moderate fractures									
		- < moderate carbonate and quartz fracture filling	37338	15.60	16.03	0.43	5		1.2	19	90
		- > minor chlorite patches and blebs									
		- very minor local sericite alteration	37339	16.03	17.03	1.00	13		0.6	1	58
		- locally sheared/well fractured									
		1-3% disseminated (very minor fracture filling) pyrite	37349	17.03	18.03	1.00	10		1.0	1	72
		13.91-14.63m - chlorite patches	37341	18.03	19.39	1.36	5		1.6	1	139
		14.63-14.88m - crystal tuff									
		15.60-16.03m - sheared lapilli tuff with 7-10% disseminated (minor fracture filling) pyrite; 1.5cm carbonate ± quartz fracture filling (25°); lower contact slip @ 40°	37342	19.39	20.76	1.37	1		1.3	1	100
			37343	20.76	22.20	1.44	2		1.2	1	58
		16.51-16.78m - leached quartz at top down to sericite ± minor carbonate; 7-10% disseminated pyrite; upper contact @ 50°	37344	22.20	23.23	1.03	5		1.4	1	68
			37345	23.23	24.26	1.03	1		1.2	1	80
		18.03-20.76m - variably fractured lapilli tuff with 2-4% pyrite									
		20.76-20.84m - leached quartz (68°)	37346	24.26	25.27	1.01	3		1.3	9	69
		20.84-22.20m - well fractured lapilli tuff to tuff breccia (crystal tuff fragment to 13cm) with 3-5% disseminated pyrite									
		22.20-25.27m - Lapilli Tuff with 3-5% disseminated pyrite; includes 21.67-21.83m sheared with 7-10% pyrite, carbonate and silicified, upper contact 64°; lower contact 60°									
25.27	32.28	Lapilli Tuff	37301	25.27	26.45	1.18	4		1.3	1	98
		- medium to dark greenish grey									
		- moderate fractures	37302	26.45	27.63	1.18	20		1.5	1	103
		- polyolithic (fragments to 6x5cm)									
		- minor chlorite and sericite alteration									
		- < moderate fracture									
		- < moderate carbonate fracture filling and patches									

DRILL HOLE LOG							HOLE NO. W90-4	PAGE 3 OF 9				
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
25.27	32.28 Cont.	- > minor white hydrothermal specks; 3-5% pyrite fracture filling and disseminations (increase in carbonate)										
		27.63-28.04m - sheared lapilli tuff with intense to moderate carbonate fracture filling (\pm minor quartz) and 10-15% very fine to fine grained pyrite disseminations and fracture filling; fine grained pyrite down to about 28.65m and very fine to > fine grained pyrite disseminations and minor fracture filling (approximately 8-12%) down to 29.33m)	37303	27.63	28.06	0.43	6		1.8	1	80	
			37304	28.06	29.33	1.27	3		1.6	1	66	
			37305	29.33	30.80	1.47	8		1.4	5	83	
			37306	30.80	32.28	1.48	3		1.4	1	75	
		29.33-29.93m - leaching, altered and minor rusty fractures; down to bottom of unit increase in carbonate and only 1-3% pyrite										
32.28	36.87	Lapilli Tuff										
		- medium greenish grey	37307	32.28	33.52	1.24	1		1.2	1	104	
		- polyolithic with distinct mafic fragments to 3.5cm	37308	33.52	34.75	1.23	4		1.1	1	106	
		- moderate to < intense (local) fractures	37309	34.75	36.45	1.70	5		1.1	1	107	
		- moderate carbonate fine grained patches and fracture filling										
		- moderate white hydrothermal specks	37310	36.45	36.87	0.42	14		1.1	15	817	
		- < moderate chlorite alteration										
		- 1-2% pyrite, trace malachite										
		34.16m - carbonate fracture filling (25 $^\circ$)										
		34.48m - 8mm wide carbonate fracture filling and magnetite and minor pyrite (12 $^\circ$)										
		34.75-36.87m - broken core, bottom 42cm is broken, silicified with carbonate, well leached and has minor malachite and 3-5% disseminated pyrite										
36.87	39.56	Altered Lapilli Tuff										
		- medium greenish grey to rusty brown and tan moderate fractures (local intense iron carbonate)	37311	36.87	38.22	1.35	4		1.1	1	89	
		- > minor carbonate fracture filling										
		- < moderate sericite alternation of felsic fragments and fracture filling	37312	38.22	39.56	1.34	14		1.6	1	122	
		- 1-2% disseminated pyrite										
		- < moderate white hydrothermal specks										
		- ground core at upper contact										
		36.87-37.32m - intense iron carbonate										
		38.76-39.18m - intense iron carbonate										

DRILL HOLE LOG

HOLE NO. W90-4

PAGE 4 OF 9

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
36.87	39.56 Cont.	39.39-39.56m - iron carbonate, carbonate fracture fillings and quartz and 2-4mm band of pyrite @ 25° 37.30-39.39 - increase in feldspar phenocrysts									
39.56	55.13	Lapilli Tuff									
		- medium greenish grey	37313	39.56	41.06	1.50	3		1.3	1	69
		- moderate fractures; > minor chlorite alteration									
		- moderate carbonate fracture filling (intense ± quartz locally)	37314	41.06	42.56	1.50	6		1.5	1	72
		- local intense iron carbonate	37315	42.56	44.06	1.50	4		1.4	1	76
		- 1-3% pyrite fracture filling and disseminations; ≤1% magnetite	37316	44.06	45.56	1.50	10		1.7	1	100
		40.32-42.39m - felsic fragments with 1-2% disseminated magnetite	37317	45.56	47.06	1.50	3		1.3	1	65
		45.22-45.40m - carbonate ± minor quartz (23°); 5% patchy pyrite	37318	47.06	48.63	1.57	3		1.6	1	88
		47.03-47.35m - < intense iron carbonate and quartz and < 1% pyrite; irregular upper contact; slips @ 53°; irregular lower contact	37319	48.63	49.28	0.65	11		2.0	1	41
		48.63-49.28m - > moderate white and iron carbonate fracture filling, minor partial open fractures; 2-3% pyrite	37320	49.28	50.19	0.91	198		2.5	46	221
		49.28-51.10m - moderate carbonate fracture filling and patches and chlorite alteration, 5-7% pyrite fracture filling and patches; trace specularite and magnetite fracture filling and minor white hydrothermal specks	37321	50.19	51.10	0.91	96		2.1	67	133
			37322	51.10	52.28	1.18	17		1.5	25	107
			37323	52.28	53.45	1.17	5		1.5	1	69
		53.45-55.13m - > moderate sericite alteration, 2-3% disseminated pyrite and moderate white hydrothermal specks	37324	53.45	55.13	1.68	5		1.4	11	57
55.13	57.26	Mineralized Andesitic Lapilli Tuff									
		- greenish grey	37325	55.13	56.20	1.07	2660	0.082	8.5	51	219
		- > moderate fractures									
		- > moderate carbonate fracture filling; < moderate quartz fracture filling	37326	56.20	57.26	1.06	196		1.9	1	257
		- < moderate chlorite alteration									
		- well altered but granular texture									
		- 6-8% pyrite fracture filling and patches									
		56.03-56.20m - quartz and lesser carbonate, sericite and chlorite and 10-15% pyrite and trace magnetite; 3cm band of massive pyrite; lower contact @ 43°									

DRILL HOLE LOG

HOLE NO. W90-4

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES						
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm		
57.26	70.05	Andesitic Lapilli Tuff - greenish grey - <moderate fractures - moderate - <moderate carbonate ± quartz fracture filling and gashes - < moderate chlorite and sericite, minor iron carbonate, manganese - minor fragments (≤ 1.0cm), granular texture - 3-5% disseminated hydrothermal specks - 1-3% very fine grained - fine grained disseminated and fracture pyrite, trace magnetite											
		57.26-57.84m - 1-3% fracture and disseminated pyrite	37347	57.26	58.76	1.50	23			1.5	1		62
		58.05-58.58m - 3-5% very fine grained - fine grained disseminated pyrite, > moderate chlorite alteration, > moderate sericite altered @ lower contact @ 65°											
		58.62m - slips @ 10° iron carbonate and manganese coated	37348	58.76	60.26	1.50	7			1.2	1		69
		58.98-59.15m - 3-5% very fine grained to fine grained disseminated pyrite, moderate carbonate fracture filling and gashes											
		59.15-60.60m - slips @ 20-73°, 1-3% very fine grained to fine grained disseminated pyrite	37349	60.26	61.76	1.50	7			1.5	1		72
		60.60-63.03m - >moderate carbonate ± quartz fracture filling and gashes, slips; 1-3% disseminated fine grained pyrite, patchy quartz with very fine grained disseminated 3-5% pyrite, > moderate sericite fracture filling, moderate chlorite alteration, minor fractured iron carbonate; upper contact gradational, lower contact @ 19°	37350 37351	61.76 63.26	63.26 64.76	1.50 1.50	3 11			1.5 1.6	1 1		88 86
		63.42-64.05m - broken core, slip @ 5-10°; manganese coated and < moderate sericite towards end, trace to 1%, very fine grained to fine grained disseminated pyrite											
		64.48m - approximately 2.0cm carbonate/quartz vein @ 37°, > moderate sericite alteration, 3-5% disseminated pyrite	37352	64.76	66.26	1.50	10			1.4	2		95
		64.98-65.23m - patchy carbonate/quartz with very fine grained 5-7% disseminated pyrite; > moderate sericite alteration	37353	66.26	67.76	1.50	2			1.5	1		113

DRILL HOLE LOG

HOLE NO. W90-4

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
57.26	70.05 Cont.	65.30-65.93m - 25% sericite altered feldspar phenocrysts (1-4mm), > moderate carbonate fracture filling and gashes	37354	67.76	68.91	1.15	1		1.3	1	91
		68.08-68.52m - abundant 1-3mm felsic fragments, trace - 1% disseminated and fracture filling pyrite									
		68.73m - slip @ 15° manganese on fractures	37355	68.91	70.05	1.14	4		1.4	1	76
		68.97m - 1mm carbonate/iron carbonate veinlet @ 19°									
		69.10-69.45m - abundant 1-3mm felsic fragments									
		69.45-69.61m - 5-7% very fine grained - fine grained fracture filling and disseminated pyrite, > moderate carbonate fracture filling and gashes									
		69.61-70.05m - > moderate carbonate ± quartz fracture filling and gashes, 1-3% very fine grained - fine grained fracture filling and disseminated pyrite									
70.05	77.47	Altered Lapilli Tuff									
		- light greenish grey, pale green mottled sections									
		- moderate fractures									
		- > moderate carbonate ± quartz fracture fillings and gashes, part siliceous									
		- > moderate sericite and chlorite alteration, minor iron carbonate and manganese									
		- 1-3% fine grained disseminated pyrite, trace magnetite, trace specularite									
		- 1-3% disseminated (specks) hydrothermal mineralization	37356	70.05	71.55	1.50	2		1.2	1	88
		71.00-71.60m - > moderate - < intense sericite and chlorite alteration, > moderate carbonate ± quartz fracture fillings and gashes, 1-3% fine grained pyrite	37357	71.55	73.05	1.50	10		1.2	1	76
		71.90-72.22m - shallow (< 5°) 1cm quartz/carbonate vein, part open, fractured, offset @ approximately 55°, > moderate sericite and chlorite alteration, 1-3% disseminated pyrite									
		72.50m - slip @ 5-10°									
		72.83-73.76m - minor iron carbonate, moderate fragments (≤ 5cm), moderate - < moderate sericite and chlorite, alteration, broken core @ 73.69m, trace - 1% disseminated pyrite, trace specularite, magnetite	37358 37359	73.05 74.55	74.55 76.05	1.50 1.50	41 4		1.4 1.0	1 1	91 97

DRILL HOLE LOG

HOLE NO. W90-4

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
70.05	77.47 Cont.			74.65-75.19m - > moderate fractures, slips @ 19-55°, 1-3% blebs (approximately 0.5mm) magnetite, trace - 1% disseminated fine grained pyrite 75.19-76.05m - 1-3% blebby (approximately 0.5mm) magnetite 76.05-77.47m - > moderate fractures, > moderate sericite and chlorite alteration, > moderate carbonate ± quartz fracture filling and gashes, part siliceous, slips @ 22-47°, manganese coated, minor iron carbonate, trace - 1% disseminated pyrite, trace magnetite	37360		76.05	77.47	1.42	9		1.3
77.47	80.47	Andesite - greyish green, granular texture - < moderate fractures, broken core at upper contact - << moderate carbonate; ± quartz fracture fillings and gashes - minor sericite and chlorite alteration - trace very fine grained disseminated pyrite 77.47-78.00m - broken core, upper contact @ 34°(?), manganese coated shallow slips 78.97m - slips @ 15° 79.30-79.52m - > moderate sericite alteration, > moderate carbonate fracture fillings and gashes, upper contact gradational, lower contact @ 39°	37361 37362	77.47 78.97	78.97 80.47	1.50 1.50	1 8		3.6 3.5	1 1	80 89	

Keewatin Engineering Inc.				DRILL LOG				Sample Data						
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37327	1.52	2.61	1.09		102	+0.02		23		1.7	1	112	32	153
37328	2.61	3.70	1.09		100	0.00		6		2.0	1	88	23	126
37329	3.70	5.20	1.50		100	0.00		2		2.4	1	114	58	132
37330	5.20	6.70	1.50		97	-0.05		1		1.9	1	96	23	113
37331	6.70	8.30	1.60		99	-0.02		3		1.6	1	82	21	90
37332	8.30	9.90	1.60		103	+0.04		8		1.3	1	93	8	76
37333	9.90	10.63	0.73		110	+0.07		11		0.9	1	70	9	96
37334	10.63	11.66	1.03		98	-0.02		1		0.6	1	60	9	99
37335	11.66	12.69	1.03		99	-0.01		18		1.0	1	68	9	77
37336	12.69	14.19	1.50		100	0.00		8		0.9	17	74	8	89
37337	14.19	15.60	1.41		106	+0.09		2		1.1	1	108	18	97
37338	15.60	16.03	0.43		100	0.00		5		1.2	19	90	18	87
37339	16.03	17.03	1.00		99	-0.01		13		0.6	1	58	9	88
37349	17.03	18.03	1.00		98	-0.02		10		1.0	1	72	4	138
37341	18.03	19.39	1.36		103	+0.04		5		1.6	1	139	10	88
37342	19.39	20.76	1.37		100	0.00		1		1.3	1	100	14	79
37343	20.76	22.20	1.44		99	-0.01		2		1.2	1	58	6	113
37344	22.20	23.23	1.03		100	0.00		5		1.4	1	68	12	69
37345	23.23	24.26	1.03		93	-0.07		1		1.2	1	80	4	93
37346	24.26	25.27	1.01		102	+0.02		3		1.3	9	69	14	96
37301	25.27	26.45	1.18		100	0.00		4		1.3	1	98	8	95
37302	26.45	27.63	1.18		107	+0.08		20		1.5	1	103	12	79
37303	27.63	28.06	0.43		98	-0.01		6		1.8	1	80	9	55
37304	28.06	29.33	1.27		100	0.00		3		1.6	1	66	13	57
37305	29.33	30.80	1.47		105	+0.07		8		1.4	5	83	15	124
37306	30.80	32.28	1.48		100	0.00		3		1.4	1	75	8	70
37307	32.28	33.52	1.24		100	0.00		1		1.2	1	104	20	66
37308	33.52	34.75	1.23		98	-0.02		4		1.1	1	106	12	79
37309	34.75	36.45	1.70		94	-0.10		5		1.1	1	107	9	104
37310	36.45	36.87	0.42		95	-0.02		14		1.1	15	817	19	104
37311	36.87	38.22	1.35		100	0.00		4		1.1	1	89	9	108
37312	38.22	39.56	1.34		105	+0.07		14		1.6	1	122	29	143
37313	39.56	41.06	1.50		100	0.00		3		1.3	1	69	8	92
37314	41.06	42.56	1.50		102	+0.01		6		1.5	1	72	14	78
37315	42.56	44.06	1.50		101	+0.02		4		1.4	1	76	8	75

Keewatin Engineering Inc.				DRILL LOG				Sample Data						
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37316	44.06	45.56	1.50		100	0.00	10		1.7	1	100	16	75	
37317	45.56	47.06	1.50		102	+0.03	3		1.3	1	65	8	75	
37318	47.06	48.63	1.57		100	0.00	3		1.6	1	88	12	159	
37319	48.63	49.28	0.65		101	+0.01	11		2.0	1	41	22	112	
37320	49.28	50.19	0.91		102	+0.02	198		2.5	46	221	27	158	
37321	50.19	51.10	0.91		100	0.00	96		2.1	67	133	33	422	
37322	51.10	52.28	1.18		97	-0.04	17		1.5	25	107	17	249	
37323	52.28	53.45	1.17		102	+0.02	5		1.5	1	69	13	116	
37324	53.45	55.13	1.68		99	-0.01	5		1.4	11	57	26	183	
37325	55.13	56.20	1.07		100	0.00	2660	0.082	8.5	51	1219	116	1196	
37326	56.20	57.26	1.06		93	-0.07	196		1.9	1	257	67	660	
37347	57.26	58.76	1.50		103	+0.04	23		1.5	1	62	41	152	
37348	58.76	60.26	1.50		100	0.00	7		1.2	1	69	11	84	
37349	60.26	61.76	1.50		99	-0.01	7		1.5	1	72	16	116	
37350	61.76	63.26	1.50		100	0.00	3		1.5	1	88	15	119	
37351	63.26	64.76	1.50		94	-0.09	11		1.6	1	86	26	183	
37352	64.76	66.26	1.50		99	-0.01	10		1.4	2	95	30	85	
37353	66.26	67.76	1.50		101	+0.01	2		1.5	1	113	17	77	
37354	67.76	68.91	1.15		98	-0.02	1		1.3	1	91	21	115	
37355	68.91	70.05	1.14		106	+0.07	4		1.4	1	76	15	114	
37356	70.05	71.55	1.50		97	-0.04	2		1.2	1	88	10	114	
37357	71.55	73.05	1.50		100	0.00	10		1.2	1	76	12	117	
37358	73.05	74.55	1.50		99	-0.02	41		1.4	1	91	13	84	
37359	74.55	76.05	1.50		95	-0.08	4		1.0	1	97	9	77	
37360	76.05	77.47	1.42		99	-0.01	9		1.3	1	82	14	108	
37361	77.47	78.97	1.50		103	+0.04	1		3.6	1	80	4	54	
37362	78.97	80.47	1.50		99	-0.02	8		3.5	1	89	4	58	

DRILL HOLE LOG

LOCATION: COOPER ZONE
(0+85W/0+35S)

AZIM: 030°
DIP: -56°

ELEV: -595m
LENGTH: 62.79m

CORE SIZE: BQ

DIP TEST

METREAGE	AZIMUTH	INCLINATION	CORR. INCLIN.
0.00			-56°
62.79		-64°	-56°

PROPERTY: WARATAH

CLAIM NO: WARATAH 7
SECTION:

LOGGED BY: R. Pegg
DATE LOGGED: November 4, 1990
DRILLING CO: FALCON
ASSAYED BY: MIN-EN

STARTED: November 3, 1990
COMPLETED: November 3, 1990
PURPOSE: Test Cooper Zone along strike
to the southwest

CORE RECOVERY: 98.2%

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
0.00	1.52	Casing.									
1.52	6.88	Lapilli tuff to tuff	37363	1.52	3.02	1.50	6		0.3	35	84
		- medium and light greyish green with rusty sections									
		- < moderate white hydrothermal specks	37364	3.02	4.23	1.21	15		0.6	5	113
		- moderate iron carbonate sections and > minor carbonate fracture fill									
		- ~20% white feldspar phenocrysts	37365	4.23	5.05	0.82	4		0.2	1	85
		- > minor sericite, minor chlorite									
		- hard to distinguish fragments - light and dark siliceous, 2 - 3% very fine grained to fine grained disseminations, fracture filling and patchy pyrite.	37366	5.05	5.97	0.92	8		0.9	27	61
		1.52-1.91m broken core	37367	5.97	6.88	0.91	14		1.5	55	106
		4.23-5.05m iron stained section (>minor patchy iron carbonate), well fractured (a few partially open) and minor silicification; 1 - 2% disseminated pyrite; >minor white hydrothermal specks.									
		5.05-5.34m light greenish grey tuff with minor chlorite blebs									
		5.34-5.47m iron stained section, a few partial open fractures; sericite altered below this section (for approximately 8cm) in the feldspar porphyry tuff									
		6.77-6.88m very broken core.									
6.88	19.12	Altered lapilli tuff and tuff	37368	6.88	8.25	1.37	5		1.2	13	153
		- medium greyish green									
		- appears to be relatively well fractured with dark green (chlorite) fragments in a light grey-green matrix; part of unit is fine grained with abundant feldspar phenocrysts									

DRILL HOLE LOG

HOLE NO. W90-5

PAGE 2 OF 8

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
6.88	19.12 Cont.	> minor white hydrothermal specks > minor carbonate (\pm quartz fracture fill); > minor chlorite and minor sericite. 2 - 4% pyrite fracture fill and minor disseminations, trace magnetite and chalcopyrite.									
		8.25-8.77m > moderate quartz-carbonate fracture fill and > minor chlorite alteration and 5 - 7% fracture filling pyrite and minor dissemination; minor sericite alteration; irregular lower contact and upper contact.	37369	8.25	9.67	1.42	16		1.4	33	180
			37370	9.67	11.22	1.55	120		1.9	58	264
		9.60-9.67m 30 - 40% pyrite and 1 - 3% magnetite patches and fracture fill in quartz and minor carbonate; fine grained magnetite fracture fill and hematite at upper contact (80°); slip lower contact (80°).									
		11.22-11.31m 5 - 7% pyrite with > minor chlorite in quartz (\pm minor carbonate); upper contact (50°); irregular lower contact.	37371	11.22	12.09	0.87	317		0.9	55	126
		11.99-12.09m > moderate quartz and minor carbonate with > minor sericite and chlorite alteration and 5 - 7% pyrite; upper contact slip (80°), lower contact (70°).	37372	12.09	13.59	1.50	149		1.1	55	95
			37373	13.59	14.84	1.25	31		1.5	25	264
		14.33-14.84m moderate patchy carbonate \pm quartz fracture fill with 5 - 7% pyrite fracture fill and minor disseminations; \leq 1% chalcopyrite blebs (most near top of section) concentrated in the carbonate; minor chlorite; upper contact at approximately 55°; lower contact at approximately 60°; silicification and minor sericite to 36cm below.									
		14.84-15.79m well fractured (micro) lapilli tuff with abundant white feldspar phenocrysts and minor quartz fragments and > minor carbonate micro fracture filling 1 - 2% disseminated pyrite.	37374	14.84	15.79	0.95	2		1.3	37	93
		15.79-15.90m slightly bleached - siliceous and minor sericite alteration and 5% very fine grained to fine grained disseminated pyrite and 2cm carbonate band (35° - 50°).	37375	15.79	17.21	1.42	1		1.2	45	81
		17.69-17.84m siliceous light greenish grey with 30 - 40% white altered feldspar (subhedral to anhedral) phenocrysts (to 7mm) includes a 2.4cm wide quartz and lesser chlorite and carbonate band (65° - 80°).	37376	17.21	18.63	1.42	1		0.8	50	92
			37377	18.63	19.12	0.59	5		1.8	70	71

DRILL HOLE LOG							HOLE NO. W90-5		PAGE 3 OF 8		
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
6.88	19.12 Cont.	18.63-19.12m > moderate carbonate fracture fill and patches and minor quartz, sericite and chlorite with 3 - 5% pyrite fracture filling and disseminations. Slip lower contact (40° - 45°).									
19.12	33.38	Andesitic lapilli tuff - medium grey-green colour - granular texture - < moderate carbonate fracture filling (some pink) and iron carbonate sections - > minor chlorite and carbonate micro fracture filling - local bleaching - minor vuggy carbonate patches - polyolithic (rare fragments to 9cm; most 6 - 20mm) chlorite and light siliceous fragments; coarsest at end of unit; 1 - 3% fine grained pyrite disseminations and fracture filling.	37378	19.12	21.07	1.95	2		1.1	1	53
		21.07-21.25m sheared with abundant chlorite, moderate carbonate and minor iron carbonate (27° - 37°).	37379	21.07	22.46	1.39	1		1.2	19	121
		22.46-23.16m intense iron carbonate (35° - 40°) irregular upper contact; lower contact approximately 20°; 2 - 3% pyrite disseminations; minor carbonate fracture filling	37380	22.46	23.16	0.70	2		1.1	32	102
		23.16-23.95m patchy bleaching; 2 - 3% fine grained disseminated pyrite and moderate white hydrothermal specks.	37381 37382 37383 37384	23.16 24.20 25.75 27.30	24.20 25.75 27.30	1.04 1.55 1.55	2 3 2 1	0.9 0.8 0.9 0.5	28 32 13 3	79 80 84 104	
		23.95-24.20m < intense iron carbonate; 2 - 3% fine grained disseminated pyrite (minor fracture filling); lower contact (50°).	37385 37386 37387	28.85 30.40 31.95	30.40 31.95 33.38	1.55 1.55 1.43	2 6 1	0.6 0.7 0.6	28 14 23	120 87 115	
		26.46-26.62m patchy carbonate and minor iron carbonate; 3 - 5% pyrite fracture fill. - irregular bleached lower contact									
33.38	34.04	Altered - fractured zone - light greenish grey to dirty white - well fractured - mostly carbonate-sericite ± quartz; includes 15cm of dirty white to light grey carbonate with minor iron carbonate	37388	33.38	34.04	0.66	49		1.7	68	25

DRILL HOLE LOG

HOLE NO. W90-5

PAGE 4 OF 8

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
33.38	34.04 Cont.			- minor open cavities - 2 - 3% disseminated pyrite - irregular upper contact and lower contact - probable crystal tuff							
34.04	44.55	Altered lapilli tuff - medium to dark green with light greenish grey fragments polyolithic (sericite altered porphyritic felsic fragments to 10cm; most <5cm) - minor chlorite alteration; > minor sericite alteration - minor crystal tuff sections - several altered sections (sericite ± carbonate ± quartz) - > minor fractures - vague lower contact (arbitrary) - 1 - 2% pyrite fracture filling and disseminations									
		36.66-36.78m creamy grey alteration; > minor sericite alteration; 40% altered feldspar phenocrysts, moderate whitish hydrothermal specks; lower contact @ 60°; minor open fractures.	37389	34.04	35.35	1.31	2		0.8	10	41
		36.78-37.16m light greyish green altered crystal tuff									
		37.35-38.40m highly altered and brecciated crystal tuff with abundant carbonate, minor quartz, sericite altered crystal tuff fragments; 1 - 2% pyrite fracture fill and disseminations; upper contact @ 70°.	37390	35.35	36.66	1.31	1		0.7	1	72
		38.40-41.27m well fractured polyolithic lapilli tuff with dark brown manganese coatings along fractures and <moderate chlorite alteration of fragments and band. Irregular lower contact; much broken core at 38.40-39.54m.	37391	36.66	37.35	0.69	1		0.6	14	34
		41.57-42.10m sericite altered lapilli tuff with a few carbonate and quartz fracture filling (~90°) plus minor iron carbonate; 3-4% disseminated pyrite and minor magnetite with the carbonate.	37392	37.35	38.40	1.05	5		1.3	62	26
		42.10-42.49m fractured upper contact (65°), siliceous fracture zone with patchy quartz and carbonate. Lower contact (85°-90°), 3-5% disseminated and fracture filling pyrite and minor specularite.	37393	38.40	39.90	1.50	2		0.3	1	126
		~43.52m and below is large increase in creamy coloured alteration (sericite) but rock still fairly siliceous.	37394	39.90	41.57	1.67	2		0.5	14	150
			37395	41.57	42.49	0.92	1		0.7	36	67
			37396	42.49	43.52	1.03	2		0.5	39	48
			37397	43.52	44.55	1.03	1		0.6	16	58

DRILL HOLE LOG										HOLE NO. W90-5	PAGE 5 OF 8
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
44.55	46.86	Sericitically altered lapilli tuff - light greenish grey - moderately fractured and sheared - > minor carbonate ± quartz fracture filling - same unit as above but has increase in mineralization - 4-6% pyrite disseminations, fracture filling and patches, - < 1% chalcopyrite fracture filling and minor magnetite - and specularite fracture filling - chalcopyrite with the quartz (± carbonate) fracture filling (35°-45°) - lower contact @ 20°	37398	44.55	45.70	1.15	6		1.4	48	523
			37399	45.70	46.86	1.16	6		0.8	37	89
46.86	58.41	Altered and mineralized lapilli tuff - light to medium greyish green - well fractured, local shearing - < moderate carbonate (± quartz) fracture filling - < moderate chlorite alteration (mafic fragments and patches) - > minor sericite altered crystal tuff fragments - < moderate white hydrothermal specks - 3-5% pyrite, > trace magnetite and specularite, trace chalcopyrite 46.86-47.87m 7-10% pyrite patches and < 1% magnetite specks; most carbonate at top 47.87-48.73m 4-6% pyrite fracture filling and disseminations and minor hematite; large increase in carbonate fracture filling 48.73-49.17m fracture/shear zone. Sericite and chlorite and iron carbonate fracture filling; in centre is chlorite-quartz + minor carbonate with pyrite (approximately 2cm wide) @ 30°; 3-5% pyrite fracture filling and disseminated blebs; quartz slip, lower contact @ 75° 52.71-53.24m sericitically altered lapilli tuff with 1-3% disseminated pyrite (increased at upper contact -steep) surrounding approximately 18cm quartz-carbonate (upper contact approximately 30°) - trace chalcopyrite; irregular lower contact 53.55-53.99m sericitically altered with last 10cm iron carbonate (well fractured)	37400	46.86	47.87	1.01	302		1.5	26	533
			37401	47.87	48.73	0.86	40		1.0	58	134
			37402	48.73	49.73	1.00	145		1.8	64	146
			37403	49.73	50.73	1.00	24		1.3	52	187
			37404	50.73	51.73	1.00	2		0.9	37	104
			37405	51.73	52.71	0.98	52		1.4	36	237
			37406	52.71	53.99	1.28	85		1.8	94	268

DRILL HOLE LOG

HOLE NO. W90-5

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INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
46.86	58.41 Cont.	53.99-55.51m	5-7% pyrite, trace chalcopyrite, minor magnetite at bottom of section with pyrite	37407	53.99	55.51	1.52	2		1.1	37	79
		56.59-56.80m	iron carbonate-carbonate-sericite breccia zone with 2-4% pyrite fracture filling, patches	37408	55.51	56.80	1.29	1		1.2	25	89
		57.80-57.98m	sericitically altered crystal tuff; upper contact (33°) - carbonate slip; minor carbonate patches	37409	56.80	57.80	1.00	2		0.8	30	103
		57.98-58.41m	sericitically altered lapilli tuff with <moderate carbonate (±quartz), 7-10% pyrite fracture filling and 1% specularite and magnetite (bottom of section)	37410	57.80	58.41	0.61	287		1.7	152	412
58.41	62.79	Altered lapilli tuff										
		- medium greyish green to creamy grey	37411	58.41	59.41	1.00	4		1.5	42	109	
		- < moderate fractures										
		- > minor carbonate (±quartz) fracture filling	37412	59.41	60.91	1.50	1		2.3	50	125	
		- polyolithic (?) mafic and felsic fragments (irregular)										
		- chlorite alteration of the mafic fragments	37413	60.91	62.79	1.88	4		2.0	36	108	
		- last 1.56m has sericite alteration (still siliceous)										
		- abundant altered felspar phenocrysts locally										
		- > minor white hydrothermal specks										
		- 1-2% disseminated and fracture filling pyrite										
		END OF HOLE										

Keewatin Engineering Inc.				DRILL LOG				Sample Data						
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37363	1.52	3.02	1.50		47	-0.80		6		0.3	35	84	17	83
37364	3.02	4.23	1.21		96	-0.05		15		0.6	5	113	21	88
37365	4.23	5.05	0.82		100	0.00		4		0.2	1	85	17	70
37366	5.05	5.97	0.92		100	0.00		8		0.9	27	61	21	83
37367	5.97	6.88	0.91		98	-0.02		14		1.5	55	106	37	90
37368	6.88	8.25	1.37		99	-0.01		5		1.2	13	153	23	79
37369	8.25	9.67	1.42		100	0.00		16		1.4	33	180	27	67
37370	9.67	11.22	1.55		100	0.00		120		1.9	58	264	33	78
37371	11.22	12.09	0.87		97	-0.03		317		0.9	55	126	29	46
37372	12.09	13.59	1.50		100	0.00		149		1.1	55	95	28	61
37373	13.59	14.84	1.25		100	0.00		31		1.5	25	264	26	68
37374	14.84	15.79	0.95		100	0.00		2		1.3	37	93	19	44
37375	15.79	17.21	1.42		98	-0.02		1		1.2	45	81	27	70
37376	17.21	18.63	1.42		100	0.00		1		0.8	50	92	16	71
37377	18.63	19.12	0.59		95	-0.03		5		1.8	70	71	28	56
37378	19.12	21.07	1.95		101	+0.02		2		1.1	1	53	20	78
37379	21.07	22.46	1.39		102	+0.03		1		1.2	19	121	18	51
37380	22.46	23.16	0.70		100	0.00		2		1.1	32	102	21	40
37381	23.16	24.20	1.04		100	0.00		2		0.9	28	79	23	66
37382	24.20	25.75	1.55		99	-0.01		3		0.8	32	80	19	84
37383	25.75	27.30	1.55		100	0.00		2		0.9	13	84	13	69
37384	27.30	28.85	1.55		98	-0.02		1		0.5	3	104	25	63
37385	28.85	30.40	1.55		100	0.00		2		0.6	28	120	20	61
37386	30.40	31.95	1.55		98	-0.03		6		0.7	14	87	11	66
37387	31.95	33.38	1.43		100	0.00		1		0.6	23	115	22	69
37388	33.38	34.04	0.66		100	0.00		49		1.7	68	25	26	15
37389	34.04	35.35	1.31		104	+0.05		2		0.8	10	41	16	47
37390	35.35	36.66	1.31		100	0.00		1		0.7	1	72	17	50
37391	36.66	37.35	0.69		99	-0.01		1		0.6	14	34	17	35
37392	37.35	38.40	1.05		95	-0.05		5		1.3	62	26	16	5
37393	38.40	39.90	1.50		100	0.00		2		0.3	1	126	20	139
37394	39.90	41.57	1.67		93	-0.12		2		0.5	14	150	14	90
37395	41.57	42.49	0.92		100	0.00		1		0.7	36	67	21	47
37396	42.49	43.52	1.03		100	0.00		2		0.5	39	48	19	59
37397	43.52	44.55	1.03		99	-0.02		1		0.6	16	58	25	51

Keewatin Engineering Inc.					DRILL LOG			Sample Data						
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37398	44.55	45.70	1.15		100	0.00		6		1.4	48	523	24	49
37399	45.70	46.86	1.16		101	+0.01		6		0.8	37	89	27	44
37400	46.86	47.87	1.01		100	0.00		302		1.5	26	533	25	217
37401	47.87	48.73	0.86		100	0.00		40		1.0	58	134	23	125
37402	48.73	49.73	1.00		98	-0.02		145		1.8	64	146	18	156
37403	49.73	50.73	1.00		100	0.00		24		1.3	52	187	19	110
37404	50.73	51.73	1.00		102	+0.02		2		0.9	37	104	19	61
37405	51.73	52.71	0.98		99	-0.01		52		1.4	36	237	37	57
37406	52.71	53.99	1.28		99	-0.01		85		1.8	94	268	38	64
37407	53.99	55.51	1.52		100	0.00		2		1.1	37	79	21	81
37408	55.51	56.80	1.29		98	-0.02		1		1.2	25	89	26	79
37409	56.80	57.80	1.00		99	-0.01		2		0.8	30	103	22	61
37410	57.80	58.41	0.61		100	0.00		287		1.7	152	412	17	25
37411	58.41	59.41	1.00		104	+0.04		4		1.5	42	109	39	52
37412	59.41	60.91	1.50		100	0.00		1		2.3	50	125	27	79
37413	60.91	62.79	1.88		98	-0.03		4		2.0	36	108	29	73

DRILL HOLE LOG							HOLE NO. W90-6		PAGE NO. 1 of 7			
LOCATION: COOPER ZONE (0+10E/0+36S)			ELEV: Approximately 611m LENGTH: 62.79m CORE SIZE: BQ			DIP TEST		PROPERTY: WARATAH CLAIM NO: WARATAH 7 SECTION: LOGGED BY: A. TRAVIS DATE LOGGED: November 6, 1990 DRILLING CO: FALCOLN ASSAYED BY: MIN-EN				
AZIM: 030° DIP: -57°			METREAGE			AZIMUTH		INCLINATION		CORR. INCLIN.		
STARTED: November 4, 1990 COMPLETED: November 4, 1990 PURPOSE: To test Mineralization beneath W90-3 and Middle trench @ "Cooper Zone" CORE RECOVERY: 99.02%			0.00 62.79			030°		-57° -57°				
METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	As
0.00	2.13	Casing/Overburden										
2.13	22.72	Andestic Crystal - Ash Tuff with feldspar porphyry bombs - greenish grey in colour - moderate feldspar (1-6mm) porphyry bombs (≤6cm) - moderate fractures - <moderate carbonate ± quartz fracture filling, gashes + veinlets - <moderate sericite and chlorite alteration, minor quartz/sericite altered zones - lower contact gradual - trace - 1% very fine grained to medium grained disseminated pyrite, trace specularite, magnetite, chalcopyrite, sphalerite										
		2.13-4.48m - broken core	37101	2.13	3.63	1.50	2		2.6	1	73	
		4.70m - pale green 1.2cm ash tuff layer @ 55-60°	37102	3.63	5.13	1.50	3		2.0	1	87	
		5.10m - pale green approximately 1.1cm ash tuff layer @ approximately 41°	37103	5.13	6.63	1.50	1		2.2	1	89	
		4.85-5.56m - slips @ 30-35°										
		5.56-5.84m - broken core										
		6.67-7.12m - banding/layering (approximately 0.5cm) pale green ash tuff @ 42-47°, minor carbonate rich layers	37104	6.63	8.13	1.50	1		2.3	1	71	
		7.12-7.40m - part open quartz ± carbonate veinlets (approximately 0.5cm) @ 24-76° slip @ <05°										

DRILL HOLE LOG

HOLE NO. W90-6

PAGE 2 OF 7

METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au ppb	Au oz/t	Ag ppm	As ppm	Cu ppm
2.13	22.72 Cont.	7.64-8.42m - coarser crystal tuff (feldspar 1-8mm), > moderate feldspar porphyry fragments, part siliceous, moderate sericite and chlorite alteration, trace very fine grained disseminated pyrite, trace chalcopyrite?	37105	8.13	9.63	1.50	2		1.6	1	72
		8.80-8.98m - broken core, slips @ 24-42°, manganese coated?									
		9.07-9.14m - 3-5% blebby (1-2mm) pyrite	37106	9.63	11.13	1.50	2		1.7	1	111
		9.90m - banding @ approximately 42°									
		10.21-11.23m - coarser crystal tuff, > moderate feldspar porphyry fragments (≤ 7cm), one 1.1cm quartz veinlet @ 73°, trace chalcopyrite, trace - 1% sphalerite, trace - 1% fine grained disseminated pyrite throughout section. Upper contact and lower contact gradational	37107	11.13	12.63	1.50	1		1.8	1	70
			37108	12.63	14.13	1.50	1		1.9	1	72
		11.65m - irregular 2cm carbonate breccia	37109	14.13	15.33	1.20	2		1.2	1	82
		12.15-12.43m - broken core	37110	15.33	16.60	1.27	4		1.6	1	107
		16.60-17.50m - quartz sericite altered zone, > moderate carbonate ± quartz fracture filling + veinlets,	37111	16.60	17.50	0.90	219		4.0	78	1270
		> moderate sericite + chlorite alteration,	37112	17.50	18.80	1.30	16		1.7	1	185
		upper contact @ 50°, lower contact @ 35°,	37113	18.80	20.10	1.30	2		2.1	1	106
		3-5% veinlet pyrite, trace - 1% chalcopyrite,	37114	20.10	21.40	1.30	1		2.1	1	103
		5-7% specularite, trace - 1% magnetite	37115	21.40	22.72	1.32	2		1.8	1	88
22.72	27.20	Altered Crystal - Lapilli Tuff									
		- greyish green in colour, patchy brown (iron carbonate)									
		- > moderate fractures									
		- > moderate carbonate ± quartz fracture filling and veinlets									
		- > moderate sericite and chlorite alteration, patchy iron carbonate related to fractures and veinlets, part bleached zones									
		- contacts gradational									
		- 1-3% very fine grained - fine grained disseminated pyrite,	37116	22.72	24.22	1.50	4		1.1	33	190
		3-5% creamy white hydrothermal mineralization, trace chalcopyrite									
		23.02-23.43m - quartz, sericite + chlorite altered zone,	37117	24.22	25.76	1.54	1		0.7	29	34
		> moderate carbonate/quartz fracture filling and veinlets @ 50-75° (some part open), upper contact @ 50°, lower contact @									

DRILL HOLE LOG

HOLE NO. W90-6

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METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS					
FROM	TO			FROM	TO		Au ppb	Au oz/t	Ag ppm	As ppm	Cu ppm	
22.72	27.20 Cont.			approximately 75°, > moderate iron carbonate, 3-5% disseminated and fracture filling pyrite, trace-1% chalcopyrite, 5-7% creamy white hydrothermal mineral specks 25.28-25.76m - broken core, abundant slips @ 40-65° (some with gouge) manganese, iron carbonate on fractures, > moderate carbonate ± quartz fracture filling and gashes 25.76-25.93m - quartz-chlorite and sericite altered zone, > moderate carbonate fracture filling and veinlets, upper contact @ 40°, lower contact @ 36°, 1-3% fine grained to medium grained disseminated pyrite, minor iron carbonate @ upper contact 26.55-26.84m - > moderate iron carbonate and carbonate fracture filling and veinlets, > moderate sericite and chlorite altered, 1-3% disseminated pyrite, slips @ approximately 15° 26.96-27.20m - very fine grained 7-10% disseminated pyrite, > moderate carbonate fracture fillings and veinlets	37118		25.76	27.20	1.44	3		1.5
27.20	32.00	Altered Crystal - Lapilli Tuff - greenish grey in colour - fine grained matrix (differs it from unit above) - >> moderate fractures, broken core, slips @ 10-65° - arbitrary contacts - > moderate carbonate ± quartz fracture fillings and veinlets, minor quartz veins (<5cm) - > moderate sericite ± chlorite fracture fillings, manganese, and iron carbonate on fractures - trace to 1% disseminated pyrite, trace magnetite, 1-3% hydrothermal mineralization 27.60m - 2cm quartz/carbonate vein @ 50-55°, 1-3% disseminated fine grained pyrite 27.75m - 0.9cm carbonate/quartz veinlet @ 20° 29.15m - 5.2cm part quartz vein @ 78° 30.94-31.16m - very broken core	37119	27.20	28.80	1.60	1		0.8	25	83	
			37120	28.80	30.40	1.60	6		0.5	24	105	
			37121	30.40	32.00	1.60	3		0.5	1	100	

DRILL HOLE LOG

HOLE NO. W90-6

PAGE 4 OF 7

METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS					
FROM	TO			FROM	TO		Au ppb	Au oz/t	Ag ppm	As ppm	Cu ppm	
32.00	62.79	Lapilli Tuff with minor Andesitic Lapilli Tuff - greyish green in colour - < moderate fractures - moderate fragments (1mm-2cm), feldspar porphyritic - > moderate carbonate ± quartz fracture filling and veinlets - moderate sericite and chlorite alteration, minor iron carbonate - contacts gradational	37122	32.00	33.50	1.50	1		0.9	8	102	
		- trace-1% disseminated pyrite, 1-3% disseminated magnetite, trace-1% specularite, trace chalcopyrite	37123	33.50	35.00	1.50	2		0.8	1	112	
		34.45m - 4cm quartz/carbonate, iron carbonate vein @ 85%, abundant chlorite @ upper contact, trace pyrite	37124	35.00	36.50	1.50	1		1.5	1	102	
		34.80-40.30m - 2-4% disseminated magnetite	37125	36.50	38.00	1.50	1		2.1	24	78	
		40.53-40.69m - quartz and carbonate veinlets @ 10-32°, > moderate chlorite and sericite alteration,	37126	38.00	39.50	1.50	2		1.8	1	75	
		3-5% disseminated fine grained pyrite	37127	39.50	41.00	1.50	1		1.7	1	66	
		41.29-41.45m - 1-3% disseminated fine grained pyrite	37128	41.00	42.50	1.50	2		1.9	1	97	
		42.00-42.29m - shallow (<5°) slip	37129	42.50	44.00	1.50	7		1.4	1	85	
		42.65-42.98m - andesitic lapilli tuff, fine grained, contacts gradational, > moderate carbonate fracture filling and gashes, 1-3% very fine grained disseminated pyrite										
		43.46-43.60m - 3-5% fine grained disseminated pyrite	37130	44.00	45.50	1.50	2		1.1	1	94	
		44.35-45.30m - 1-3% disseminated magnetite	37131	45.50	47.00	1.50	2		2.5	1	100	
		45.68-45.87m - 1-3% disseminated pyrite										
		46.23-46.52m - 5-7% disseminated (approximately 0.75mm blebs) magnetite										
		46.62m - slip @40°, 1-3% disseminated pyrite, > moderate sericite envelope	37132	47.00	48.50	1.50	1		1.2	12	69	
		47.17m - 0.7cm quartz/carbonate veinlet @ 49°, 3-5% specularite										
		47.33m - irregular < 1cm quartz/carbonate veinlet @ 83°, trace-1% specularite										
		47.57-47.62m - 4.5cm quartz/carbonate vein @ 80-83°, 3-5% disseminated and fracture filling pyrite envelope	37133	48.50	50.00	1.50	1		1.5	1	87	
		48.44m - 0.9cm carbonate/quartz veinlet @ 77°										
		48.92m - 0.5cm carbonate veinlet @ 26°										
		49.39-49.66m - three large (≤7cm) mafic feldspar porphyry fragments (maroon coloured)	37134	50.00	51.50	1.50	1		1.6	1	104	

DRILL HOLE LOG

HOLE NO. W90-6

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METREAGE		DESCRIPTION	SAMPLE NO.	METREAGE		LENGTH	ASSAYS				
FROM	TO			FROM	TO		Au ppb	Au oz/t	Ag ppm	As ppm	Cu ppm
32.00	62.79 Cont.			50.10-50.42m - shallow (<10°) slip, broken core, chlorite on fractures, 1-3% disseminated magnetite, trace pyrite	37135		51.50	53.00	1.50	2	
		51.79 - 0.9cm carbonate/quartz veinlet @ 45°, broken core	37136	53.00	54.60	1.60	1		1.5	1	100
		52.39m - 1.4cm carbonate ± quartz vein @ 87°, abundant chlorite									
		52.40-53.22m - 3-5% disseminated magnetite, trace chalcopyrite									
		53.53m - 0.8cm carbonate/quartz veinlet @ 30°, gouge @ lower contact	37137	54.60	56.20	1.60	3		1.2	24	113
		55.59m - 0.5cm iron carbonate envelope (approximately 1mm iron carbonate veinlet) @ 28°	37138	56.20	57.80	1.60	1		0.8	18	88
		56.53m - approximately 0.8cm carbonate veinlet @ 63°									
		56.70m - 0.5cm carbonate/quartz veinlet @ 58°									
		57.13m - irregular 2-4cm carbonate/quartz vein @ approximately 55-75°									
		58.40m - 0.4cm carbonate/quartz veinlet @ 57°									
		58.68m - 1.5cm carbonate/quartz veinlet @ 63-70°	37139	57.80	59.40	1.60	1		1.0	1	98
		59.54-59.70m - broken core, manganese on slips @ 10-35°	37140	59.40	61.00	1.60	1		0.7	1	109
		60.26m - 0.5cm carbonate/quartz veinlet @ 52°	37141	61.00	62.79	1.79	1		1.2	1	111
		61.29m - 1-2cm carbonate/quartz veinlet @ 58°, abundant chlorite									
		60.87-62.13m - broken core with abundant slips @ 17-23°, iron carbonate on fractures									
		END OF HOLE									

Keewatin Engineering Inc.								DRILL LOG				Sample Data		
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37101	2.13	3.63	1.50		94	-0.09	2		2.6	1	73	27	103	
37102	3.63	5.13	1.50		87	-0.20	3		2.0	1	87	13	124	
37103	5.13	6.63	1.50		97	-0.04	1		2.2	1	89	16	103	
37104	6.63	8.13	1.50		100	0.00	1		2.3	1	71	7	88	
37105	8.13	9.63	1.50		103	+0.05	2		1.6	1	72	13	107	
37106	9.63	11.13	1.50		99	-0.01	2		1.7	1	111	12	92	
37107	11.13	12.63	1.50		100	0.00	1		1.8	1	70	7	88	
37108	12.63	14.13	1.50		100	0.00	1		1.9	1	72	21	104	
37109	14.13	15.33	1.20		99	-0.01	2		1.2	1	82	8	92	
37110	15.33	16.60	1.27		100	0.00	4		1.6	1	107	7	104	
37111	16.60	17.50	0.90		100	0.00	219		4.0	78	1270	34	344	
37112	17.50	18.80	1.30		99	-0.01	16		1.7	1	185	19	260	
37113	18.80	20.10	1.30		98	-0.02	2		2.1	1	106	21	127	
37114	20.10	21.40	1.30		100	0.00	1		2.1	1	103	20	90	
37115	21.40	22.72	1.32		98	-0.02	2		1.8	1	88	9	84	
37116	22.72	24.22	1.50		100	0.00	4		1.1	33	190	28	71	
37117	24.22	25.76	1.54		101	+0.01	1		0.7	29	34	13	93	
37118	25.76	27.20	1.44		102	+0.03	3		1.5	62	59	23	102	
37119	27.20	28.80	1.60		97	-0.05	1		0.8	25	83	29	95	
37120	28.80	30.40	1.60		94	-0.10	6		0.5	24	105	26	74	
37121	30.40	32.00	1.60		100	0.00	3		0.5	1	100	19	119	
37122	32.00	33.50	1.50		101	+0.01	1		0.9	8	102	23	83	
37123	33.50	35.00	1.50		99	-0.01	2		0.8	1	112	23	84	
37124	35.00	36.50	1.50		100	0.00	1		1.5	1	102	14	95	
37125	36.50	38.00	1.50		98	-0.03	1		2.1	24	78	14	89	
37126	38.00	39.50	1.50		99	-0.01	2		1.8	1	75	7	92	
37127	39.50	41.00	1.50		102	+0.02	1		1.7	1	66	17	89	
37128	41.00	42.50	1.50		97	-0.04	2		1.9	1	97	11	88	
37129	42.50	44.00	1.50		100	0.00	7		1.4	1	85	14	75	
37130	44.00	45.50	1.50		100	0.00	2		1.1	1	94	9	72	
37131	45.50	47.00	1.50		96	-0.06	2		2.5	1	100	17	77	
37132	47.00	48.50	1.50		100	0.00	1		1.2	12	69	24	92	
37133	48.50	50.00	1.50		100	0.00	1		1.5	1	87	19	73	
37134	50.00	51.50	1.50		98	-0.02	1		1.6	1	104	12	72	
37135	51.50	53.00	1.50		106	+0.06	2		1.1	7	101	13	85	
37136	53.00	54.60	1.60		100	0.00	1		1.5	1	100	9	87	

DRILL HOLE NO. W90-6

Keewatin Engineering Inc.					DRILL LOG			Sample Data						
SAMPLE				CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS							
Number	From	To	Total Metres	Sp.Gr.	%		Amt. Lost	ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37137	54.60	56.20	1.60		99	-0.01		3		1.2	24	113	17	92
37138	56.20	57.80	1.60		103	+0.04		1		0.8	18	88	14	92
37139	57.80	59.40	1.60		100	0.00		1		1.0	1	98	13	83
37140	59.40	61.00	1.60		97	-0.05		1		0.7	1	109	15	86
37141	61.00	62.79	1.79		98	-0.03		1		1.2	1	111	16	87

LOCATION: COOPER ZONE
(0+70E/0+28.5S)

DRILL HOLE LOG

HOLE NO. W90-7

PAGE NO. 1 of 7

AZIM: 030°
DIP: -55°

ELEV: Approximately 629m
LENGTH: 63.09m

DIP TEST

PROPERTY: WARATAH

CORE SIZE: BQ

METREAGE	AZIMUTH	INCLINATION	CORR. INCLIN.
0.00			-55°
63.09		-63°	-54.5°

CLAIM NO: WARATAH 7
SECTION:

STARTED: November 5, 1990
COMPLETED: November 5, 1990
PURPOSE: Test Cooper Zone along
strike to the southeast

LOGGED BY: R. Pegg
DATE LOGGED: November 6, 1990
DRILLING CO: Falcon
ASSAYED BY: Min-En

CORE RECOVERY: 99.3%

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
0.00	0.61	Casing									
0.61	12.03	Tuff Breccia									
		- medium to dark greyish green	37414	0.61	2.11	1.50	1		3.3	1	139
		- > minor fractures									
		- > minor carbonate (± quartz), some concentrations	37415	2.11	3.61	1.50	2		3.1	1	106
		- polyolithic (fragments to 21cm), medium grey porphyry,	37416	3.61	5.11	1.50	2		2.9	1	105
		small chlorite fragments, greyish green felsic, purple	37417	5.11	6.61	1.50	3		2.0	1	94
		fragments, grey and green feldspar porphyry fragments	37418	6.61	8.11	1.50	2		1.8	1	105
		(most 1-6cm)	37419	8.11	9.61	1.50	1		2.1	1	107
		- minor leached carbonate vugs and partial open fractures	37420	9.61	11.11	1.50	1		2.3	1	69
		- > minor local white hydrothermal specks	37421	11.11	12.03	0.92	4		1.3	5	117
		- 1-3% pyrite disseminations and fracture filling; <1% magnetite ± specularite (especially disseminated in the grey feldspar porphyry fragments)									
12.03	34.47	Lapilli Tuff to Tuff Breccia									
		- dark green to medium greyish green	37422	12.03	13.61	1.58	1		1.5	16	61
		- polyolithic (mafic, light green siliceous; green porphyry)									
		- < moderate fracture and < moderate carbonate ± quartz fracture filling (some concentrations)									
		- a few large fragments (20-40cm) or bands - light to medium greenish grey (altered feldspar phenocrysts); < moderate chlorite alteration, 1-3% pyrite, trace chalcopyrite									

DRILL HOLE LOG										HOLE NO. W90-7	PAGE 2 OF 7	
INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
12.03	34.47 Cont	12.63-13.10m - carbonate-silica and minor chlorite and very minor sericite and iron carbonate; 1-2% pyrite; minor leached vugs; bands and lower contact @ 50°										
		13.61-14.62m - > moderate carbonate fracture filling; 2-4% pyrite fracture filling and blebs and trace chalcopyrite	37423	13.61	14.62	1.01	2		1.5	13	88	
		17.31-17.72m - large light grey green altered feldspar porphyry fragments	37424	14.62	16.12	1.50	1		1.2	1	84	
		18.85-20.32m - dark green lapilli tuff with > moderate carbonate, 2-4% pyrite fracture filling and disseminations	37425	16.12	17.62	1.50	1		1.4	1	201	
			37426	17.62	18.85	1.23	2		1.1	21	157	
			37427	18.85	20.32	1.47	3		1.1	25	91	
			37428	20.32	21.82	1.50	1		1.0	33	76	
			37429	21.82	23.32	1.50	1		1.1	5	146	
			37430	23.32	24.82	1.50	2		0.8	60	83	
			37431	24.82	26.32	1.50	1		0.9	6	94	
			37432	26.32	27.82	1.50	1		1.0	39	92	
			37433	27.82	29.32	1.50	3		1.3	38	80	
			37434	29.32	30.82	1.50	1		1.1	23	120	
			37435	30.82	32.32	1.50	1		1.9	1	78	
	37436	32.32	33.40	1.08	1		2.0	1	59			
	37437	33.40	34.47	1.07	1		2.3	1	76			
		- broken core at lower contact										
34.47	35.60	Lapilli Tuff and Andesitic Tuff										
		- light to medium grey and greyish green	37438	34.47	35.60	1.13	2		3.7	1	86	
		- more andesitic to the bottom										
		- well fractured										
		- minor carbonate (most as very fine grained fracture filling in upper 10cm)										
		- broken upper contact and lower contact										
		- <1% pyrite fracture filling, minor magnetite throughout										

DRILL HOLE LOG

HOLE NO. W90-7

PAGE 3 OF 7

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES					
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm	
35.60	54.51			Andesite and Andesitic Tuff - medium greyish green - granular texture - > moderate fractures; > minor white hydrothermal specks - > moderate carbonate (± quartz) fracture filling; minor vugs/open fractures - > minor chlorite alteration (a few small patches) - several narrow tuffaceous sections - gradation contacts common between the flows and tuffs banding 55°-60° - a few 1cm offsets of bands by carbonate fracture filling - 3-5% pyrite fracture fillings and disseminations, trace magnetite and specks 35.60-36.26m - sheared, broken core with numerous partial open fractures 36.96-37.20m - numerous leached vugs and moderate iron carbonate 39.45-39.51m - irregular quartz-carbonate fracture fillings (1-2cm) with sericite altered envelope and 2-3% pyrite fracture filling and disseminations 39.90-40.09m - fractured zone with abundant carbonate (± minor quartz) fracture filling and > minor chlorite altered; 2-4% disseminated and fracture filling pyrite 41.76-41.97m - numerous open fractures and vugs; some remnant carbonate 41.97-42.27m - > moderate carbonate fracture filling and open fractures 42.39-42.79m - first 8cm is light greyish green with 40% medium green altered feldspar grains and abundant very fine grained carbonate; rest is medium greyish green polyolithic lapilli tuff with chlorite blebs, altered feldspar grains and subrounded felsic fragments; > minor white hydrothermal specks - decrease in fractures and carbonate below 46.92m 49.09-49.17m - quartz-carbonate and chlorite (69°), 5-7% pyrite fracture filling and disseminations;								
			37439	35.60	36.96	1.36	1		2.7	1	45	
			37440	36.96	38.46	1.50	1		1.9	17	45	
			37441	38.46	39.90	1.44	3		1.4	29	57	
			37442	39.90	41.40	1.50	1		1.6	1	55	
			37443	41.40	42.90	1.50	2		1.8	47	97	
			37444	42.90	44.40	1.50	1		1.2	13	49	
			37445	44.40	45.90	1.50	2		1.7	36	93	
			37446	45.90	47.40	1.50	2		1.5	61	78	
			37447	47.40	48.90	1.50	1		1.3	42	80	
			37448	48.90	50.40	1.50	3		1.9	23	66	
			37449	50.40	51.90	1.50	2		1.6	19	85	
			37450	51.90	53.40	1.50	2		1.6	12	86	

DRILL HOLE LOG

HOLE NO. W90-7

PAGE 4 OF 7

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
35.60	54.51 Cont			minor sericite and specularite 51.46-51.61m - fracture zone with abundant carbonate vugs and open fractures (approximately 40°) - alternating sections of porphyritic andesite and tuffaceous andesite - lower contact fracture approximately 16°	37451		53.40	54.51	1.11	3	
54.51	55.52	Fractured and Sheared Crystal Tuff(?)/Lapilli Tuff - medium greyish green and light greyish green well fractured and sheared - > minor carbonate and iron carbonate fracture filling, < minor quartz fracture filling - < moderate sericite and chlorite alteration - > minor vugs and partial open fractures, 1-2% pyrite fracture filling and disseminations, minor white hydrothermal specks 54.70-54.82m - sericitic crystal tuff - rest appears to be lapilli tuff - lower contact (carbonate fracture filling) @ 32°	37452	54.51	55.52	1.01	2		2.0	31	79
55.52	56.39	Lapilli Tuff - medium greyish green - micro fractured - > minor carbonate (minor pink) fracture filling - < moderate white hydrothermal specks - > minor chlorite blebs - partial open fractures near bottom; 1-2% pyrite fracture filling and disseminations (fine grained) - fractured lower contact approximately 20°	37453	55.52	56.39	0.87	18		3.2	76	24
56.39	57.00	Altered and Sheared Tuff - dirty white to medium greyish green - > moderate carbonate patches and fracture filling (minor pink) - vuggy over upper 5cm; minor gouge - < moderate chlorite and sericite and white hydrothermal specks - lower contact approximately 30° - 5% fine grained pyrite disseminations and fracture filling; - < 1% magnetite and specularite (with carbonate)	37454	56.39	57.00	0.61	1		1.1	9	34

DRILL HOLE LOG

HOLE NO. W90-7

PAGE 5 OF 7

INTERVAL		DESCRIPTION	SAMPLE NO.	INTERVAL		LENGTH	ANALYSES				
FROM	TO			FROM	TO		Au ppb	Au opt	Ag ppm	As ppm	Cu ppm
57.00	59.11			Altered Tuff - medium greenish grey - < moderate white hydrothermal specks - > minor carbonate fracture filling (a few large vugs) - > minor chlorite blebs - > minor fractures - 1-2% pyrite fracture filling and disseminations, > trace magnetite - slip lower contact (45°)	37455		57.00	58.00	1.00	2	
			37456	58.00	59.11	1.11	4		1.3	9	74
59.11	60.00	Crystal Tuff - medium grey - 20-30% greenish grey feldspar phenocrysts - > minor carbonate fracture filling - > minor chlorite patches - 1-3% disseminated magnetite, 1% pyrite fracture filling and disseminations	37457	59.11	60.00	0.89	2		1.0	43	97
60.00	63.09	Lapilli Tuff - medium greenish grey - minor carbonate and iron carbonate - polyolithic (fragments to 5.5cm); some fragments brecciated - minor chlorite blebs - 1-3% magnetite disseminations, 1% disseminated and fracture filling pyrite	37458	60.00	61.14	1.14	1		0.9	1	87
			37459	61.14	63.09	1.95	5		0.9	18	75
		- END OF HOLE -									

Keewatin Engineering Inc.				DRILL LOG				Sample Data						
SAMPLE				CORE RECOVERY			VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS						
Number	From	To	Total Metres	Sp.Gr.	%	Amt. Lost		ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37414	0.61	2.11	1.50		99	-0.01		1		3.3	1	139	19	93
37415	2.11	3.61	1.50		90	-0.15		2		3.1	1	106	21	103
37416	3.61	5.11	1.50		95	-0.07		2		2.9	1	105	6	91
37417	5.11	6.61	1.50		100	0.00		3		2.0	1	94	19	84
37418	6.61	8.11	1.50		95	-0.08		2		1.8	1	105	14	85
37419	8.11	9.61	1.50		100	0.00		1		2.1	1	107	23	74
37420	9.61	11.11	1.50		103	+0.04		1		2.3	1	69	13	80
37421	11.11	12.03	0.92		100	0.00		4		1.3	5	117	18	84
37422	12.03	13.61	1.58		101	+0.02		1		1.5	16	61	11	88
37423	13.61	14.62	1.01		99	-0.02		2		1.5	13	88	27	104
37424	14.62	16.12	1.50		98	-0.03		1		1.2	1	84	18	103
37425	16.12	17.62	1.50		100	0.00		1		1.4	1	201	38	80
37426	17.62	18.85	1.23		100	0.00		2		1.1	21	157	24	78
37427	18.85	20.32	1.47		101	+0.01		3		1.1	25	91	25	66
37428	20.32	21.82	1.50		100	0.00		1		1.0	33	76	25	93
37429	21.82	23.32	1.50		100	0.00		1		1.1	5	146	36	60
37430	23.32	24.82	1.50		100	0.00		2		0.8	60	83	38	76
37431	24.82	26.32	1.50		101	+0.02		1		0.9	6	94	31	70
37432	26.32	27.82	1.50		99	-0.01		1		1.0	39	92	24	78
37433	27.82	29.32	1.50		100	0.00		3		1.3	38	80	24	71
37434	29.32	30.82	1.50		98	-0.02		1		1.1	23	120	25	70
37435	30.82	32.32	1.50		101	+0.01		1		1.9	1	78	6	89
37436	32.32	33.40	1.08		96	-0.04		1		2.0	1	59	16	77
37437	33.40	34.47	1.07		100	0.00		1		2.3	1	76	6	79
37438	34.47	35.60	1.13		97	-0.03		2		3.7	1	86	6	112
37439	35.60	36.96	1.36		101	+0.01		1		2.7	1	45	6	132
37440	36.96	38.46	1.50		100	0.00		1		1.9	17	45	13	79
37441	38.46	39.90	1.44		100	0.00		3		1.4	29	57	15	78
37442	39.90	41.40	1.50		97	-0.05		1		1.6	1	55	16	93
37443	41.40	42.90	1.50		98	-0.02		2		1.8	47	97	25	125
37444	42.90	44.40	1.50		103	+0.04		1		1.2	13	49	44	157
37445	44.40	45.90	1.50		100	0.00		2		1.7	36	93	78	298
37446	45.90	47.40	1.50		101	+0.02		2		1.5	61	78	22	131
37447	47.40	48.90	1.50		100	0.00		1		1.3	42	80	21	93
37448	48.90	50.40	1.50		99	-0.01		3		1.9	23	66	18	87

SAMPLE					CORE RECOVERY		VISUAL ESTIMATES (% Ore Minerals)	ASSAY RESULTS						
Number	From	To	Total Metres	Sp.Gr.	%	Amt. Lost		ppb Au	oz/t Au	ppm Ag	ppm As	ppm Cu	ppm Pb	ppm Zn
37449	50.40	51.90	1.50		98	-0.03		2		1.6	19	85	7	113
	51.90	53.40	1.50		99	-0.01		2		1.6	12	86	16	128
37450	53.40	54.51	1.11		100	0.00		3		1.5	28	94	11	134
37451	54.51	55.52	1.01		100	0.00		2		2.0	31	79	33	107
37452	55.52	56.39	0.87		101	+0.02		18		3.2	76	24	50	54
37453														
	56.39	57.00	0.61		100	0.00		1		1.1	9	34	18	85
37454	57.00	58.00	1.00		94	-0.06		2		1.2	12	28	27	82
37455	58.00	59.11	1.11		101	+0.01		4		1.3	9	74	16	80
37456	59.11	60.00	0.89		100	0.00		2		1.0	43	97	19	54
37457	60.00	61.14	1.14		99	-0.01		1		0.9	1	87	16	81
37458	61.14	63.09	1.95		99	-0.01		5		0.9	18	75	8	83
37459														



LEGEND (1988)

Intrusive Rocks

- MZ Mesonite
- SY Syenite
- OP Orthoclase Porphyry
- PP Feldspar Porphyry

Mafic Volcaniclastic Rocks

- A Agglomerate, including A₁ - andesite flow, A₂ - rhyolite tuffaceous
- VC Interbedded volcanic components / mafic wacks

Sedimentary Rocks

- SG Interbedded siltstone / greywacke
- ARG Argillite

SYMBOLS

- Outcrop
- Limit of title
- Lineament
- Fault
- Boundary
- Fluvium
- Contour
- Grid Sample Location
- Quartz - chlorite +/- calcite vein
- Altitude
- Width (cm)
- Measurement
- PP pyrite
- CP chloropyrite
- SP sphalerite
- MS magnetite
- SP-VE specular hematite
- AR arsenopyrite
- GA galena
- Au gold

GEOLOGICAL BRANCH
ASSESSMENT REPORT

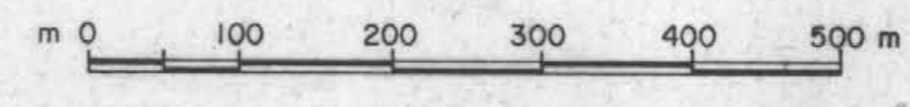
21,301

ASSAY RESULTS

Sample	Chlor	Pyrite	Sph	Mag	Sp-H	As	Gal	Au
38023	0.01	0.01	0.01	0.01	0.01	0.01	0.002	
38024	0.02	0.01	0.01	0.02	0.02	0.002		
38025	0.01	0.01	0.01	0.01	0.01	0.002		
38026	0.01	0.01	0.01	0.01	0.01	0.004		
38027	0.01	0.01	0.01	0.01	0.01	0.002		
38028	0.01	0.01	0.01	0.01	0.01	0.002		
38029	0.01	0.01	0.01	0.01	0.01	0.002		
38070	0.01	0.01	0.03	0.15	0.002			
38071	0.01	0.01	0.01	0.01	0.002			
38072	0.01	0.01	0.01	0.03	0.002			
38073	0.04	0.04	0.02	0.15				

PART 1 OF 2

- 1990 LEGEND
- And andesite
 - arg argillite
 - aT ash tuff
 - Di diorite
 - FP feldspar porphyry
 - Hfp hornblende porphyry
 - LapT lapilli tuff
 - LitT lithic tuff
 - Lst limestone
 - MDi monzodiorite
 - M monzonite
 - SLT siltstone
 - SST sandstone
 - TB tuff breccia
 - XT crystal tuff
 - carb carbonate
 - Epid epidote
 - Mt magnetite
 - Propyl propylitic
 - P porphyritic
 - qtz quartz
 - VNLTs veinlets
 - outcrop (large, small)
 - ⊙ helipad
 - ⊗ toe-in
 - ⊕ Cooper zone



BIG M RESOURCES LTD.

WARATAH PROJECT

GEOLOGY

EAST HALF

Keewatin Engineering Inc.

Date	Jan., '91	N.T.S.	1048/10W,1E	Mining Division	LIARD	Map No.	1
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ISKUT

RIVER

WARATAH 6 (4S x 5W)
WARATAH 7 (4S x 5E)

LEGEND (1988)

Intrusive Rocks

- MZ Monzonite
- SY Syenite
- OP Orthoclase Porphyry
- FP Felsic Porphyry

Mafic Volcaniclastic Rocks

- A Agglomerate, including A₁ - andesite flow, A₂ - rhyolite horizons, A₃ - mafic tuffs
- VC Interbedded volcanic components / mafic tuffs

Sedimentary Rocks

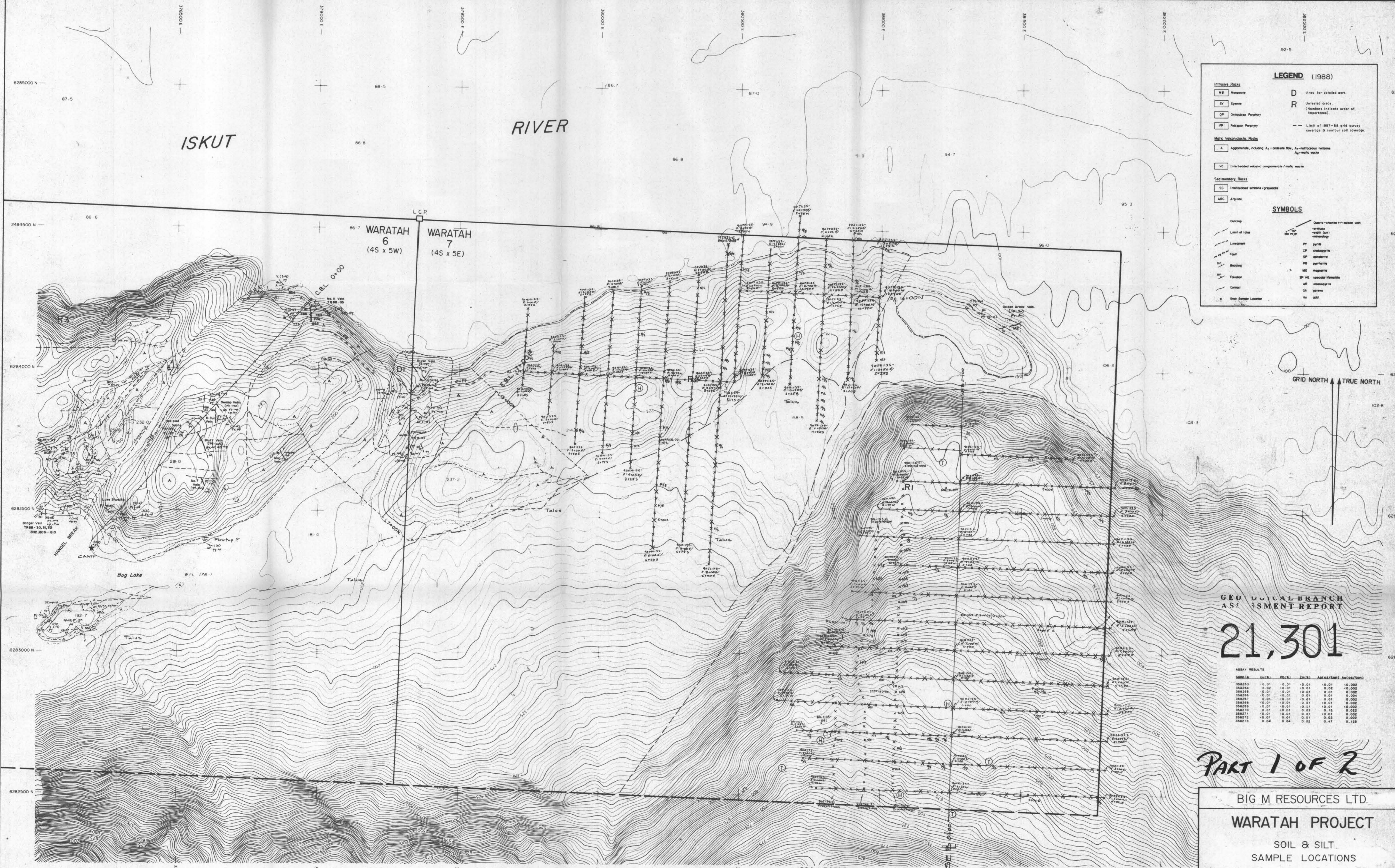
- SG Interbedded siltstone / graywacke
- ARG Argillite

Other

- D Area for detailed work
- R Untested areas. (Numbers indicate order of importance)
- Limit of 1987-88 grid survey coverage & contour soil coverage

SYMBOLS

- Outcrop
- Limit of lake
- Location
- Flow
- Beaching
- Fauna
- Camber
- Grid Sample Location
- Quartz - chlorite (1-2) mafic vein
- pyrite
- calcopryite
- apatite
- mag. magnetite
- SP-HL specular hematite
- AR arsenopyrite
- GA galena
- Au gold



GEOLOGICAL BRANCH
ASSESSMENT REPORT

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ASSAY RESULTS

SAMPLE	GAUGE	Fe (%)	Si (%)	Al ₂ O ₃ (%)	Au (g/t)
386253	0.01	0.01	10.01	0.01	0.002
386254	0.01	0.01	0.01	0.01	0.002
386255	0.01	0.01	10.01	0.01	0.002
386256	0.01	0.01	0.01	0.01	0.004
386257	0.01	0.01	0.01	0.01	0.002
386258	0.01	0.01	0.01	0.01	0.002
386259	0.01	0.01	10.01	0.01	0.002
386260	0.01	0.01	0.01	0.01	0.002
386271	0.01	0.01	0.01	0.01	0.002
386272	0.01	0.01	0.01	0.01	0.002
386273	0.04	0.04	0.02	0.41	0.125

PART 1 OF 2

BIG M RESOURCES LTD.

WARATAH PROJECT

SOIL & SILT
SAMPLE LOCATIONS

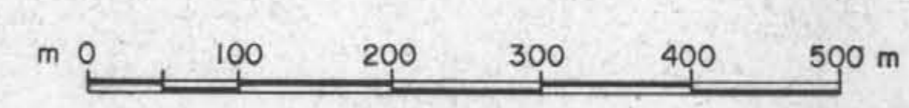
EAST HALF

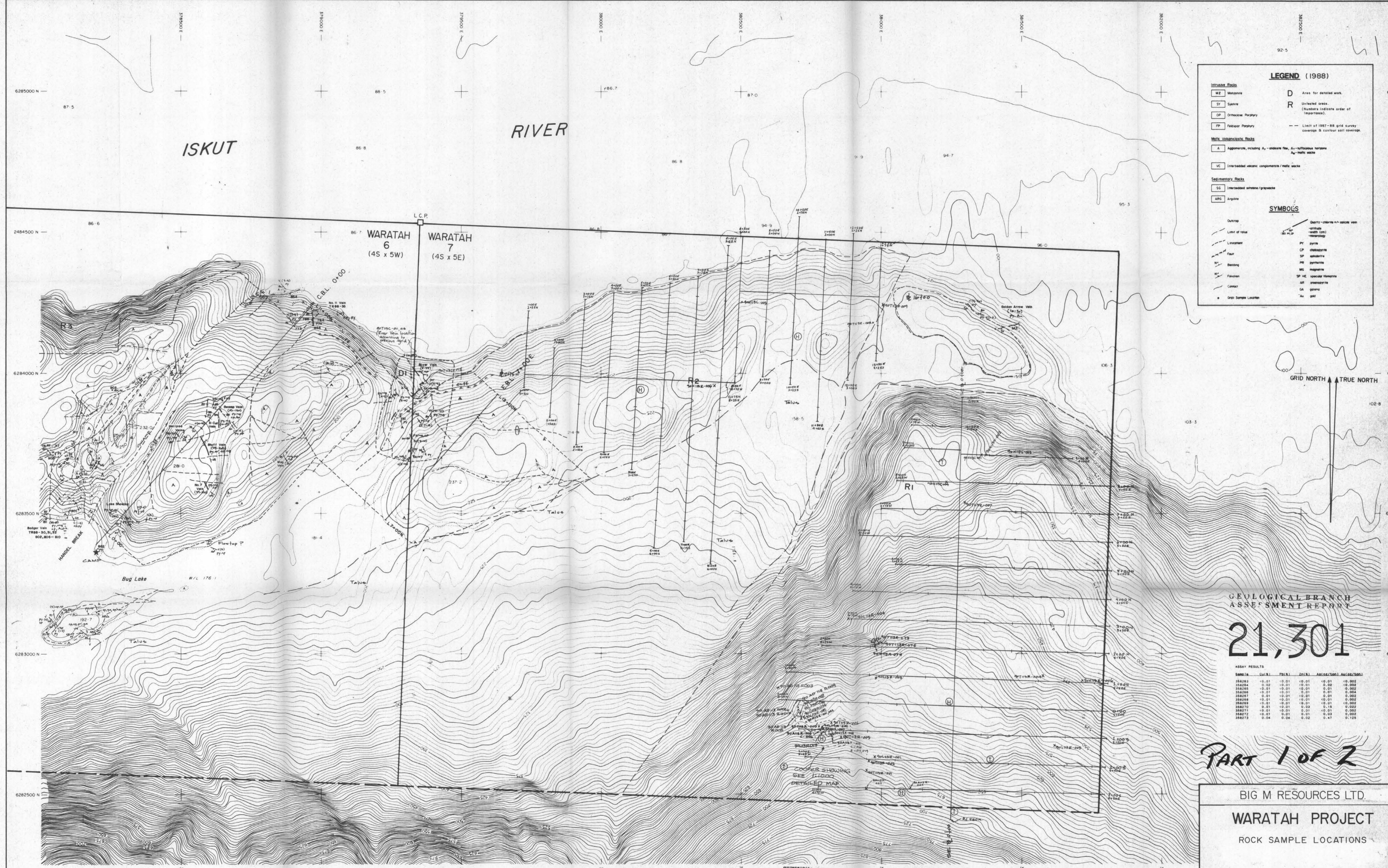
Keewatin Engineering Inc.

Date	Mar., 1991	N.T.S.	104B/10W, 11E	Mining Division	LIARD	Map No.	2
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1990 LEGEND

- x 1990 Soil sample
- o 1990 Silt sample
- No sample
- H Helipad
- T Helicopter toe-in





LEGEND (1988)

Intrusive Rocks

- ME Metapelite
- SY Syenite
- OP Orthoclase Porphyry
- FP Feldspar Porphyry

Mafic Volcanic Rocks

- A Agglomerate, including A₁ - andesite flow, A₂ - rhyolite flow, A₃ - mafic tuff
- VC Interbedded volcanic components / mafic tuff

Sedimentary Rocks

- SG Interbedded siltstone / greywacke
- ARG Argillite

SYMBOLS

- Outcrop
- Limit of talus
- Levee
- Fault
- Banking
- Fraction
- Camp
- Grid Sample Location
- Quartz-chlorite + calcite vein
- Normal fault (cm) / microfracture
- PP pyrite
- CP chlorite
- SP siderite
- ME magnetite
- SP-HE specular hematite
- AR arsenopyrite
- GA galena
- Py pyrite

D Area for detailed work.
R Unhealed area.
 (Numbers indicate order of importance).
 --- Limit of 1987-88 grid survey coverage & contour soil coverage.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,301

ASSAY RESULTS

SAMPLE	Cu (%)	Pb (%)	Zn (%)	Ag (oz/ton)	Au (oz/ton)
388283	0.01	0.01	0.01	0.01	0.002
388284	0.02	0.01	0.01	0.02	0.002
388285	0.01	0.01	0.01	0.01	0.002
388286	0.01	0.01	0.01	0.01	0.004
388287	0.01	0.01	0.01	0.01	0.002
388288	0.01	0.01	0.01	0.01	0.002
388289	0.01	0.01	0.01	0.01	0.002
388290	0.01	0.01	0.02	0.18	0.002
388291	0.01	0.01	0.01	0.01	0.002
388292	0.01	0.01	0.01	0.02	0.002
388293	0.04	0.04	0.02	0.47	0.125

PART 1 OF 2

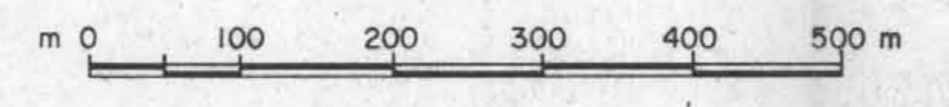
BIG M RESOURCES LTD.
WARATAH PROJECT
 ROCK SAMPLE LOCATIONS

EAST HALF
 Keewatin Engineering Inc.

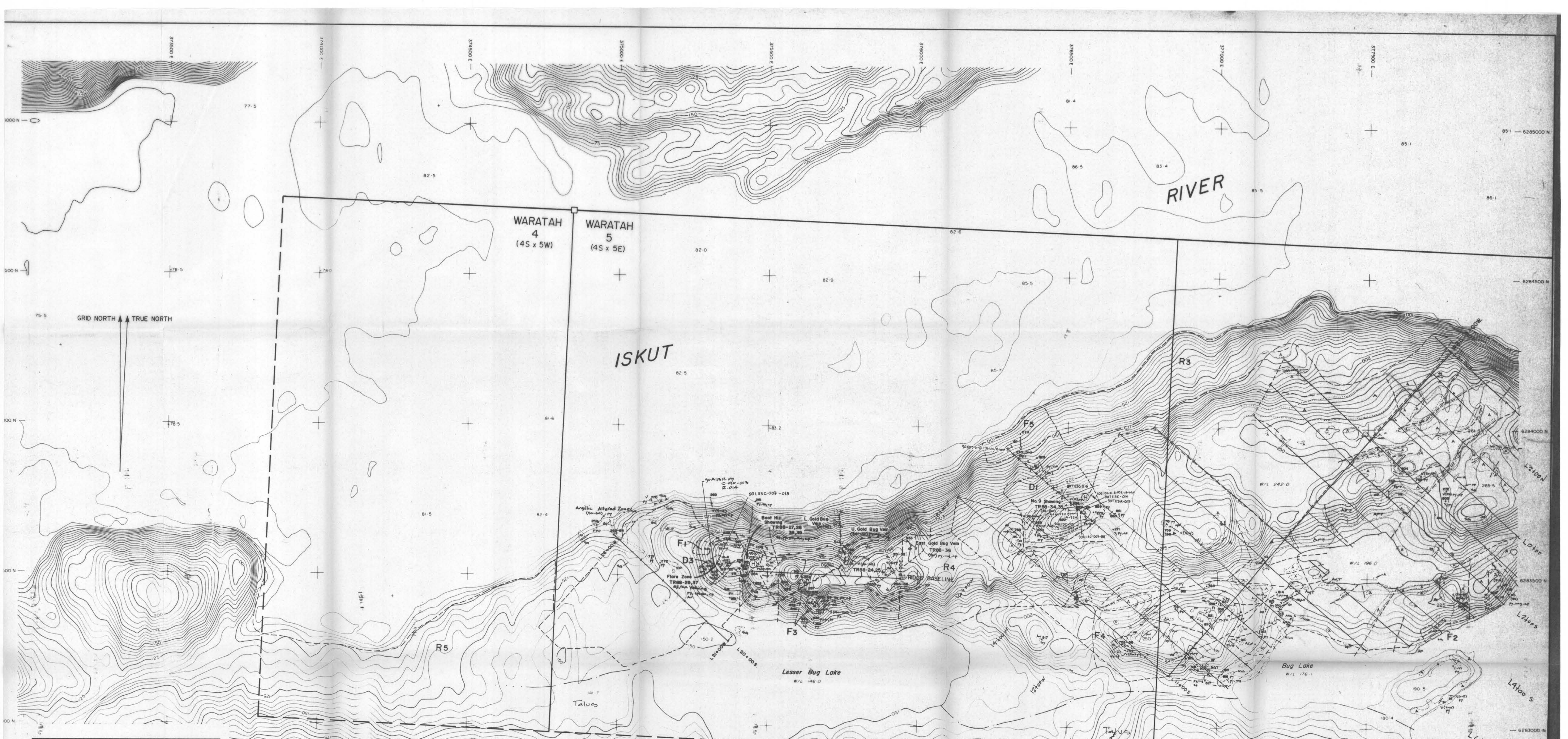
Date: Jan, '91 N.T.S. 1048/10W,1E Mining Division LIARD Map No. 4



- 1990 LEGEND**
- X 1990 grab / chip sample
 - Δ 1990 float sample
 - ⊕ Helipad
 - ⊙ Helicopter toe-in



ISKUT RIVER
SCALE 1:5000



LEGEND (1988)

Intrusive Rocks

- ME Monzonite
- SY Syenite
- OP Orthoclase Porphyry
- FP Felspar Porphyry

Metavolcanic Rocks

- A Agglomerate, including A₁ - andesite flow, A₂ - rhyolite horizons
- A₃ - mafic rocks
- VC Interbedded volcanic conglomerates / mafic wacks

Sedimentary Rocks

- SG Interbedded siltstone / greywacke
- ARG Argillite

SYMBOLS

- Contour
- Line of relief
- Levee
- Fault
- Bedding
- Flowline
- Canal
- Grid Sample Location

Area for detailed work

Area for follow-up

Unlisted area
(Numbers indicate order of importance)

Limit of 1987-88 grid coverage

ASSAY RESULTS

Sample	Cu (%)	Pb (%)	Zn (%)	As (ppm)	Au (g/t)
149752	0.05	0.01	0.01	0.04	0.002
149753	0.01	0.01	0.01	0.00	0.000
149754	0.01	0.01	0.01	0.01	0.004
149755	0.17	0.01	0.01	0.23	0.008
149756	0.02	0.01	0.01	0.01	0.004
149757	0.01	0.01	0.01	0.00	0.000
149758	0.20	0.01	0.01	0.06	0.002
149759	0.03	0.01	0.01	0.07	0.004
149760	0.01	0.01	0.01	0.03	0.002
149761	0.01	0.01	0.01	0.01	0.002
149762	0.01	0.01	0.01	0.01	0.002
149763	0.01	0.01	0.01	0.01	0.002
149764	0.01	0.01	0.01	0.01	0.002
149765	0.03	0.01	0.01	0.10	0.018
149766	0.01	0.01	0.01	0.04	0.010
149767	0.01	0.01	0.01	0.03	0.002
149768	0.01	0.01	0.01	0.02	0.008
149769	0.01	0.01	0.01	0.02	0.008
149770	0.01	0.01	0.01	0.01	0.002
149771	0.01	0.01	0.01	0.01	0.002
149772	0.01	0.01	0.01	0.01	0.004
149800	0.01	0.01	0.01	0.01	0.002
149801	0.01	0.01	0.01	0.01	0.002
149802	0.04	0.01	0.01	0.02	0.002
149812	0.03	0.01	0.01	0.07	0.012
149813	0.01	0.01	0.01	0.01	0.002
149814	0.03	0.01	0.01	0.15	0.008
149815	0.01	0.01	0.01	0.01	0.002
149816	0.01	0.01	0.01	0.01	0.002
149817	0.01	0.01	0.01	0.01	0.002
149818	0.01	0.01	0.01	0.01	0.002
149819	0.01	0.01	0.01	0.01	0.002
149820	0.01	0.01	0.01	0.01	0.002
149821	0.01	0.01	0.01	0.01	0.002
149822	0.01	0.01	0.01	0.01	0.002
149823	0.01	0.01	0.01	0.01	0.002
149824	0.01	0.01	0.01	0.01	0.002
149825	0.01	0.01	0.01	0.01	0.002
149826	0.01	0.01	0.01	0.01	0.002
149827	0.01	0.01	0.01	0.01	0.002
149828	0.01	0.01	0.01	0.01	0.002
149829	0.24	0.01	0.01	0.10	0.002
149830	0.01	0.01	0.01	0.01	0.002
149831	0.01	0.01	0.01	0.01	0.002
149832	0.03	0.01	0.01	0.01	0.002
149833	0.02	0.10	1.13	2.23	0.002
149834	0.01	0.03	0.03	0.08	0.002
149835	0.21	1.20	1.49	2.25	0.038
149836	0.01	0.06	0.71	1.15	0.028
149837	0.02	0.15	0.23	0.25	0.004
149838	0.02	0.06	0.42	0.15	0.004

ASSAY RESULTS

Sample	Cu (%)	Pb (%)	Zn (%)	As (ppm)	Au (g/t)
149839	0.01	0.25	0.87	0.27	0.002
149840	0.01	0.01	0.02	0.01	0.002
149841	0.01	0.10	0.02	0.10	0.004
149842	0.01	0.01	0.01	0.01	0.002
149843	0.01	1.03	1.89	3.83	0.008
149844	0.01	0.01	0.01	0.01	0.002
149845	0.01	0.01	0.01	0.01	0.002
149846	0.01	0.02	0.01	0.02	0.002
149847	0.01	0.01	0.01	0.01	0.002
149848	0.03	0.01	0.01	0.06	0.008
149849	0.01	0.01	0.01	0.01	0.002
149850	0.01	0.01	0.01	0.01	0.002
149851	0.01	0.01	0.01	0.01	0.002
149852	0.01	0.01	0.01	0.01	0.002
149853	0.01	0.01	0.01	0.01	0.002
149854	0.01	0.01	0.01	0.01	0.002
149855	0.01	0.01	0.01	0.01	0.002
149856	0.01	0.01	0.01	0.01	0.002
149857	0.01	0.01	0.01	0.01	0.002
149858	0.01	0.01	0.01	0.01	0.002
149859	0.01	0.01	0.01	0.01	0.002
149860	0.01	0.01	0.01	0.01	0.002
149861	0.01	0.01	0.01	0.01	0.002
149862	0.01	0.01	0.01	0.01	0.002
149863	0.01	0.01	0.01	0.01	0.002
149864	0.01	0.01	0.01	0.01	0.002
149865	0.01	0.01	0.01	0.01	0.002
149866	0.01	0.01	0.01	0.01	0.002
149867	0.01	0.01	0.01	0.01	0.002
149868	0.01	0.01	0.01	0.01	0.002
149869	0.01	0.01	0.01	0.01	0.002
149870	0.01	0.01	0.01	0.01	0.002
149871	0.01	0.01	0.01	0.01	0.002
149872	0.01	0.01	0.01	0.01	0.002
149873	0.01	0.01	0.01	0.01	0.002
149874	0.01	0.01	0.01	0.01	0.002
149875	0.01	0.01	0.01	0.01	0.002
149876	0.01	0.01	0.01	0.01	0.002
149877	0.01	0.01	0.01	0.01	0.002
149878	0.01	0.01	0.01	0.01	0.002
149879	0.01	0.01	0.01	0.01	0.002
149880	0.01	0.01	0.01	0.01	0.002
149881	0.01	0.01	0.01	0.01	0.002
149882	0.01	0.01	0.01	0.01	0.002
149883	0.01	0.01	0.01	0.01	0.002
149884	0.01	0.01	0.01	0.01	0.002
149885	0.01	0.01	0.01	0.01	0.002
149886	0.01	0.01	0.01	0.01	0.002
149887	0.01	0.01	0.01	0.01	0.002
149888	0.01	0.01	0.01	0.01	0.002
149889	0.01	0.01	0.01	0.01	0.002
149890	0.01	0.01	0.01	0.01	0.002
149891	0.01	0.01	0.01	0.01	0.002
149892	0.01	0.01	0.01	0.01	0.002
149893	0.01	0.01	0.01	0.01	0.002
149894	0.01	0.01	0.01	0.01	0.002
149895	0.01	0.01	0.01	0.01	0.002
149896	0.01	0.01	0.01	0.01	0.002
149897	0.01	0.01	0.01	0.01	0.002
149898	0.01	0.01	0.01	0.01	0.002
149899	0.01	0.01	0.01	0.01	0.002
149900	0.01	0.01	0.01	0.01	0.002
149901	0.01	0.01	0.01	0.01	0.002
149902	0.01	0.01	0.01	0.01	0.002
149903	0.01	0.01	0.01	0.01	0.002
149904	0.01	0.01	0.01	0.01	0.002
149905	0.01	0.01	0.01	0.01	0.002
149906	0.01	0.01	0.01	0.01	0.002
149907	0.01	0.01	0.01	0.01	0.002
149908	0.01	0.01	0.01	0.01	0.002
149909	0.01	0.01	0.01	0.01	0.002
149910	0.01	0.01	0.01	0.01	0.002
149911	0.01	0.01	0.01	0.01	0.002
149912	0.01	0.01	0.01	0.01	0.002
149913	0.01	0.01	0.01	0.01	0.002
149914	0.01	0.01	0.01	0.01	0.002
149915	0.01	0.01	0.01	0.01	0.002
149916	0.01	0.01	0.01	0.01	0.002
149917	0.01	0.01	0.01	0.01	0.002
149918	0.01	0.01	0.01	0.01	0.002
149919	0.01	0.01	0.01	0.01	0.002
149920	0.01	0.01	0.01	0.01	0.002
149921	0.01	0.01	0.01	0.01	0.002
149922	0.01	0.01	0.01	0.01	0.002
149923	0.01	0.01	0.01	0.01	0.002
149924	0.01	0.01	0.01	0.01	0.002
149925	0.01	0.01	0.01	0.01	0.002
149926	0.01	0.01	0.01	0.01	0.002
149927	0.01	0.01	0.01	0.01	0.002
149928	0.01	0.01	0.01	0.01	0.002
149929	0.01	0.01	0.01	0.01	0.002
149930	0.01	0.01	0.01	0.01	0.002
149931	0.01	0.01	0.01	0.01	0.002
149932	0.01	0.01	0.01	0.01	0.002
149933	0.01	0.01	0.01	0.01	0.002
149934	0.01	0.01	0.01	0.01	0.002
149935	0.01	0.01	0.01	0.01	0.002
149936	0.01	0.01	0.01	0.01	0.002
149937	0.01	0.01	0.01	0.01	0.002
149938	0.01	0.01	0.01	0.01	0.002
149939	0.01	0.01	0.01	0.01	0.002
149940	0.01	0.01	0.01	0.01	0.002
149941	0.01	0.01	0.01	0.01	0.002
149942	0.01	0.01	0.01	0.01	0.002
149943	0.01	0.01	0.01	0.01	0.002
149944	0.01	0.01	0.01	0.01	0.002
149945	0.01	0.01	0.01	0.01	0.002
149946	0.01	0.01	0.01	0.01	0.002
149947	0.01	0.01	0.01	0.01	0.002
149948	0.01	0.01	0.01	0.01	0.002
149949	0.01	0.01	0.01	0.01	0.002
149950	0.01	0.01	0.01	0.01	0.002
149951	0.01	0.01	0.01	0.01	0.002
149952	0.01	0.01	0.01	0.01	0.002
149953	0.01	0.01	0.01	0.01	0.002
149954	0.01	0.01	0.01	0.01	0.002
149955	0.01	0.01	0.01	0.01	0.002
149956	0.01	0.01	0.01	0.01	0.002
149957	0.01	0.01	0.01	0.01	0.002
149958	0.01	0.01	0.01	0.01	0.002
149959	0.01	0.01	0.01	0.01	0.002
149960	0.01	0.01	0.01	0.01	0.002
149961	0.01	0.01	0.01	0.01	0.002
149962	0.01	0.01	0.01	0.01	0.002
149963	0.01	0.01	0.01	0.01	0.002
149964	0.01	0.01	0.01	0.01	0.002
149965	0.01	0.01	0.01	0.01	0.002
149966	0.01	0.01	0.01	0.01	0.002
149967	0.01	0.01	0.01	0.01	0.002
149968	0.01	0.01	0.01	0.01	0.002
149969	0.01	0.01	0.01	0.01	0.002
149970	0.01	0.01	0.01	0.01	0.002
149971	0.01	0.01	0.01	0.01	0.002
149972	0.01	0.01	0.01	0.01	0.002
149973	0.01	0.01	0.01	0.01	0.002
149974	0.01	0.01	0.01	0.01	0.002