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## LOCATION AND PHYSIOGRAPHY

The Indata-Schnapps claims are located approximately 130 kilometres northwest of Fort St.James. Access to the claim group is via the Leo Creek forest access road to the Driftwood Road and then to the Tchentlo "T Road". The Indata Road forks to the west at km 6 on the "T Road", just past the Brule Creek bridge. Driving time from Fort St.James to the property is approximately 2 hours.

The Indata-Schnapps claims occupy an undulating forested landscape with elevations varying from 875 to 1280 metres ( 2,850 to 4,200 feet). Vegetation consists of mature stands of pine, spruce and balsam.

## TENURE

| Claim Name | \# units | Record \# | Expiry Date |
| :--- | :--- | :--- | :--- |
| Indata 1 | 20 | 239378 | Feb 3/ 2000 |
| Schnapps 2 | 20 | 238723 | Nov 14/ 2000 |
| Schnapps 5 | 4 | 238893 | Sept 13/ 1998 |
| Schnapps 1 | 20 | 238722 | Nov 14/ 1998 |
| Schnapps 3 | 8 | 238859 | Aug 20/ 2000 |
| Schnapps 4 | 10 | 238860 | Aug 20/2000 |
| Indata 5 | 6 | 241741 | April 4/ 1998 |
| Indata 2 | 15 | 239379 | Feb 3/ 2000 |
| Indata 3 | 20 | 240192 | Oct 22/ 1997 |
| Indata 4 | 16 | 240193 | Oct 25/ 1997 |

## HISTORY

Two post claim posts dated in the early 1970's give evidence of the earliest known exploration on the property. No results of this work are known but it is believed to have been preformed during the porphyry copper boom in progress during this period in the Omineca Region.

Imperial Metals Corporation staked the Schnapps 1 and 2 claims in November 1983 after locating, sampling and obtaining weak geochemical results from a gossanous ultramafic intrusive on Limestone Ridge. The claim boundaries were sampled on 250 metre intervals coincident with staking and demonstrated strong copper and arsenic anomalies in several places in the central and northwestern regions of the claim block. Imperial Metals Corporation completed preliminary soil and induced polarization surveys and a four hole diamond drill program in 1985. Two of Imperial Metal's holes, drilled into a strong geochemical soil copper anomaly,
penetrated the edge of what has become known as the "Lake Zone". The better of these holes, $85-$ DDH-1 encountered 63 metres of chlorite altered mafic volcanic rocks grading $0.14 \% \mathrm{Cu}$ with the last 4 metres grading $0.28 \% \mathrm{Cu}$.

Eastfield Resources Ltd purchased the Schnapps claims from Imperial Metal's in 1986 and in that year invited Noranda Exploration to conduct a property inspection. Noranda's inspection extended to the east of the Imperial Metals grids and identified a strong gold-silver-arsenic soil anomaly within a vegetation kill zone. Eastfield obtained trading status the following year and in September 1987 conducted an exploration program that was successful in discovering auriferous quartz sulfide veins hosted in mafic volcanic and hybabyssal rocks. The discovery vein which varied in width from 1 to 7 metres was subsequently explored by trenching and diamond drilling over a strike length of 800 metres. It was found to cross from hypabbysal volcanic rocks into a serpentinized metaperidotite that is speculated to occur within a major fault zone. Exploration completed in 1988 and 1989 identified 4 similar veins with strike lengths up to 300 metres and comparable widths and mineralogy. Grades in the veins are highly variable but sometimes achieve impressive grades ( eg hole $88-\mathrm{I}-111.379 \mathrm{Oz} /$ ton Au over 4 metres).

Grid work completed late in 1989 in the north eastern region of the grid area identified a propylitically altered and stockwork veined mafic volcanic unit from which 18 select samples were collected (all samples) from an area measuring 700 by 300 metres. These samples averaged $0.97 \%$ copper and despite being select in nature demonstrated the porphyry potential of "the Northeast Anomaly".

In 1990 Aerodat Limited completed an airborne survey covering the entire property ( 595 line kilometres at a nominal line spacing of 100 metres). One of the more intriguing results of the survey was the delineation of 300 metre diameter total magnetic anomaly directly over " the Lake Copper Zone".

In 1993 Eastfield received authorization to construct an access road to the Lake Zone. This access road was essentially completed in the winter of 1995 with the final deficiencies completed in July and August 1995. An excavator trenching program was initiated in October 1995 following the completion of the road. Highlights of the trenching program included $0.36 \% \mathrm{Cu}$ over 75 metres in the Lake Zone and the identification of copper mineralization in a previously unknown tourmaline bearing quartz-diorite body some 300 metres to the east and 40 metres higher in elevation than the Lake Zone ( select samples to $2.76 \% \mathrm{Cu}$ ).

## GEOLOGY

The Indata Claim Group is located within or immediately to the west of a major terrane boundary named the Pinchi Fault Zone. The Pinchi Fault is a long lived structural feature that separates the Palaeozoic Cache Creek Group rocks on the west from the Mesozoic Takla Group rocks on the east. This fault zone has had both trust fault and strike-slip fault habits during its evolution and is still active as is evidenced by current hot spring activity associated with it. Thrusting in the fault zone has been from the west such that Cache Creek rocks have been thrust over Takla Group rocks within the fault zone. Subsequent normal faulting and erosion has caused some juxtapositioning to occur. The complexities of this juxtapositioning have made it
difficult to assign correct ages to some lithologies, particularly a mafic tuffaceous unit that can be argued to be part of either group.

The Indata Claims are underlain by two predominant stratified lithologies that have been intruded by several magmatically distinct intrusive suites. The two stratified lithologies are a well bedded light grey to blue grey limestone probably belonging to the Cache Creek Group and intermediate to mafic volcanic rocks of unknown affinity. Intrusive into these lithologies are a complex variety of intrusive rocks including diorite, latite, quartz-diorite, granite-granodiorite, gabbro, pyroxenite, peridotite and serpentinite.

Pyroxenite, peridotite and gabbro have been mapped within a 1 km diameter zoned feature 1.5 kilometres east of Albert Lake. These units are almost certainly gradational from a common magma that probably continues to grade into diorite which is outbound but not restricted to the circular feature. Quartz-diorite and granite-granodiorite units occur as additional and apparently younger intrusive bodies within the claim group. A 3.5 by 2 kilometre granite-granodiorite stock located in the southern region of the claim block constitutes the largest known intrusive on the property. Several serpentinite bodies are known to exist within a linear belt along the eastern boundary of the claim group. The serpentinite has petrographically been interpreted to be metapyroxenite implying a common origin with the zoned ultramafic complex. Fine grained latite has been identified by petrographic analysis from a single drill hole and may represent another intrusive type. The recently discovered quartz-diorite occurring east of the Lake Zone is notable in its tourmaline content.

## MINERALIZATION

Previous mineralization on the property has, in large, been directed at polymetallic precious metal vein mineralization. Polymetallic veins occur in two distinct types. The first and predominant style of vein occurs in shallowly dipping structures with several directions of strike of which northerly is the most common. Five veins have so far been discovered with individual segments having lengths up to 800 metres and widths of 1 to 7 metres. This style of vein is associated with massive accumulations of arsenopyrite, pyrite and stibnite, with lesser accumulations of marcasite, chalcopyrite and tetrahedrite within a quartz-carbonate gangue. Trace amounts of nickel and bismuth and sulfides and sulfosalts occur where the vein is hosted by talc-magnesite altered meteperidotite. While gold grades have often been erratic they can achieve impressive values (ie $88-\mathrm{I}-111.379 \mathrm{Oz} /$ ton Au over 4 metres).

A second style of precious metal veining is known to occur from a single drill hole (89-1-6). In this drill hole a 3.2 metre vein grading $10.3 \mathrm{Oz} /$ ton $\mathrm{Ag}, 0.12 \% \mathrm{Cu}$ and 218 ppm Mo is accompanied by only traces of Au and Ag .

Of interest to the current program volcanic hosted porphyry style copper mineralization that occurs in the "Lake Zone" near the northeastern end of Albert Lake and on the northeastern side of the claim group within "The Northeastern Anomaly". In the Lake Zone disseminated and fracture related chalcopyrite and bornite occur in silicified tremolite/actinolite altered andesite (minor basalt). Minor fluorite has been petrographically identified suggesting proximetry to a
heat source. A 300 metre diameter total field airborne magnetic anomaly corresponds to this zone.

Copper mineralization occurring within the northeast anomaly is similar to the Lake zone excepting that it is more strongly associated with intense silicification and quartz stockwork veining and the development of a pink feldspar that may indicate the development of secondary orthoclase.

A final style of mineralization that is known to occur but which has not been evaluated is nickel sulfide (pentlandite) mineralization occurring with or without chalcopyrite in gabbro in several places on the claim block (samples to $0.16 \%$ nickel).

## SCOPE OF WORK PROGRAM

The 1995 field program entailed three parts. . The first part of the program was to correct deficiencies in road construction which had occurred in 1994 and 1995. Most of this work entailed additional culvert installation, ditching and contouring the uphill side of the final 7.3 kilometres of the access road. Slash piles were burned and reburned and both sides of the road grass seeded.

The second part of the program entailed geochemical till sampling the cut made for the road bed in recognition that this cut represents a much deeper sampling medium than has previously been accessible. Samples were dug until undisturbed material was encountered on 50 metre centres. New exposures of rock were likewise sampled.

The third and final part of the program consisted of completing an excavator trenching program predominantly within the Lake (copper) Zone. Anomalous till samples obtained from the roadside till sampling program were likewise trenched as the equipment was exiting the property. Trenches T-3 through T-11 essentially represent continuous trenching within the Lake Zone while trenches T-1, T-2 and T-12 through T-79 ( 16 additional trenches) represent test pits. All trenches and test pits were reclaimed and grass seeded.

## RESULTS

Trench locations are designated T -, till samples are designated $95-\mathrm{R}$ - and rock samples are designated $95-\mathrm{M}-$. Results for samples along with assay certificates are listed in the appendix and plotted on figures 2,3 and 4.

The most significant result of the 1995 program was a 75 metre continuous interval grading $0.36 \%$ copper from trench T-7 in the Lake zone. Material in this trench consists of intensely chlorite and tremolite altered andesite containing disseminated chalcopyrite and magnetite.

Trench T-13, also a successful trench, exposed a previously unknown quartz-diorite containing several percent pyrite and minor tourmaline. Samples collected from this trench, which in actuality is a deep pit, ranged from anomalous to $2.76 \%$ copper. This discovery is significant because of the single very high grade sample and the presence of tourmaline which suggests quartz-diorite may be the heat source and mineralizing entity responsible for copper mineralization in the Lake Zone. An untested chargeability anomaly ( 300 by 600 metres in extent) exists to the east of this trench.

Trench T-35 exposed a new 2 metre wide quartz sulfide vein system with anomalous $\mathbf{A u}$ and $\mathbf{A g}$ values and highly anomalous $\mathrm{Sb}, \mathrm{Bi}$ and W values. This vein may be of significance because it is on strike and 200 metres distant from trench 89-T-41 where silicified volcanic returned up to $0.17 \% \mathrm{Cu}, 0.12 \% \mathrm{Sb}, 1.1 \% \mathrm{As}, 101.5 \mathrm{gms} /$ tonne Ag and $2.55 \mathrm{gms} /$ tonne Au .

Trench T-50 was dug in a lowlying area where road construction had entailed excavating extremely gossanous fill to build the road surface above swampy terrain. This location
corresponds to a prominent southeast striking linear airborne magnetic feature (low). Till sampling returned a value of 178 ppb Au . While the material excavated in trench T-50 was not anomalous itself it is noteworthy that it is intensely altered and affected by cataclastic shearing which has been accompanied by the development of a network of limonite,calcite, ankerite and dolomite veinlets. This airborne feature is almost certainly indicative of a major structural feature that remains to be more fully evaluated.

## COST STATEMENT

## COMPLETING ACCESS ROAD (REMEDIATION OF DEFICIENCIES)

| Equipment July - August |  |
| :---: | :--- |
| Cat $78.5 \mathrm{hrs} @ \$ 115$ | $\$ 9,027.50$ |
| Excavator $77 \mathrm{hrs} @ \$ 110$ | $\$ 8,470.00$ |
| Hiab $8 \mathrm{hrs} @ \$ 73.75$ | $\$ 590.00$ |
| Lowbed $7 \mathrm{hrs} @ \$ 87.50$ | $\$ 612.50$ |
| Equipment September |  |
| Backhoe | $\$ 113.00$ |
| Consumable |  |
| Culverts $3 @ \$ 305.70$ | $\$ 917.10$ |
| Grass seed 125 kg | $\$ 530$ |

SUB TOTAL
$\mathbf{\$ 2 0 , 2 6 0 . 1 0}$

## GEOCHEMICAL SAMPLING PROGRAM

## Personnel (June 15-22)

Geologist (J.W. Morton)
8 days @ $\$ 300$ day
$\$ 2,400$
Field Assistant (R. Vedd)
8 days @ $\$ 220$ day
\$1,760
Room and Board 8 man days © \$60 day
\$480
Vehicle Costs
Truck Rental 8 days @ \$60 day $\$ 480$
Fuel
\$250
ATV Rental 5 days @ \$60 \$300

Analytical Costs
127 samples ( 100 soil and 27 rock)
(30 element ICP plus Au) @ 15.80
\$2,006.60
SUB TOTAL
\$7,676.60

## TRENCHING PROGRAM

Personnel (October 12-20)
Geologist (J.W. Morton)9 days @ \$300\$2,700
Field Assistant (Francois Larocque)6 days @ \$220\$1,320
Room and Board and Travel Costs ..... \$1,200
Equipment Costs
Excavator 48 hours @ \$161.00 ..... \$7,728
Lowbed 10 hours @ \$87.50 ..... \$875
Vehicle Costs
Truck Rental 10 days @ \$60 day ..... $\$ 600$
Fuel ..... \$250
Analytical Costs ( 67 rock chip samples)
30 element ICP plus Au @ \$26 each ..... \$1742
Petrographic Analysis (6 samples) ..... \$840
SUB TOTAL ..... \$17,255
TOTAL ..... $\$ 45,191.70$
TOTAL CLAIMED ON WORK STATEMENT ..... $\$ 43,250$

## AUTHOR CERTIFICATION

I, J.W.Morton of the city of North Vancouver B.C. certify the following:

1. I graduated from Carleton University Ottawa in 1971 with a B.Sc in Geology.
2. I graduated from the University of British Columbia in 1976 with a M.Sc in Soil Science.
3. I am a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia.
4. I supervised the work described in this report.

Dated this 12th day of January 1996.

TRENCH RESULTS (see figures $\mathbf{2 , 3}$ and 4)

| Trench | Sample \# | Tag \# | Width (interval) Metres | Copper (ppm) | Gold <br> (ppb) | Other <br> (ppm) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| T-1 | T-1-1 | 100401 | $\begin{aligned} & 0-7.5 \\ & (7.5) \end{aligned}$ | 848 | 9 |  |
| T-1 | T-1-2 | 100402 | $\begin{aligned} & 7.5-13 \\ & (7.5) \end{aligned}$ | 535 | 11 |  |
| T-4 | T-4-1 | 100403 | $0-3$ <br> composite | 1415 | 7 | Mo 5 |
| T-4 | T-4-2 | 100404 | 3-6 <br> composite | 1089 | 3 | Mo 5 |
| T-4 | T-4-3 | 100405 | 6-9 <br> composite | 371 | 5 |  |
| T-4 | T-4-4 | 100406 | $9-12$ <br> composite | 650 | 4 |  |
| T-4 | T-4-5 | 100407 | 12-15 composite | 1817 | 13 | Mo 4 |
| T-4 | T-4-6 | 100408 | $15-18$ <br> composite | 457 | 11 |  |
| T-4 | T-4-7 | 100409 | $18-21$ <br> composite | 1508 | 4 |  |
| T-5 | T-5-1 | 100410 | 0-4 composite | 332 | 5 |  |
| T-5 | T-5-2 | 100411 | 4-9 composite | 1216 | 13 |  |
| T-5 | T-5-3 | 100412 | 9-14 composite | 303 | 6 |  |
| T-6 | T-6-1 | 100413 | $14-19$ <br> composite | 229 | 2 |  |
| T-6 | T-6-2 | 100414 | 19-24 <br> composite | 275 | 2 |  |
| T-6 | T-6-3 | 100415 | 24-29 <br> composite | 9510 | 29 |  |


| T-6 | T-6-4 | 100416 | $29-34$ <br> composite | 1969 | 4 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| T-6 | T-6-5 | 100417 | $34-38$ <br> composite | 298 | 5 |  |
|  |  |  |  |  |  |  |
| T-7 | T-7-1 | 100418 | $0-12.5$ | 463 | 17 |  |
| T-7 | T-7-2 | 100419 | $12.5-25$ | 512 | 22 |  |
| T-7 | T-7-3 | 100420 | $25-37.5$ | 132 | 4 |  |
| T-7 | T-7-4 | 100421 | $37.5-50$ | 124 | $<2$ |  |
| T-7 | T-7-5 | 100422 | $50-62.5$ | 852 | 16 |  |
| T-7 | T-7-6 | 100423 | $62.5-75$ | 530 | 6 |  |
| T-7 | T-7-7 | 100424 | $75-87.5$ | 1350 | 45 |  |
| T-7 | T-7-8 | 100425 | $87.5-100$ | 2196 | 83 |  |
| T-7 | T-7-9 | 100426 | $100-112.5$ | 1077 | 37 |  |
| T-7 | T-7-10 | 100427 | $112.5-125$ | 1572 | 5 |  |
| T-7 | T-7-11 | 100428 | $125-137.5$ | 1067 | 6 |  |
| T-7 | T-7-12 | 100429 | $137.5-150$ | 5208 | 17 |  |
| T-7 | T-7-13 | 100430 | $150-162.5$ | 564 | 4 |  |
| T-7 | T-7-14 | 100431 | $162.5-175$ | 5363 | 16 |  |
| T-7 | T-7-15 | 100433 | $175-187.5$ | 3552 | 10 |  |
| T-7 | T-7-16 | 100434 | $187.5-200$ | 2144 | 17 |  |
| T-7 | T-7-17 | 100435 | $200-212.5$ | 4778 | 37 |  |
| T-7 | T-7-18 | 100436 | $212.5-225$ | 126 | 3 |  |
| T-7 | T-7-19 | 100437 | $225-237.5$ | 403 | 6 |  |
| T-7 | T-7-20 | 100438 | $237.5-250$ | 368 | 9 |  |
| T-7 | T-7-21 | 100439 | $250-262.5$ | 4196 | 84 | Mo 8 |
| T-8 | T-8-1 | 100432 | $0-10$ |  |  |  |
| composite | 284 | 19 |  |  |  |  |
|  | 100440 | $0-10$ |  |  |  |  |
| composite | 592 | 8 |  |  |  |  |


| T-10 | T-10-1 | 100441 | $0-10$ <br> composite | 392 | 11 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| T-11 | T-11-1 | 100442 | $0-10$ <br> composite | 358 | 15 |  |
| T-12 | T-12-1 | 100443 | $0-10$ composite | 708 | 5 |  |
| T-13 | T-13-1 | 100444 | 0-5 composite | 419 | <2 |  |
| T-13 | T-13-2 | 100445 | 0-5 composite | 376 | $<2$ |  |
| T-13 | T-13-4 | none | grab | 27,567 | 79 |  |
| T-13 | T-13-5 | none | $0-5$ <br> composite | 1,215 | 13 |  |
| T-14 | T-14-1 | 100446 | 0-5 composite | 22 | <2 |  |
| T-30 | T-30-1 | 100447 | 0-5 composite | 2142 | 10 | sand Mo 7 |
| T-30 | T-30-2 | 100448 | $\begin{aligned} & 0-5 \\ & \text { grab } \end{aligned}$ | 237 | $<2$ | rock in clay |
| T-35 | T-35-1 | 100449 | 0-2 west side | 1003 | 41 | Ag 5.6 <br> Sb 290 <br> Bi 177 <br> W 42 |
| T-35 | T-35-2 | 100450 | $0-2$ <br> east side | 352 | 4 | Sb 34 <br> W 7 |
| T-36 | T-36-1 | 100451 | 0-1 | 77 | 3 |  |
| T-36 | T-36-2 | 100452 | 1-3 | 15 | <2 |  |
| T-36 | T-36-3 | 100453 | grab | 28 | <2 |  |
| T-36 | T-36-4 | 100454 | grab | 59 | <2 |  |
| T-43 | T-43-1 | 100455 | grab | 705 | 11 | rock in clay |
| T-72 | T-72-1 | 100456 | 0-8 | 34 | $<2$ | Mo 42 |
| T-72 | T-72-2 | 100457 | 8-16 | 15 | 2 | Mo 21 |


| T-72 | T-72-3 | 100458 | 16-32 | 19 | 8 | Ag 2.7 <br> Pb 169 <br> As 908 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| T-100 | T-100-1 | 100459 | 0-5 composite | 757 | 8 |  |
| T-200 | T-200-1 | 100460 | 0-5 <br> composite | 56 | $<2$ |  |
| T-300 | T-300-1 | 100461 | 0-5 composite | 342 | 25 |  |
| T-300 | T-300-2 | 100462 | 0-5 composite | 41 | 3 |  |
| T-79 | T-79-1 | 100463 | 0-5 composite | 87 | 4 |  |
| T-50 | T-50-1 | none | grab | 81 | 1 |  |

TILL SAMPLE RESULTS (see figures 2,3 and 4)

| Sample \# | Copper (ppm) | Gold <br> (ppb) | Notes |
| :---: | :---: | :---: | :---: |
| 95-R-1 | 65 | 14 |  |
| 95-R-2 | 94 | 8 |  |
| 95-R-3 | 118 | 8 |  |
| 95-R-4 | 201 | 6. |  |
| 95-R-5 | 403 | 5 |  |
| 95-R-6 | 973 | 2 | $3+55 \mathrm{~N}, 2+50 \mathrm{~W}$ |
| 95-R-7 | 757 | 10 |  |
| 95-R-8 | 640 | 7 |  |
| 95-R-9 | 1673 | 6 |  |
| 95-R-10 | 498 | 15 |  |
| 95-R-11 | 134 | 7 |  |
| 95-R-12 | 87 | 22 |  |
| 95-R-13 | 272 | 14 | $0+00,1+20 \mathrm{~W}$ |
| 95-R-14 | 376 | 24 |  |
| 95-R-15 | 125 | 7 |  |
| 95-R-16 | 233 | 11 |  |
| 95-R-17 | 214 | 15 |  |
| 95-R-18 | 291 | 13 |  |
| 95-R-19 | 135 | 7 | $\begin{aligned} & 16 \mathrm{~km} \text { mark } \\ & 3+50 \mathrm{~S}, 0+65 \mathrm{~W} \end{aligned}$ |
| 95-R-20 | 199 | 11 |  |
| 95-R-21 | 414 | 21 |  |
| 95-R-22 | 206 | 7 |  |
| 95-R-23 | 70 | $<2$ |  |
| 95-R-24 | 174 | 5 | $6+00 \mathrm{~S}, 0+55 \mathrm{~W}$ |


| 95-R-25 | 332 | 23 | As 2500 |
| :---: | :---: | :---: | :---: |
| 95-R-26 | 403 | 12 |  |
| 95-R-27 | 192 | 7 |  |
| 95-R-28 | 131 | 6 |  |
| 95-R-29 | 162 | 9 |  |
| 95-R-30 | 420 | 31 | 15 km mark |
| 95-R-31 | 258 | 21 |  |
| 95-R-32 | 350 | 10 |  |
| 95-R-33 | 209 | 9 | $10+40 \mathrm{~S}, 0+33 \mathrm{E}$ |
| 95-R-34 | 1357 | 65 |  |
| 95-R-35 | 2585 | 80 |  |
| 95-R-36 | 868 | 11 | Ni 612 |
| 95-R-37 | 114 | 8 |  |
| 95-R-38 | 197 | 19 |  |
| 95-R-39 | 203 | 11 |  |
| 95-R-40 | 141 | 13 |  |
| 95-R-41 | 260 | 17 |  |
| 95-R-42 | 132 | 14 |  |
| 95-R-43 | 164 | 12 |  |
| 95-R-44 | 217 | 43 |  |
| 95-R-45 | 210 | 17 | Sb 21 |
| 95-R-46 | 111 | 17 |  |
| 95-R-47 | 103 | 9 |  |
| 95-R-48 | 174 | 9 |  |
| 95-R-49 | 69 | 5 |  |
| 95-R-50 | 44 | 178 |  |
| 95-R-51 | 76 | 2 |  |
| 95-R-52 | 40 | 2 |  |


| 95-R-53 | 48 | 2 | 20+00S, $5+35 \mathrm{E}$ |
| :---: | :---: | :---: | :---: |
| 95-R-54 | 50 | 2 | $+30 \mathrm{~m}=14 \mathrm{~km}$ mark |
| 95-R-55 | 119 | 7 |  |
| 95-R-56 | 80 | 5 |  |
| 95-R-57 | 109 | 12 |  |
| 95-R-58 | 158 | 11 |  |
| 95-R-59 | 100 | 10 |  |
| 95-R-60 | 82 | 9 |  |
| 95-R-61 | 153 | 13 |  |
| 95-R-62 | 140 | 8 |  |
| 95-R-63 | 118 | 8 |  |
| 95-R-64 | 93 | 5 |  |
| 95-R-65 | 34 | 5 |  |
| 95-R-66 | 26 | 6 |  |
| 95-R-67 | 34 | 5 |  |
| 95-R-68 | 30 | <2 | Mo 11 |
| 95-R-69 | 32 | 2 |  |
| 95-R-70 | 34 | <2 |  |
| 95-R-71 | 30 | <2 | Mo 20 |
| 95-R-72 | 47 | 9 | $\begin{aligned} & \text { Mo 12, Pb } 1230 \\ & \text { Zn } 539, \text { Ag } 3.8 \\ & \text { As } 1353 \end{aligned}$ |
| 95-R-73 | 17 | 7 |  |
| 95-R-74 | 123 | 7. | 13 km mark |
| 95-R-75 | 279 | 18 |  |
| 95-R-76 | 111 | 3 |  |
| 95-R-77 | 84 | 7 |  |
| 95-R-78 | 242 | 10 |  |
| 95-R-79 | 143 | 104 |  |


| 95-R-80 | 126 | 11 |  |
| :---: | :---: | :---: | :---: |
| 95-R-81 | 81 | 5 |  |
| 95-R-82 | 77 | 6 |  |
| 95-R-83 | 87 | 5 |  |
| 95-R-84 | 76 | $<2$ |  |
| 95-R-85 | 103 | 8 |  |
| 95-R-86 | 90 | 7 |  |
| 95-R-87 | 62 | 2 |  |
| 95-R-88 | 79 | 7 |  |
| 95-R-89 | 42 | <2 |  |
| 95-R-90 | 109 | 8 |  |
| 95-R-91 | 54 | 5 |  |
| 95-R-92 | 40 | 2. |  |
| 95-R-93 | 77 | 5 |  |
| 95-R-94 | 47 | 5 |  |
| 95-R-95 | 37 | <2 |  |
| 95-R-96 | 51 | <2 |  |
| 95-R-97 | 45 | 12 |  |
| 95-R-98 | 52 | 8 |  |
| 95-R-99 | 66 | 8 |  |
| 95-R-100 | 26 | 6 |  |

ROCK DESCRIPTIONS (sampled during till sampling program)
95-M-1 (at $95-\mathrm{R}-1$ )(at $5+00 \mathrm{~N}, 4+25 \mathrm{~W}$ )
Bleached light green coloured, clay altered, quartz veinlets, sericitized ?, rubble exposed by new road.

Cu 29 ppm, Au 2 ppb
95-M-5 (11 m on road N of $95-\mathrm{R}-6$ )
Dark altered (tough) volcanic, miner py and cpy.
Cu 852 ppm , Au 3 ppb
95-M-7 ( 11 m on road S of $95-\mathrm{R}-6$ )
Dark altered (tough) volcanic, minor py and cpy.
Cu 2518 ppm, Au 4 ppb
95-M-9 (4+00N, 4+15W ?)
Dark volcanic breccia, subrounded clasts to 3 cm .
Cu 695 ppm , Au 6 ppb
95-M-11 ( 30 m S on road from $95-\mathrm{R}-22$ )
Dark amphibole altered volcanic, almost black, dusted with fine grained disseminated pyrite.
Cu 49 ppm, Au 2 ppb
95-M-12 (6+00S, $0+50 \mathrm{~W}$ )
5 metre wide limonite stained clay rich shear zone.
Cu 97 ppm, Au 3 ppb
$95-\mathrm{M}-13$ ( 26 m at 160 from $6+00 \mathrm{~S}, 0+55 \mathrm{~W}$ )
10 cm section of massive quartz sulfide from 2 m vein system, py, cpy, strike 114 , dip 70 S .
$\mathrm{Cu} 4011 \mathrm{ppm}, \mathrm{Ag} 48.0 \mathrm{ppm}, \mathrm{Bi} 623 \mathrm{ppm}, \mathrm{W} 60 \mathrm{ppm}$,
Au 72 ppb
95-M-14 ( 27 m at 160 from $6+00 \mathrm{~S}, 0+55 \mathrm{~W}$ )
plus 1 metre quartz vein striking 115 , dipping 70 S .
$\mathrm{Cu} 722 \mathrm{ppm}, \mathrm{Ag} 12.7 \mathrm{ppm}, \mathrm{Sb} 145 \mathrm{ppm}, \mathrm{Bi} 220 \mathrm{ppm}$, W 256 ppm, Au 18 ppb ${ }^{*}$
$95-\mathrm{M}-15$ ( 76 m at 160 from $6+00 \mathrm{~S}, 0+55 \mathrm{~W}$ )
15 m wide fault zone striking 130 , dipping 70 S , zone is chlorotic brecciated and foliated, sample is from 1.5 m section of vein and wall rock breccia.

Cu 163 ppm , Bi 328 ppm, W 172 ppm, Au 3 ppb
95-M-16 ( 23 m S along road from $10+50 \mathrm{~S}, 0+67 \mathrm{E}$ )
Amphibole altered volcanic, minor py, cpy.
Cu 764 ppm, Au 7 ppb

95-M-17 ( 10 m S along road from 95-R-34)
Amphibole altered diorite, weak gossan, minor py, trace cpy.
Cu 165 ppm, Au 5 ppb
95-M-18 (at 95-R-31 ?)
Major vertical shear striking 060 ), carbonate altered quartz stockwork, mariposite spotted, shear is plus 5 metres wide, on south bank of creek.

Cu 6 ppm , Au 3 ppb
95-M-19 ( 30 m S on road from 95-R-35)
Amphibole altered diorite, disseminated and fracture controlled py, cpy.
Cu 447 ppm , Au 14 ppb
95-M-20 (at 95-R-50)
Silicified and carbonate altered ultramafic, forms prominent orange brown gossan, faint breccia like fabric with angular clasts to several cm , network of carbonate veinlets.

Cu 44 ppm, Ni 417 ppm, Cr 439 ppm, $\mathrm{Au}<2 \mathrm{ppb}$
95-M-21 (at (95-R-50)
Similar to 95-M-20.
Cu 52 ppm, Au 19 ppb
95-M-22 (at 95-R-67)
Biotite granite, limonitic hairline scale veinlets, occasional vuggy quartz veinlet.
Mo 16 ppm, Cu 14 ppm, Au 2 ppb
95-M-23 ( 20 m N on road from 95-R-72)
Biotite granite, similar to $95-\mathrm{M}-22$ excepting strongly clay altered and with a waxy manganese looking coating.

$$
\mathrm{Cu} 15 \mathrm{ppm}, \mathrm{Au}<2 \mathrm{ppb}
$$

95-M-24 ( 20 m S on road from 95-R-73)
Clay alteration zone in biotite granite.
Cu 5 ppm, Au 2ppb
95-M-25 ( 10 m S on road from 95-R-86)
Volcanic, mixed domains of felsic and mafic components, pyritic, some sericitization,py, trace cpy.

Cu 123 ppm, Au 2 ppb



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November, 1995

Samples: T4, T7-16, T13-1, T36-4, T43, T50

## Summary:

Samples are mainly of hypabyssal andesite to locally quartz diorite which were metamorphosed and recrystallized, mainly to plagioclase, tremolite/actinolite, chlorite, and quartz, with locally moderately abundant epidote. Abundant veinlets are of a variety of types as follows:

1) quartz-plagiociasetepidote-(biotite-tremollite/actinolite)
2) quartz
3) dolomite/ankerite-tremolite $\pm$ plagioclase/quartz

One sample is of an altered, sheared, amd partly recrystallized ultramafic rocks (probably a hornbendite or clinopyroxenite). It contains two sets of carbonate-rich veinlets.

Sample T-4 contains rounded to lensy patches dominated by very fine grained quartz in a groundmass of very fine to extremely fine grained tremolite/actinolite and chlorite, with less abundant quartz. The original nature of the sample and the mode of formation of the quartz-rich lenses are unknown. Pyrite and much less abundant chalcopyrite and magnetite form disseminated grains.

Sample T-7-16 is a metamorphosed andesite containing scattered phenocrysts of plagioclase and hornblende in a groundmass dominated by extremely fine grained plagioclase, chlorite, and tremolite/actinolite, with minor disseminated magnetite. Quartz forms disseminated patches, coarser ones of which may be amygdules. A few coarser grained lenses are of plagioclase-tremolite/actinolite; the largest of these has a core of tremolite/actinolite-quartz. A major vein is of quartz-epidote-plagioclase-chlorite with minor magnetite and chalcopyrite. It has an envelope up to 15 mm across in which tremolite/actinolite replaces groundmass plagioclase and chlorite. A veinlet is of quartz.

Sample T13-1 is a slightly porphyritic, hypabyssal fine to locally medium grained quartz diorite dominated by plagioclase, quartz and patches of chlorite, with moderately abundant disseminated pyrite and minor tourmaline. Plagioclase occurs in two modes, as patches of coarser grains and as unusual disseminated lathy grains in quartz. The former probably represent early-formed grains and the latter later-formed grains which crystallized at the same time as the quartz grains. Coarser patches of chlorite probably are after original hornblende grains.

Sample T-36-4 is a metamorphosed, hypabyssal andesite which contains minor phenocryst of plagioclase and hornblende in an unoriented, very fine grained groundmass dominated by plagioclase and tremolite/actinolite. An early vein is of quartz-biotite/chlorite-tremolite/actinolite-(pyrite). Other, early veins are of plagioclase-quartz. A few veins and veinlets are of dolomite-plagioclase-(tremolite). A late veinlet is of dolomite-(plagioclase/quartz).

Sample T-43 is a metamorphosed, hypabyssal andesite containing phenocryst of hornblende (altered to tremolite/actinolite and biotite/chlorite) and minor plagioclase in a groundmass dominated by very fine grained plagioclase and actinolite. One diffuse vein contains an outer zone dominated by plagioclase-(biotite) and a core dominated by quartz with minor tremolite/actinolite. A few extremely fine grained zones are of cryptocrystalline to extremely fine grained actinolite and plagioclase with seams of cryptocrystalline ankerite; they may represent zones of brecciation. One cuts the diffuse quartz-plagioclase vein. Later veinlets are of very fine grained ankerite with patches of quartz, chlorite, and hematite.

Sample T-50 is an altered, sheared ultramafic rock containing megacrysts of tremolite in a groundmass of much finer grained tremolite and patchy zones of epidote. Textures suggest that the groundmass was formed by cataclastic deformation and moderate recrystallization of a medium to coarse grained ultramafic rock, of which the coarser tremolite grains are relics. A network of late shear zones cut the rock and were formed by strong cataclastic deformation, probably at lower confining pressure than the early deformation. Many of them are loci of early ankerite-limonite veins. A network of later calcite/dolomite veinlets cut some of the earlier veins and shear zones.


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## Sample T-4 Tremolite-Chlorite-Quartz Metamorphic Rock; Quartz-rich Patches and Lenses; Disseminated Pyrite, (Chalcopyrite)

The sample contains rounded to lensy patches dominated by very fine grained quartz in a groundmass of very fine to extremely fine grained tremolite/actinolite and chlorite, with less abundant quartz. The original nature of the sample and the mode of formation of the quartz-rich lenses are unknown. Pyrite and much less abundant chalcopyrite and magnetite form disseminated grains.

| groundite/actinolite | 40-45 | chalcopyrite | 0.5\% |
| :---: | :---: | :---: | :---: |
| tremolite/actinolite | 40-45 | chalcopyrite | 0.5\% |
| chlorite | 35-40 | muscovite | 0.3 |
| quartz | 7.8 | magnetite | 0.3 |
| pyrite | 3-4 | pyrrhotite | minor |

Lenses up to several mm long are dominated by quartz grains averaging $0.05-0.15 \mathrm{~mm}$ in size, with a few grains up to 0.5 mm across in larger patches. Some contain coarse grains of pyrite and minor disseminated flakes of chlorite and of muscovite. Others contain minor to moderately abundant fibrous tremolite/actinolite and patches of pyrite. A few patches contain moderately abundant acicular grains of tremolite/actinolite in random orientation.

A few lenses up to 3.5 mm in size are of equant quartz grains averaging $0.01-0.03 \mathrm{~mm}$ in size with much less interstitial seams and patches of chlorite, moderately abundant disseminated, equant grains of chalcopyrite averaging 5-15 microns in size, and a few pyrite grains averaging $0.05-0.15 \mathrm{~mm}$ across.

A few single grains of quartz are from $0.3-0.7 \mathrm{~mm}$ in size.
In the groundmass, tremolite/actinolite forms patches of ragged fibrous, prismatic grains averaging 0.03-0.05 mm in length, a few patches of grains averaging 0.05-0.1 mm long, and a few grains up to 0.5 mm long. Many of the coarser grained patches are associated with patches and lenses of quartz.

Chlorite forms dense patches up to 1.5 mm in size of extremely fine grained flakes, and other patches in which it is intergrown intimately with tremolite/actinolite in widely varying amounts between patches.

Quartz is concentrated moderately to strongly in patches up to 1 mm in size as grains averaging $0.02-0.04 \mathrm{~mm}$ in size.

Muscovite forms disseminated flakes averaging $0.05-0.1 \mathrm{~mm}$ in length, mainly intergrown with chlorite.

Pyrite forms disseminated grains averaging $0.2-0.5 \mathrm{~mm}$ in size. Some contain minor to abundant inclusions of chalcopyrite and a few contain minor inclusions of pyrrhotite. A few pyrrhotite inclusions are altered slightly to moderately to marcasite/pyrite.

Chalcopyrite forms disseminated grains averaging $0.05-0.1 \mathrm{~mm}$ in size and a few up to 0.4 mm across. One coarse patch is rimmed by recrystallized chlorite and muscovite flakes averaging 0.07-0.1 mm in length.

Magnetite forms anhedral to euhedral, equant grains averaging $0.02-0.05 \mathrm{~mm}$ in size. Many grains contain a core of purplish colour enclosed in a rim of light grey colour. Both phases are isotropic.

| Sample T-7-16 | Metamorphosed Andesite; <br> Patches of Plagioclase-Tremolite/Actinolite-Quartz; Quartz; <br>  <br>  <br>  <br>  <br>  <br> Vein of Quartz-Epidote-Plagioclase-Tremolite/Actinolite- <br> (Magnetite-Chalcopyrite); Veinlet of Quartz |
| :--- | :--- |

Scattered phenocrysts of plagioclase and hornblende are set in a groundmass dominated by extremely fine grained plagioclase, chlorite, and tremolite/actinolite, with minor disseminated magnetite. Quartz forms disseminated patches, coarser ones of which may be amygdules. A few coarser grained lenses are of plagioclase-tremolite/actinolite; the largest of these has a core of tremolite/actinolite-quartz. A major vein is of quartz-epidote-plagioclase-chlorite with minor magnetite and chalcopyrite. It has an envelope up to 15 mm across in which tremolite/actinolite replaces groundmass plagioclase and chlorite. A veinlet is of quartz.


Plagioclase forms a few ragged phenocrysts averaging $0.6-0.9 \mathrm{~mm}$ in size. Alteration is slight to moderate to cryptocrystalline to extremely fine grained chlorite and epidote.

Chlorite is concentrated in a few patches from 0.3-0.8 mm in size as flakes averaging 0.02-0.05 mm in size; these may be secondary after mafic phenocrysts.

In the groundmass, plagioclase forms equant grains averaging $0.01-0.02 \mathrm{~mm}$ in size. Quartz forms disseminated grains averaging $0.03-0.07 \mathrm{~mm}$ in size and a few up to 0.15 mm across. Chlorite forms extremely fine to very fine grained patches up to 0.5 mm in size, and moderately abundant, single grains intergrown intimately with plagioclase. Tremolite/actinolite forms disseminated, ragged prismatic to fibrous grains and clusters of a few grains averaging $0.05-0.1 \mathrm{~mm}$ in length, and a few up to 0.3 mm long.

Magnetite forms disseminated, subhedral to euhedral grains averaging $0.03-0.07 \mathrm{~mm}$ in size. A few grains are replaced slightly by hematite.

Ti-oxide forms patches up to 0.15 mm in size of elongate grains up to 0.05 mm long; it is secondary after ilmenite. Some patches are of skeletal intergrowths of Ti-oxide with silicates. Most grains are stained reddish brown from hematite.

A few patches averaging $0.3-0.7 \mathrm{~mm}$ in size and one 1.7 mm long are slightly interlocking quartz grains averaging $0.1-0.3 \mathrm{~mm}$ in size. These may be in part amygdules. They grade in texture and size into groundmass patches of quartz.

One lens $1.8 \times 0.8 \mathrm{~mm}$ in size contains slightly radiating clusters of fibrous to elongate prismatic grains of tremolite/actinolite up to 0.4 mm long intergrown with patches of quartz and plagioclase. Quartz is concentrated in the core of the patch as grains averaging $0.2-0.5 \mathrm{~mm}$ in size. Plagioclase is concentrated along the margins as grains averaging 0.05 mm in size. A few smaller lenses are similar, but are finer grained and lack quartz in the core.

A vein 1-1.5 mm wide is dominated by very fine grained intergrowths of quartz, epidote, plagioclase, and chlorite. Magnetite forms a few euhedral to subhedral grains averaging 0.1-0.2 mm in size. Chalcopyrite forms a grain 0.1 mm in size; it is replaced in a rim 0.005 mm wide by red-brown hematite.

A few veinlets up to 0.1 mm wide are dominated by very fine grained quartz.

## Sample T13-1 Hypabyssal Quartz Diorite(?); Chlorite Alteration

The sample is a slightly porphyritic, hypabyssal fine to locally medium grained quartz diorite dominated by plagioclase, quartz and patches of chlorite, with moderately abundant disseminated pyrite and minor tourmaline. Plagioclase occurs in two modes, as patches of coarser grains and as unusual disseminated lathy grains in quartz. The former probably represent early-formed grains and the latter later-formed grains which crystallized at the same time as the quartz grains. Coarser patches of chlorite probably are after original hornblende grains.

| quartz | $35-40 \%$ |
| :--- | :---: |
| chlorite | $30-35$ |
| plagioclase |  |
| coarser | $15-17$ |
| lathy | $8-10$ |
| pyrite | $4-5$ |
| sericite | 0.2 |
| tourmaline | 0.1 |
| Ti-oxide <br> garnet | minor |
| chalcopyrite | trace |
| trace |  |
| pyrrhotite | trace |

Plagioclase forms anhedral to subhedral prismatic grains averaging $0.5-0.8 \mathrm{~mm}$ in size and a few elongate prismatic grains up to 1.7 mm long. These commonly occur in clusters of several, slightly interlocking grains, mainly intergrown coarsely with patches of chlorite. It also forms unusual, subhedral, lathy to acicular grains averaging $0.15-0.25 \mathrm{~mm}$ long in quartz. Alteration is slight to locally moderate to cryptocrystalline to extremely fine grained sericite.

Quartz forms equant grains averaging 0.3-0.6 mm in size. Many quartz-quartz grain borders are sutured finely.

Chlorite forms dense patches averaging $0.3-1 \mathrm{~mm}$ in size and a few up to 1.5 mm across of extremely fine to very fine grained, pale green flakes; these probably are after original hornblende. It also occurs in smaller, irregular patches interstitial to quartz grains. A few chlorite-rich patches contain concentrations of extremely fine grained sericite in patches up to 0.2 mm across.

Pyrite forms disseminated, anhedral grains averaging $0.05-0.15 \mathrm{~mm}$ in size, with a few up to 0.5 mm long. Many large ones contain one to a few rounded inclusions of pyrrhotite or pyrrhotitechalcopyrite averaging $0.007-0.015 \mathrm{~mm}$ in size, and lensy inclusions averaging $0.03-0.05 \mathrm{~mm}$ in size. A few contain elongate inclusions up to 0.1 mm long of chalcopyrite. A few grains contain moderately abundant silicate inclusions.

Chalcopyrite forms a few equant grains averaging $0.02-0.05 \mathrm{~mm}$ in size and a few up to 0.08 mm across. Grains are replaced moderately along their margins by secondary chalcocite, with grains smaller than 0.03 mm across being replaced strongly. Some grains are tarnished strongly.

Tourmaline forms dense clusters up to 0.17 mm across of grains and a few prismatic grains up to 0.3 mm long and acicular grains up to 0.5 mm long, mainly included in patches of chlorite. Pleochroism is from colourless to light, slightly bluish green.

An irregular grain 0.2 mm across of garnet occurs in one patch of chlorite.
Ti-oxide forms ragged patches averaging $0.05-0.08 \mathrm{~mm}$ in size of extremely fine to cryptocrystalline grains.

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Sample T-43 Metamorphosed, Slightly Porphyritic, Hypabyssal Andesite;
Vein of Quartz-Plagioclase-Biotite-Actinolite;
Veinlets of Ankerite-(Quartz-Chlorite-Hematite)
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Phenocrysts of hornblende and minor plagioclase are set in a groundmass dominated by very fine grained plagioclase and actinolite. One diffuse vein contains an outer zone dominated by plagioclase-(biotite) and a core dominated by quartz with minor tremolite/actinolite. A few extremely fine grained zones are of cryptocrystalline to extremely fine grained actinolite and plagioclase with seams of cryptocrystalline ankerite; they may represent zones of brecciation. One cuts the diffuse quartz-plagioclase vein. Later veinlets are of very fine grained ankerite with patches of quartz, chjorite, and hematite.

## phenocrysts

| hornblende | $5-7 \%$ |
| :--- | :---: |
| plagioclase | 0.2 |
| groundmass | $50-55$ |
| plagioclase | $35-40$ |
| actinolite | $1-2$ |
| magnetite | 0.3 |
| chalcopyrite | 0.1 |
| pyrite |  |

vein, veinlets, breccia

1) (early) quartz-plagioclase-(biotite-actinolite) 4-5
2) actinolite-rich breccia matrix 2
3) (late) ankerite-(quartz-chlorite-hematite) 1-2

A few patches averaging $0.7-1.5 \mathrm{~mm}$ in size are of tabular actinolite grains averaging 0.2-0.5 mm in size. One patch is of a grain 1.2 mm long and a few smaller grains. These probably are secondary after original homblende phenocrysts. Pleochroism is from light yellowish green to light/medium green.

Plagioclase forms very few ragged phenocrysts up to 0.9 mm long. They are recrystallized moderately to cryptocrystalline to extremely fine, subgrain aggregates.

In the groundmass, plagioclase forms anhedral, slightly interlocking grains averaging 0.1-0.5 mm in size and a few up to 0.4 mm across. These are recrystallized moderately to much finer, subgrain aggregates.

Actinolite forms ragged, prismatic to fibrous grains averaging 0.1-0.2 mm in size with a few up to 0.7 mm long. Pleochroism is as in the phenocrysts.

Magnetite forms subhedral to euhedral grains averaging $0.03-0.08 \mathrm{~mm}$ in size and a few up to 0.15 mm across. Alteration is slight to moderate to hematite in patches along grain borders. A few grains have small, darker purple cores

Chalcopyrite forms disseminated grains averaging $0.02-0.05 \mathrm{~mm}$ in size and a few up to 0.15 mm across. It is concentrated moderately in a few patches up to 0.2 mm across as grains averaging $0.02-0.05 \mathrm{~mm}$ in size intergrown with chlorite. A few platy grains of hematite occur along cleavage planes of chlorite. Pyrite forms disseminated grains averaging $0.01-0.02 \mathrm{~mm}$ in size and a few up to 0.05 mm across; many larger grains are associated with chalcopyrite and contain abundant inclusions of magnetite.

A diffuse vein up to 2 mm wide is dominated by quartz grains averaging $0.2-0.4 \mathrm{~mm}$ in size. It contains irregular patches of groundmass plagioclase-(actinolite). Towards the margins of the veins are irregular patches of ragged plagioclase grains up to 0.5 mm in size. Intergrown with plagioclase and extending into the quartz-rich core are patches of extremely fine grained biotite, with pleochroism from pale to medium greenish brown.

A lensy veinlet 0.3 mm wide is dominated by quartz with a few patches up to 0.25 mm in size of chalcopyrite and lesser pyrite.

A few brecciated seams and zones up to 1 mm wide consist of cryptocrystalline plagioclase, extremely fine grained actinolite, and cryptocrystalline seams and patches of ankerite. One of these cuts the diffuse vein and they are cut by the ankerite-rich veinlets.

A few lensy veinlets averaging $0.15-0.4 \mathrm{~mm}$ wide are of very fine to fine grained calcite with a few patches dominated by extremely fine grained hematite. Some of these contain minor to abundant patches and lenses of extremely fine grained quartz and/or chlorite. Some narrower parts of veinlets are of cryptocrystalline to extremely fine grained quartz and chlorite.

A late veinlet 0.01 mm wide of ankerite cuts across one of the ankerite veinlets.

# Sample T-36-4 Metamorphosed, Slightly Porphyritic, Hypabyssal Andesite; Veins of Quartz-Biotite/Chlorite-Tremolite/Actinolite-(Pyrite), Plagioclase-Quartz, Dolomite-Plagioclase-(Tremolite), and Dolomite 

Minor phenocrysts of plagioclase and hornblende (altered to tremolite/actinolite and biotite/chlorite) are set in an unoriented, very fine grained groundmass dominated by plagioclase and tremolite/actinolite. An early vein is of quartz-biotite/chlorite-tremolite/actinolite-(pyrite). Other, early veins are of plagioclase-quartz. A few veins and veinlets are of dolomite-plagioclase-(tremolite). A late veinlet is of dolomite-(plagioclase/quartz).

| $\begin{array}{lll}\text { phenocrysts } \\ \text { plagioclase } \\ \text { hornblende }\end{array}$ | $2-3 \%$ |  |
| :--- | :---: | :--- |
| groundmass | 1 | (altered completely) |$]$

A few patches up to 2 mm across are dominated by plagioclase phenocrysts averaging 0.7-1 mm in size. These are recrystallized slightly to moderately, and contain about $10 \%$ disseminated fibrous to prismatic grains of tremolite/actinolite averaging $0.05-0.1 \mathrm{~mm}$ long.

A few patches up to 1.7 mm in size which are of extremely fine grained intergrowths of tremolite/actinolite and biotite/chlorite probably are secondary after hornblende phenocrysts.

In the groundmass plagioclase forms anhedral, slightly interlocking grains averaging 0.07-0.15 mm in size. Some are recrystallized slightly to moderately to much finer, subgrain aggregates.

Tremolite/actinolite forms ragged, unoriented, prismatic to fibrous grains averaging 0.1-0.2 mm long and a few up to 0.5 mm long, as well as much finer acicular grains intergrown with plagioclase.

One skeletal patch of pyrite up to 1 mm across borders a cluster of coarser grained plagioclase, and is intergrown with extremely fine grained plagioclase and minor patches of chlorite. Pyrite also is concentrated strongly in a few ragged patches bordering one dolomite-plagioclase vein.

Pyrrhotite forms disseminated, anhedral grains averaging $0.01-0.03 \mathrm{~mm}$ in size.
Ilmenite forms disseminated grains and clusters of a few grains averaging $0.01-0.03 \mathrm{~mm}$ in grain size, and one patch 0.2 mm across.

An early veinlet up to 0.5 mm wide is of quartz, biotite/chlorite, and less abundant tremolite/actinolite and pyrite. Quartz forms equant, slightly interlocking grains averaging 0.015-0.02 mm in size. Biotite/chlorite forms equant flakes averaging $0.02-0.03 \mathrm{~mm}$ in size; pleochroism is weak from pale to light brown. Tremolite/actinolite forms acicular grains averaging $0.05-0.1 \mathrm{~mm}$ long. Pyrite is concentrated strongly in a patch 0.6 mm in size as anhedral grains averaging $0.01-0.03 \mathrm{~mm}$ in size.

A few later, subparallel discontinuous veins and veinlets averaging $0.3-0.5 \mathrm{~mm}$ wide are of very fine grained plagioclase. The largest one widens to an ellipsoidal lens up to 1.2 mm wide, which has an outer zone of equant plagioclase grains with euhedral terminations averaging $0.2-03 \mathrm{~mm}$ in size. In the core is a lens up to 0.6 mm wide of a single quartz grain containing minor acicular tremolite/actinolite grains.

Major, subparallel veins are dominated by dolomite, which forms clusters of elongate grains oriented parallel to the length of the veins. Dolomite-rich zones grade into zones dominated by cryptocrystalline to extremely fine grained, intergrown plagioclase. Where both minerals are present, plagioclase commonly is along margins of the vein and dolomite in the core. Tremolite forms minor patches and seams, mainly along borders of the veinlet and in lenses parallel to its length.

A late veinlet averaging $0.05-0.1 \mathrm{~mm}$ wide and a few veinlets up to 0.03 mm wide are of equant dolomite grains averaging $0.02-0.03 \mathrm{~mm}$ in size. One small branching veinlet 0.03 mm wide subparallel to the main veinlet has a core of calcite rimmed by very fine grained plagioclase/quartz.

## Sample T-50 Altered, Sheared Ultramafic Rock: Ankerite-(Tremolite-Limonite) Veinlets; Late Calcite-Dolomite Veinlets

Coarse grains of tremolite are set in a groundmass of much finer grained tremolite and patchy zones of epidote. Textures suggest that the groundmass was formed by cataclastic deformation and moderate recrystallization of a medium to coarse grained ultramafic rock, of which the coarser tremolite grains are relics. A network of late shear zones cut the rock and were formed by strong cataclastic deformation, probably at lower confining pressure than the early deformation. Many of them are loci of early ankerite-limonite veins. A network of later calcite/dolomite veinlets cut some of the earlier veins and shear zones.

```
megacrysts
tremolite
12-15%
groundmass
tremolite 75-80
epidote 12-15
shear zones
tremolite
4-5
veinlets, veins
1) ankerite-tremolite 2-3
2) calcite/dolomite 1-2
```

Equant to slightly elongate megacrysts averaging $1.5-2 \mathrm{~mm}$ in size and a few up to 3.5 mm across are of tremolite. Some are altered slightly to moderately to irregular patches and trains of dolomite and cryptocrystalline Mineral X. Many megacrysts are recrystallized more strongly to intergrowths of very fine grained tremolite in two main, sub-perpendicular orientations.

The groundmass is dominated by unoriented tremolite grains averaging $0.02-0.05 \mathrm{~mm}$ in size, with some patches of cryptocrystalline grains and some grains from $0.1-0.3 \mathrm{~mm}$ long. The groundmass may represent more strongly recrystallized coarse grains in which the original texture was destroyed. Intergrown intimately with tremolite are patchy zones with minor to moderately abundant cryptocrystalline to locally extremely fine grained epidote.

A few zones up to 0.6 mm wide are dominated by cryptocrystalline to extremely fine grained tremolite; they probably were formed during strong, cataclastic deformation.

Abundant wispy veinlets averaging $0.03-0.05 \mathrm{~mm}$ wide and a few veins up to 0.8 mm across are of extremely fine grained dolomite/ankerite and minor cryptocrystalline to extremely fine grained tremolite. Some veinlets contain moderately abundant orangish brown limonite, possibly as a replacement of ankerite. Some narrow, banded to braided veinlets occur along the sheared zones described above.

A network of late, irregular veinlets averaging $0.05-0.15 \mathrm{~mm}$ wide and one up to 0.3 mm across are of calcite grains averaging $0.03-0.05 \mathrm{~mm}$ in size, with a few grains up to 0.25 mm across. In larger veins, calcite grains commonly are oriented perpendicular to the walls of the veins. A few of the veins cut the earlier veins, whereas, others appear to grade into the wispy ankerite veinlets along some of the shear zones.


ISP - . 500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-h20 AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
this leach is partial for mn fe sr ca p la cr mg ba ti b and limited for ma $k$ and al.
ASSAY RECOMHENDED FOR ROCK AND CORE SAMPLES IF CU PB 2N AS > 1\%, AG > 30 PPM \& AU > 1000 PPR
SAMPLE TYPE: PI ROCK PD TO PG SOIL AU** ANALYSIS BY FA/ICP FROM 30 GM SAMPLE.
Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

SIGNED BY.... A.....TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS


Sample type: SOIL. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



Sample type: SOIL. Samples begiming 'RE' are Reruns and 'RRE' are Reject Reruns.


Sample type: SOIL. Samples begiming. 'RE' are Reruns and 'RRE' are Reject Reruns,



PIONEER LABORATORIES INC.

GEOCHEMICALANALYSIS CKRTIFICATE Multi-element ICP Analysis - . 500 gram sample is digested with 3 ml of aqua regia, diluted to 10 ml with Water. This leach is partial for Mn, Fe, Ca, P, La, Cr, Mg, Ba, $\mathbf{T i}, \mathrm{B}, \mathrm{W}$ and limited for $\mathrm{Na}, \mathrm{K}$ and Al . Detection Limit for Au is 3 ppm. *AU Analysis- 10 gram sample is digested with aqua regia, MIBK extracted, graphite furnace AA finished to 1 ppb detection.

## EASTFIELD RESOURCES LTD.

Project:
Sample Type: Rocks

| ELEMENT | Mo | Cu | Pb | 2n | Ag | Ni | Co | Mn | Fe | As | $u$ | Au | Th | Sr | Cd | Sb | Bi | $v$ | Ca | P | La | Cr | Mg | Ba | Ti | $B$ | Al | Na | K | W | $A^{*}{ }^{*}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SAMPLE | ppm | ppm | ppm | ppm | pppr | ppm | ppm | ppm | \% | pprn | ppm | ppm | ppm | ppm | ppm | ppon | Ppm | pprn | \% | \% | ppm | ppm | \% | ppan | \% | ppm | \% | x | \% | ppm | ppb |
| ORV is | 2 | 28 | 3 | 83 | . 3 | 8 | 10 | 719 | 4.29 | 8 | 5 | ND | 2 | 77 | . 3 | 2 | 2 | 34 | 1.16 | . 061 | 5 | 28 | . 23 | 76 | . 01 | 3 | . 47 | . 04 | . 11 | 2 | 38 |
| ORV 3N? | 1 | 25 | 3 | 62 | . 3 | 5 | 8 | 1404 | 3.18 | 3 | 5 | MD | 2 | 328 | . 3 | 2 | 2 | 29 | 6.93 | . 053 | 4 | 18 | . 68 | 38 | . 16 | 3 | 1.08 | . 03 | . 05 | 2 | 16 |
| ORV 4 | 1 | 20 | 3 | 74 | . 3 | 6 | 6 | 3392 | 3.90 | 6 | 5 | ND | 2 | 499 | . 3 | 2 | 2 | 40 | 9.29 | . 057 | 3 | 28 | 1.18 | 30 | . 11 | 3 | 1.77 | . 03 | . 02 | 2 | 6 |
| ORV 5 | 1 | 207 | 3 | 26 | . 3 | 24 | 21 | 256 | 3.42 | 3 | 5 | ND | 2 | 14 | . 2 | 2 | 2 | 93 | . 75 | . 036 | 1 | 46 | . 99 | 47 | . 17 | 3 | 1.18 | . 11 | . 62 | 2 | 5 |
| T-13-4 | 2 | 27567 | 3 | 51 | . 3 | 47 | 29 | 293 | 7.78 | 3 | 6 | ND | 2 | 34 | 2.3 | 2 | 16 | 99 | . 70 | . 005 | 1 | 133 | 2.50 | 17 | . 02 | 3 | 3.20 | . 12 | . 04 | 2 | 79 |
| T-13-5 | 3 | 1215 | 3 | 9 | . 3 | 70 | 38 | 324 | 7.22 | 7 | 5 | ND | 2 | 2 | . 2 | 2 | 2 | 182 | . 08 | . 005 | 1 | 190 | 4.97 | 6 | . 01 | 3 | 4.00 | . 02 | . 02 | 2 | 13 |
| T-50 | 1 | 81 | 3 | 24 | . 3 | 134 | 21 | 275 | 1.78 | 2 | 5 | ND | 2 | 15 | . 2 | 2 | 2 | 20 | 2.28 | . 001 | 1 | 480 | 2.08 | 21 | . 01 | 11 | 1.19 | . 02 | . 07 | 2 | 1 |
| ETF-BI | 2 | 45 | 3 | 86 | . 3 | 9 | 24 | 1118 | 18.62 | 4 | 5 | ND | 2 | 105 | . 4 | 2 | 2 | 28 | 5.74 | 1.924 | 130 | 10 | 1.44 | 34 | . 05 | 3 | . 50 | . 01 | . 01 | 2 | 46 |
| ETF-B2 | 1 | 48 | 3 | 39 | . 3 | 20 | 10 | 134 | 6.31 | 2 | 5 | ND | 2 | 21 | . 3 | 2 | 2 | 414 | 1.10 | . 257 | 11 | 74 | . 33 | 29 | . 34 | 3 | . 34 | . 05 | . 01 | 2 | 34 |
| ETF-B3 | 2 | 34 | 3 | 92 | . 3 | 4 | 29 | 1312 | 17.95 | 2 | 5 | ND | 2 | 130 | . 7 | 2 | 3 | 23 | 5.49 | 1.945 | 132 | 21 | 1.96 | 7 | . 06 | 3 | . 74 | . 04 | . 01 | 2 | 39 |

Fort St. James Specialty Wood
P.O. Box 148, Vanderhoof, B.C., Canada VOJ 3AO • Phone (604) 567-3136 • Fax (604) 567-3909

INVOICE
Eastfield Resources Ltd:msem 110-325 Howe St.
Vancouver, B.C. V6C $1 Z 7$


## I NVOICE

$K \& D$ LOGGING LTD.
Bag 19
Fort St. James, B.C. VOJ 1P0
Phone 996-8032
Fax 996-8742

```
To:re Eastfield Resources
    November 2, 1995
    110-325 Howe Street
    Vancouver, B.C.
    V6C 1Z7
    Invoice # 886
```

Re: Equipment Rental

1995 Cat 330 Hoe
48 hours @ \$161.00/hour
\$ 7,728.00
Lowbed

10 hours @ \$87.50/hour
G.S.T.

Total:
The-Paid mis. Chy \# 404 FT
$121104 \$ 8,603$, $\frac{00}{2}$
$130001 \$ 602,21$

Indafa.



