

DIAMOND DRILL HOLE B-90-1

BAR CLAIMS
PALMER BAR CREEK AREA

Fort Steele Mining Division
NTS $82 \mathrm{G} / 5 \mathrm{~W}$
Latitude $49^{\circ} \mathrm{N}$
Longitude $116^{\circ} 04^{\prime} \mathrm{W}$
11506
for
SWIFT MINERALS LTD.
305 - 675 West Hastings street
Vancouver, B. C. V6B 1N2
by
PETER KLEWCHUK Geologist

June 29, 1990

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in pocket
in pocket
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Early in 1990, Swift Minerals Ltd. drilled a 293.2 meter (962') NQ hole on the northwest part of the Bar Deposit, a fault-controlled, hydrothermally-emplaced mass of quartz and sulfides which locally carries significant copper and gold mineralization.

The drill hole is located 11 kilometers west of Cranbrook, B.C. in the Fort Steele Mining Division. The hole was drilled on the Bar mineral claim which is $100 \%$ owned by Chapleau Resources Ltd. Swift Minerals Ltd. is currently earning a 60\% interest in a large 450 unit property which includes the area of drilling and which is presently owned or controlled by Chapleau.

The drill hole is located in the drainage of Palmer Bar Creek, one of a series of south-flowing tributaries to the Moyie River. The Moyie and its south-flowing tributaries are well-known for their placer gold production and the drilling of hole B-90-1 is part of an exploration program to locate economically mineable lode gold sources of the placers.

The Bar Deposit was discovered and first drilled by Chapleau in 1988. DDH B-90-1 was drilled at the northern edge of the deposit where improved copper and gold values were defined by previous drilling. Widespread anomalous copper and gold were intersected by the drilling although economic grades have not been detected. Of significant exploration interest is the fact that a syenite intrusive, previously seen on the footwall contact of the deposit only as a dyke and with very low gold values, is present in DDH B-90-1 as a more massive body, is pervasively altered and is anomalous in gold for its entire 87.8 meter drilled interval. The hole ended in this syenite.

The large size of the Bar Deposit and its overburden cover hinder inexpensive detailed evaluation to establish whether economic gold or copper are present. It is recommended that the mineralized zone be traced with geophysics and then drilled with a follow-up program of wide-spaced holes to test the extensions of the deposit for economic mineralization.

### 2.00 INTRODUCTION

### 2.10 Location and Access

The 'Purcell Camp' claim group presently under option to Swift Minerals Ltd. from Chapleau Resources Ltd. is located in the drainage areas of Moyie River and Perry Creek, approximately 20 kilometers due west of Cranbrook, B.C., in the Fort steele Mining Division (Figure 1). The property centers on Latitude $49^{\circ} 30^{\prime} \mathrm{N}$ and Longitude $116^{\circ} 04^{\prime} \mathrm{W}$.

Access to the property is via good active logging roads which join main highways in the Cranbrook area. All the tributary drainages of Moyie River and Perry Creek which occur on the claim block have some road access but areas at higher elevations along the ridge separating Moyie River and Perry Creek must be accessed on foot or by helicopter.

### 2.20 Physiography

The property is situated west of the Rocky Mountain Trench within the Moyie Range of the Purcell Mountains. Topography is moderate to steep with glacially rounded ridges; elevation ranges from 1220 to 2130 meters.

Vegetation cover varies from immature to mature forests of larch, pine, spruce and fir. Considerable clear-cut logging has occurred on the claim group in the recent past and the logged areas are in various stages of regeneration.

### 2.30 History of Previous Exploration

Moyie River, Perry Creek, and numerous of their tributary streams which drain the 'Purcell Camp' claim group have produced considerable placer gold. The Moyie River is presently being actively placer mined by Queenstake Resources Ltd. and many small placer operations are worked on a small scale basis. The knowledge of significant placer gold in the main drainages and tributaries of Moyie River and Perry Creek has resulted in long-standing exploration activity for bedrock sources.

Many small lode gold occurrences have been discovered in the general area of the Purcell property and a few have seen minor production. Virtually all of the lode gold has come from relatively small quartz veins, usually in association with minor base metal sulfides. The advent of historically high gold prices in the late 1970's prompted staking which blanketed these areas of known placer gold production.

Exploration activity has been constrained by the extensive coverage of glacial drift, and although many small programs have been undertaken, few have been successful at delineating drill targets.


Recent logging activity in the area has enhanced the exploration process by providing road access and exposing bedrock and float along haul roads, skid roads and in burned clear-cut areas.

Modern interest in the present 'Purcell Camp' area arose when prospecting discovered widespread quartz float with visible gold in the Palmer Bar Creek area. Since then the present claim block has been staked or optioned by Chapleau Resources Ltd. Reconnaissance work on the claims in 1986 and 1987 has produced a progressive understanding of sources of lode gold mineralization and of a genetic model for the gold deposits.

In 1988 Chapleau discovered the Bar Deposit through geologic mapping and trenching. An 8000 foot drill program defined much of the geology of the deposit and demonstrated that widespread anomalous copper and gold mineralization is present although no commercial deposit was outlined.

### 2.40 Property

The 'Purcell Camp' consists of 450 units in 51 mineral claims (Figure 2) either wholly owned or under option to Chapleau Resources Ltd. In turn Swift Minerals Ltd. has an option to acquire a 60\% interest in the entire property. Details of the claim block and ownership are provided by Banting (1989).

### 2.50 Objective of Drill Hole B-90-1

Drilling done by Chapleau in 1988 indicated an area of higher copper and gold mineralization within the Bar Deposit near the northwest edge of the known deposit, where two flanking felsic dykes coalesce. This previous drilling also indicated an improvement of grade with depth. Hole B-90-1 was drilled to test the area of indicated better mineralization.



Regional and property geology as well as a detailed description of the Bar Deposit are provided in Banting (1989) thus only a summary of this information is provided here.

### 3.10 Regional and Property Geology

The area of the Purcell property is underlain by Precambrian Purcell Supergroup rocks of the Aldridge, Creston and Kitchener Formations. These are intruded by Precambrian age diorite and gabbro composition sills and dykes of the Moyie Intrusions. Cretaceous guartz monzonite and granodiorite stocks occur just off the property to both east and west and related, fault-controlled syenite dykes occur as part of the Bar Deposit.

A complex system of NE to NNE striking normal and reverse faults occur parallel to the regional strike while a series of easterlystriking normal and reverse transverse faults cut across the regional trend at an oblique angle. This block-faulted area appears centered on the area of the best known placer gold and it seems probable that gold mineralization is genetically related to both the structural complexity and the spatially-associated felsic intrusives.

### 3.20 Geology of the Bar Deposit

The Bar Deposit is a structurally-controlled hydrothermallyemplaced deposit of quartz, sulfides and syenite dykes within an envelope of argillic, chloritic, silicic and carbonate altered wallrock. The known part of the deposit consists of a northwestoriented "West Limb" syenite dyke and an east to northeast-oriented "North Limb" syenite dyke. The two limbs coalesce in the northwest part of the deposit and on surface they form a wishbone-shaped, fold-like feature which verges to the northwest (Figure 3). The West Limb of the deposit dips steeply to the east and the North Limb dips moderately to the north, producing a deposit similar in shape to a recumbent fold with a northwest-striking, northeast-dipping axis. The axial trace of the deposit rakes steeply to the northwest.

The known part of the Bar Deposit is developed at the intersection of the Cranbrook and Palmer Bar Faults. Both faults are regionally-extensive structures and are probably deep-seated.

### 4.10 Introduction

The 1988 drilling of the Bar Deposit indicated better copper and gold values near the area of convergence of the North and West Syenite Dykes. DDH B-88-20 was one of the deeper holes drilled and it returned the best copper intersection of $0.57 \%$ over 50.5 meters. DDH B-90-1 was collared near DDH B-88-20 and drilled to test the mineralized zone at depth and close to the zone of dyke convergence (see Figure 3).

The hole was collared March 2, 1990 and completed at 293.2 meters on March 6. The hole was projected to penetrate similar geology as that seen in DDH B-88-20 and it was hoped that the footwall of the West Syenite Dyke would be encountered in the drill hole by about 290 meters. The lower syenite intrusive proved to be different in character from that seen in DDH-B-88-20 and technical difficulties were created by the altered nature of this intrusive at a depth of 293.2 meters. As this was close to the budgeted depth and little new information was being provided by the drilling at this stage, the hole was stopped.

### 4.20 Results

DDH B-90-1 was collared on the north, hangingwall side of the Bar Deposit; it intersected altered siltstones and argillites of the Lower Cranbrook Formation, then the North Syenite Dyke, more altered siltstones and then the main Quartz Flooded Zone. Immediately below the wide Quartz Flooded Zone the hole encountered an altered syenite which is much larger than the West Dyke seen in the 1988 drilling. A summary log is provided in Table 1, Figure 4 is a cross section showing DDH B-90-1 and the adjacent DDH B-88-20. The complete drill log is provided as Appendix 1.

Anomalous gold, base metals and arsenic are present through much of the drill hole, demonstrating a strong mineralizing process. Gold, arsenic, lead and copper values in DDH B-90-1 are presented graphically as histograms in Figure 5.

| DEPTH | DESCRIPTION |
| :---: | :---: |
| 0-4.9m | Casing - no core |
| 4.9-68.0m | Siltstone \& argillite, minor pyrite, minor quartz veining. Moderate to strong cleavage at $45^{\circ}$ to core axis, sub-parallel to bedding. |
| 68.0-75.5m | Silicified argillite and siltstone. Up to 10\% pyrite. |
| 75.5-80.6m | Porphytic syenite dyke. 1\% dissiminated pyrite, thin quartz veins. |
| 80.6-82.0m | Minor fault zone, argillic-altered argillite and siltstone. |
| 82.0-96.8m | Siltstone and argillite, increasingly silicified downward. Up to 5\% pyrite, disseminated and in patches. |
| 96.8-104.2m | Altered, sheared siltstone, $40 \%$ quartz, $7-8 \%$ pyrite. Transitional zone to underlying Quartz Flooded Zone. Wispy siltstone lenses mixed with quartz lenses and bands of pyrite. Minor chalcopyrite. Healed breccia. |
| 104.2-205.4m | Quartz Flooded Zone. Mixture of approximately 60\% quartz, 20\% silicified siltstone and argillite and 20\% pyrite with minor chalcopyrite. Extensive quartz-healed brecciation. |
| 205.4-293.2m | Syenite. Strongly argillic-altered; much of it is clay. Porphyritic with local large white $k$-feldspar phenocrysts, smaller pale green plagioclase feldspars. Finely disseminated euhedral pyrite occurs through most of it. Grades downward to a patchy chloritic, foliated rock with foliation up to $15^{\circ}$ to c/a. Fine pyrite continues to bottom of hole. |
| 293.2 m | End of Hole. |

Table 1. Summary descriptive log, drill hole B-90-1.

### 4.30 Geochemical Analyses

Most of the drill core was split and sampled after logging and analyzed at Eco-Tech Laboratories Ltd. in Kamloops, B.C. for gold and a multi-element ICP package. Complete geochemical analyses are in Appendix 2.

### 4.31 Copper

The 1988 drilling suggested that copper is most concentrated in the North Dyke area with the best values coming from near its junction with the West Dyke (Figure 3). DDH B-88-20 intersected $0.57 \%$ copper across a drilled length of 50.5 meters (Figure 4). DDH B-90-1 was collared to test this zone closer to the junction of the two dykes where the mineralization might be of higher grade. In DDH B-90-1 copper is quite strongly anomalous through much of the Quartz Flooded Zone as well as the immediately overlying brecciated and silicified hangingwall siltstones. Although one sample interval returned $2.19 \%$ copper, average values are lower than in DDH B-88-20.

Interestingly, copper is anomalous on the contact zone of the North Dyke but is comparatively weakly developed at the contact of the lower syenite and is of relatively low concentration in the lower syenite (Figure 5).
4.32 Gold

Anomalous gold is present through much of DDH B-90-1. The highest values of .05 and $.03 \mathrm{oz} / \mathrm{ton}$ are at the contacts of the North Syenite Dyke (Figure 5). Anomalous gold persists through both the Quartz Flooded Zone and the lower syenite; this is an improvement over gold values seen in DDH B-88-20, where only local highs up to 300 PPB Au occur in the Quartz Flooded Zone and no anomalous gold was detected in the 5.5 meter drilled width of the West syenite Dyke. The extensive syenite which DDH B-90-1 ended in is significantly anomalous in gold for the top 47 meters of the drilled intersection, with values up to 420 PPB Au .

The presence of strong gold mineralization in the large syenite intrusive of DDH B-90-1 is the most significant result of this drill hole and helps to confirm the genetic association of gold with the syenite intrusives. The widespread anomalous gold within the intrusive suggests the possibility of a large tonnage, lower grade gold deposit within this intrusive body. Furthermore, the increase in gold content over the relatively short distance from DDH B-88-20 to DDH B-90-1 suggests that economic grades could exist within a short distance of DDH B-90-1.

The presence of anomalous gold mineralization with altered
intrusives has been noted also in the Archean gold belt of ontario. Marmont (1983, p.39) states that "Wolfe (1976), after examining six felsic intrusions in locations across the Superior Province of Ontario, suggested that gold mineralization is correlated with altered" sections of the felsic intrusions and the unaltered portions are barren, regardless of their primary gold content."

### 4.33 Arsenic

Arsenic is strongly anomalous throughout the Bar Deposit intersection cut by DDH B-90-1. One high of 3835 PPM occurs at the footwall contact of the North Dyke, another of 5190 PPM occurs within the lower syenite just below the hangingwall contact (Figure 5). The entire zone between the two syenite bodies carries anomalous arsenic and elevated values occur locally within the lower altered syenite. This strong presence of arsenic probably reflects the pervasive nature of the mineralizing process.

Arsenic appears related to both gold and copper although the correlation with either is not unequivocal.

### 4.34 Lead

Lead is known to be a generally good indicator of gold mineralization in the 'Purcell Camp' area. Higher grade gold intersections obtained in the 1988 drilling were typically with elevated lead values, often with visible galena evident. The results for DDH B-90-1 adhere to this relationship with higher lead values typically occurring with better gold.

### 4.35 Other Elements

A number of other elements show elevated values within the drilled intersection (Appendix 2). Silver is typically weakly to moderately elevated; this is probably an association with gold or lead or both. Zinc is locally elevated in association with lead. Molybdenum, cobalt, nickel and chromium show fairly consistent high values and are considered a reflection of a magmatic-associated mineralizing process.

### 4.40 Discussion

DDH B-90-1 has intersected the most consistently high gold mineralization yet seen within the Bar Deposit. The presence of strongly anomalous gold in the altered lower massive syenite body shows that good opportunity exists to define an economic zone within the Bar Deposit area. Based on the drilling done to date, further evaluation should be done to the northwest and at depth, to test for economic gold within the lower syenite intrusive.

### 5.00 CONCLUSIONS

1. Gold mineralization is more persistent in DDH B-90-1 than in any previous drilling of the Bar Deposit. Most of the hole is anomalous with gold concentrated in the syenite intrusives and at the margins of the Quartz Flooded Zone.
2. The West Dyke in DDH B-88-20 carries no gold while the 'equivalent' lower syenite in DDH B-90-1 is anomalous for the top 47 meters of its drilled interval. The altered nature of the syenite may be related to its gold content.
3. The lower syenite body intersected by DDH B-90-1 appears to be a more massive intrusive than the previously drilled West Dyke. This character and the anomalous gold content of the lower syenite suggest a possibility for economic but lower grade, disseminated, syenite-hosted gold mineralization.
4. Copper is anomalous throughout the North Dyke Syenite and the Quartz Flooded Zone but is only weakly developed in the lower syenite. Although individual analyses get up to 2.19\%, copper grades are lower in DDH B-90-1 than in DDH B-88-20.

### 6.00 RECOMMENDATIONS

1. The persistent gold mineralization seen in $D D H B-90-1$ should be followed up with additional exploration of the Bar Deposit. The strike extension of the favourable mineralized zone should be delineated with geophysics because overburden masks these areas and precludes trenching to obtain this data. Magnetics and VLF-EM which were successfully employed in 1988 should be utilized in addition to an Induced Polarization survey.
2. If geophysics is successful at defining any strike extent of the zone, drill-testing of the deposit beyond the limits of 1988 and 1990 drilling should be done, initially on relatively wide-spaced centers, and subsequently in more detail if warranted.

### 7.00 REFERENCES

Banting, R.T., March 7, 1989. Engineering Report on the PurcellCamp. Chapleau Resources Ltd. internal report.
Marmont, Soussan, 1983. The role of felsic intrusions in goldmineralization. in 'The Geology of Gold inOntario', Ontario Geological Survey MiscellaneousPaper 1l0, edited by A.C. Colvine.
Wolfe, W.J., 1976. Gold in early Precambrian Superior Province plutonic rocks; Ontario Division of Mines, Geoscience Study 17, 11p.
8.00 Author's Qualifications

As author of this report $I$, Peter Klewchuk, certify that:

1. I am an independent consulting geologist with offices at 246 Moyie Street, Kimberley, British Columbia.
2. I am a graduate geologist with a BS degree (1969) from the University of British Columbia and an MS degree (1972) from the University of Calgary.
3. I am a Fellow in good standing of the Geological Association of Canada.
4. I have been actively involved in mining and exploration geology, primarily in the province of British Columbia, for the past 18 years.
5. I have been employed by major mining companies and provincial government geological departments.

Dated at Kimberley, British Columbia, this 25th day of June, 1990.


Peter Klewchuk Geologist


 quartz.

$$
\text { | Sample: } 35177 \quad 95.6-96.8 \mathrm{~m} \quad 1.2 \mathrm{~m}
$$



| DEPTH |  |  |  |  |  |  | -ANALYS | SIS |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FROM TO | DESCRIPTIOW |  |  |  | Cu | Pb | $\mathbf{Z n} \mid \mathbf{A g}$ | \|As | Au |
| \| 104.2-204.4m| | cont 'd |  |  |  |  |  | 1 |  |  |
|  | 35195 | 117.3-118.8m | 1.5 m | Similar to above 10-15\% pyrite. | 235 | 12\| | 19\|0.6 | 70 | 401 |
| 1 |  |  |  | Dominantly quartz with very little |  |  | 1 |  |  |
| , |  |  |  | recognizable siltstone. |  |  |  |  |  |
| \| | 35196 | 118.8-120.3 m | 1.5 m | Similar to above. Few ragged lensey | 921 | 10\| | 17\|0.8 | 651 | 251 |
| \| |  |  |  | greenish siltstone patches. |  |  |  |  |  |
| 1 | 35197 | 120.3-121.8 m | 1.5 m | Similar to above. Foliation varies | 2791 | 32\| | $21 \mid 2.0$ | \| $120 \mid$ | 75 |
| \| |  |  |  | from 45-15 ${ }^{\circ}$; swirly 15-20\% pyrite |  |  |  |  |  |
| \| | 35198 | 121.8-123.3 m | 1.5 m | Swirly foliation $45^{\circ}$ to $15^{\circ}, 20 \% \mathrm{py}, \mid 20$ | \|2045| | 140\| | 3917.8 | \| $150 \mid$ | 115 |
| , |  |  |  | very little siltstone. Small patches\| |  |  |  |  |  |
| \| |  |  |  | of cpy in late, cross-cutting quartz \| |  |  |  |  |  |
| \| |  |  |  | vein a 121.9 (covers only 1/2 of core\| |  |  |  |  |  |
| , | 35199 | 123.3-124.8 m | 1.5 m | 75\% quartz $15 \%$ thin silicified silt- | 491 | 18\| | 17\|0.6 | 80\| | 301 |
| \| |  |  |  | stone fragments/wisps, 10\% pyrite. |  |  | $i$ |  |  |
| , |  |  |  | Foliation at $45-60^{\circ}$. |  |  |  |  | , |
| 1 | 35200 | 124.8-126.3 m | 1.5 m | Swirly, complexly folded, some light | 112\| | 141 | 13\|0.6 | 901 | 501 |
| , |  |  |  | gray \& white quartz $10-15 \%$ very |  |  |  |  |  |
| , |  |  |  | patchy pyrite. |  |  |  |  |  |
| \| | 35201 | 126.3-127.8 m | 1.5 m | Similar to above. Foliation varies | 851 | 16\| | 12\|0.6 | 1201 | 401 |
| 1 |  |  |  | $0^{\circ}$ to $50^{\circ}$ to c/a. | 1 |  |  |  |  |
| 1 | 35202 | 127.8-129.3 m | 1.5 m | 20\% coarse pyrite in (healed) | 2621 | 18\| | 19\|0.8 | \| 2401 | 351 |
| 1 |  |  |  | brecciated masses; siltstone and |  |  |  |  |  |
| 1 |  |  |  | argillite fragments are more angular |  |  |  |  | 1 |
| 1 |  |  |  | than wispy (locally) in completely |  |  |  |  | 1 |
| 1 |  |  |  | quartz-healed breccia. Minor late |  |  |  |  | 1 |
| 1 |  |  |  | cross-cutting light gray quartz veins\| |  |  |  |  |  |
| 1 | 35203 | 129.3-130.8 m | 1.5 m | Glassy mottled gray quartz, 10-15\% py\| | \| 521 | 12\| | 19\|0.4 | \| 170 | 301 |
|  |  |  |  | 5-10\% siltstone \& argillite in thin |  |  |  |  |  |
| $1$ |  |  |  | ragged wispy lenses. |  |  |  |  |  |
| $i$ | 35204 | 130.8-132.3 m | 1.5 m | Similar to above. | 481 | 61 | 19\|0.4 | 190 | 201 |
| 1 | 35205 | 132.2-133.8 m | 1.5 m | Similar to above, about 8-10\% pyrite. | 231 | 81 | 26\|0.2 | 901 | 101 |
| , | 35206 | 133.8-135.3 m | 1.5 m | More mixed with $25 \%$ altered siltstone\| | \| 355| | 81 | 3010.4 | 1101 | 351 |
| 1 |  |  |  | and argillite. $60-70 \%$ quartz, $10 \%$ |  |  |  |  |  |
|  |  |  |  | pyrite. |  |  |  |  |  |
| 1 | 35207 | 135.3-136.8 m | 1.5 m | 10\% siltstone, 10\% pyrite | 228 | 61 | 18\|0.2 | 60 | 151 |
| 1 | 35208 | 136.8-138.3 m | 1.5 m | 10\% siltstone, 20\% pyrite. Foliated | 214 | 178\| | 18\|0.2 | \| 145 | | 201 |
|  |  |  |  | at $45-50^{\circ}$ to c/a. |  |  |  |  |  |
| 1 | 35209 | 138.3-139.8 m | 1.5 m | Similar to above. | 861 | 18\| | $22 \mid 0.4$ | \| 1301 | 151 |
| 1 | 35210 | 139.8-141.3 m | 1.5 m | 25\% pale gray to green sittstone, | 383\| | $26 \mid$ | $22 \mid 0.4$ | 801 | 151 |
| , |  |  |  | 10-15\% pyrite. |  |  |  |  |  |
| 1 | 35211 | 141.3-142.8 m | 1.5 m | 25\% pale gray to green siltstone. \|35 | \|3579| | 421 | 59\|1.0 | 901 | 151 |
| 1 |  |  |  | 10-25\% pyrite minor cpy. |  |  |  |  |  |
| 1 | 35212 | 142.8-144.3 m | 1.5 m | 10\% siltstone, 10\% pyrite, very minor\|27 | \| 2747 | | 30\| | $45 \mid 0.8$ | \| $120 \mid$ | 201 |
| , |  |  |  | cpy. \| |  |  |  |  |  |
| 1 | 35213 | 144.3-145.3m | 1.0 m | More glassy light gray qtz. Coarse >1000 | 100001 | 20\| | 312\|10.2 | 451 | 451 |
| , |  |  |  | ragged patchy cpy within a 4 cm wide \|A | \|Assay | 2.19 | 9\% Cu |  |  |
|  |  |  |  | band at $20^{\circ}$ to $\mathrm{c} / \mathrm{a}$ at 144.6 m ; smaller |  |  | 1 |  |  |
| \| |  |  |  | patches of cpy occur through the rest\| |  |  | , |  |  |
|  |  |  |  | of the zone. Cpy > py. \| | 1 |  | 1 |  | 1 |
|  | 35214 | 145.3-146.0 m | 0.7 m | 85\% quartz, 15\% pyrite. | \| 6501 | 201 | $22 \mid 0.6$ | \| $105 \mid$ | 151 |
| 1 | 35215 | 146.0-147.5 m | 1.5 m | Re-silicified breccia; late gray \|439 | \|4390| | $24 \mid$ | 54\|1.4 | \| 185 | 651 |
|  |  |  |  | quartz veins. Foliated at $50^{\circ}$ to $\mathrm{c} / \mathrm{a}$ \| |  |  |  |  |  |
|  |  |  |  | 15\% pyrite. \| |  |  |  |  |  |
|  | 35216 | 147.5-148.8 m | 1.3 m | Strongly silicified minor siltstone, \|3 | \|3496| | 22\| | 73\|1.4 | \| 190 | 251 |
|  |  |  |  | 15\% vuggy, patchy pyrite, minor cpy. \| |  |  |  |  |  |
|  | 35217 | 148.8-150.2 m | 1.4 m | Complexty brecciated; re-silicified. \|69 | \|6978 | 81 | 108\|2.4 | \| 2001 | 601 |
|  |  |  |  | Gray quartz cuts white quartz 15\% py, \| |  |  | 1 |  |  |
|  |  |  |  | minor cpy. \| |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |




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## ECO-TECH LABORATORIES LTD.

ASSAYING - ENVIRONMENTAL TESTING
10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2ل33 (604) 573-5700 Fax 573-4557
Appendix 2. Geochemical Analyses
MARCH 15. 1990
CERTIFICATE OF ANALYSIS ETK 90-46

ATTENTION: R. VERZOSA
SAMPLE IDENTIFICATION: 68 DRILL CORE samples received March 9, 1990 PROJECT: B - 90 - 1

AU AU AU CU
ET\# Description (ppb)(g/t)(oz/t) (s)



# ASSAYING - ENVIRONMENTAL TESTING 

10041 East Trans Canada Hwy., Kamloops, B.C. V2C 2J3 (604) 573-5700 Fax 573-4557

SWIFT MINERALS

MARCH 15. 1990
$A U \quad A U \quad A U \quad C U$
ET\# Description (ppb) ( $g / t$ ) ( $\mathrm{Oz} / \mathrm{t}$ ) ( m )

46 - 31 35181 175
46 - $32 \quad 35182 \quad 85$
$46-33 \quad 35183 \quad 50$
46 - 34 35184 410
46 - 35 35185 105
46 - 36 35186 85
46 - 37 35187 75
46 - 38 35188 95
46 - 39 35189 25
46 - 40 35190 45
46 - 41 35i91 91
46 - 42 35192 35
46 - 43 35193 90
46 - 44 35194 55
46 - 45 35195 40
46 - 46 35196 25
46 - 47 35197 75
46 - 48 35198 115
46 - 493519930
46 - 50 35200 50
46 - 51 35201 40
46 - 52 35202 35
46 - 53 35203 30
46 - 54 35204 20
46 - 55 35205 10
46 - $56 \quad 35206$
46 - 57 35207 15
46 - 58 35208 20
46 - 49 35209 15
46 - 60 35210 15
46 - 61 35211 15
46 - $62 \quad 20$
46 - $63 \quad 35213 \quad 45 \quad 2.19$
46 - 64 35214 15
46 - 65 35215 65
46 - 66 35216 25
46 - 67 35217 60
46 - 68 35218 50

NOTE: $\quad>=$ GREATER THAN


EZO-TEOH LABORATORIESLTD.
FOR Frank J. Pezzotti. A.SC.T.
B.C. Certified Assayer
cc. Peter Klewchuk

FAX: WAYNE WILE

| ECO-TECH LABORATORIES LTD. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  | A6 M ( ${ }^{\text {a }}$ ) | 45 | 1 | B | Bi Ca(z) |  | C1 C0 |  | Cl | Cu fe(l) |  | $K(z)$ | LA Mo(z) |  | m | $M O M(L)$ |  |  |  | Pe | $\mathbf{S 8}$ | SN <br> ع3se | $\text { Se } 11(2)$ |  | 0 |  |  |  |  |
| 46 | - 1 | 1 | 35151 | . 6 | . 39 | 45 | 6 | 25 | (5 | . 43 | (1 | 24 | 59 | 121 | 2.95 | . 09 | $(10$ | . 25 | 45 | 11 | . 02 | 31 | 390 | 56 | 5 | (20) | 13 | <. 01 | <10 | 14 | (10 | 5 | 3 |
| 46 | - 2 | 2 | 35152 | . 2 | . 35 | 10 | 4 | 15 | (5 | . 13 | (1) | 8 | 41 | 14 | 1.06 | . 05 | <10 | . 16 | 30 | 10 | . 03 | 11 | 50 | 62 | (5) | (20) | 1 | <. 01 | <10 | 9 | 10 | 3 | 25 |
| 46 | - 3 | 3 | 35153 | . 2 | 1.05 | 25 | 2 | 55 | (5 | . 18 | (1) | 17 | 47 | 167 | 3.74 | . 21 | <10 | . 64 | 678 | 5 | . 02 | 22 | 340 | 14 | 5 | (20) | 8 | <.01 | <10 | 9 | (10) | 4 | 42 |
| 46 | - 1 | 1 | 35154 | . 2 | . 18 | 15 | 4 | 15 | (5 | . 14 | (1 | 1 | 98 | 237 | 1.94 | . 07 | (10 | . 12 | 343 | 11 | . 03 | 11 | 190 | 24 | (5) | (20 | 8 | <. 01 | 10 | 5 | 10 | 3 | 28 |
| 46 | - 5 | 5 | 35155 | 2.0 | . 26 | 90 | 2 | 25 | 20 | . 23 | (1 | 0 | 65 | 1563 | 7.21 | . 10 | 110 | . 94 | 802 | 10 | . 02 | 48 | 570 | 39 | 10 | (20) | 15 | (.01 | <10 | 5 | 10 | 8 | 71 |
| 46 | - 6 | 6 | 35156 | 8.0 | . 26 | 200 | 2 | 25 | 50 | . 25 | (1 | 151 | 52 | 1919 | 8.10 | . 10 | 110 | . 33 | 294 | 17 | . 02 | 97 | 120 | 152 | 20 | (20) | 23 | <.01 | <10 | 5 | 10 | 7 | 75 |
| 46 | - 7 | 7 | 35157 | . 8 | . 49 | 10 | 2 | 55 | (5 | . 29 | (1 | 14 | 37 | 231 | 1.22 | . 17 | 10 | . 07 | 27 | 5 | . 04 | 8 | 890 | 36 | (5 | (20) | 28 | <.01 | (10 | 4 | 10 | 7 | 135 |
| 46 | - 8 | 8 | 35158 | . 4 | . 42 | 10 | 4 | 55 | (5 | . 29 | (1) | 4 | 46 | 44 | 1.61 | . 17 | (10 | . 05 | 407 | 4 | . 04 | 4 | 790 | 26 | 5 | <20 | 28 | < .01 | <10 | 4 | (10 | 8 | 77 |
| 46 | - 9 | 9 | 35159 | . 2 | . 36 | 15 | 2 | 55 | (5 | . 29 | (1 | 6 | 24 | 15 | 1.76 | . 14 | (10 | . 05 | 615 | 2 | . 04 | 5 | 600. | 38 | 5 | (20) | 28 | <.01 | <10 | 4 | <10 | 6 | 61 |
|  | - 10 |  | 35160 | . 2 | . 25 | 5 | 12 | 40 | (5 | . 25 | 1 | 6 | 32 | 32 | 2.25 | . 14 | <10 | . 05 | 958 | 4 | . 04 | 2 | 770 | 156 | 10 | (20 | 20 | <.01 | <10 | 4 | 30 | 6 | 706 |
| 46 | - 11 |  | 35161 | . 4 | . 25 | 10 | 4 | 30 | (s | . 25 | 1 | 3 | 30 | 35 | 1.12 | . 10 | (10 | . 03 | 481 | 2 | . 04 | 3 | 560 | 19 | (5) | (20 | 18 | (.01 | (10) | 3 | 20 | 5 | 543 |
| 46 | - 12 |  | 35162 | 1.0 | . 45 | 170 | 2 | 10 | (5) | . 19 | (1 | 1 | 40 | 25 | 3.79 | . 05 | (10 | . 04 | 55 | 5 | . 04 | 13 | 550 | 32 | 5 | (20) | 12 | <. 01 | <10 | 1 | 10 | 4 | 130 |
| 48 | - 13 |  | 35163 | 10.4 | . 30 | 3835 | 10 | 20 | (5 | . 13 | 18 | 39 | 59 | 707 | 3.\% | .0\% | 110 | . 10 | 3 | 13 | . 02 | 32 | 60 | 2854 | 15 | <20 | 6 | (.01 | <10 | 5 | 10 | 5 | 3649 |
| 4 | - 14 |  | 35164 | . 6 | . 19 | 460 | 12 | 20 | (5) | .06 | <1 | 69 | 71 | 19 | 5.08 | . 12 | (10 | . 01 | 9 | 12 | . 02 | 28 | 210 | 50 | 10 | (20 | 3 | (.01 | <10 | 11 | 10 | 3 | 25 |
| 46 | - 15 |  | 35165 | . 2 | . 21 | 165 | 2 | 35 | (5) | . 02 | (1 | 29 | 48 | 9 | 1.52 | . 14 | <10 | . 02 | 6 | 5 | . 02 | 23 | 30 | 34 | 5 | (20 | 2 | (.01 | (10 | 13 | <10 | 2 | 5 |
| 48 | - 16 |  | 35166 | . 2 | . 23 | 115 | 4 | 35 | (5 | .06 | <1 | 22 | 47 | 7 | . 97 | . 14 | (10 | . 01 | 6 | 6 | . 02 | 16 | 190 | 30 | 5 | (20) | 4 | <.01 | (10) | 13 | (10) | 3 | 8 |
| 46 | - 17 |  | 35167 | . 8 | . 22 | 110 | 4 | 25 | ( 5 | . 13 | 1 | 25 | 51 | 165 | 3.4 | . 14 | <10 | . 13 | 281 | 13 | . 02 | 23 | 420 | 20 | 5 | (20 | - | (.01 | (10) | 16 | 10 | 4 | 14 |
| 46 | - 18 |  | 35168 | 1.2 | . 22 | 95 | 4 | 30 | (5 | . 10 | 1 | 35 | 57 | 165 | 3.85 | . 13 | (10 | . 12 | 340 | 7 | . 02 | 27 | 270 | 28 | $(5$ | <20 | 4 | (.0) | (10 | 17 | <10 | 3 | 19 |
| 46 | - 19 |  | 35169 | 4.4 | . 18 | 85 | 12 | 30 | 45 | . 12 | 1 | 42 | 41 | 50 | 5.62 | . 10 | (10 | . 44 | 481 | 5 | . 02 | 27 | 370 | 60 | (5) | (20 | 4 | (.01 | (10) | 11 | 10 | 4 | 33 |
| 4 | - 20 |  | 35170 | 1.0 | . 22 | 30 | 2 | 20 | (5 | . 07 | 2 | 15 | 69 | 420 | 2.00 | . 08 | <10 | . 21 | 276 | 4 | . 02 | 16 | 240 | 16 | (5 | <20 | 4 | (.01 | (10 | 18 | <10 | 4 | 23 |
| 46 | - 21 |  | 35171 | 1.2 | . 29 | 25 | 2 | 20 | (5 | . 05 | (1 | 9 | 41 | 472 | 1.95 | . 08 | (10 | . 24 | 176 | 5 | . 02 | 13 | 170 | 24 | 5 | (20 | 3 | (.01 | 10 | 14 | 110 | 2 | 20 |
| 46 | - 22 |  | 35172 | 1.6 | . 21 | 20 | 2 | 20 | (5 | . 05 | (1 | 11 | 71 | 902 | 1.98 | . 08 | <10 | . 10 | 175 | 7 | . 02 | 17 | 250 | 18 | <5 | <20 | 3 | <.01 | 20 | 15 | 10 | 2 | 12 |
| 4 | - 23 |  | 35173 | 1.6 | . 18 | 25 | 2 | 20 | (5) | . 07 | ${ }^{1}$ | 12 | 82 | 949 | 3.30 | . 09 | <10 | . 39 | 446 | 10 | . 02 | 24 | 300 | 16 | 5 | 120 | 1 |  | 10 | 15 | <10 | 3 | 24 |
| 46 | - 24 |  | 35174 | 5.0 | . 19 | 30 | 2 | 10 | (5 | . 04 | (1 | 14 | 105 | 2212 | 2.11 | .04 | <10 | . 12 | 158 | 13 | . 02 | 38 | 170 | 36 | 15 | <20 | 3 | 8.01 | 10 | 15 | 10 | 2 | 30 |
| 46 | - 25 |  | 35175 | 2.0 | . 18 | 20 | $<2$ | 20 | (5 | .00 | (1 | 12 | 6 | 921 | 3.41 | . 09 | <10 | . 46 | 450 | 9 | . 02 | 17 | 320 | 24 | 5 | $<20$ | 4 | 1.01 | 10 | 16 | 10 | 3 | 21 |
| 4 | - 26 |  | 35176 | 3.6 | . 17 | 40 | <2 | 15 | 10 | . 07 | (1) | 22 | 123 | 1710 | 5.63 | . 0 | 110 | . 72 | 578 | 7 | . 02 | 34 | 590 | 28 | 10 | 120 | 3 | <. 01 | (10 | 16 | 10 | 3 | 39 |

ECO-TECH LABORATORIES LTD. SWIFT MINERALS - ETF90-46A


ECO-TECH LABQRATORIES LTD.
SHIFT MINERALS - ETF90-46A


MOTE: $)=$ geEATER THM
$<=$ LESS TMMM


Sal MAME VILE 659-5572
CC: PETER KLUNCHOK
901 moustrial RD.m. 2
cranbroox, E.C.
VIC 4 C9

ECO-TECH LABORATORIES LTD.

loott east traws chmad hry. KAMLOOPS, B.C. V2C 233 HOWE - 604-573-5700 fax - 604-573-4551

SWIFT MINERALS - ETK 90-51

## 205, 675 N . HASIIMOS ST <br> VAMCOUVER, B.C. <br> Y68 4 C9

ATTENTIOM: R. VERIOSA

PROJECT: - $90-1$
68 drill cone samples received march 9, 1990


ECO-TECH LABORATORIES LTD. SWIFT MINERALS - ETK 90-51

PAGE
EII


ECO-TECH LABDRATORIES LTD. SNIFT MINERALS - ETK 90-51


WOTE: < = LESS THAM


FRAWN PELZDIII, A. Sc. T.
D.C. CERTLFIED ASSAYER
fal: MAYME WILE 669-5572
CC: PEIER KLEMCHX
\$OI IMOUSTRIM RE. WO. 2
crambrook, B.C.
VIC 4C?

## 5c90/5uIfI





