	DL	018950 SUPERINTENDENT OF BROKERS	Forrest Project
·	MINISTRY OF ENERGY, MINES and PETROLEUM RECOURCES	VANCOUVER STOCK EXCHANGE (Venture Company)	1045/15
		EMENT OF MATERIAL FACTS #13/90 FECTIVE DATE: MARCH 30, 1990	New? V
	SMITHERS, B.C.	at Vanaguwan B.C. 16C 2VI	Tolophone, $(601)$ , $697$ , $7162$
		eet, Vancouver, B.C., V6C 2X4 OFFICE AND TELEPHONE NUMBER	<u>Telephone: (604) 687-7463</u>

#100 - 200 Granville Street, Vancouver, B.C., V6C 1S4 ADDRESS OF REGISTERED AND RECORDS OFFICES OF ISSUER

Pacific Corporate Services Limited, Suite 830, 625 Howe Street, Vancouver, B.C., V6C 3B8 NAME AND ADDRESS OF REGISTRAR & TRANSFER AGENT FOR ISSUER'S SECURITIES IN BRITISH COLUMBIA

The securities offered hereunder are speculative in nature. Information concerning the risks involved may be obtained by reference to this document; further clarification, if required, may be sought from a broker.

OFFERING: 900,000 COMMON SHARES

The Offering may be increased by up to 135,000 Shares (15% of Offering) to meet oversubscriptions. See "Plan of Distribution".

	Offering Price (estimated)*	Commission	Estimated Net Pro- ceeds to be Received by the Issuer
Per Share	\$1.15	\$0.08625	\$1.06375
Total	\$1,035,000	\$77,625	\$957,375

\* To be calculated in accordance with the Rules of the Vancouver Stock Exchange.

**ADDITIONAL OFFERING:** The Agent has agreed to purchase (the "Guarantee") any of the Shares offered hereby which are unsubscribed for on the Offering Day (see "Consideration to Agent"). Any Shares acquired by the Agent under the Guarantee will be distributed under this Statement of Material Facts through the facilities of the Vancouver Stock Exchange at the market price at the time of sale.

SHAREHOLDER OFFERING: This Statement of Material Facts also qualifies for sale at the market price for shares of the Issuer at the time of sale 274,195 common shares, which the Issuer has previously issued to the shareholders described herein (the "Shareholder Offering"). None of the proceeds of sale from the Shareholder Offering will be received by the Issuer.

## AGENT

L.O.M. Western Securities Ltd. #2200 - 609 Granville St. Vancouver, B.C. V7Y 1H2

Neither the Superintendent of Brokers nor the Vancouver Stock Exchange has in any way passed upon the merits of the securities offered hereunder and any representation to the contrary is an offence.

May 2/90

# 018950

### 1. PLAN OF DISTRIBUTION

## A. THE OFFERING

By Agreement dated for reference February 9, 1990 (the "Agency Agreement"), Avondale Resources Inc. (the "Issuer") appointed L.O.M. Western Securities Ltd. (the "Agent") to offer through the facilities of the Vancouver Stock Exchange (the "Exchange") 900,000 common shares of the Issuer (the "Shares") at a fixed price (the "Offering").

The Offering will take place on the "Offering Day" which will be not more than one hundred eighty (180) calendar days after the date this Statement of Material Facts is accepted for filing by the Exchange and the Superintendent of Brokers (the "Effective Date").

The offering price of the Shares (the "Offering Price") will be determined in accordance with the rules of the Exchange, and accepted by the Issuer and the Agent, and may be at a discount from the average trading price of the Issuer's shares as determined by the Exchange.

The Issuer has granted to the Agent an option (the "Greenshoe Option") expiring sixty (60) days after the Offering Day, to sell up to an additional fifteen percent (15%) of the number of Shares offered hereunder, exercisable at the Offering Price to cover over-allotments, if any. The number of shares subject to the Greenshoe Option will be determined immediately on completion of the Offering. Alternatively, the Agent is entitled to cover such over-allotments by making purchases of the Issuer's shares in the open market.

The Agent reserves the right to offer selling group participation in the normal course of the brokerage business to selling groups of other licenced dealers, brokers and investment dealers who may or may not be offered part of the commissions derived from the Offering.

The obligations of the Agent under the Agency Agreement may be terminated prior to the opening of the market on the Offering Day at its discretion on the basis of its assessment of the state of the financial markets and may also be terminated at any time upon the occurrence of certain stated events.

The Issuer has agreed to notify the Agent of any further public equity financing that it may require or propose to obtain during the twelve month period following the Effective Date and the Agent shall have the right of first refusal to provide such financing.

Except as set out in this Statement of Material Facts, there are no payments in cash, securities or other consideration being

## SUMMARY REPORT ON THE AVONDALE RESOURCES INC. FORREST PROJECT

.

## ISKUT RIVER AREA LIARD MINING DIVISION BRITISH COLUMBIA

Bernard Dewonck, F.G.A.C.

January 24, 1990

offered hereunder and for a period of thirty (30) days following completion of the distribution.

## 10. STATUTORY RIGHTS OF RESCISSION

The British Columbia <u>Securities Act</u> provides purchasers with the right to rescind a contract for the purchase of securities where the Statement of Material Facts and any existing amendments there-to either contain a misrepresentation or are not delivered to the purchaser before delivery of the written confirmation of sale. For further information concerning these rights, and the time limits within which they must be exercised refer to Sections 66, 114, 118 and 124 of the Securities Act or consult a lawyer.

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## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Avondale Resources Inc. has the right to earn a 100% interest in the Forrest Project, which consists of the Forrest 1-15 mineral claims comprising 278 units. The property is situated within the Liard Mining Division on the west side of Forrest Kerr Creek and immediately north of the Iskut River. Extensive exploration for precious metals is ongoing at a rapid pace in the area and numerous discoveries have been made, of which several are in advanced stages of exploration, development or, in the case of Skyline Gold Corporation, in production. Calpine Resources Incorporated/Stikine Resources Ltd.'s Eskay Creek 21 Zone is located 15 kilometres to the southeast of the property while Cominco/Prime Resources Corporations's Snip deposit and Skyline Gold Corporations's Johnny Mountain Mine are 30 kilometres to the west-southwest. Bob Quinn Lake on the Stewart-Cassiar Highway is 30 kilometres to the east.

The Forrest Project itself has evolved rapidly from a raw prospect in 1987 to its present status - nineteen separate mineral showings or zones identified and partial coverage by detailed geological, geochemical and geophysical surveys over the two grids. Commodity assemblages range from native gold to gold-arsenic-coppersilver, copper-gold and copper in quartz veins and/or shear zones.

The 1989 field program has identified several coincident multi-element geochemical, geophysical and structural anomalies of interest on both the Forrest and South Central Grids. These target areas require detailed work which should include additional mapping, fill-in soil geochemical and geophysical surveys, trenching and rock sampling to define the source of these anomalies. In the case of several showings in the northern part of the property, little additional surface work can be done prior to diamond drilling. The various mineral occurrences on the Forrest property are hosted by a Permian volcano-sedimentary package, compared to rocks of Lower Jurassic age as is the case for most other occurrences in the region. A common link between them however, is postulated to be Lower Jurassic intrusives - the heat source for the principal hydrothermal mineralizing event in the region.

Of the numerous occurrences identified to date on the Forrest Project, those located in the northern part of the property are priority targets for continued exploration. The Triple Creek Showing carries significant gold values and may represent a lower level exposure of the Forrest Zone stockwork. The Creek Shear has also yielded encouraging gold values, as well as copper and silver, but also displays some of the strongest alteration evident on the property. It has been suggested that in the Forrest Zone area, the majority of veins and fracture fillings occur within volcanic rocks, not sedimentary, and that continuity at depth of potentially mineralized structures might be restricted by underlying sedimentary stratigraphy if stress within the latter is dissipated along bedding planes rather than in the creation of fractures. The Creek Shear, however, occurs within siltstone, an encouraging feature given its location topographically below the Forrest Zone. The Canyon Shear is similar in nature, although within andesite where exposed, and appears to have significant identifiable strike potential in view of an associated air photo lineament as well as potential geochemical expression to the southwest.

Contour soil sampling below these three showings has produced a substantial gold-copper-arsenic (+/- silver) anomaly across 450 metres of slope which probably reflects as yet undiscovered occurrences. Numerous veins are visible on the precipitous slopes of Gossan Creek which have not yet been investigated, indicating a good probability that the overburden covered areas will yield new discoveries.

Detailed prospecting in the area of the contour sampling is required, in conjunction with additional contour sampling, as well as along strike projections of the three showings. The use of VLF-EM where practical is strongly recommended, at least as a prospecting tool on a local basis even if systematic grid controlled surveys are not possible due to topographic constraints. It is anticipated that only limited additional trenching is feasible and exploration should proceed to the drilling stage during the next program.

The NW 3 Shear is a new discovery, also significant because it occurs in sedimentary rocks and appears to be a strong feature. Detailed follow up is required as described above and early drill target definition would complement program development envisaged for the Triple Creek, Creek and Canyon Shear Showings.

The Tarn Showing has good potential because of its apparent strength, reflected in the extent of associated quartz-sericite-chlorite alteration. Grab samples have produced significant gold and copper values from more strongly mineralized material than that seen in place to date. The source of this material, therefore, remains to be located. Again, VLF-EM may be a quick and inexpensive means of tracing the zone to define a drill target. Trenching and geochemical sampling may be hampered by glacial deposits. The showing is not reflected in the present grid soil geochemistry, probably because of overlying glacial material in the immediate vicinity.

The VG Showing as it stands has limited potential because the veins are narrow. One cannot ignore the fact, however, that considerable gold can be found in these veins. The showing requires detailed mapping in an attempt to recognize any structural or mineral zonation implications, as well as possible surface targets made possible by increased vein intensity. An IP survey is recommended to help identify drill targets at depth that are inferred from surface work however interpretation may be complicated by graphitic sediments in lower stratigraphy.

The 50 Zone requires detailed mapping to define the source of widespread arsenopyrite and chalcopyrite bearing quartz vein float, although one such vein has been located. This mapping is also needed to establish structural relationships with the Forrest Zone. Soil sampling has produced a strong gold-arsenic-copper anomaly which should be followed up by VLF-EM and mechanized trenching, since topographic relief in this area is quite subdued. This work should lead to drill target definition.

It is recognized that the Forrest Zone, the quartz megastockwork zone which first attracted attention to the property, is itself virtually unmineralized but that it is indicative of a substantial hydrothermal event. The system's depth potential in general has been alluded to in discussion of the Triple Creek Showing etc. however the Forrest Zone itself does warrant continued investigation. It is effectively a drill target at present, such work to be preceded by deep penetration IP surveys over a few test lines. If successful the survey can be expanded to provide more definitive sulphide rich targets.

Several other showings require continued mapping, prospecting and sampling follow up, particularly the Azurite, West Creek and 14 Shear Showings. On a broader scale systematic grid coverage should be expanded to include the Midway Area, to bridge the gap between the existing grids for mapping purposes, and subsequent geochemical and geophysical surveys as warranted. Grid expansion should also take place to the south of the South Central Grid. The Forrest 2 claims appears to be on strike with the Permian volcano-sedimentary sequence and also warrants systematic coverage. This grid work could be initiated with 100 metre line spacings, which can later be reduced as results dictate. Other large areas of the property have yet to be prospected in great detail, such as the diorite in the northwest and southwest corners and the southern and southeastern areas east of the West Slope Fault where Triassic and younger rocks occur.

The grid controlled soil geochemical surveys produced four anomaly patterns on the Forrest Grid. The strongest anomaly is associated with the 50 Zone, discussed previously. Recommendations of prospecting, mapping, VLF-EM surveys and trenching apply to the full extent of this anomaly including the arcuate band northwest of the 50 Zone. The second anomaly was also referred to with regard to the Canyon Shear strike extensions. The third area of interest is centred near the end of L46+00N and may be related to the Canyon Shear trend, while the fourth lies south of the Azurite Showing. The latter anomaly may be related to the main 50 Zone trend. Grid expansion to the west is required in the case of the third area as well as more detailed sampling and prospecting in both the third and fourth areas, followed by trenching. Similar attention should be given to the four linear trends described on the South Central Grid, with particular focus on the roughly coincident geochemical anomaly - fault structure - resistivity high south of the Pond Showing. This area features the highest gold-in-soil values recorded on this grid, up to 6570 ppb. This work should lead to the definition of drill targets to be incorporated in the drill programs undertaken on more advanced targets.

It is also suggested that some effort be devoted to the mapping and interpretation of glacial features on the property. This may be of some assistance

in interpreting the presently defined geochemical anomalies as well as in guiding further exploration in other parts of the property.

The magnetic and resistivity surveys completed to date have been of very limited assistance in delineating mineralization. It is suggested that VLF-EM surveys be conducted as follow up on the showings as mentioned previously, as part of the initial coverage of new or expanded grids and even as a prospecting tool prior to grid establishment in the remaining unexplored areas of the property. The use of IP has also been mentioned previously with respect to the Forrest Zone and VG Showing, however the expense of the survey warrants its use on a few test lines initially to evaluate its usefulness.

A two part, second phase exploration program comprising both surface work and diamond drilling is therefore proposed. Those showings requiring little surface work can be drilled while work is in progress in other areas to define additional targets (Phase IIa). Phase IIb would include some surface work to complete definition of new targets, continued drilling of the first targets as guided by the Phase IIa work and drilling of all other targets generated. A breakdown of the total Phase II budget of \$1,500,000 follows.

## BUDGET ESTIMATE

Phase IIa

,

Surface Program

Mobilization	\$ 6,900
Field Costs	70,000
Support Costs (fixed wing, helicopter, freight)	37,000
Equipment Rental	5,500
Contract Services (linecutting, geophysics)	27,000
Analyses	40,000
Diamond Drilling (550 m @ \$200/m, all inclusive)	110,000
Preliminary Compilation and Report	20,000
Contingency @ 10%	 31,600
Subtotal	\$ 348,000
Management Fee @ 15%	 52,000
Total Phase IIa	\$ 400,000

Phase IIb

Surface Program (all inclusive)	\$ 90,000
Diamond Drilling (3900 m @ \$200/m all incl.)	780,000
Contingency @ 10%	87,000
Subtotal	\$ 957,000
Management Fee @ 15%	143,000
Total Phase IIb	\$1,100,000

GRAND TOTAL PHASE II

\$1,500,000

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Bernard Dewonck, F.G.A.C.

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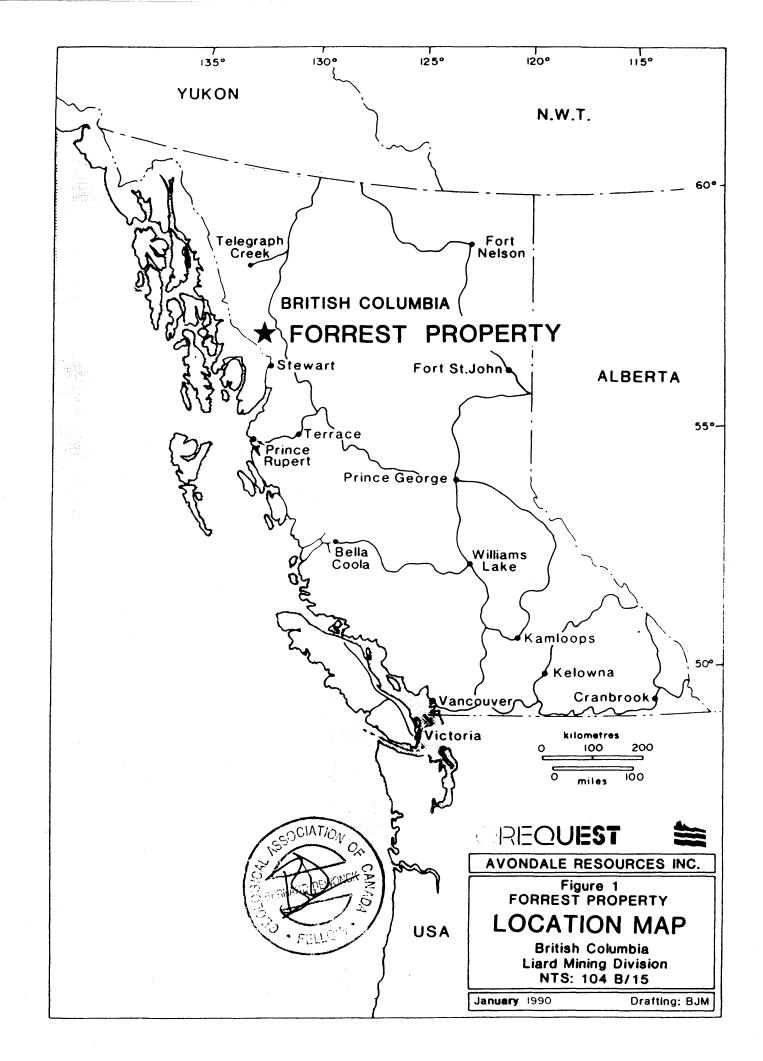
#### INTRODUCTION

This report was prepared at the request of Avondale Resources Inc., who has the right to acquire a 100% interest in the Forrest Project. The property comprises the Forrest 1-15 claims totalling 278 units. The results of exploration to date are summarized and recommendations for continued work are made.

The information contained in this report is taken primarily from field data resulting from work carried out by Pamicon Developments Ltd. in 1987, 1988 and 1989, under the direct supervision of S. Todoruk, B.Sc. Mr. Todoruk is the registered owner of the claims, subject to a partnership agreement with other individuals directly associated with Pamicon Developments Ltd. The author has visited the property, both in October 1988 and September 1989, and reviewed field data with Pamicon personnel on a continuing basis. OreQuest Consultants Ltd. conducted an extensive property examination in September, 1988 (Raven, 1988) and prepared a qualifying report for Avondale Resources Inc. on the subject property (Dewonck, 1989). The Summary, Conclusions and Recommendations presented in this report, while based on the data collected by Pamicon, are soley those of the present author.

### LOCATION AND ACCESS

The Forrest Project is located approximately 110 kilometres east of Wrangell, Alaska, and 100 kilometres north of Stewart, British Columbia, on the eastern edge of the Coast Range Mountains (Figure 1). Bob Quinn Lake on the Stewart-Cassiar Highway is situated 30 kilometres to the east-northeast while Bronson airstrip (servicing Cominco/Prime Resources Corporation's Snip deposit and Skyline Gold Corporation's Johnny Mountain Mine) is 30 kilometres to the west-southwest. The southerly flowing Forrest Kerr Creek lies immediately east of the claims while the



Iskut River is located just to the south of the Forrest 9 and 10 claims. Coordinates of the claims area are 56°47'N latitude and 130°44'W longitude, and the map reference is NTS 104B/15.

Access to the property is via helicopter from the Bronson Creek gravel airstrip, Bob Quinn Lake or the Forrest Kerr airstrip located 15 kilometres to the northwest at the headwaters of Forrest Kerr Creek. Daily scheduled flights to the Bronson Creek strip from Smithers, Terrace and Wrangell, Alaska have been available during the field season using a variety of fixed wing aircraft.

The province of British Columbia has recently completed a study on possible road access to the Iskut, Eskay Creek and Sulphurets areas. Construction of a road from the Stewart-Cassiar Highway from Bob Quinn Lake down the Iskut to Bronson Creek is anticipated in the near future. The road would be situated just south of the Forrest claims on the south side of the Iskut Valley. A possible branch road at Km 40 would allow access to Eskay Creek and the Unuk River area, including Sulphurets.

## PHYSIOGRAPHY AND VEGETATION

Unlike much of the general Iskut River area currently being explored, which is often steep, rugged and heavily forested at lower elevations, the claims include a large alpine area of gently rolling topography, with patchy soil cover, which contains most of the known showings. Elevations range from 300 m in the Forrest Kerr Creek valley to 1800 m along the western border of the property. The steeper, lower slopes up to 1000 m are predominantly covered with large spruce and fir. A steep-sided creek valley bisects the Forrest 1-4 claims, providing some rock

exposure at elevations below the principal showings. It is probable that the gently rolling upper portions of the claim area can be explored from late May or early June except in years of heavy snowfall, and work can continue on the property in general until late September or October.

## CLAIM STATUS

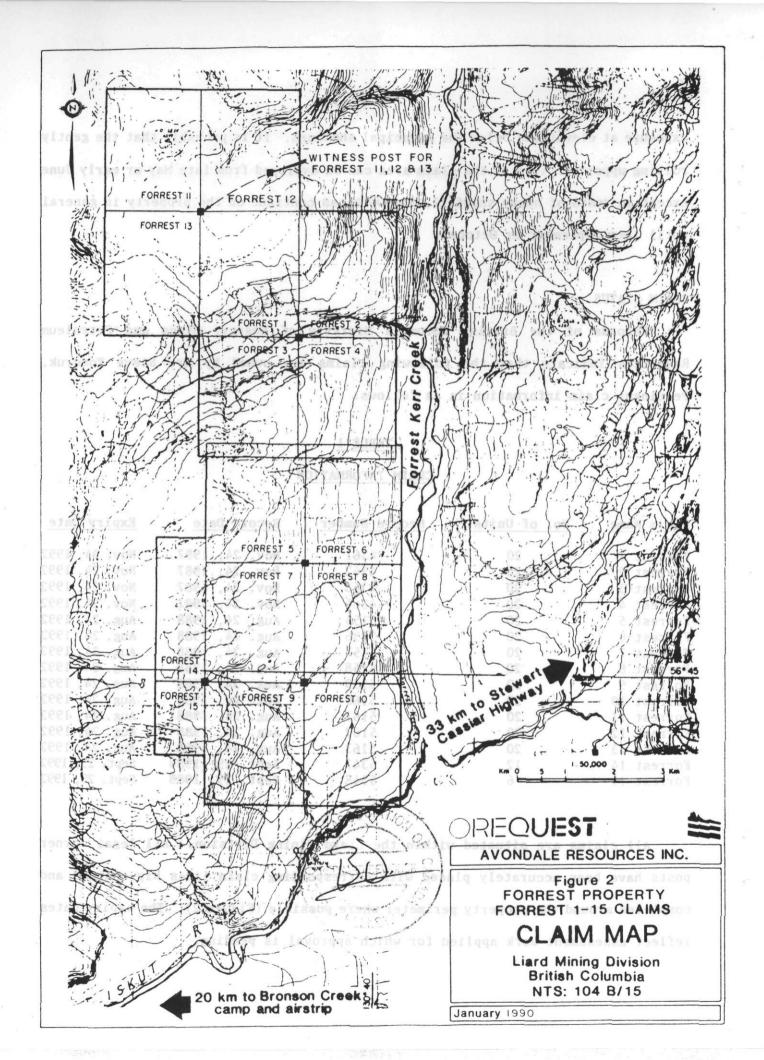
Records of the British Columbia Ministry of Energy, Mines and Petroleum Resources indicate that the following claims are owned by Mr. Steve Todoruk. Pertinent claim information is as follows:

## TABLE 1

## CLAIM INFORMATION

<u>Claim Name</u>	No. of Units	Record Number	Record Date	Expiry Date
Forrest 1	20	4361	Nov. 24, 1987	Nov. 24, 1992
Forrest 2	20	4362	Nov. 24, 1987	Nov. 24, 1992
Forrest 3	20	4363	Nov. 24, 1987	Nov. 24, 1992
Forrest 4	20	4364	Nov. 24, 1987	Nov. 24, 1992
Forrest 5	20	5155	Aug. 24, 1988	Aug. 24, 1992
Forrest 6	20	5156	Aug. 24, 1988	Aug. 24, 1992
Forrest 7	20	5157	Aug. 24, 1988	Aug. 24, 1992
Forrest 8	20	5158	Aug. 24, 1988	Aug. 24, 1992
Forrest 9	20	5159	Aug. 24, 1988	Aug. 24, 1992
Forrest 10	20	5160	Aug. 24, 1988	Aug. 24, 1992
Forrest 11	20	5161	Aug. 24, 1988	Aug. 24, 1992
Forrest 12	20	5162	Aug. 24, 1988	Aug. 24, 1992
Forrest 13	20	5163	Aug. 24, 1988	Aug. 24, 1992
Forrest 14	12	5347	Sept. 29, 1988	Sept. 29, 1992
Forrest 15	6	5348	Sept. 29, 1988	Sept. 29, 1992

All claims are situated within the Liard Mining Division. All legal corner posts have been accurately placed with corresponding claim lines hip-chained and completed around the property perimeter where possible (Figure 2). The expiry dates reflect assessment work applied for which approval is pending.

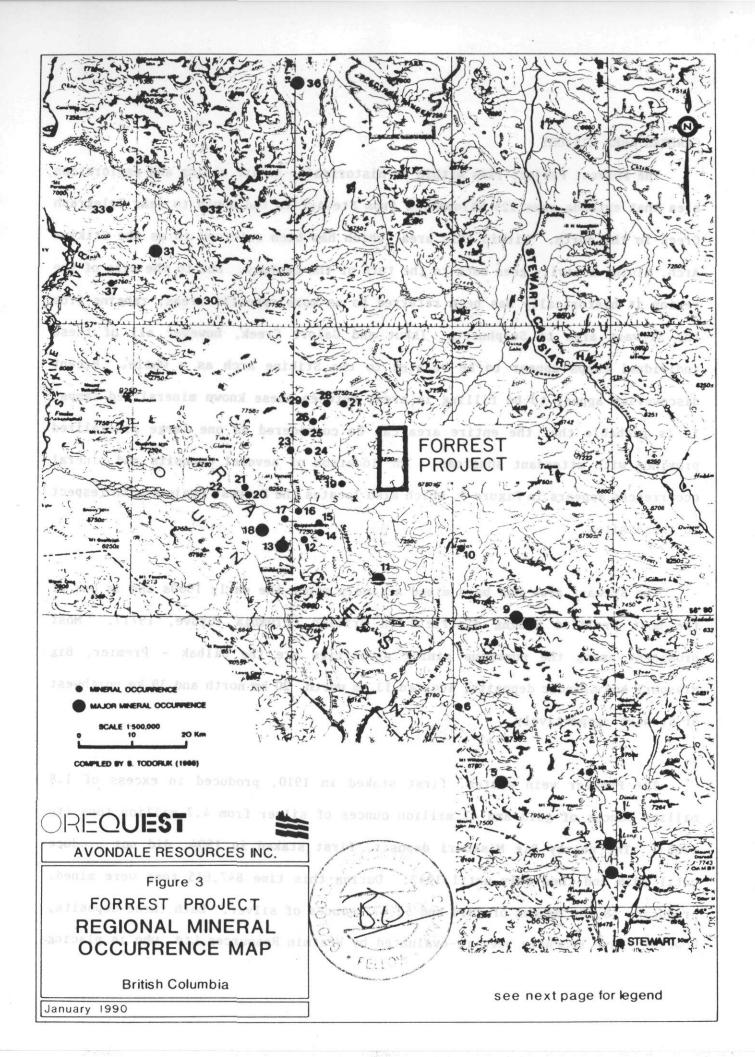


## GENERAL AREA HISTORY

The Forrest Project lies within an historically active mining and exploration area that extends some 225 kilometres from Stewart in the south to near Telegraph Creek in the north. Within this area, which has been referred to as the Stikine Arch, mining activity goes back to the turn of the century. Due to the size of the region it historically has been referred to as more specific areas, ranging from the Stewart area to Sulphurets, Iskut and Galore Creek, however all of these individual camps appear to be related to the Stikine Arch as a whole. Recent discoveries appear to be filling in areas between these known mineralized camps. It is probable that the entire area can be considered as one large mineralized province with attendant subareas. The location of several deposits and mineral occurrences appears in Figure 3, which also locates the Forrest Project with respect to these sites.

The Stewart area has been mined actively since the early 1900s and is one of the most prolific mining districts in British Columbia (Grove, 1971). Most prominent among the numerous mining properties are the Silbak - Premier, Big Missouri and Granduc deposits, located 13 km north, 20 km north and 39 km northwest of Stewart respectively.

The Premier vein system, first staked in 1910, produced in excess of 1.8 million ounces of gold and 41 million ounces of silver from 4.7 million tons (to 1968). The nearby Big Missouri deposit, first staked in 1904, did not produce until 1938 and then only until 1942. During this time 847,615 tons were mined, producing 58,384 ounces of gold and 52,677 ounces of silver. Both these deposits, however, have recently been re-evaluated by Westmin Resources Ltd. who is placing



#### PROPERTY OWNER

## MINERAL RESERVES AND/OR ELEMENTS

1 Westmin Resources Ltd./Silbak Premier Mines 2 Westmin Resources Ltd./Tournigan Mining Explorations Ltd. 3 Noranda (Todd Creek Project) Au 4 Scottie Gold Mine Au 5 Granduc 6 Echo Bay Mines/Magna Ventures/Silver Princess **Resources (Doc Project)** 7 Western Canadian Mining (Kerr Project) Cu, Au 8 Catear Resources Ltd. 9 Newhawk/Lacana/Granduc (Sulphurets Project -West Zone) 10 Calpine/Consolidated Stikine Silver Ltd. (Eskay Creek Project) 11 Consolidated Silver Standard Mines Ltd. (E & L Deposit) 12 Inel Resources Ltd. 13 Skyline Explorations Ltd. (Stonehouse Gold Deposit) 14 Kestrel Resources Ltd. 15 Hector Resources Inc. (Golden Spray Vein) Au, Ag 16 Tungco Resources Corp. 17 Winslow 18 Cominco/Prime Resources Corp. (Snip Deposit) 19 Pezgold Resource Corp. 20 Meridor Resources Ltd. Au 21 Delaware Resource Corp./American Ore Ltd. /Golden Band Au 22 Magenta Development Corp./Crest Resources Ltd. 23 Ticker Tape Resources Ltd. (King Vein) Au Au 24 Pezgold Resource Corp. 25 Consolidated Sea-Gold Corp. Au 26 Gulf International Minerals Ltd. (Northwest Zone) 27 Kerr Claims 28 Pezgold Resource Corp. (Cuba Zone) 29 Pezgold Resource Corp. (Ken Zone) 30 Pass Lake Resources Ltd. (Trek Project) Cu, Au 31 Galore Creek 32 Continental Gold Corp. 33 Bellex Resources Ltd./Sarabat Resources Ltd. (Jack Wilson Project) 34 Pass Lake Resources Ltd. (JD Project) 35 Lac Minerals (Hankin Peak Project) Au 36 Schaft Creek 37 Paydirt

6,100,000 tons 0.064 oz/t Au, 2.39 oz/t Ag 1,860,000 tons 0.09 oz/t Au, 0.67 oz/ton Ag 10,890,000 tona 1.79% Cu 470,000 tons 0.27 oz/ton Au, 1.31 oz/ton Ag 146,437 tons 0.827 oz/ton Au 854,072 tons 0.354 oz/t Au, 22.94 oz/ton Ag Au, Cu, Ag 3,200,000 tons 0.80% Ni, 0.60% Cu Au, Ag, Cu, Pb, Zn 876,000 tons 0.55 oz/ton Au, 1.0 oz/ton Ag Au, Ag, Cu, Pb, Zn Au, Ag, Cu, Pb, Zn Au, Ag, Cu, Pb, Zn 1,032,000 tons 0.875 oz/ton Au Ag, Au Au, Ag, Cu, Pb Au, Ag, Cu Ag, Cu, Au Ag, Pb, Zn Cu, Au 125,000,000 tons 1.06% Cu, 0.397 g/t Au. 7.94 g/t Ag Au, Ag, Cu Au, Cu Au, Cu 910,000,000 tons 0.30% Cu, 0.020% Mo, 0.113 g/t Au, 0.992 g/t Ag 200,000 tons 0.120 oz/ton Au

them both into production with announced reserves of 6.1 million tons grading 0.064 oz/ton gold, 2.39 oz/ton silver and 1.86 million tons grading 0.09 oz/ton gold and 0.67 oz/ton silver respectively (Canadian Mines Handbook, 1989-90).

The Granduc deposit, a massive sulphide copper orebody, was discovered in 1951 and put into production in 1971 with reserves of 39.32 million tons grading 1.73% copper with minor gold and silver values. Production ceased in 1978 but the mine was reactivated in 1980 until early 1984. Production to 1978 totalled 13,423,340 tonnes grading 1.32% copper and later production (1981-82) was 1,114,271 tonnes grading 1.17% copper.

Scottie Gold Mines commenced production on a vein deposit at the north end of Summit Lake in 1981 with reserves of 186,680 tons grading 0.76 oz/ton gold. It closed in 1985, having experienced financial difficulties brought on by depressed metal prices and loss of infrastructure as a result of the closure of the nearby Granduc facilities.

Bond International Gold Inc. recently announced the initial drill results from their Red Mountain Project (News Release, September 29, 1989). One discovery, referred to as the Marc Zone, produced a 66 m drill intersection grading 9.88 g/ton gold and 49.29 g/ton silver. Another area, the Willoughby Gossan Zone, produced a 20.5 m intersection grading 24.98 g/ton gold and 184.21 g/ton silver. These occurrences lie approximately 15.5 km and 23.5 km respectively east-northeast of Stewart.

The Forrest Project lies on the northern fringe of the Iskut-Sulphurets area which has seen extensive exploration in the last three years. The Iskut area originally attracted interest at the turn of the century when prospectors, returning south from the Yukon goldfields searched for placer gold and staked bedrock gossans. In the 1970s the porphyry copper boom drew exploration into the area. The new era of gold exploration began with the 1979 option of the Sulphurets claim block by Esso Minerals Canada and the 1980 acquisition of the Mount Johnny claims by Skyline Explorations Ltd. Skyline commissioned its mill in July, 1988. Cominco Ltd. and Prime Resources Corp. are projected to announce a feasibility decision on the adjacent Snip deposit in early 1990. There has been limited production from Catear Resources Ltd.'s Goldwedge Zone where the mill was commissioned in June, 1988.

Beyond these projects, and except for limited early placer gold recovery from some creeks, the area has had no mineral production history. Since 1979, more than 70 new mineral prospects have been identified, though ground acquisition was relatively slow until the fall of 1987 when the promising results of summer exploration programs became known and the provincial government announced the upcoming release of analytical results from a regional stream sediment survey. By April 1988, all open ground had been staked. More than 60 companies hold ground in the Iskut-Sulphurets belt but to date only small areas within this 40 x 80 km district have received extensive exploration.

In the Sulphurets Creek camp 40 km southeast of the Forrest property near Brucejack Lake, the vein-hosted West Zone of Newhawk Gold Mines Ltd. / Granduc Mines Ltd. / Corona Corporation is reported to contain 854,072 tons grading 0.354 oz/ton gold and 22.94 oz/ton silver while the Snowfield Gold Zone and Sulphurets Lake gold

zone are bulk tonnage low grade deposits containing 7.7 million tons of 0.075 oz/ton gold and 20 million tons of 0.08 oz/ton gold respectively (GCNL Aug. 24, 1989). Catear Resources Ltd.'s Gold Wedge Zone is reported to contain 146,437 tons of 0.827 oz/ton gold in a similar setting (Canadian Mines Handbook, 1989-90).

The Doc deposit located 47 km southeast of the Forrest property hosts 470,000 tons grading 0.27 oz/ton gold and 1.31 oz/ton silver, within a series of high grade but narrow quartz veins.

On the Snip property situated 30 km to the west-southwest, the Twin Zone, a 3 to 25 ft thick discordant shear vein cuts a thickly bedded sequence of intensely carbonatized feldspathic wackes and siltstones. Twin Zone reserves in all categories have been reported as 1,032,000 tons of 0.875 oz/ton gold (Prime Resources, 1989). This does not include additional reserves which may be developed outside the Twin Zone when mining begins. Twin Zone mineralization occurs in a banded shear zone comprising alternating bands of massive calcite, heavily disseminated to massive pyrite, crackle quartz and thin bands of biotite-chlorite.

At Skyline's nearby Johnny Mountain Mine, reserves in all categories are estimated at 876,000 tons of 0.55 oz/ton gold and 1.00 oz/ton silver with copper, zinc, and lead (Northern Miner, Aug. 21, 1989). Five major areas of gold-bearing sulphide are known. The most important Stonehouse Zone consists of sulphidepotassium feldspar-quartz vein and stockwork systems which have been only partly explored.

The most recently discovered and perhaps the most exciting gold mineralization occurs on the Eskay Creek property of Calpine Resources Incorporated/Stikine Resources Ltd., located 15 km southeast of the Forrest property. At the original 21 Zone discovery gold grading up to 0.73 oz/ton over 96.5 ft (hole CA88-6) occurs in several distinct lithologies in a 300 foot wide fault zone at a contact between Lower Jurassic Mt. Dilworth Formation volcanics and sediments (Northern Miner, 1988, p.20; Calpine Resources Incorporated News Release, January 6, 1989). More recent results have returned 0.875 oz/ton gold over 682.2 ft (CA89-109), 91.8 ft of 0.453 oz/ton gold and 16.91 oz/ton silver (CA89-93) and 55.8 ft of 0.867 oz/ton gold and 19.92 oz/ton silver (CA89-101 - Calpine News Release, August 21, 1989). Results of numerous other drill intercepts are being released as drilling is continuing at a rapid pace. The 21 Zone has now been traced over a minimum strike length of 1300 m and remains open at depth and to the northeast.

The E & L deposit is also situated in the area southwest of the Forrest property. This deposit was worked in the 1960s and early 1970s by trenching, drilling and 460 m of underground development, and has proven reserves of 3.2 million tons of 0.8% nickel and 0.6% copper (BCMEMPR Minfile). Mineralization consisting of disseminated pyrrhotite, chalcopyrite with minor pentlandite, pyrite and bornite occurs in a small stock of altered coarse grained gabbro.

The northwest portion of the Stikine Arch, known as the Galore Creek area, was the focus of widespread exploration in the 1950's, 1960's and 1970's for large tonnage porphyry copper deposits. Two major discoveries were made and exploration work defined reserves of 125 M tons grading 1.07% copper, 0.397 g/t gold and 7.94g/t silver at Galore Creek, and 910 M tons grading 0.30% copper, 0.113 g/t gold,

0.992 g/t silver and 0.02% molybdenum at Schaft Creek. More recently several companies have been restaking ground in this area to evaluate the gold potential. The Galore Creek deposit itself is the subject of renewed interest as it may include potentially gold enriched portions. Gold exploration is still at an early stage however several prospects are likely to receive further attention in 1990.

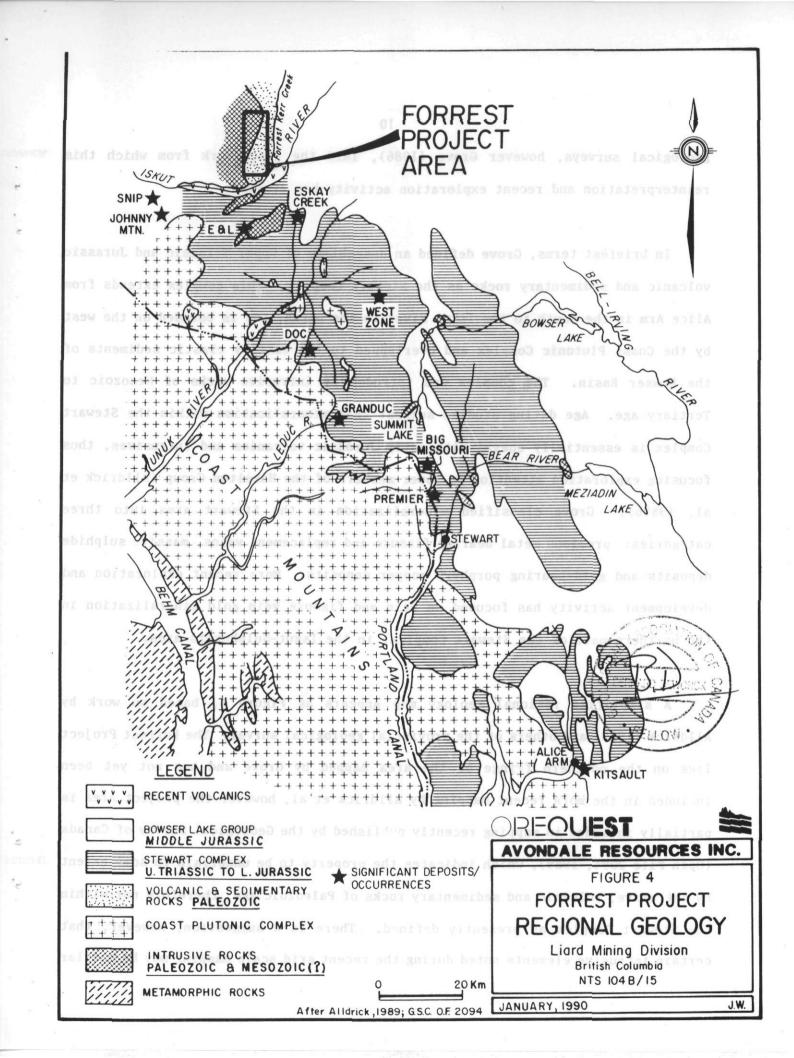
### PROPERTY HISTORY

An extensive mega-stockwork quartz vein system, now referred to as the Forrest Zone, first drew attention to the project area in 1987. The Forrest 1-4 claims were staked in August of that year and limited work in 1988 (Todoruk and Ikona, 1988; Dewonck, 1989) led to the discovery of several mineral occurrences, precipitating the staking of the Forrest 5-15 claims. During 1989 two grids were established, tied into a common 5300 metre long baseline. The Forrest and South Central Grids were mapped, soil sampled and covered by magnetic and resistivity surveys. Previously identified occurrences were followed up and prospecting continued throughout much of the project area, leading to the discovery of several new showings. Soil sampling along topographic contours was also carried out in steep terrain immediately north of the Forrest Grid and along portions of the east facing slopes west of Forrest Kerr Creek. Stream sediment and heavy mineral concentrates were collected from several drainages.

There is no record of work prior to 1987.

## **REGIONAL GEOLOGY**

The regional geological framework of the Stewart-Iskut-Galore area is undergoing extensive reinterpretation by both federal and provincial government



geological surveys, however Grove (1986), laid the groundwork from which this reinterpretation and recent exploration activity has evolved.

In briefest terms, Grove defined an assemblage of Upper Triassic and Jurassic volcanic and sedimentary rocks as the Stewart Complex. This complex extends from Alice Arm in the south to the Iskut River to the north, and is bounded on the west by the Coast Plutonic Complex and overlapped to the east by clastic sediments of the Bowser Basin. The complex was intruded by intrusive rocks of Mesozoic to Tertiary age. Age dating studies suggest that mineralization within the Stewart Complex is essentially coeval with early Jurassic volcanics and intrusives, thus focusing exploration attention on lower members of the Hazelton Group (Alldrick et al, 1989b). Grove classified mineralization in the Stewart area into three categories: precious metal bearing fissure and replacement veins, massive sulphide deposits and gold-bearing porphyry copper deposits. More recent exploration and development activity has focused on vein and fissure vein gold mineralization in the northern part of the Stewart Complex, in the Iskut-Sulphurets area.

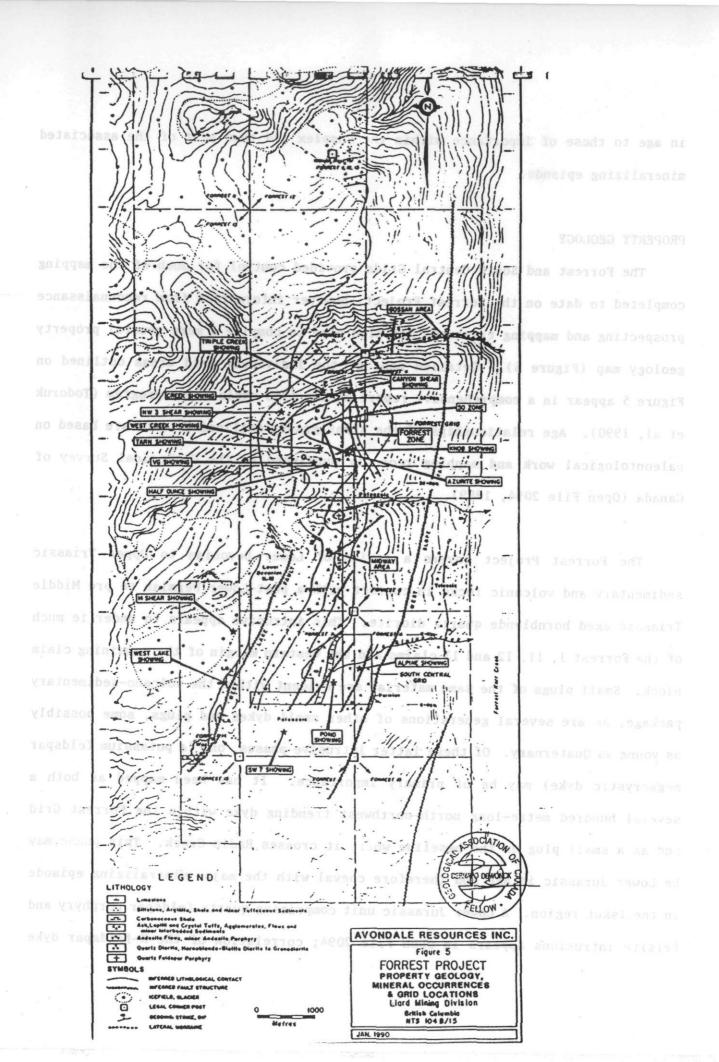
A simplified regional geology map appears as Figure 4, based on work by Alldrick (1989) and others of the provincial geological survey. The Forrest Project lies on the northern fringe of the area mapped by Grove and has not yet been included in the more recent mapping by Alldrick et al, however the project area is partially included in mapping recently published by the Geological Survey of Canada (Open File 2094, 1989), which indicates the property to be underlain to some extent by intrusive, volcanic and sedimentary rocks of Paleozoic age, therefore not within the Stewart Complex as presently defined. There is a suggestion, however, that certain intrusive elements noted during the recent grid scale mapping may be similar

in age to those of importance within the Complex and thus part of the associated mineralizing episode.

## PROPERTY GEOLOGY

The Forrest and South Central Grids provided control for much of the mapping completed to date on the Forrest Project, however information from reconnaissance prospecting and mapping traverses was also used to compile a more general property geology map (Figure 5). Detailed maps of the individual grid areas outlined on Figure 5 appear in a comprehensive report on the 1989 exploration program (Todoruk et al, 1990). Age relationships of the stratigraphy outlined to date are based on paleontological work and mapping recently published by the Geological Survey of Canada (Open File 2094, 1989).

The Forrest Project covers a series of Lower Devonian to Upper Triassic sedimentary and volcanic rocks in contact with a post-Lower Permian to pre Middle Triassic aged hornblende quartz diorite. This intrusive appears to underlie much of the Forrest 1, 11, 12 and 13 claims and the western margin of the remaining claim block. Small plugs of the same material are evident within the volcano-sedimentary package, as are several generations of other small dykes and plugs, some possibly as young as Quaternary. Of these latter intrusive phases, one (a potassium feldspar megacrystic dyke) may be of primary importance. It has been mapped as both a several hundred metre-long north-northwest trending dyke within the Forrest Grid and as a small plug on the baseline where it crosses Radio Creek. This phase may be Lower Jurassic in age and therefore coeval with the major mineralizing episode in the Iskut region. A Lower Jurassic unit comprising quartz feldspar porphyry and felsite intrusions appears in Open File 2094; correlation of the K-feldspar dyke



with this unit is tentative only, requiring field comparison and laboratory studies such as age dating to substantiate or discount this premise. Observations by J.R. Clark (1989) also suggest this link.

Structures on the property trend dominantly north-northeast. Stratigraphy between two prominent faults trends in this direction, with moderate westerly dips, paralleling the faults themselves. The West Lake and West Slope Faults both juxtapose older strata upon younger, from west to east across each fault line. A third fault, referred to on the Open File map as the Forrest Kerr Fault, trends along Forrest Kerr Creek just east of the diagram boundary of Figure 5. Fault names used in this report conform with the Open File map. In previous reports (Todoruk and Ikona, 1988; Dewonck, 1989) the West Slope Fault has been referred to as the Forrest Fault. All mineral occurrences noted to date are located west of the West Slope Fault, however this may be due more to the concentration of exploration in this area because of better rock exposure rather than to a particular tectonic or stratigraphic phenomenon.

It is estimated that the property has been affected by two and possibly three deformations (Clark, 1989). The first and strongest event predates Triassic rocks and effected lower greenschist metamorphism-greenschists in the volcanics and phyllites in the sediments. Folding is generally visible on the outcrop scale but it is difficult to map structures on a regional scale. A second phase affects all strata, characterized by minor fold axes plunging shallowly southwest, and the final event formed fold axes plunging shallowly to moderately northwest.

The oldest rocks evident to date on the property are Lower Devonian limestone fault-emplaced lenses on the hangingwall of the West Lake Fault. As indicated previously this limestone overlies a Permian volcano-sedimentary sequence, bounded by the West Slope and West Lake Faults, in the southern portion of the property. This package features a unit of ash, lapilli and crystal tuffs, agglomerates, flows and minor interbedded sediments; andesite flows with minor porphyritic elements; carbonaceous shale; and finally a sedimentary unit of siltstone, argillite, shale and minor tuffaceous sediments. This breakdown represents a generalization of more detailed mapping of the two grids on which individual map units and rock description vary. There are, for example, more mafic flow rocks noted on the Forrest Grid which to south, volcanic rocks gradually change from coarser members such as agglomerates and lapilli tuffs to finer ash and crystal tuffs with increased intervals of tuffaceous sediments.

The South Central Grid features several strong north-northeast trending fault structures, essentially paralleling the major topographic lineaments. The fault zones frequently have propyllitic alteration (chlorite and iron carbonate) associated with them. Quartz and minor quartz carbonate veins are common throughout the grid area however a particular affinity for the main andesite unit is evident. Alteration on the Forrest Grid appears to be intimately associated with individual mineral occurrences which will be discussed in greater detail later in this report.

## MINERALIZATION

There are nineteen separate showings or zones identified on Figure 5. Those with the greatest potential and/or geological significance will be described in

detail while the others will be summarized more briefly. Commodities present include gold, +/- arsenic, +/- copper, +/- silver.

#### Forrest Zone

Attention was first drawn to the project area by this extensive mega-quartz stockwork system which is well exposed over a 0.25 square kilometre area. While only weakly mineralized at best, initial assessment of the zone's significance was that it is indicative of a substantial hydrothermal event representing a higher level of the system and that potential existed for enhanced mineral values at depth. This premise was based on the discovery of other vein showings at topographically lower levels along Gossan Creek carrying significant gold, copper and/or arsenic values.

The zone consists of quartz veins whose orientations are variable but principally 000°/90° and 130°/60-85°NE. The latter orientation is dominant and indicative of the overall outline of the zone, as defined by weak alteration discolouration. Mineralization is restricted to erratically distributed minor disseminations of chalcopyrite and pyrite. Alteration of the host andesite is minor, evident as restricted envelopes of silicification, sericitization and traces of pyrite weathering to produce slight rust stains. Wallrock inclusions are commonly strongly chloritized and minor sericite occurs in late fractures in the quartz. Clark (1989) suggests that these veins may constitute a sheeted fracturefilling system above a Jurassic intrusion, where upwarping caused by the intrusion resulted in clean fractures in the andesite, infilled by quartz. Similar strain in the siltstones may have been distributed along bedding planes, precluding fracture development. Exploration of the zone at depth may be complicated by the

presence of underlying siltstones however some of the stronger hydrothermal feeders may penetrate them. The absence of mineralization within the zone itself is admittedly a negative factor, however several showings north of and topographically lower than the Forrest Zone (the North Ridge area) carry markedly higher gold, arsenic and/or copper values. The VG showing, situated southwest of and topographically higher than the Forrest Zone, includes quartz veins with variable orientations, albeit narrow, with significant visible gold, demonstrating that the system is far from being barren.

## Triple Creek Showing

Grab samples collected from these arsenopyrite-bearing quartz veins by Pamicon Developments Ltd. (Todoruk and Ikona, 1988) assayed from 60 ppb to 0.438 oz/t gold and 121 to 88,142 ppm arsenic. Chip sampling across 40 cm by the author at the site of the highest assay produced 0.068 oz/t gold and >2000 ppm arsenic (Dewonck, 1989). Similar variations in gold values were recorded by both Pamicon and OreQuest at another sample site. Several veins are exposed in three creek draws across 125 to 150 metres.

The easternmost vein exposures were hand trenched in 1989. Three veins with associated narrow stringers were exposed across 8 metres of which the easternmost was the most strongly mineralized. Four .5 m by .5 m panel samples collected by Pamicon down the dip of this vein assayed from 0.184 to 0.466 oz/t gold and a 1 m by 1 m panel sample from the next vein to the west assayed 0.000 oz/t gold (Todoruk et al, 1990). The former vein is strongly brecciated, unlike those within the Forrest Zone, but orientation approaches that of the dominant trend of the zone.

Wallrock (andesite) alteration is also relatively weak quartz-sericite +/- chlorite halos with widths comparable to the veins they enclose.

With the exception of the above trenching the Triple Creek veins remain poorly exposed and have not been traced beyond the showing area. They occur at substantially lower elevations than the Forrest Zone, however, and could represent the gold potential of the zone at depth. Several other quartz veins were noted from the air along the slopes above Gossan Creek, enhancing the probability that additional gold-bearing quartz veins will be identified.

## Creek Showing

This showing, located approximately 125 metres east of and 50 metres higher than the Triple Creek Showing, comprises a northeast trending vertically dipping shear zone up to 1.5 m wide. Grab sampling by Pamicon in 1988 ranged from 0.073 to 0.274 oz/t gold, 15,046 to >1-% copper and 18.5 ppm to 3.72 oz/t silver. A grab sample collected by the author assayed 0.190 oz/t gold, 8.61% copper and 3.92 oz/t silver. Follow up work in 1989 (Todoruk et al, 1990) defined a strike length of at least 150 m, along which one and sometimes two silicified zones, each up to 30 cm wide, are recognized. Mineralization within the shear is primarily chalcopyrite and pyrite, with minor magnetite, in a brecciated matrix. Arsenopyrite bearing quartz veins topographically below the zone and subparallel shears both above and below are reported (Clark, 1989). The shear zone has associated with it some of the strongest alteration noted to date on the property, a quartz-sericite-pyrite assemblage up to 2 m wide. Five channel samples collected by Pamicon produced values including 0.140 oz/t gold, 6.77% copper and 2.35 oz/t silver over 0.25 m to 0.122 oz/t gold, 2,056 ppm copper and 3.9 ppm silver over 1.0 metre. The lowest

gold value is 0.048 oz/t over 0.5 m, accompanied by 12,716 ppm copper and 16.7 ppm silver. This showing is of particular interest because of its occurrence within siltstone, accompanied by significant alteration and associated gold values. The perceived drawback of Forrest Zone style quartz veining being absent in the sediments in general may be mitigated by structures such as this, which is also located topographically below the Forrest Zone.

### Canyon Shear Showing

Similar in nature to the Creek Shear and located some 300 metres east of it, the Canyon Shear trends northeast and is evident as a linear more than 1000 metres long on air photos. Sampling to date has taken place at essentially one site only, down a steep canyon with limited access.

First examined briefly by OreQuest personnel in 1988 ("Gulch Showing, Raven, 1988), grab samples of a narrow arsenopyrite-bearing shear assayed 0.066 oz/t gold while a rusty zone assayed 0.193 oz/t. More detailed work in 1989 (Todoruk et al, 1990) identified a shear zone pinching and swelling up to 4 metres wide. Chalcopyrite, arsenopyrite and pyrite are present but are generally obscured by deep weathering in sheared goethite-rich areas. Phyllic alteration of the host andesite fades into chloritic alteration over about 0.5 metre, away from the zone.

Grab sampling by Pamicon, where an upper trench is now located on the northwest wall of the shear, produced 0.519 oz/t gold. Subsequent continuous panel samples, collected prior to trenching, along strike and downhill to the northeast (1 m long by 0.2 or 0.3 m wide), assayed from 0.140 to 0.160 cc c gold, the latter taken from the same site as the grab. Four trench samples were collected from the same site

but over panels up to 1.0 m by 1.0 m. Values ranged from 0.018 oz/t to 0.243 oz/t gold. Another trench was dug some 25 metres below the first, across 3.5 m of shear zone, and sampled on panels 0.9 to 1.1 m high and 0.8 to 1.0 m wide. Values here ranged from 460 to 1660 ppb, where a previously collected grab assayed 0.036 oz/t. The strike potential to the southwest has not been investigated.

## NW 3 Shear Showing

The sampling of a piece of talus by soil sampling crews led to the discovery of this zone, described as a silicified, chalcopyrite-bearing shear associated with a clay gouge zone which is possibly up to 5.0 metres wide (Todoruk et al, 1990). Southerly, upslope extension of the shear is estimated to be at least 100 to 150 metres. The talus sample (silicified material) assayed 0.166 oz/t gold, 13.3% copper and 28.7 ppm silver and the best channel sample result is 0.044 oz/t gold and 2.09% copper across 1.5 metres. The showing requires a more thorough examination but is significant due to its location within sediments and its apparent strength.

## VG Showing

Samples of quartz vein talus carrying visible gold were collected by Pamicon in 1988 (Todoruk and Ikona, 1988) and returned values up to 5.820 oz/t gold. Material assaying 0.108 oz/t gold was resampled by OreQuest (Raven, 1988) and produced 0.122 oz/t. While these samples are spectacular in nature, follow up work has found only thin, irregular quartz +/- carbonate +/- chlorite veins hosted by intermediate to mafic tuff breccias. Gold blebs up to several millimetres in diameter are usually associated with bornite and specular hematite. Clark (1989) has noted two styles of vein infilling: 1) multi stage crack and fill (mainly

quartz), and; 2) syn-tectonic quartz +/- carbonate +/- chlorite veins with acicular crystal growth perpendicular to vein walls. He suggests that the latter veins possibly carry gold remobilized from deeper levels, enhancing the depth potential of this area in particular and others in general. Mineral zonation on the property is only speculated at: bornite-hematite at higher levels (the VG Showing is situated topographically above the Forrest Zone), the appearance of chalcopyrite at lower elevations and arsenopyrite at the lower showings (Triple Creek, etc.). More select grab samples were collected by Pamicon in 1989 (Todoruk et al, 1990) which produced results similar to previous ones. The area warrants more detailed mapping and systematic sampling to gain a better understanding of its potential and relationship to other occurrences.

## Tarn Showing

This showing was discovered as talus float during the geological mapping program on the Forrest Grid. Semi-massive chalcopyrite hosted by a strongly sericitized lapilli tuff fault breccia assayed 0.353 oz/t gold, 22.4% copper and 118.3 ppm silver (Todoruk et al, 1990). Follow up of this talus sample located similarly brecciated material in place - strongly sericitic and displaying a strong shear fabric - as well as more mineralized talus. Limonitic iron-carbonate and quartz stringers appear to be strongly associated with the mineralization and two trenches across the trend of the zone exposed this feature, however the mineralization was not as massive as that found in the original talus sample. The best of three trench samples assayed 0.060 oz/t gold and 9, J ppm copper across 1.2 metres. Seven other grab samples produced gold values ranging from 0.044 oz/t to 0.266 oz/t and copper values ranging from 6070 ppm to 11.9%. This work took place during the first snowfall of the season, which precluded more detailed

evaluation. The host tuffaceous sediments have undergone quartz-sericite alteration over several metres on both sides of the fault, as well as exhibiting a wider weak sericite-chlorite assemblage.

## 50 Zone

Several blocks of talus material comprising arsenopyrite and chalcopyritebearing quartz veins and brecciated quartz first defined this zone. Located in the northern portion of the Forrest Grid, the zone includes an area of quartz veining within which a 6 to 10 cm wide zone of massive fine-grained arsenopyrite is situated along the footwall of a 20 to 30 cm wide vein. Strike extension of this southeast trending vein appears to be interrupted by late stage north trending slip planes, however this vein alone cannot account for the widely dispersed float and soil anomalies (discussed later) in the area. The vein orientation approaches that of the principal Forrest Zone trend however the 50 Zone lies on the opposite side of an east-west trending fault from the Forrest Zone. The influence of this fault on the spatial relationship between the two in terms of the vertical mineral zonation hypothesis remains to be determined but the 50 Zone itself warrants detailed work. Numerous select grab samples from talus material produced gold values ranging from 520 ppb to 0.244 oz/t (Todoruk et al, 1990) and a grab of the arsenopyrite in place produced 5,110 ppb gold.

#### Other Zones

Several other occurrences are labelled on Figure 5. Collectively they are indicative of the large area over which mineralization of a varied nature occurs on this property. Brief summaries of these showings follow.

The Azurite Showing comprises a semi massive to massive chalcopyrite (bedded?) zone or flat lying shear with high copper values but less significant gold values. Grab sampling in 1988 (Todoruk and Ikona, 1988) produced copper values in excess of 10%, silver to 76.6 ppm and gold to 740 ppb. Channel sampling over 1 m intervals by OreQuest (Raven, 1988) produced copper >20,000 ppm and up to 400 ppb gold. More detailed channel sampling in 1989 (Todoruk et al, 1990) yielded a high of 0.046 oz/t gold, 0.81 oz/t silver and 7.91% copper over 1.0 m.

The Knob Showing features veining similar to that in the Forrest Zone but with stronger copper mineralization. Pamicon grab samples (1988) produced highs of 6.90% copper, 2.02 oz/t silver and 0.026 oz/t gold. Channel, chip and grab sampling by OreQuest (Raven, 1988) produced comparable copper and silver values but lower gold values.

The Half-Ounce Showing derives its name from a quartz vein which assayed 0.504 oz/t gold (Todoruk and Ikona, 1988). This isolated occurrence is located at an elevation intermediate to the VG Showing (above) and the Forrest Zone (below). Other chalcopyrite-bearing and malachite-stained veins in the area produced low gold values. No additional work was done here in 1989 other than coverage by the grid surveys.

The West Creek Showing is a 1989 prospecting discovery from which only limited data was obtained (Stammers, personal comm.). It consists  $\uparrow$  chalcopyrite bearing fractures in and adjacent to a shear zone outcropping in precipitous terrain. Grab sampling has produced up to 25.6% copper, 0.032 oz;t gold and 42.7 ppm silver. The Midway Area has been noted to have several quartz veins 2 to 3 m wide containing chalcopyrite and malachite however no follow up work has taken place to date.

The 14 Shear Showing comprises a zone 0.3 to 2.0 metres wide located along a 150 metre strike length. Chalcopyrite and pyrite mineralization occurs as disseminations but more commonly as discontinuous chalcopyrite stringers. Grab samples (Todoruk et al, 1990) have produced up to 0.102 oz/t gold and 11.4% copper while panel sample values reach 0.006 oz/t gold and 4.81% copper. The showing is hosted by intrusive diorite. This unit has received little attention to date and the existence of the 14 Shear indicates that further exploration in the diorite is warranted.

The West Lake Showing features a system of fracture controlled chalcopyrite stringers of various orientations which vary in width from 1 to 2 mm to more commonly 1 cm. One massive chalcopyrite vein 30 to 40 cm wide is reported (Todoruk et al, 1990) producing 11.10% copper, 2.81 oz/t silver and no gold. Other select grab samples also produced values of similar magnitude. The fractures occur over an area approximately 100 metres in diameter.

A sheared quartz-chalcopyrite-pyrite breccia called the SW 7 Shear is a late discovery. The west trending zone is limited by a major fault structure to the northwest. A select grab of massive chalcopyrite assayed 21.5% copper, 8.84 oz/t silver and 105 ppb gold. Other samples reflect similar mineralogy, comparable to that of the West Lake Showing. The Pond and Alpine Showings are quartz vein occurrences hosted by an andesite unit within which quartz veining is much more prevalent than in other units. Arsenopyrite, chalcopyrite, pyrite, malachite/azurite and, in the case of the Pond Showing, galena carry erratic gold values. The veins appear to be related to fault structures, filling tension gashes parallel and oblique to the shear direction (Clark, 1989).

### GEOCHEMISTRY

Geochemical sampling has been carried out as three types of surveys, in addition to the rock sampling of mineral occurrences: stream sediment and heavy mineral sampling, contour soil sampling in areas of severe topography and detailed grid sampling over both the Forrest and South Central Grids. The results of each survey are outlined below, based on data reported from the 1989 exploration program (Todoruk et al, 1990).

## Stream Sediment and Heavy Mineral Sampling

Both conventional silt samples and panned concentrates of heavy minerals were collected at several sites on accessible drainages flowing into Forrest Kerr Creek and Gossan Creek. The highest heavy mineral anomaly (4,690 ppb gold) occurs at the mouth of Alpine Creek (Figure 5) whose drainage is only partially covered by the South Central Grid. Other anomalous results were recorded in tributaries on the south side of Gossan Creek, below known occurrences, as well as in an unnamed drainage some 1200 metres north of Alpine Creek. A tributaries of Gossan Creek influenced by a large, unexplored portion of the Forrest 13 claim yielded 250 ppb in a heavy mineral concentrate sample.

Grid Soil Sampling

Substantial coverage of both the Forrest and South Central Grids was completed where topography and soil development permitted. The initial program consisted of samples collected at 25 metre intervals on lines spaced at 50 metres. Restricted areas were sampled in greater detail by adding lines at the intervening 25 metre spacing.

Geochemical data was analyzed statistically by Montgomery Consultants Ltd. Almost 3000 samples were included in this analysis for which the samples were sorted into two lithologically defined groups, ie. soils derived from 1) andesites, or 2) interbedded sediments and volcanics. The two grids were treated individually, resulting in different background and anomalous levels for each grid for the same element in the same lithology. Of the eleven elements used in initial calculations, gold, copper and arsenic were deemed to be the most significant and were selected for more detailed evaluation. The several populations that exist for each element in some cases have overlapping limits. In these instances compromise contour levels were selected as listed below:

### TABLE2

Forrest Grid Geochemical Contour Intervals

LITHOLOGY	ELEMENT		CONTOUR INTERVAL
Andesite	Gold	30-50 ppb 50-132 ppb >132 ppb	Upper background/lower anomalous Mainly anomalous Highly anomalous
	Arsenic	139-211 ppm 211-654 ppm >654 ppm	Upper background/lower anomalous Mainly anomalous Highly anomalous
	Copper	337-550 ppm >550 ppm	Anomalous Highly anomalous

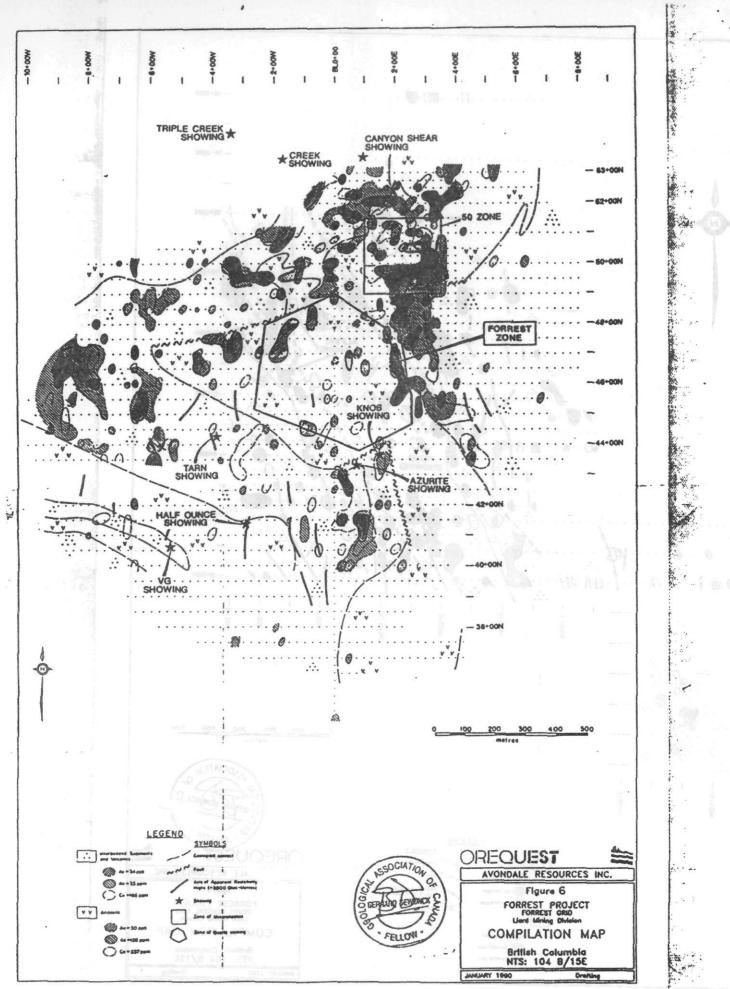
LITHOLOGY	ELEMENT		CONTOUR INTERVAL
Interbedded Sediments and Volcanics	Gold	35-50 ppb 50-80 ppb >80 ppb	Upper background/lower anomalous Anomalous Highly anomalous
	Arsenic	33-64 ppm >64 ppm	Upper background/lower anomalous Anomalous
	Copper	166-275 ppm >275 ppm	Upper background/lower anomalous Anomalous

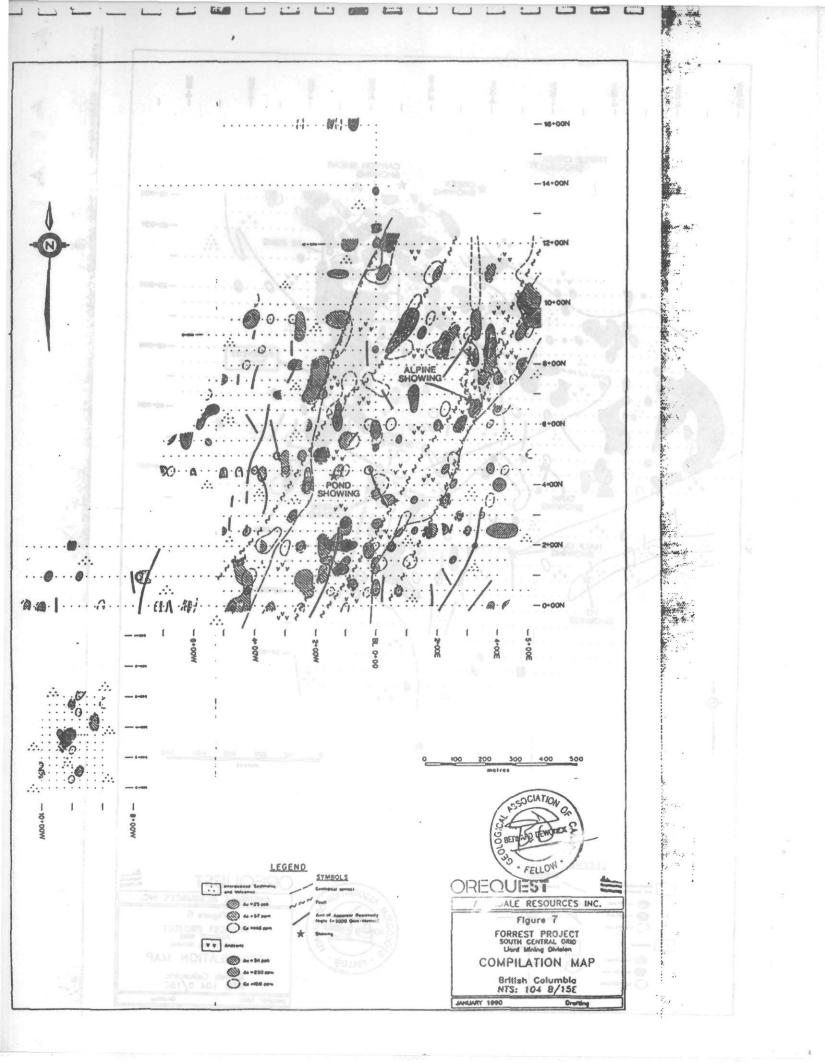
# TABLE 3

South Central Grid Geochemical Contour Intervals

LITHOLOGY	ELEMENT		CONTOUR INTERVAL
Andesite	Gold	34-65 рр <b>b</b> >65 ррb	Upper background/lower anomalous Anomalous
	Arsenic	250-1400 ppm >1400 ppm	Anomalous Highly anomalous
	Copper	150-210 ppm >210 ppm	Upper background/lower anomalous Anomalous (?)
Interbedded Sediments and			
Volcanics	Gold	24-45 ppb >45 ppb	Upper background/possible anomalous Anomalous (?)
	Arsenic	57-160 ppm >160 ppm	Possibly anomalous Anomalous
	Copper	148-284 ppm >284 ppm	Possibly anomalous Anomalous

Compilation maps for the Forrest Grid and South Central Grid (Figures 6 and 7 respectively) show each element as contoured above backgrid id ie. incorporating all anomaly levels. Contour lines have been "merged" across lithological boundaries to integrate anomaly-equivalent levels.





Four areas within the Forrest Grid display geochemical responses which warrant detailed follow up work (Figure 6). The most prominent area's axis extends from L45+50N, 2+00E to L53+00N, 3+75E, defined by several patches of anomalous gold values which peak at 150, 615 and 2,370 ppb. A more extensive arsenic anomaly and patches of associated copper values give the zone a width of approximately 100 to 150 metres, with the most consistent gold-arsenic-copper coincidence occurring immediately north of an east-west fault contact in the southeast corner of the 50 Zone. It is this geochemical trend that led to the discovery of the 50 Zone mineralization. Associated with this generally northerly trend is an arcuate zone of coincident copper-arsenic values, accompanied by more discrete gold anomalies. It wraps around the northwest corner of the 50 Zone outline on Figure 6 and ends at roughly L51+50N, 0+00.

The second priority area lies immediately west of this point along strike from the Canyon Shear Showing. The northeast trend consists of intermittent copper, arsenic and gold values along the northwest margin of the grid, where sampling could not be systematically extended because of steep terrain, from L50+00N, 3+50W to L52+50N, 0+50W.

A more broadly defined zone (arsenic primarily) constitutes the third area of interest, located several hundred metres to the southwest along the Canyon Shear trend and centred near the end of L 46+00N. Spot gold values within this zone reach 360 ppb.

The fourth area is situated south of the Azurite Showing, extending from L 40+00N to L 43+00N and defined by intermittently coincident copper, arsenic and gold

anomalies. Further work is required to determine the relationship, if any, between this feature and the Azurite Showing or, more generally, the first anomaly trend discussed above.

Turning to the South Central Grid (Figure 7), it is evident that gold, arsenic and/or copper values occur more as widely distributed but smaller anomalies than as definitive, coincident linear zones. It appears, however, that the more significant anomalies, as well as greater instances of anomaly coincidence, occur within the principal andesite unit which hosts both the Alpine and Pond Showings.

Linear geochemical trends are difficult to recognize, if they in fact exist, however some association can be made with other features. It is possible to envisage a series of intermittently coincident copper, arsenic and gold anomalies along a narrow trend from L 0+00N, 4+75W to L 11+00N, 2+00E particularly because it roughly parallels a prominent northeast trending fault and, in the southern portion, a geological contact. Similarly, a trend incorporating the Alpine Showing is associated with two parallel fault traces, from L 6+00N, 2+75E to L 12+00N, 5+25E.

Much more restricted, and less clearly defined as a trend, are arsenic and gold anomalies near a fault and a resistivity high south of the Pond Showing. This particular grouping however, does include the highest gold values encountered on the grid - up to 6570 ppb gold and should be the primary trenching target on this grid. Even more limited are anomalous values associated with a northwest trending resistivity high immediately east of the Pond Showing.

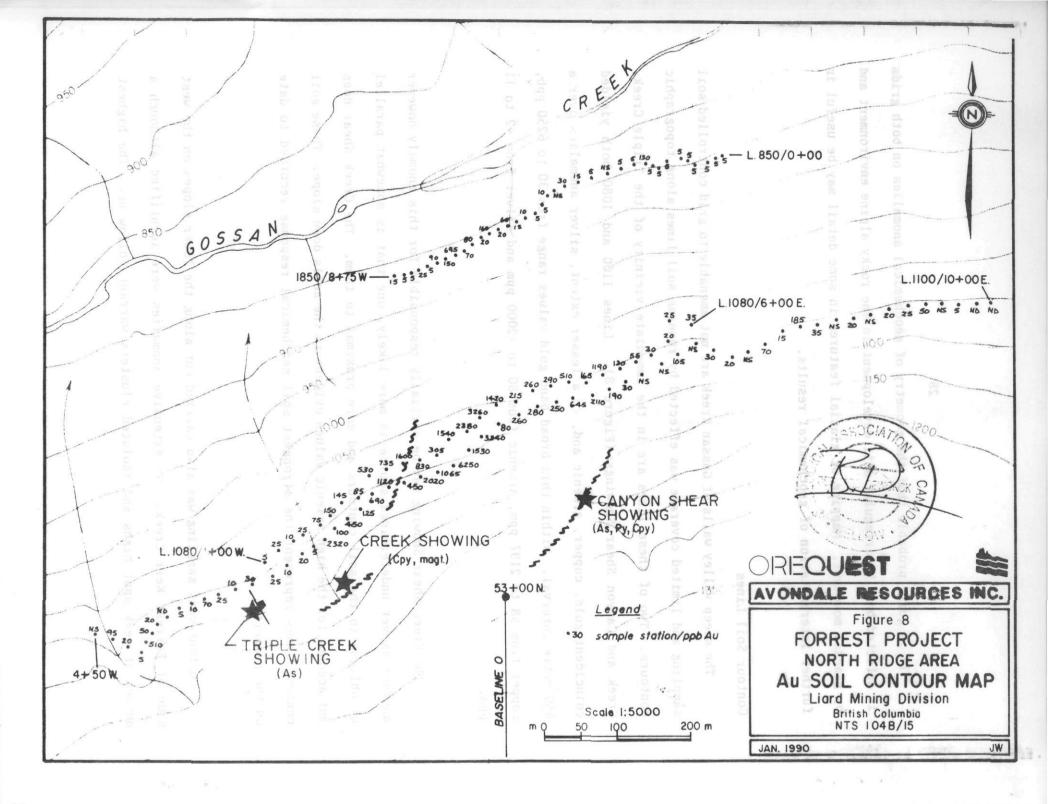
It is quite probable that the geometry of geochemical anomalies on both grids is affected both by irregular soil development in the rocky alpine environment and by glacial movement. Mapping of glacial features in some detail may be useful in further interpretation of geochemical results.

### Contour Soil Lines

The steep valley walls of Gossan Creek are not amenable to grid controlled soil sampling and limited coverage was effected by running soil lines along topographic contours. Two of these lines are in the immediate vicinity of the Triple Creek, Creek and Canyon Shear Showings (Figure 8). Lines 1100 and 1080 both yielded coincident gold, copper, arsenic and, to a lesser extent, silver anomalies over a 450 metre interval. Within this broad band gold values range from 30 to 6250 ppb, copper from 58 to 2197 ppm, arsenic from 80 to >2000 ppm and silver from <2 to 11 ppm.

The Creek Shear Showing may be partially responsible for this anomaly however another as yet undetermined source is more likely, one that is somewhat parallel or oblique to the soil contours and more proximal to them. The Creek Shear does not account for the high arsenic values evident in the soils down slope. These soil contour lines represent the strongest soil geochemical response recorded to date on the property.

Contour soil sampling was also carried out along the lower slopes on the west side of Forrest Kerr Creek. No extensive anomalies were identified although a number of weak spot highs and isolated clusters warrant follow up. The highest



values obtained are 385 ppb gold, 210 ppm arsenic and 816 ppm copper at one site. Other elevated gold values range from 35 to 103 ppb.

#### GEOPHYSICS

Two basic geophysical surveys were conducted over the grids: a magnetic survey using an EDA Omnimag PPM-300 total field magnetometer in conjunction with an EDA Omnimag P375 base station recorder, and a resistivity survey using a Ronka EM16R (Geonics Ltd.).

The magnetic data appears to be of no consequence in defining salient features. Values on the Forrest Grid show a maximum relief of 1095 gammas, due entirely to a diorite plug. The vast majority of the grid displays a variation of only 150 gammas. The maximum relief on the South Central Grid is even lower, 572 gammas, however two isolated highs on L 2+00N occur in an area of known sulphides and should be investigated. Because of the lack of significant features in the magnetic data it is not included in this report.

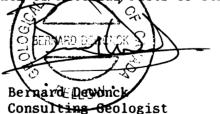
Results of the resistivity surveys appear as axes of resistivity highs on the compilation maps. In the case of the Forrest Grid (Figure 6), correlation of mineralization with resistivity data is not readily evident as mineral occurrences and anomalous gold geochemistry are associated with all resistivity levels. Resistivity lows (<300 ohm metres) appear to be associated with shales and/or argillites and may also be influenced by ice melt waters (Todoruk et al, 1990). Values over the grid as a whole range from 10 to 9000 ohm metres.

The South Central Grid features a prominent narrow resistivity low (<100 ohm metres) (Todoruk et al, 1989) which appears to be intimately associated with the belt of carbonaceous shales shown on the geology map (Figure 5). West of this zone readings exceed 1000 ohm metres and represent nothing of interest in view of the geological and geochemical evidence available. East of the zone, the area underlain predominantly by crystal and lapilli tuffs produces relatively flat values in excess The most complex resistivity data is associated with the of 1000 ohm metres. andesites and tuffaceous siltstones, within which much of the anomalous geochemistry and observed mineralization occurs. While some of the quartz veins and gold geochemical anomalies can be correlated with local resistivity highs (>1000 ohm metres), plotted copper and pyrite occurrences coincide with lows (<100 ohm metres) including the flanks of the shale zone. The lows, therefore, could be associated with either sulphides or local intercalations of carbonaceous material, or both. Of the resistivity highs shown on Figure 7, the one south of the Pond Showing, which may have some relationship with a subparallel fault structure and geochemical anomalies, could be of interest.

### CERTIFICATE of QUALIFICATIONS

I, Bernard Dewonck, of 11931 Dunford Road, Richmond, British Columbia hereby certify:

- I am a graduate of the University of British Columbia (1974) and hold a BSc. degree in geology.
- 2. I am an independent consulting geologist retained by OreQuest Consultants Ltd. of 306-595 Howe Street, Vancouver, British Columbia.
- 3. I have been employed in my profession by various mining companies since graduation.
- 4. I am a Fellow of the Geological Association of Canada.
- 5. I am a member of the Canadian Institute of Mining and Metallurgy.
- 6. This report is based on a review of information listed in the Bibliography, visits to the property in October, 1988, September, 1989, and a review of currently available field data.
- 7. Neither OreQuest Consultants Ltd. nor myself have or expect to receive direct or indirect interest in the property or in the securities of Avondale Resources Inc.
- 8. I consent to and authorize the use of the attached report and my name in the Companies' Prospectus, Statements of Matrian Facts or other public document.



DATED at Vancouver, British Columbia, this 24th day of January, 1990.

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# AVONDALE RESOURCES INC.

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# REPORT AND FINANCIAL STATEMENTS

February 28, 1989

CORCORAN & COMPANY