

## **ASSESSMENT REPORT ON DIAMOND DRILLHOLE CF97-17**

## FORS PROPERTY

FORT STEELE MINING DIVISION N.T.S. 82G/5W

## LATITUDE 49° 22'

LONGITUDE 115° 59'

Report for:

Citation Resources Inc. Suite 922 - 510 West Hastings St. Vancouver, B.C. V6B 1L8

Report by:

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> April, 1998 EOLOGICAL SURVEY BRANCH ASSESSMENT REPORT

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#### ASSESSMENT REPORT ON DIAMOND DRILLHOLE CF97-17 FORS PROPERTY Fort Steele Mining Division NTS 82G/5W

#### 1.00 SUMMARY

The Fors property is Sullivan-type base metal prospect, located in southeastern B.C., Canada. This report records geological data gained from the completion of diamond drill hole CF97-17.

The property is located 18 km southwest of Cranbrook, B.C. The claims are well serviced by a network of old forestry roads. The Fors claims cover steep mountain terrain all below timberline.

The claims were first staked by H. Fors in 1965. The claims were worked intermittently by Cominco Ltd. from 1966 to 1983. Placer Dome, in 1988, worked the property for one season. Consolidated Ramrod Gold Corp. (now Quest International Resources Corp.) explored the claims from 1992 - 1996. In the fall of 1996 the property was optioned to Citation Resources.

The Fors property is currently owned 50% by Chapleau Resources Ltd. and 50% by Barkhor Resources Inc. The property consists of 16 claims totaling 128 units.

The Fors property is underlain by Middle Proterozoic sediments and intrusives. The sediments on the claims are subdivided into the Lower and Middle Aldridge Formations. A thick gabbro sill intrudes the sediments near the contact between the Middle and Lower Aldridge contact. The Moyie Fault, a major regional thrust fault, cuts the property along it's southern boundary. Rocks on the property are metamorphosed to biotite and garnet greenschist facies.

Mineralization on the Fors property consists of Pb,Zn,As,Au,Bi and W hosted in and adjacent to a discordant fragmental pipe. Sulphides associated with intense hydrothermal alteration occur within and around the fragmental pipe. The pipe structure is capped by thick alteration assemblages consisting of plagioclase, carbonate, biotite, calc-silicate and talc. The core of the fragmental pipe is intensely tourmalinized. The alteration cap is overlain by a bedded massive sulphide layer which has a maximum thickness of 2 m. The bedded massive sulphide consists mainly of sphalerite, galena and pyrrhotite. A massive sulphide vein, 2 m thick, consisting of

pyrrhotite, arsenopyrite, galena, sphalerite and rare scheelite, cuts the fragmental pipe and the overlying alteration cap.

Diamond drill hole CF97-17 was collared at a depth of 468.6 m off the bottom of a preexisting hole. The hole was drilled at -70° on a azimuth of 130° to a total depth of 1,060 m. The hole achieved it's objective and did test the Sullivan Horizon. The hole did not find base metal mineralization of economic interest at Sullivan Time, therefore no further drilling is recommended.

#### 2.00 INTRODUCTION

#### 2.10 Objective

Diamond Drillhole CF97-17 was designed to test the Lower-Middle Aldridge contact (Sullivan Horizon) for lead-zinc mineralization.

#### 2.20 Location and Access

The Fors property is situated immediately west of Monroe Lake, approximately 18 km southwest of Cranbrook, B.C. The claims are located in the Fort Steele Mining Division plotted on NTS mapsheet 82G/5W, centered around longitude  $115^{\circ}$ , 59' and latitude  $49^{\circ}$  22' (see Figure 1).

Access on the property is provided by a network of old logging roads.

#### 2.30 Physiography

The property is west of the Rocky Mountain Trench in the Moyie Range of the Purcell Mountains. The claims cover steep sided mountains with rounded and rolling tops. The land forms are typical of valley glaciation which was not accompanied by Alpine glaciation. The property is drained by the south east flowing Little Lamb creek. Little Lamb creek drains into Lamb Creek which flows southeast into Moyie Lake.

The climate is transitional between maritime and continental with average monthly precipitation totals of 30 mm. Temperatures in July average 26°C and in January -5°C. In the winter months the property is covered by 1.0 m to as much as 2.0 m of snow.

The entire property is below timberline and has a maximum relief of 850 m. The claims lie between 1,067 m and 1,920 m of elevation (A.S.L.).

#### 2.40 Flora and Fauna

Most of the old growth forest which once covered the property was harvested some 40 to 50 years ago. Some old growth Douglas fir and western larch remains in terrain which is too steep for logging.

The property is well forested by second growth timber consisting of lodgepole pine, Douglas fir, western larch with rare white pine and cedar.

The area contains abundant big game, mainly, elk, moose, mule deer, white tail deer, cougar, black bear and rare grizzly bear.

**2.50 Property Description** (See Figure 2)

The following claims listed below are owned 50% by Chapleau Resources Ltd. and 50% by Barkhor Resource Inc.

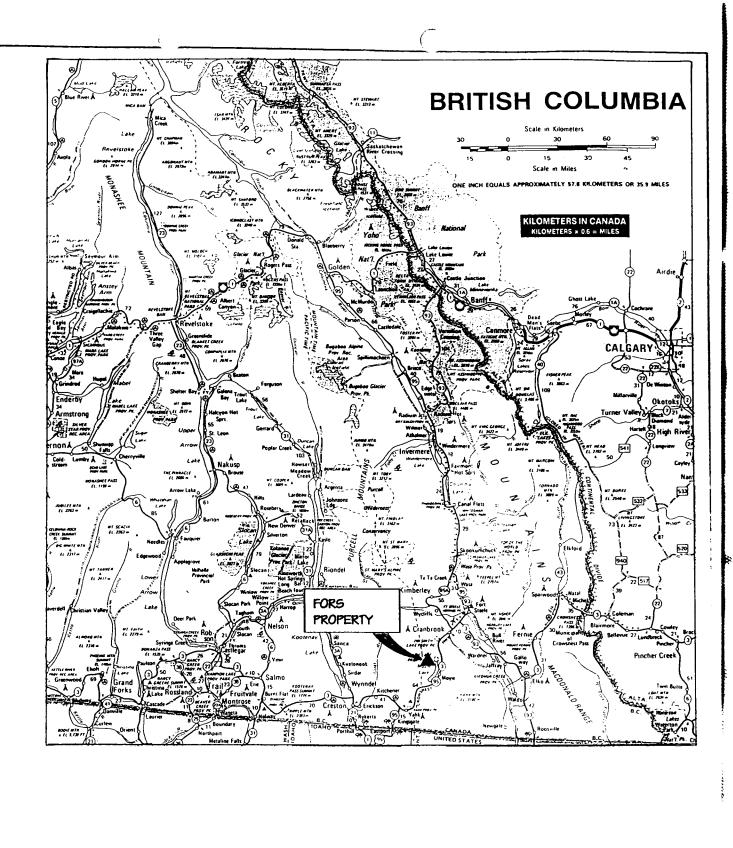
<u>Claim Name</u>	<u>Units</u>	Record No.	<u>Anniv.</u>
Lynx 23	1	315087	Dec. 9/2003
Lynx 24	1	315086	Dec. 9/2003
Lynx 25	1	315085	Dec. 11/2003
Lynx 26	1	315081	Dec. 11/2003
Lynx 27	1	315080	Dec. 11/2003
Puma	16	210303	April 27/2002
Puma 1	12	210304	April 27/2001
Puma 2	20	210403	Dec. 17/98
Puma 3	15	210404	Jan. 25/2000
Puma 4	1	314828	Nov. 19/99
Puma 5	1	314829	Nov. 19/99
Puma 6	1	314830	Nov. 19/99
Puma 7	1	314831	Nov. 19/99
Cougar 1	20	210413	Feb. 24/2001
Cougar 2	16	210408	Feb. 5/99
Cougar 3	20	210409	Feb. 8/99

#### 2.60 HISTORY

The original Fors claims were staked in 1965 by H. Fors of Kimberley, B.C. to cover a number of float boulders containing significant sediment-hosted Pb-Zn mineralization.

The property was worked intermittently by Cominco Ltd. in 1966, 1967, 1976, 1982 and 1983. Cominco completed limited soil geochemical, geophysical, geological mapping and diamond drilling programs designed to find the source of the mineralized float and to test Sullivan Time on the property. Cominco completed 7 seven diamond drillholes totalling 944.0 m.

Private interests staked the original Fors ground after Cominco allowed it to lapse. In 1988, the property was optioned to Placer Dome. They conducted geological and geochemical work for one season.



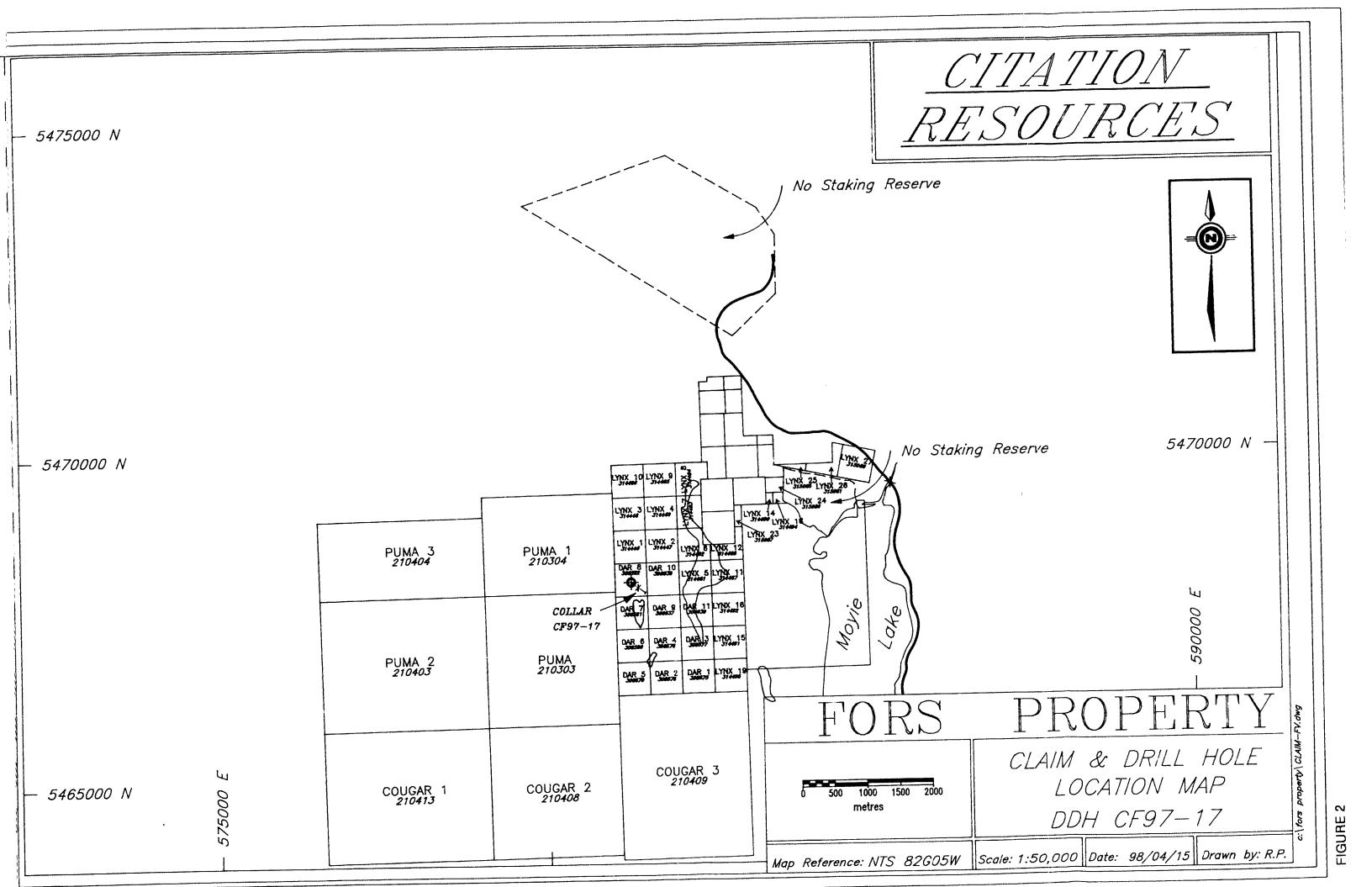
## FORS PROPERTY

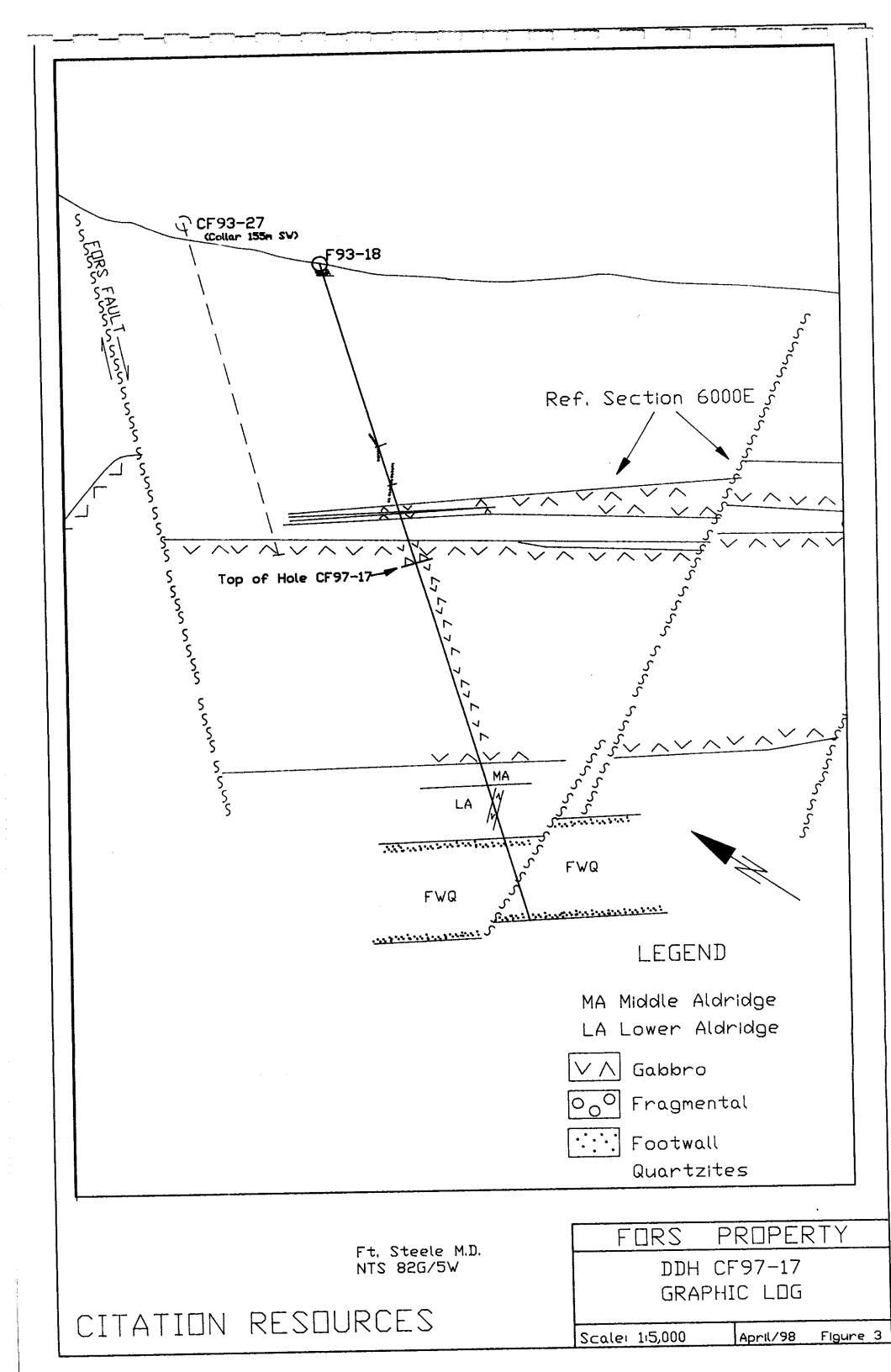
# PROPERTY LOCATION MAP

Scale: as shown

Date: April/98

Figure l





In the fall of 1993, Chapleau Resources Ltd. and Barkhor Resources Inc. optioned the Fors property and commenced a diamond drill program. Consolidated Ramrod Gold Corp. (now Quest International Res. Corp.) eventually optioned the property from Chapleau and Barkhor.

Consolidated Ramrod operated the property from 1992 to 1996. During that time Consolidated Ramrod conducted an I.P. Survey and completed 32 diamond drillholes totalling 13,147.0 m. Consolidated Ramrod's work discovered two Pb-Zn rich massive sulphide beds, 10 and 100 cm thick, immediately underlain by a sulphide rich (Pb,Zn,Ag,Au,Bi,As,W&Sm) tourmalinized and albitized cross cutting fragmental structure (Fors Vent). Consolidated Ramrod concluded that the massive sulphide deposit above the Fors Vent is too small to be economic and therefore dropped the option agreement for the property in the Fall of 1996.

In the Fall of 1996 the property was re-optioned to Citation Resources Inc.. Citation's objective was to test the Sullivan Horizon in areas adjacent to the Fors Vent.

3.00 GEOLOGY

#### 3.10 Regional Geology 3.11 <u>Stratigraphy</u>

Aldridge Formation

The Aldridge Formation has been sub-divided into three informal units, the lower, middle and upper Aldridge Formations. Regionally, the lower Aldridge Formation is comprised of grey weathering quartz wacke and siltstone interbedded with silty argillite. The middle Aldridge Formation is comprised of "... thick-bedded, massive to graded quartz arenite and wacke beds, thin-bedded siltstone and, minor argillite" (Höy 1993). In the Moyie area, the Middle Aldridge unit is in excess of 2800 meters thick.

The basal part of the middle Aldridge generally consists of grey weathering, interbedded siltstone and arenite with minor intervals of silty argillite. In the upper middle Aldridge succession, competent quartz arenite and siltstone intervals are thinner with a corresponding increase in the proportion of more recessive, interbedded siltstone and argillite. The upper part of the middle Aldridge "... comprises a number of distinct cycles of massive, grey quartz arenite beds that grade upward into an interlayered sequence of siltstone and argillite ... The contact with the Upper Aldridge is placed above the last bed of massive grey quartz arenite" (Höy 1993).

Intraformational conglomerates have also been described at varying stratigraphic levels in the Aldridge Formation, from the upper portion of the lower Aldridge, at the lower-middle contact and in the lower portion of the middle Aldridge. They range from conformable to crosscutting zones of intraformational conglomerate to massive zones of siltstone or wacke.

The intraformational conglomerates (fragmental) layers are generally massive to poorly bedded, occasionally with a crude fining upward texture. Clasts and/or fragments range from a few millimeters to many centimeters in diameter and are clast to matrix supported in a silty matrix. Both conglomerate clasts and the matrix are compositionally identical with the host Aldridge Formation.

"Crosscutting zones of conglomerate or massive sandstone are less common. A zone of massive sandstone several tens of meters wide and containing abundant lithic fragments is exposed ... just south of Moyie. It is vertical, cutting across essentially flat-lying middle Aldridge turbidite beds. Its contact is irregular and a poorly developed vertical banding is apparent in the first few meters of the edge of the zone. The zone dies out upsection, and is overlain by flat-lying turbidite beds"

Other crosscutting zones occur beneath the Sullivan orebody, North Star Hill and at the St. Joe prospect. In contrast with the Moyie structures, these are associated with tourmaline alteration and sulphide mineralization. On North Star Hill, irregular crosscutting zones and concordant layers of conglomerate are conspicuous in the upper part of the lower Aldridge. Clasts of argillite, quartzite and tourmalinite up to 5 centimeters across occur in a dark grey quartzite or siltstone matrix. Both stratabound conglomerate and a large crosscutting conglomerate breccia occur in the footwall of the Sullivan deposit. At the St. Joe prospect, a crosscutting fragmental unit several meters thick is overlain by an intraformational conglomerate unit suggesting fragmentals were extruded onto the seafloor" (Höy 1993).

The upper Aldridge Formation consists mainly of rusty weathering, thin-bedded, dark to medium grey argillite, and thinly parallel-laminated light and dark grey siltite laminae. Strata of the Aldridge Formation "... grade into those of the overlying Creston Formation over a few hundred meters ... characterized by the increasing abundance of a very thin-bedded, medium-grained siltite ... The top of the Aldridge Formation was defined at the top of the last thick (greater than 10 meters) interval of grey argillite and thinly parallel-laminated siltite" (McMechan 1979). Alternatively, Höy (1993) described the contact between the upper Aldridge and Creston Formations as usually gradational and placed the contact where either green-tinged lenticular bedding or syneresis cracks become

noticeable.

#### 3.12 Moyie Intrusives

The following has been paraphrased from Höy (1993):

"Moyie sills are restricted to the lower Aldridge, the lower part of the middle Aldridge, and to correlative rocks in the northern Hughes Range. Moyie Intrusions generally form laterally extensive sills ... (and) commonly comprise up to 30 per cent of lower and middle Aldridge successions. Their abundance decreases up-section in the middle Aldridge, as the abundance of thick-bedded A-E turbidites decreases.

Moyie sills comprise dominantly gabbro and diorite. ... (consisting of) dominantly hornblende and plagioclase phenocrysts, typically up to 5 millimeters in diameter, in a finer grained groundmass of plagioclase, quartz, hornblende, chlorite and epidote. Hornblende phenocrysts, commonly partially altered to chlorite and epidote, are generally subhedral to anhedral with irregular ragged terminations. Plagioclase ... is generally clouded by a fine mixture of epidote and albite (?), particularly in the more calcic cores of zoned crystals. Accessory minerals include leucoxene, commonly intergrown with magnetite, as well as tourmaline, apatite, calcite and zircon."

#### 3.13 Structure

Rocks of the Belt Basin have been affected by several separate phases of deformation, ranging from Middle Proterozoic through to Paleocene. The North American craton underwent two phases of extension, a compressional orogeny and subsequently continental rifting followed by development of a miogeocline. Thrusting and folding associated with development of the Foreland Fold and Thrust belt took place from Cretaceous to Paleocene time and was followed by Eocene extension.

The earliest deformation was associated with extension in the Middle Proterozoic which resulted in block faulting along the margin of the Purcell Basin, coincident with deposition of the Fort Steele and Aldridge formations. Distinct changes in the character of lower Purcell strata of the Hughes Range indicate that the Boulder Creek fault and the segment of the Rocky Mountain Trench fault north of Boulder Creek represent the northern and eastern edge of the local Purcell Basin. Dramatic southward increases in coarse-grained sediments in the Northern Hughes Range suggest proximity to growth faults near the margin of the basin. Movement along these growth faults is interpreted to have ceased by upper middle to upper Aldridge time.

Voluminous extrusion of basaltic lava (Nicol Creek Formation) in the upper Purcell Supergroup has been interpreted to indicate renewed extension in the Purcell Basin. In addition, dramatic changes in the thickness of the Sheppard and Gateway formations were interpreted to reflect growth faults active during deposition of these strata. A tectonic high has been proposed in the Larchwood Lake area north of Skookumchuck. Variations in the thickness and character of the strata document facies changes which resulted "... from block faulting ..., with erosion and deposition of coarse conglomerates on and at margins of tectonic highs and shallow-water, turbulent carbonate facies deposited in adjacent small basins (Höy 1993).

A late Middle to early Upper Proterozoic (1300 to 1350 Ma) compressional event, the East Kootenay orogeny, has been interpreted based upon evidence for deformation and metamorphism prior to deposition of lower Paleozoic miogeoclinal strata. This event was associated with folding with the development of a regional cleavage and granitic intrusions (i.e. 1305±52 Ma Hellroaring Creek stock). Localized high grade metamorphic areas (i.e. Mathew Creek) are related to this tectonic event which is interpreted to have terminated Belt Purcell sedimentation.

The extensional Goat River orogeny occurred during deposition of the Windermere Supergroup (800 to 900 Ma) and is characterized by large-scale block faulting during and perhaps immediately prior to deposition of strata. The Windermere Supergroup is comprised of a basal conglomerate (Toby Formation) overlain by immature clastic and carbonate sediments of the Horsethief Creek Group. The Toby Formation consists of "... predominantly conglomerates and breccias, interpreted to have been deposited in fan sequences adjacent to active fault scarps in large structural basins. Locally, up to 2000 meters of underlying Belt-Purcell rocks have been eroded from uplifted blocks, providing a sediment source ... in adjacent basins" (Höy 1993).

The earlier tectonic events may record incipient rifting, with development of block-faulted, intracratonic structural basins, whereas by early Paleozoic time continental separation had occurred as platformal and miogeoclinal sediments were deposited on a western continental margin. The Laramide orogeny (Late Jurassic to Paleocene) resulted in the horizontal, northeast directed compression of Proterozoic strata and the overlying Paleozoic miogeoclinal prism onto the North American craton. Easterly verging thrust faults and folds developed with normal faults and westerly verging back thrusts and normal faults, resulting in locally complex structural relationships. Two major faults, the Boulder Creek - St. Mary and Dibble Creek - Moyie faults, have had a significant role in the structural history and fabric of the region, controlling facies and thickness changes in Proterozoic and Paleozoic strata.

"The Boulder Creek fault, one of the more prominent structural features that crosses the generally north-trending structural grain, coincides approximately with a pronounced change in Purcell rocks. The St. Mary fault, the southwestern extension of the Boulder Creek fault, follows the southern edge of a late Proterozoic (Windermere) structural basin. To the south, the northeast-trending Moyie - Dibble Creek fault system coincides with the northwestern flank of Montania, a lower Paleozoic tectonic high" (Höy 1993).

A final episode of north-trending, west dipping normal faulting took place in the Late Tertiary. The Rocky Mountain Trench is the most prominent and is a listric normal fault having dip-slip separation of at least 5 to 10 kilometres. However, strike slip separation is interpreted to be minimal due to stratigraphic correlations across the trench.

#### 3.14 Mineralization

There are two main deposit types hosted by Purcell Supergroup strata in southern British Columbia, namely:

- 1) stratabound clastic-hosted deposits such as the Sullivan and Kootenay King, which are syngenetic or formed immediately following deposition of the host sediments, or
- 2) vein deposits, which have been sub-divided by Höy (1993) into three separate types:
  - a) copper veins (i.e. Bull River and Dibble)
  - b) lead zinc veins (i.e. Estella and St. Eugene), and
  - c) gold veins (Perry Creek and Midway).

Stratabound Clastic-hosted Deposits

Stratabound clastic-hosted deposits are "... concordant bodies of massive or laminated lead, zinc and iron sulphides in fine to, less commonly, mediumgrained sedimentary rocks" (Höy 1993). Some deposits may have cross-cutting footwall stockworks, disseminated or vein mineralization interpreted as conduits for mineralized solutions which were subsequently deposited as the overlying stratiform deposit.

Many stratiform lead-zinc deposits have associated zoning, either vertically (commonly copper-lead-zinc-(barium)) or lateral (commonly copper-lead-zinc).

Stratiform lead-zinc deposits in the Purcell Supergroup are restricted to deep water facies of the lower and middle Aldridge Formation.

#### Sullivan

The following has been taken from Höy (1993).

"The Sullivan deposit is one of the largest base metal massive sulphide deposits in the world. ... The deposit has produced in excess of 125 million tonnes of ore from an original reserve of more than 160 million tonnes that contained 6 per cent lead, 6 per cent zinc, 28 per cent iron and 67 grams per tonne silver.

The western part of the orebody is approximately 1000 meters in diameter and up to 100 meters thick. It comprises massive pyrrhotite with occasional wispy layers of galena, overlain by layered galena, pyrrhotite and sphalerite, which in turn is overlain by pyrrhotite, sphalerite, galena and minor pyrite that is intercalated with clastic layers. Its eastern part, separated from the more massive western part by an irregular transition zone, includes five distinct conformable layers of generally well-laminated sulphides separated by clastic rocks. The sulphide layers thin to the east away from the transition zone. Sub-ore-grade sulphide layers of pyrite and pyrrhotite with subordinate sphalerite and galena persist beyond the eastern limits of the ore-grade sulphides.

An extensive brecciated and altered zone underlies the massive western part of the orebody. Linear north-trending breccia zones, disseminated and vein sulphides, and extensive alteration to a dark, dense chert-like tourmaline-rich rock are conspicuous features of the altered footwall. Albite-chlorite-pyrite alteration is also restricted to the western part of the orebody, occurring in crosscutting zones in the footwall tourmalinite, in the orebody itself and up to 100 meters into the hangingwall.

The deposit is zoned, with lead, zinc and silver values decreasing toward the margin in the eastern part. Tin is concentrated in the western part. In general, metal distribution patterns are directly related to proximal chaotic breccia; higher absolute values and higher Pb/Zn and Ag/Pb ratios overlie the breccia zones.

Sullivan is interpreted to be a hydrothermal synsedimentary deposit (sedex deposit) that formed in a small submarine basin.

The western part lies directly above the conduit zone, the brecciated and altered footwall of the deposit."

Kootenay King (from Höy 1993)

The Kootenay King mine is a stratiform clastic-hosted deposit which produced approximately 13 260 tonnes of ore with documented recovery of 715 grams of gold, 882 kilograms of silver, 710 866 kilograms of lead and 881 383 kilograms of zinc. The deposit was a The property is underlain by the Middle Aldridge Fm. On the property, the Middle Aldridge Fm. consists mainly of Middle Proterozoic siltstones, quartzites and argillites intruded by Middle Proterozoic gabbro sills and dykes. The sediments are medium to thick bedded, rarely thin bedded proximal and distal turbidites.

#### 3.20 PROPERTY GEOLOGY

#### 3.21 Stratigraphy

The Fors property is underlain by the Middle Proterozoic Aldridge Formation. Regionally the formation is subdivided into 3 mapable units, the Lower Aldridge, Middle Aldridge and Upper Aldridge. The Upper Aldridge unit does not outcrop on the Fors property The Aldridge Formation has the sedimentalogical characteristics of a flysch sequence. In general, the formation is a repetitous and monotonous sequence of alternating beds of fine and medium grained siltstone and argillite with lessor fine to coarse grained quartz arenite. Beds show sharply defined bottom surfaces which are commonly marked by abundant sole markings. Internal structures are generally indistinct and bed surface features such as ripple marks are rare.

The Middle Aldridge is approximately 3,048.0 m thick and consists mainly of medium to thick bedded siltstone with scattered sequences of thin bedded, rusty weathering argillite. The argillite sequences are rarely more than 10 m thick. The siltstone beds exhibit internal texture, structure and bed forms that are consistent with A-E turbidite described by Bouma (1962).

#### 3.22 Intrusive Rocks (Moyie Intrusives)

A gabbro sill outcrops near the southern boundary of the property. In drillholes the sill ranges in thickness between 300 m and 340 m. The sill is medium to coarsely crystalline with finer grained margins. The Moyie Intrusives have isotopic ages that are indistinguishable from the host sediment (approximately 1,433 MA, Zartman, 1982).

#### 3.23 Structure

Structure on the property is dominated by the Moyie Fault. The Moyie Fault is a major regional thrust fault. The fault dips at 60° to the northwest and strikes northeast. On the claims the fault moves the Lower Aldridge unit over the Kitchener Formation, amounting to a total stratigraphic displacement of approximately 4,700 m. A number of minor northwest trending normal faults have been mapped on the property. On the property Aldridge sediments form a large northeast plunging syncline.

#### 3.24 Metamorphism

In general, rocks on the Fors property are metamorphosed to biotite and garnet zone greenschist facies.

#### 4.00 ALTERATION AND MINERALIZATION

On the Fors property, Pb,Zn,As,Ag,Au,Bi and W mineralization is associated with a mushroom shaped discordant fragmental pipe. Intense alteration and sulphides occur within and around the fragmental pipe. The pipe structure is capped by plagioclase, biotite, calc-silicate and mica alteration assemblages with disseminated and bedded sulphides. The fragmental pipe is strongly tourmalinized and in part albitized with abundant dissemnated sulphides throughout the structure.

Drilling has intersected a massive sulphide bed, 2m thick, immediately above the alteration cap. The massive sjlphide bed consists of pyrrhotite, galena, and sphalerite. The sulphide bed thins rapidly down dip and on-strike.

A late massive sulphide vein 2 m thick cuts the fragmental pipe and the alteration cap. The vein consists of pyrrhotite, arsenopyrite, galena, sphalerite, minor chalcopyrite, rare bismuthunite and scheelite. The vein does not appear to go beyond the confines of the fragmental pipe and alteration cap.

#### 5.00 DIAMOND DRILLING - DDH CF97-17 (See Figures 2 & 3)

Diamond Drillhole CF97-17 is located on the Dar 8 claim, centered at longitude 115° 53' 50" and latitude 49° 21' 45" at an elevation of 1,160 m. The hole was collared at a depth of 468.6 m off the bottom of a pre-existing hole. The hole was drilled NQ at minus 70° on an azimuth of 130°. The contractor, Britton Bros. Diamond Drilling, began drilling hole CF97-17 and Nov. 9, 1997 and finished the hole on Nov. 18, 1997.

The hole cored gabbro from 468.7 m to 812.9 m and from 812.9 m to 863.0 m. The hole was in Middle Aldridge sediments consisting mainly of medium to thick bedded siltstone and argillite. From 863.0 to the end of the hole at 1,064.4 m the core consisted of fine grained planer bedded siltstone and argillite, typical of the Lower Aldridge Formation.

The hole cored gabbro from 468.7 m to 812.9 m and from 812.9 m to 883.0 m to the end of the hole at 1,060 m, the core consisted mainly of medium to thick bedded Lower Aldridge siltstones and argillites.

The hole encountered some widely scattered zones of intense alteration. The alteration consisted of narrow bands and or concretions consisting of bioite and albite with rare subhedral pink garnets. Quartzite and siltstone beds are commonly sericitized and silicified.

A fault zone 2 m thick at 999.1 m cuts the core axis at 50°.

Mineralization in the hole is commonly occurs as weakly disseminated pyrrhotite in the sediments. Very widely scattered, very thin massive pyrrhotite-minor sphalerite beds (2 mm to 4 mm thick) occur in the core between 936.0 and 1,060.4 m.

#### 6.00 CONCLUSION

Drillhole CF97-17 penetrated the top of the Lower Aldridge Formation (Sullivan Horizon) at 883.0 m. Therefore, the hole did test the Sullivan Horizon and found no base metal mineralization of economic interest.

#### 7.00 RECOMMENDATIONS

No further diamond drill tests of Sullivan Time can be recommended for the area adjacent to hole CF97-17.

#### 8.00 REFERENCES

- Volcanism in the Middle Aldridge Formation, Purcell Supergroup, S.E.B.C., by T. Hoy, D.L. Pighin, P.W. Ransom
- The Fors Prospects, A Proterozoic Sedimentary Exhalative Base Metal Deposit in Middle Aldridge Formation, S.E.B.C., by J.M. Britton & D.L. Pighin
- Vine A Middle Proterozoic Massive Sulphide Vein, Purcell Supergroup, S.E.B.C. by T. Hoy & D.L. Pighin
- Geology of the Sullivan Orebody, Kimberley, B.C., Canada by J.M. Hamilton, D.T. Bishop, H.C. Morris and O.E. Owens
- Structural Setting, Mineral Deposits and Associated Alteration and Magmatism, Sullivan Camp, S.E.B.C., by T. Hoy
- Geology of the Purcell Supergroup in the Fernie West-half Area, S.E.B.C., Bulletin 84, by T. Hoy

#### STATEMENT OF EXPENDITURES

On A Diamond Drill Program CF97-17

Work performed from Nov. 9th to Nov. 18th, 1997

<u>CONTRACTOR</u> Olympic Diamond Drilling, Smithers, B.C. Invoices 97084 & 97085

Drilling, mobilization and materials (344.3 m)

\$62,732.00



David L. Pighin, P.Geo. High Grade Geological Consulting

Appendix "A"

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Drill Log CF97-17

DRILL HOLE RECO	DRD	CITATION R	ESOURCES	<u>SINC.</u>	Page 1 of 4
Property: FORS		Hori. C	Comp: 118.0m	ŀ	IOLE #: CF97-17 Extension
Location: Dar 8 Cla	im	Vert. C	omp: 324.0m	L	.ENGTH: 344.3 m (depth 1,060m)
Commenced: Nov.	9/97 Completed: Nov.18	3/97 Corr. D	)ip: -70°	D	rill Contractor: Britton Bros. D.D.
Coords: Long. 115	5° 53' 50" Lat. 49° 21' 45"	True B	earing:	с	ore Size: NQ
Coords: UTM (E)	(N) (El	L) % Rec	overy:	c	asing: 468.6 m Starts at bottom
Coords: Grid (E)	(N) (El	L) Logged	d Date: Nov/97	c c	of Hole F93-18 fore Storage: Vine
Elevation: 1,160 m	Collar Dip: -70 Az	zi: 145° Logge	d By: D.L. Pigh	in	
OBJECTIVE:Extent	tion of Hole F93-18				
Additional Surveys	Depth: 609.7 Dip: -69 Depth: 914.0 Dip: -66	Azi: 130º Azi: 130º Azi: 130º	• •	Type: Sperry Sun Type: Sperry Sun Type: Sperry Sun	<u></u>
From To	LITHOLOGY: GABBRO				
	LITHOLOGY: GABBRO				
From To 468.6 - 812.9 m	COLOR: Green to Dark Green.	······			
	COLOR: Green to Dark Green. TEXTURE: Medium to coarsely	v crystalline, finely crystalline n	ear contacts.		
	COLOR: Green to Dark Green.	v crystalline, finely crystalline n	ear contacts.		
	COLOR: Green to Dark Green. TEXTURE: Medium to coarsely	v crystalline, finely crystalline n	ear contacts.		
	COLOR: Green to Dark Green. TEXTURE: Medium to coarsely TECTONIC STRUCTURE: NIL GENERAL ALTERATION: Rare	v crystalline, finely crystalline n e epidotization		Weakly disseminated	pynhotite and magnetite, rare chalcopyrite

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From To	LITHOLOGY: Siltstone, interbedded Argillite				
812.9 - 863.4 m	COLOR: Gray to light brownish gray with scattered white banding.				
	<b>PRIMARY STRUCTURE:</b> Medium to thick bedded, bedding sharp and flat, generally fine to very fine grained siltstone, bedding to core at 815.0 = 66°.				
	TECTONIC STRUCTURE: NIL				
	<b>GENERAL ALTERATION:</b> 812.9 to 815.3 m = intensely albitized, biotitized and sericitized. 815.3 to 831.5 = widely scattered bands of albitization rarely more than 10 cm thick. Patchy silicification and sericitization throughout remainder of section. Rare thin bands of spotted hornfels between 815.0 and 847.0 m.				
	MINERALIZATION & ASSOCIATED, HOST STRUCTURE: Rare disseminated pyrrhotite.				
	ADDITIONAL OBSERVATIONS:				
From To	LITHOLOGY: Siltstone, interbedded Argillite. GOOD LOWER ALDRIDGE TYPES				
863.4 - 871.2 m	COLOR: Light gray banded brownish gray and gray.				
	PRIMARY STRUCTURE: Thin to very thin bedded, bedding sharp and flat, siltstone is very fine grained.				
	TECTONIC STRUCTURE: NIL				
	GENERAL ALTERATION: Finely biotitic siltstone with soft white sericitic argillite.				
	MINERALIZATION & ASSOCIATED, HOST STRUCTURE: Rare disseminated pyrrhotite.				
	ADDITIONAL OBSERVATIONS:				

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From To	LITHOLOGY: Feldspar Porphyritic Gabbro Dyke?			
871.2 - 883.0 m	COLOR: Dark green, spotted white.			
	TEXTURE: Medium crystalline, with white feldspar phenocrysts.			
	TECTONIC STRUCTURE: N/A			
	GENERAL ALTERATION: NIL			
	MINERALIZATION & ASSOCIATED, HOST STRUCTURE: NIL			
L	ADDITIONAL OBSERVATIONS:			
From To	LITHOLOGY: Siltstone, interbedded Argillite. LOWER ALDRIDGE TYPE SEDIMENTS			
883.0 - 936.1 m	COLOR: Gray to reddish brownish gray.			
	PRIMARY STRUCTURE: Medium to thin bedded, rare very thin beds and rare thick beds. Bedding generally sharp and flat, siltstones generally fine grained. Bedding to core at 885.0 m = 77°, at 907.0 m = 77°, at 941.0 m = 75°.			
	TECTONIC STRUCTURE:			
	<b>GENERAL ALTERATION:</b> Silicification associated with sericitization is patchy throughout section but from 907.7 to 913.5 m silicification and sericitization is very intense. 926.2 to 927.2 m = intensely albitized, 929.3 to 930.3 m = intense albitization associated with thin chlorite filled fracture at 5° to core.			
	MINERALIZATION & ASSOCIATED, HOST STRUCTURE: 893.5 to 908.0 m = very widely scattered 2mm to 4mm thick bedding parallel layers of pyrrhotite and sphalerite.			
	ADDITIONAL OBSERVATIONS:			

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From To	LITHOLOGY: Siltstone, interbedded Quartzite and minor silty Argillite. FOOTWALL QUARTZITE		
936.1 - 1,060.4 m	COLOR: Light gray to light bluish gray.		
End of Hole	<b>PRIMARY STRUCTURE:</b> Generally medium to thick bedded, rare very thick beds and some medium to thin bedded silty argillite intervals, bedding distinct, commonly wavy, siltstone and quartzite beds are proximal turbidites. Bedding to core at 997.0 m = 79°, at 991.0 m = 77°, thick to very thick bedded.		
	TECTONIC STRUCTURE: 999.5 to 1001.5 m = chloritic shear or fault zone cuts core at 50°, minor thin zones of soft fault gouge.		
	<b>GENERAL ALTERATION:</b> Intense patchy silicification is usually associated with sericitization and scattered subhedral pink garnets. 966.2 - 966.6 m = intensely albitized.		
	MINERALIZATION & ASSOCIATED, HOST STRUCTURE: Widely scattered thin quartz veins 1 cm to 10 cm thick cut core axis at 5°. These veins commonly contain pyrrhotite and widely scattered tourmaline needles.		
	ADDITIONAL OBSERVATIONS: END OF HOLE AT 1,060.4 meters		

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