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## The FORS Property, British Columbia A Significant New Base Metal Discovery?

 CONS. RAMROD GOLD
 CHAPLEAU RESOURCES
 BARKHOR RESOURCES

 CYN @ \$4.15 - TSE
 CHI @ \$0.49 - VSE
 BHO @ \$0.42 - VSE

 Recommendation:
 BUY
 Recommendation:
 BUY

 Category:
 SPECULATIVE
 Category:
 SPECULATIVE
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 Share
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	Shares	Shares	Est.	Work.	52-Week
Company	<u>O/S(mm)</u>	<u>F/D(mm)</u>	Flt(mm)	<u>Cap./sh</u>	Range
Cons. Ramrod Chapleau Res. Barkhor Res.	17.3 10.3 12.9	20.7 11.8 14.9	2.5 3.0 10.0	\$0.06 \$0.02 \$0.02	\$4.50 - \$1.15 \$0.76 - \$0.08 \$0.64 - \$0.08

### INTRODUCTION

At the beginning of November, announcements of visual drill results generated strong market activity on the Vancouver Stock Exchange. The mineral exploration property under scrutiny is called the FORS property, situated 16 kilometres southwest of Cranbrook, British Columbia (see Figure 1.). On November 4, Chapleau Resources and Barkhor Resources announced that hole No. 92-1 of their exploration program had begun and had "encountered visible lead-zinc mineralization throughout and is continuing at about 200 feet." To this was added on November 6, "[the hole] has intersected 80 feet of abundant to massive sulphides." On November 10 we further heard that the hole was at 810 feet and still drilling having cut about 600 feet of alteration.

On November 17, the first assays of the drill program were released: 9.8 feet grading 7.25% zinc, 6.47% lead and 1.95 oz/ton silver. Why are observers excited? We have an interesting but by no means economic There have been numerous intersection. instances of "grassroots" exploration promotions and disappointments. The reason for the excitement lies some 35 kilometres north of the FORS property: Cominco's Sullivan mine. Geologists have been searching for "Son of Sullivan" for decades and every few years the market latches onto a new play, none of which has proven successful to date. It is the discovery of anything that may hint at "Son of Sullivan" which ignites interest in the marketplace. We are at an extremely early stage in the exploration of the FORS property but there are already clear geological indications that a very large mineralizing system has been active in the immediate vicinity of the FORS project's first hole.

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Figure 1: Location of the FORS Property, British Columbia (after Leitch, C.H.B., Turner, R.J. W., and Höy, T., 1991).



#### THE FORS PROPERTY

The seven claim, 29.75 square kilometre property is owned by private interests but is optioned to three listed companies. Chapleau and Barkhor announced October 22 their acquisitions of options to earn 50% interests each in the FORS property. Each of the two companies were to issue 25,000 shares on VSE approval of the deal; spend \$12,000 on exploration by April 1993; and issue a further 25,000 shares if a second phase program is recommended. The private interests also retain a 1.5% Net Smelter Return royalty in the On November 6 Consolidated property. Ramrod Gold announced that it had entered into an agreement by which Cons. Ramrod would acquire an option to earn a 50% interest in the FORS property from Chapleau and Barkhor. Consolidated Ramrod may spend \$1.5 million on exploration in stages by November 30, 1996 to earn 50%, may expend an additional \$500,000 to earn an additional 10% and has right of first refusal on any financings by Chapleau and Barkhor for the life of the agreement. Consolidated Ramrod is now managing the project.

#### THE SULLIVAN MINE

The Sullivan lead-zinc mine. owned 100% by Cominco Ltd., was discovered in 1892 and has been in production since 1909. To date, the mine has produced over 140 million tons of ore grading an average of 6.8% lead, 5.9% zinc and 2.4 oz/ton silver, and still has published reserves of 20.3 million tons grading 4.7% lead, 7.6% zinc and 0.8 oz/ton silver (year-end 1991).

The Sullivan deposit is situated at or near the bottom of the Middle Aldridge formation, part of the Middle Proterozoic Purcell Supergroup (see Figure 2.). It appears to be at least 1.4 billion years old. The western part of the deposit consists of massive pyrrhotite (ironsulphide) with occasional wispy layers of galena (lead-sulphide), overlain by layered galena, pyrrhotite and sphalerite (zinc-sulphide). This is in turn overlain by layers of pyrrhotite, sphalerite, galena and minor pyrite (another iron-sulphide) that inter-finger with layers of clastics, or fragmental sediments. This sequence of mineralization encompasses a roughly circular area that is approximately 1,000 metres in diameter and up to 100 metres thick. The eastern part of the deposit consists of five distinct layers of sulphides, separated by clastic rocks, which thin out and become uneconomic towards the east. The western and eastern portions of the deposit are separated by an irregular transition zone.

The model for the genesis of the Sullivan deposit has been the subject of numerous studies done in the past by mine owner Cominco Ltd.. A formal five year study, currently in its third year, is being conducted by the joint team of the Geological Survey of Canada, the British Columbia Geological Survey Branch and Cominco Ltd. Basically, an oceanfloor vent complex caused sulphides (predominantly pyrrhotite) to be deposited on the surrounding ocean floor. Sulphides are Figure 2: Schematic cross-section of the Sullivan orebody (after Turner, R.J.W. and Leitch, C.H.B., 1992).



massive and thick in the central vent area and in distinct layers further from the vent(s). Tourmalinite alteration of the underlying vent "pipe" may have taken place at that time. Over a longer time period, a series of gabbro dykes and sills were emplaced specifically related to the large, underlying Movie Sill. This sill and its offshoots set up a flow of hot fluids that percolated through the vent complex, the massive pyrrhotite body and the now overlying sediments. The fluids partially replaced the pyrrhotite in places with galena and sphalerite thereby creating the economic ore-body now being mined. The fluids also alter the other rocks they encounter causing distinct mineral assemblages, especially the massive albitite and albite-chlorite alteration in sediments overlying and surrounding the deposit.

From the studies of the Sullivan deposit and the surrounding alteration package, one can develop a "check-list" of geological characteristics to look for when evaluating drillholes of potential Sullivan look-alikes. First, we should look for drilling to occur in the vicinity of the Lower Aldridge - Middle Aldridge That is not to say that only contact. exploration "at Sullivan Time" is valid. In fact a new theory holds that the formation of the Sullivan deposit coincided with a specific geological event (ie. tectonic activity as evidenced by the transition from quiescent sedimentation to more violent turbidite sedimentation) that may have occurred at different times in the region. We would just

give exploration "at Sullivan Time" a higher degree of probability of success. Second, we should see the Moyie Sill or some other larger gabbro sill in the vicinity. This sill provides the temperature "engine" which drives the altering fluid flow necessary to produce the mineralization being sought. Next, we should see evidence of massive altering fluid flow. In other words, we should see very large scale alteration including massive tourmalinization and massive albitization. Other less-pervasive alterations and indicator minerals include: carbonate and iron-carbonate alteration, possibly manganiferous garnet, as well as elevated levels of minor metals (antimony, arsenic bismuth and tin). Finally, we should see evidence that the fluids replaced pyrrhotite with galena and sphalerite. (Please note that we have vastly over-simplified things here and left out a good number of smaller-scale features but that the above provides a good exploration model.)

#### FORS PROPERTY DRILLING

The FORS property has been drilled in the past. In 1966, Cominco drilled a shallow hole (limited in depth by the portable drill used). The hole was collared on a small outcrop exposure of massive sulphides estimated to be approximately 30 feet in diameter. The hole showed the lens to be perhaps 4 feet thick and was apparently not followed up, although Cominco's regional exploration efforts have been extensive.

The Chapleau - Barkhor - Consolidated Ramrod ongoing exploration program is the first directed at base metals on the FORS property since Cominco abandoned the property. Project geologists concluded that the outcrop may represent "leakage" from a mineralizing system at depth. The hole collar is located approximately 1,200 feet above Sullivan Time. About 1,500 feet to the south, another Cominco-drilled hole is believed to have hit over 1,000 feet of the Moyie Sill in 1978.

Hole No. 92-1 was begun on November 3, 1992, drilling at an angle of -45°. After going through the surface sulphide lens, the drilling encountered laminated sediments with abundant disseminated sulphides and sericitic

and chloritic alteration. At 211 feet the hole cut 9.8 feet grading 7.25% zinc, 6.47% lead and 1.95 oz/ton silver. The hole was carried on to 868 feet but not before encountering carbonate alteration zones; brecciated calciteflooded zones; abundant garnets; abundant sulphide layers, veins, and veinlets; and approximately 280 feet of albite alteration beginning at approximately 375 feet downcore.

Hole No. 92-2 was begun November 12, drilling from the same set-up at -65°. That hole encountered no sulphide lens like that in No. 92-1 but did begin to intersect an alteration package, including albitization, tourmalinization, carbonate flooding, and disseminated sulphides, through to 800 feet. Sullivan Time was expected and intersected at 1,550 feet but was preceded by a 200 foot thick highly tourmalinized zono. The hole continued into the Lower Aldridge for over two hundred feet, encountering thick bands of tourmalinite. Hole No. 92-3 was begun December 2, and was being drilled vortically from the same set-up as holes No. 92-1 and No. 92-2.

The FORS property encompasses the correct geology, namely Middle Aldridge Formation. The Movie Sill, a large, potential source of heat-driven fluid flow, has been shown to be in close proximity. The huge alteration package, including albitization and tourmalinization, encountered in hole No.'s 92-1 and 92-2 is of a size that has not been seen before outside of the Sullivan deposit area, suggesting a very large vent complex in the vicinity. From where the package has been intersected in both holes to date, one can conclude that the alteration package is flat-lying and is therefore not a small alteration package associated with vein-type mineralization. The surface exposure of zinclead mineralization, the lens encountered in hole No. 92-1, and numerous occurrences of small layers or veins of sphalerite and galena lower in the section can be interpreted to show that later-stage fluids may have replaced pyrrhotite with sphalerite and galena. All of these features lead us to conclude that the FORS property exploration has discovered a large vent complex with the potential to be economically mineralized.

Preliminary evidence seems to indicate that the periphery of a large vent complex has been

intersected by drilling, with the center of that complex located in a north-northeasterly direction from the current drill set-up. The companies plan to direct their next round of drilling in that direction. Down-hole geophysical probing indicates a large off-hole anomaly, suggesting conductive material such as massive sulphides or graphite. Airborne geophysical surveying identified a large anomaly located approximately fifteen hundred feet to the northeast. Ground geophysical surveying will be used in the next few weeks to determine the exact location and orientation of the airborne anomaly relative to the ground. This will provide more accurate drill targets for the next round of drilling. Work is expected to continue over the winter, although the weather and terrain are difficult. Financing the exploration program should not be a problem.

#### CONCLUSIONS AND RECOMMENDATIONS

We have already outlined the FORS property ownership. We have outlined our reasoning as to why we believe that the FORS property hosts potential for significant base metal mineralization. The FORS property is relatively large and covers most of the important prospective ground. More speculativelyinclined investors, however, may consider purchasing shares of the owners of the grounds to the east, northeast, north, northwest and west (see Figure 3.); the Moyie Fault to the south makes exploration in that direction relatively fruitless.

Immediately to the east is the Vine property which is partly-owned 100% by Consolidated Ramrod and partly-held 90% by Consolidated Ramrod with Cominco owning 10% but with a 60% back-in provision. To the northeast are the Moy 2-12 and Min 2 claims owned by Akiko Gold (V-AKG - \$0.05). Consolidated Remrod. Barkhor and Chapleau have collectively signed an agreement to acquire a 70% interest in this clairn group via a combination of share issuance, cash payments and exploration expenditures.

To the north, the joint venture partners have acquired an option to earn an 80% interest in the Leigh and MR claims. The joint venturers will issue shares, make payments and conduct exploration over 5 years to earn their interest. White Knight Resources (V-WKR - \$0.20) owns the option on the remaining 20% of these claims, which are subject to a 2% Net Smelter Return royalty in favour of the vendors.

Glencairn Explorations (C-GLJ - \$0.20) owns the next adjoining property going counterclockwise from the Leigh and MR claim group. This claim group is currently owned 100% by Glencairn. North of the Leigh and MR claim group is the MOY claim group nwned by White Knight and Goldpac Investments (V-GMK -\$0.15). Immediately westward of the FORS property is the McNeil property owned as to 50% by Greenstone Resources (GRE - \$1.27 and 50% by Dragoon Resources (V-DGN -\$0.20). The joint venturers have optioned a portion of this property and may earn up to a 60% combined interest through share issuances and exploration expenditures over five years.

At this point, we believe that Consolidated Ramrod is the best investment in the group. Consolidated Ramrod is the operator of the FORS property and has taken a leadership roll in joint venturing and/or optioning the key grounds in the prospective areas to the northeast, north and northwest. Consolidated Ramrod also owns an extensive portfolio of properties and property interests outside of this play. Clearly Chapleau and Barkhor are also important investments in this exploration play.

As we stated above, we believe that the evidence to date suggests that the vent complex, and therefore potential mineralization, appears to be located to the northeast. On this basis, Akiko Gold, Glencairn Explorations and White Knight become the more important peripheral players.

The risks involved in these Investments are considerable. Exploration is at an extremely early stage. Geology is as much art as science and as such leaves much open to interpretation. Our interpretation is based upon descriptions of the core drilled by the joint venture partners and our understanding of the Sullivan deposit mineralization and alteration. There are no guarentees that the Sullivan model will apply on the FORS Property. Exploration stocks only trade well when exploration is ongoing. Winter in this area is trying and may cause the joint venture partners to pause until late winter or early spring. Similarly, financing is not guaranteed and may cause an interruption in exploration while funding is obtained. We believe, however, that financing will not be a major hurdle.

With all these risks in mind, we continue to recommend purchase of the shares of Consolidated Ramrod, Barkhor Resources and Chapleau Resources to investors seeking exposure to a new, potentially significant base metal discovery.

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Figure 3: Approximate claim map modified from George Cross News Letter Ltd. No. 222 (1992).



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