## ARIS SUMMARY SHEET

$E$District Geologist, Prince GeorgeOff Confidential: 89.05.26
ASSESSMENT REPORT 17561 MINING DIVISION: Cariboo


## WORK

DONE :

Drilling
DIAD $871.0 \mathrm{~m} \quad 6$ hole (s);NQ
Map(s) - 1; Scale(s) - 1:600 093J 001

# GEOLOGICAL REPORT of DIAMOND DRILLING <br> on the <br> GISCOME PROPERTY <br> COM 1,2,4,4 (frac.),5,6 Claims <br> CARIBOO MINING DISTRICT, 

> NTS $93 \mathrm{~J} / 1 \mathrm{~W}$
> $54^{\circ} 65^{\prime} \mathrm{N}, \quad 122^{\circ} 19^{\prime} \mathrm{W}$

CASTELLO RESOURCES LTD. 164-1266 Hornby St., Vancouver, B.C.
by
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March 1988

Owner: Mr. G. Klein Operator: Castello Resources Ltd. Location: NTS 93J/lW

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## SUMMARY

In February 1988, a short diamond drill programme was conducted by Castello Resources on the Com claim group, located east of Giscome B.C. From this programme major lithological units were delineated in the western claim area, and zones of skarn alteration were tested for concentrations of $\mathrm{Pb}-\mathrm{Zn}-\mathrm{Ag}$ mineralization.

The Com claim area has undergone exploration since 1942. This work has identified an epidote-garnet skarn prospect on the property. The skarn zones consistently occur at the contact between limestone and underlying gneissic rocks within slide mountain group stratigraphy. Lenses and pods of sulphide mineralization are concentrated within intense and strong zones of skarn alteration.

The largest zone of sulphide occurrence identified to date is in the western property area. Drill data from this area has found the sulphide mineralization in the skarn zone to be sporadic and discontinuous along strike and at depth. This mineralization was generally low-grade with intermittent higher grade centers. The extent of this skarn zone is as yet untested to the east and further to the west.

More exploration is recommended for the claim area in order to find extensions and constraints to the defined skarn zone, and to understand better the occurrence of sulphide mineralization. Work is warranted especially to investigate the reported occurrence of sphalerite-galena float and the source of coincident Ag-Hg geochemical anomalies located to the east and along strike of the defined skarn zone.

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## 1. $\quad$ INTRODOCTION

The Com claim group covers an area of 6 square kilometers and is located approximately 40 km to the northeast of prince George. The claim area'has undergone mineral exploration since 1942. During this period a mineralized skarn prospect has been delineated within the claim area.

The skarn is composed primarily of epidote and lesser garnet skarn alteration mineralogies. Within the skarn zones are intermittent concentrations of $\mathrm{Pb}-\mathrm{Zn}-\mathrm{Ag}$ sulphides.

Diamond drilling on the Com claims in February 1988 was directed at defining possible extensions to skarn zones outlined by previous geological surface mapping and drilling. To this end, drilling was concentrated primarily in the western property area. Geological information from this programme delineated the extent of the skarn zone and associated mineralization in this region.

### 1.1 Location and Access

The Giscome property is located approximately 40 km northeast of prince George, B.C. and is 5 km to the east of the abandoned Giscome townsite, (see figure l). The property is within the Cariboo Mining District and is found in map sheet NTS 93J/lW.

The property area is serviced by Highway 16 east from prince George and the Willow 1 iver road to Giscome. East from Giscome, access is provided by a gravel secondary road. This road is maintained year round by local logging operations and leads to the Mt. Churchill lookout tower.

Topography in the area is subdued with elevations between 600 and 750 meters. Most of the property area is covered by thick glacial deposits and outcrop exposure is poor. The forest cover is moderate to thick and is comprised primarily of mixed coniferous and deciduous vegetation.

### 1.2 Claim Status

The Com claim group consists of six claims, Com 1, $2,4,4$ frac., 5 , and 6 in good standing, (see Figure 2). The claims are owned by Mr. Gerald Klein, prince George and operated by Castello Resources Ltd., lø4-l26ø Hornby $S t .$, Vancouver, B.C..

Pertinent information regarding the status of the claims is outlined in Table 1.



TABLE 1
CLAIM STATUS

| Claim |  | Units | Recora No. | Date Recorded | Expiry Date |
| :---: | :---: | :---: | :---: | :---: | :---: |
| COM 1 |  | 1 | 5174 | 13-99-83 | 13-09-87 |
| COM 2 |  | 1 | 5173 | 13-09-83 | 13-99-87 |
| COM 4 | Frac. | 1 | 7136 | 09-09-85 | 09-09-87 |
| COM 4 |  | 6 | 7137 | 99-09-85 | 09-09-87 |
| COM 5 |  | 6 | 7834 | 3ø-06-86 | 30-06-87 |
| COM 6 |  | 6 | 7948 | Ø2-99-86 | 02-09-87 |

* 

The dispositions are in good standing to one year after the dates shown in column 4.

## 1.3 property History

The Com claim area has undergone mineral exploration since 1942. At that time, John H. Gerlitzki discovered $\mathrm{Pb}-\mathrm{Zn}$ sulphides mineralization in float and later excavated the Discovery pit. He staked eight claims, the J.H.G group, around the discovery area.

From 1942-1943, Mr. Gerlitzki hand-trenched the property and located a second, east-west striking zone containing pb-Zn-Ag sulphides, $25 \emptyset$ feet north of the Discovery pit. A short shaft was sunk on this showing. The zone was reportedly traced for $60 \emptyset$ feet to the east and $2 \emptyset$ feet to the west on surface and was terminated at either end by glacial debris.

Exploration for uranium by geiger-counter was conducted in 1945. Pyrochlore was identified within the sulphide zone and John Gerlitzki staked additional claims. Low prices for Pb and Zn caused the suspension of exploration until 1959.

Totem Resources optioned the property in 1959 and conducted an airborne EM survey as well as follow-up ground EM surveys. This work outlined an anomalous zone up to $1 \varnothing, \varnothing \varnothing \varnothing$ feet in length with several anomalous highs along its extent. Four short holes were drilled into the strongest anomaly areas and intersected a graphitic argillite interval containing minor $\mathrm{Pb}-\mathrm{Zn}$ mineralization.

In 1964 Mr . Gerlitzki restaked the J.H.G. group and staked the Samson claims to the east.

Vanco Explorations optioned the property in 1965 and conducted geological mapping. Also, the Hall and Gerlitzki trenches were excavated. Geochemical soil sampling done east of the Discovery pit produced inconclusive results. The surveys outlined Ag-Hg
anomalies coincident with the identified skarn zones and beyond to the east along strike, reportedly continuing to the intrusions near Lookout Mtn..

In 1966 Samson Mines optioned the property and drilled eight holes totaling about $2 \emptyset 00$ feet. This drilling found scattered zones of $\mathrm{Pb}-\mathrm{Zn}-\mathrm{Ag}$ mineralization. The best values returned were 30 feet of 7-8\% Pb+Zn in hole 66-2. Surface work by Samson Mines reportedly found mineralized float in the eastern property area, (John Payne, personal communication). Maps of this occurrence have been lost.
In l967, Samson Mines drilled six holes into a strong positive anomaly outlined by a ground magnetometer survey. This zone was found to be caused by magnetite in serpentinized peridotite.

In 1968 a total of 12 diamond drill holes were completed by central B.C. Exploration Ltd.. Four holes were drilled through the skarn zone, totaling about $1 \varnothing \emptyset \emptyset$ feet. The best intersection was in DDH-68-12 of 9 feet grading $5.4 \mathrm{oz} / \mathrm{T}$ Ag and $6 \% \mathrm{~Pb}+\mathrm{Zn}$. A fifth hole was drilled near the zone of best grade, and intersected a skarn zone 250 feet wide. This hole returned two sections from 50 to $6 \emptyset$ feet thick, grading up to $2.6 \mathrm{oz} / \mathrm{T} \mathrm{Ag}$ and $4.7 \% \mathrm{pb}+\mathrm{Zn}$, with individual five foot sections grading up to $8 \mathrm{oz} / \mathrm{T} \mathrm{Ag}$ and $12 \% \mathrm{pb}+\mathrm{Zn}$.

Eleven additional holes were drilled into a residual anomaly identified by gravity survey and found the anomaly to be caused by peridotite.

In 1969, twelve drill holes tested the skarn zone and the hangingwall rocks to the south. A 5.5-foot section of $2.5 \mathrm{oz} / \mathrm{T} \mathrm{Ag}$ and $20 \% \mathrm{~Pb}+\mathrm{zn}$ was returned. 'The drill core was tested for Hg , with some samples of sulphides returning up to 50 ppm Hg . A geochemical soil survey was done for $A g$ and $H g$. Several coincident anomalies were found, some over the skarn zone.

In 1974 and 1975, payne briefly mapped the surface skarn area and relogged the remaining, preserved drill core. He found the skarn zone and geological units to have been poorly identified in previous drill logs.

In 1976, the property was allowed to lapse and Central B.C. Explorations Ltd. failed. Between that time and the present, the on-site storage area for drill core was vandalized and the core lost.

From 1983 to 1986, the Com claims were staked by Gerry Klein. In 1987, the Com dlaims were optioned by Garry Brown, Castello Resources Ltd., Vancouver.

### 1.4 Logistics

Diamond drilling was conducted to test the strike and depth extents of the skarn zones identified by previous geological mapping and diamond drilling. A total of six diamond drill holes (nQ) were completed.
See Figure 3.

Four drill sites were set up in a crude fence, approximately parallel to the strike of the skarn zone, and extending to the west of the main skarn zone defined by previous drilling. An additional hole was drilled to the south of the fence to test the skarn zone at depth. A sixth hole was drilled to the northeast of these holes to test a second narrow zone of high-grade $\mathrm{pb}-\mathrm{Zn}-\mathrm{Ag}$ mineralization previously identified there. All holes were drilled in the up-dip direction, perpendicular to strike, or were vertical in order to intersect the skarn zone at depth.

The drill core was logged and mineralized intervals were sampled. Sections of individual drill holes and cross sections of the drilled areas were constructed and compiled with earlier drill data.

### 1.5 Itinerary

Jan. 22 - John Payne to prince George and returns to Vancouver.
Jan. 28 - Drilling commences on property.
Feb. 8 - Wendy sisson and Payne to prince George. payne returns to vancouver.
Feb. 19 - payne to prince George.
Feb. 20 - Payne returns to vancouver.
Feb. 24 - Drilling finishes.
Feb. 26 - Sisson returns to vancouver.

### 2.6 GEOLOGY

2.1 Regional Geology

Several regional geological maps have been produced for the prince George area, (see G.S.C. Maps 49-196Ø, 2-1962, 12ø4, 1287 and 1424A). See Figure 4.

The Com claims are located within slide Mountain Group stratigraphy which has been identified as part of the Intermontane Belt structural province, (Monger, 1984). The claim area borders on the omineca Crystalline Belt to the east. Wolverine complex intrusions are contained in this belt. Earlier work identified slide Mountain rocks as part of the Omineca Complex, (Tipper et al., 1974). The Quesnel terrane is located to the southwest of the property. It is uncertain whether or not any of the massive, less deformed volcanic rocks found in the southern property area may belong to this Group.

The Slide Mountain Group is Upper paleozoic in age and comprised of basalt, ultramafic rocks, and basinal marine sediments, (Monger, 1984). The Upper paleozoic to Lower Jurassic Quesnel Group is comprised of island arc volcanic and volcanoclastic rocks, plus associated basinal marine strata. Quesnel Group and slide Mountain Group rocks are fault-separated in the claim area, as is the slide Mountain Group strata from the omineca Complex, (Tipper et al., 1979).


## LEGEND

21 Glacial Till
15 Jurassic Takla Group andesite, basalt
14 Triassic?Jurassic? argillite, greywacke, shaly limestone

Figure 4 Regional Geology (part of Map \#2-1962)

A Wolverine Complex granodiorite B Wolverine Complex gneiss,

Mississippian slide Mountain Gp. andesite, basallt, limestone Devonian limestone Cambrian limestone, quartzite schist

## LEGEND

Skarn (epidote $\pm$ garnet), after Unit $1 \pm$ Unit 2 Massive Sulfide (defined in drill holes, trenches; projected)
Quartz-plagioclase porphyry dike regional deformation, metamorphism


Andesite flow $\pm$ chert, argillite Dacite flow (+ argillite in east) Argillite (after mudstone) Crystalline Limestone Gneiss (after greywacke)


Figure 3. Detailed Geology (after Payne, 1976)

Wolverine Complex intrusions are comprised of quartz monzonite, granodiorite and quartz diorite in the property area and are found towards Lookout Mountain. These rocks have been dated as Early Tertiary, (Tipper et al., l979).

The major regional lineament system in the prince George area parallels the McLeod Fault, which separates the Omineca Belt rocks from the Rocky Mountain Fold and Thrust Belt to the east. This structure trends to the northwest and joins with the Rocky mountain Trench further north. Three major lineaments are found to the southwest of this fault, paralleling its trend. Faults along these separate the lithological Groups mentioned above. payne identified one of these faults cutting the southern property area, (payne, 1987).

## 2.2 property Geology

The property is underlain by a sequence of metasedimentary and metavolcanic rocks. These strata trend from 085 to $1 \varnothing 5$ degrees and dip steeply to the south from $5 \emptyset$ to $7 \varnothing$ degrees.

The property geology is dominated by rocks of the slide Mountain Group. These represent an original sequence of deep to shallow marine sediments. The original, undeformed stratigraphy on the property consisted of a thick lower unit of greywacke, overlain by limestone and shale, with local flows of dacite, which were in turn overlain by dirty andesitic tuffaceous sediments.

Metamorphism of these rocks occurred during the progressive, regional deformation of the Intermontane Belt in the Early to Middle Jurassic. In the property area, the slide Mountain Group strata were subjected to greenschist and upper greenschist facies metamorphism. The resulting stratigraphy consists of a lower unit of biotite gneiss, (Unit l), overlain by crystalline limestone/marble, (unit 2), and argillite, (unit 3), with local occurrences of dacite, (Unit 4), and an upper chloritic gneiss, (Unit 5).

Units 1 and 5 are consistent in their extent across the property. Units 2 and 3 are well defined as distinct stratigraphic units in the eastern property area. However, towards the west, these units become interlayered with the gneisses of Unit l, (see Figure 5). This geology is thought to represent facies changes within the original stratigraphic section through time.

Rocks thought to belong to the Quesnel Group were identified in the southern property area, (see payne, 1974). These rocks can apparently composition and more massive nature. The Quesnel Group is represented predominantly by mafic and lesser felsic volcanic rocks and chert, (Payne, 1987). The units within this Group appear to have undergone less intense deformation than the underlying gneisses. The nature of the contact between Quesnel Group strata and those of the slide Mountain Group is undefined.

The Quesnel Group rocks were not noted in core from the 1988 drill programme. Therefore, no positive identification can be made of this unit. It is uncertain whether rocks identified as massive andesite and andesite flows during previous mapping and drilling may actually belong to the upper part of unit 5 .

The Slide Mountain Group rocks are crosscut in the western property area by quartz-feldspar porphyry intrusions, (Unit 6), and andesite dykes, (Unit 6a).

In the eastern property area, towards Lookout Mountain, are intrusive rocks identified as belonging to the Wolverine complex. These rocks are granodiorite to quartz diorite in composition. unit 6 may be related to these intrusions.

### 2.3 Geological Units

## Unit 1

Unit l is a dark brown, fine grained, well-foliated biotite gneiss with contrasting compositional layers of biotite-rich and quartz-plagioclase-rich material. Compositional layers average $\varnothing .1$ to $\varnothing .5 \mathrm{~cm}$ in thickness and comprise approximately 60\% (biotite) and 40\% (quartz-plagioclase) of the section. The unit becomes increasingly biotitic with depth. Small, pinky red garnets were developed locally as augen within biotite-rich layers. These are best noted in the unaltered gneiss, away from the skarn zone.

Subunit 1c
Chloritic biotite gneiss is interlayered with unit l. Chlorite is developed as intergrowths in the biotite-rich foliation layers. This subunit may represent weak alteration of Unit l by fluids associated with the skarn.

## Subunit llm

Subunit lum represents crystalline limestone interlayered in biotite gneiss of Unit l. It is developed locally in the upper section of Unit 1 .

Subunit lsk, lLmsk
This subunit designates rocks of unit laffected by epidote- and/or garnet-skarn alteration. (See Economic Geology below.)

Unit 2
Unit 2 is a fine to medium grained, white to light grey, cxystaline limestone. The unit is weakly foliated, and competent. commonly it has a banded nature caused by more-argillaceous, darker grey interlayers.

Subunit 2a
Subunit 2a is dark grey argillaceous limestone commonly with thin argillite interlayers averaging 3 to 10 cm thick. The subunit is less competent then unit 2 and locally is pyritic.

Subunit 2sk
This subunit designates limestone affected by epidote- and/or garnetskarn alteration. (See Economic Geology below.)

Unit 3
Unit 3 is a black, very fine grained argillite, which is well foliated and fairly competent. Local graphitic intervals carry abundant folioform partings of graphite. In the western property area, unit 3 hosts dyke swarms and possible fault zones.

Subunit 3 Lm
Subunit 3 Lm designates thin limestone and argillaceous limestone interlayers within Unit 3 argillite.

Subunit 3 g
This Subunit identifies biotitic gneiss interlayered with argillite, and is found in the western property area.

Subunit 3sk
This Subunit of the argillite was affected by tremolite-skarn alteration. (See Economic Geology below.)

Unit 4
Unit 4 is defined as pale green, dacitic volcanic rocks, which are best represented in the eastern and western property areas. These felsic volcanic rocks occur predominantly as flows and possibly welded tuffs, with minor interlayered argillite.
unit 5
Unit 5 is a dark to medium green, chlorite-biotite-quartz gneiss. It contains well defined compositional layers rich in chlorite/biotite and quartz-plagioclase, averaging 0.1 and 1 cm in thickness, respectively. Each comprises 50\% of the rock. Unit 5 is a competent rock but locally becomes schistose in texture and fissile.

This Unit is similar to Unit 1 gneiss but is stratigraphically above the limestone and argillite of Units 2 and 3 , whereas unit 1 is stratigraphically below these units.

Subunit 5a
Subunit 5a represents an argillaceous chlorite-biotite-quartz gneiss unit which locally forms interlayers within Unit 5 , and itself locally contains thin argillite interlayers.

Unit 6
Unit 6 consists of white, fine to coarse grained, quartz-feldspar porphyry dyke rocks of granodiorite to quartz diorite composition.

Subunit 6a
Subunit 6a represents fine grained, dense, dark green andesite dykes. These dyke rockis may be coeval or younger then the unit 6 intrusions.

### 2.4 Structure

The Com property stratigraphy has a generally consistent strike of 095 degrees with a dip of $7 \varnothing$ degrees to the south.

Although the units have been strongly deformed, interpretation of drill data and previous surface mapping has not delineated any major fold structure closures within the property area.

At least three fault structures are interpreted to crosscut the property. These structures have a similar northeast trend and are vertical or dip steeply to the southeast (?). Offset on the delineated structures in the west property area is unknown. The Farmer fault was identified in earlier studies by payne. It is mapped as following a shallow valley on surface, and in the southwest as following Farmer Creek. It is intersected by several drill holes at depth, (DDH 69-10, 69-11 and 69-12, and also possibly DDH 88-5 and 88-3). payne also reported that one of the lineaments paralleling the McLeod fault traverses the southern property area.

Dyke rocks of Unit 6 and 6 a occur locally along the fault structures in drill section.

## 3.ஏ ECONOMIC GEOLOGY

### 3.1 Deposit Description

On the Com property economic mineralization is concentrated within epidote-garnet 'skarn zones. These zones are located consistently along the lower contact of the Unit 2 and Unit 1 Lm limestones and the underlying gneisses of Unit l. The skarn zones are concentrated within the Unit 1 gneiss. Locally, where gneiss contains thin interlayers of limestone, (Subunit llm), the skarn affects both rock types. The skarn contact with the unit 2 limestone is sharp. However, the lower contact of the skarn zone is gradational, as the degree of development of skarn decreases in intensity with depth in the gneisses.

Epidote skarn is the dominant skarn alteration seen on the property. Garnet-skarn alteration is minor, and tremolite-skarn alteration is rare, occurring locally only in argillite.

The epidote-skarn alteration is medium to pale limy green in colour with beigy orange mottles. Strong to intense skarn zones consist of dense, very fine grained epidote with lesser quartz and calcite plus very minor secondary clay minerals. Intense skarn alteration obIiterates all original textures of the host rock, yielding an equigranular, dense mass of skarn minerals. Where skarn alteration is weaker, remnant patches of foliated gneiss can be recognized. Here, the alteration is lime-green in colour, and the rock consists primarily of epidote and chlorite plus lesser quartz and calcite. In weak skarn zones, alteration is concentrated along foliation planes and fracture surfaces in the host gneiss.

Garnet-skarn alteration is less common and is developed as lenses within the epidote-skarn zones. It forms discontinuous bodies consisting primarily of garnet, epidote and minor quartz, calcite and secondary clay minerals. These zones are pinky beige in colour and locally contain medium to coarse grained, subhedral garnet. The garnet-skarn alteration lenses likely represent higher temperature cores to the surrounding epidote skarn zone.

The tremolite skarn is uncommon and restricted to argillite, (payne, 1987). Tremolite forms radiating clusters of elongate, prismatic grains, and where abundant give the host rock a white colour. Tremolite-skarn alteration was not noted in the drill core from the 1988 programme.

Sulfide mineralization is sporadic and restricted to zones of strong to intense skarn alteration. It is concentrated as small, massive, discontinuous lenses or pods in epidote- and garnet-skarn zones. In the sulphide lenses, galena and sphalerite form foliated bands interlayered with skarn-altered host rock. These sulphide-rich layers average $\emptyset .2$ to 2 cm in width, and are concentrated in sulfide-bearing zones averaging 5 to $5 \emptyset \mathrm{~cm}$ in thickness. Surrounding these mineralized intervals, the skarn rocks have low sulphide contents, with galena and sphalerite concentrated as sporadic blebs.

Veins of epidote-skarn mineralogies crosscut strong and intense epidote-skarn alteration zones. These veins locally carry high concentrations of sulphides.

Sphalerite-galena concentrations within garnet-skarn alteration zones locally also contains chalcopyrite. Pyrargyrite was noted in DDH 68-2 in a massive ba'nd of galena.

In an earlier study, (Allen, 1973), an occurrence of pyrochlore was mentioned, associated with sphalerite in a showing north of the Discovery pit.

### 3.3 Distribution

Sulphide mineralization is discontinuous along the strike extent of the skarn-alteration zones across the claim area and also at depth. This distribution is attributed to the sporadic nature of the deposits and, to a lesser extent, to possible displacement by faults which crosscut the property, (See Figure 5).

In the 1988 drill programme, the western property area was tested for sulphide mineralization at depth. previous work had outlined skarn alteration on surface in this area plus sulphide concentrations at the Discovery and Hall trench sites.

DDH-88-1 and DDH-88-2, to the west of DDH-68-12, intersected zones of epidote-garnet iskarn 213.5 and 115.5 feet wide, respectively. Each contains intermittent intervals of disseminated to massive sphaleritegalena, (See Appendices A and B). This skarn zone yielded sporadic silver values from intervals of massive sulphide. DDH-69-12 identified a possible fault which may offset the skarn zone. This hole did not encounter any sulfide mineralization; however, it contained broad zones of very poor recovery where the skarn zone would be projected to occur. In plan, based on adjacent holes, the skarn zones does not appear to be offset in this region.

To the west of DDH-88-2, skarn alteration becomes less intense.
only weak skarn mineralization was noted in DDH-88-5. Further west DDH-88-4 also intersected a skarn zone containing disseminated to massive intervals of sulphide mineralization similar to that in
holes 88-1 and 88-2. This interval occurs between 89 and 140 feet and is truncated at depth by a large porphyry intrusion of unit 6 , (see Figure 6 and Appendix A). The zone seen in DDH-88-4 appears to be separated from that in DDH-88-1 by the Farmer fault. Thus these two zones may be unrelated stratigraphically.

West of DDH-88-4, the skarn alteration becomes less intense. DDH-88-3 intersects the skarn zone at depth; there it is less than 50 feet wide with a few intermittent sections of disseminated galena and sphalerite. Some evidence suggests that a fault separates these two drill holes.

To the east of DDH-88-1, the mineralized skarn is intersected by drill hole DDH-69-4 between approximately 280 and 400 feet. This zone may be separated from DDH-69-5 and DDH-69-6 by a northeast-trending fault. The skarn zone in the two holes to the east (69-5 and 69-6) is less pervasive and lacks significant mineralization.

Previous drilling identified a skarn zone to the northeast, stratigraphically below the western skarn zone within unit land lim rocks. In DDH-69-11 a thick section of epidote skarn was intersected from approximately 191 to 297 feet, but no mineralization was found. In DDH-68-2 to the northeast, a short interval of $\mathrm{Pb}-\mathrm{Zn}-\mathrm{Ag}$ mineralization was intersected between 101 and 121 feet, bound on either side by dyke rocks of Unit 6. DDH-88-6 was drilled to the east of DDH-68-2 in an attempt to intersect the projected extension of mineralization found in that hole. However, only a thin interval of barren skarn alteration was encountered from 229 to 241 feet.

### 3.4 Model of Deposit Genesis

The common mode of occurrence of skarn deposits is at or near the contact of an acidic or intermediate intrusive body and a pure or impure limestone or andesite. However, at Giscome, the skarn deposit occurs at the contact of a limestone and underlying gneiss, and is contained predominantly in the gneissic rocks. The sulphide mineralogy suggests that this skarn zone was formed at a low temperature. This indication and the lithological position of the skarn suggest that it is well removed from an intrusive heat source and that sulphide-rich solutions migrated to be deposited at the favorable limestone-gneiss boundary. The heat source to produce the skarn is unknown but may be related to intrusions to the northeast and east or to the porphyry dykes seen on the property.

The timing of the deposit is interpreted as being post-metamorphism. In the weaker skarn zones remnant patches of gneiss can be seen. Alteration took advantage of the pre-existing foliation, yielding a banded or layered appearance to the skarn and sulphide-rich zones. Locally, epidote-skarn alteration affected intrusive dykes; in these, skarn minerals are concentrated along fractures. Also, host rocks may be affected by skarn alteration along the contacts of these
intrusions.

This suggests that the skarn alteration is related to these intrusive events. It is also possible that previously formed skarn alteration in the host rocks was remobilized locally near the intrusions.

## 4.ø GEOCHEMISTRY

See Appendix A.

### 4.1 Discussion of Results

The highest-grade results from the 1988 drill programme were from holes DDH-88-1 land DDH-88-2. DDH-88-4 also returned some economically interesting values. However DDH-88-3, DDH-88-5 and DDH-88-6 failed to find significant mineralization. Footage intervals of interest are summarized in Table 2.

Assay results show that the sulphide mineralization is sporadic and is concentrated most strongly within zones of intense epidote-garnetskarn alteration. Sulphides tend to be concentrated in specific intervals with little to no dispersion into the surrounding skarn rocks: outside these intervals of massive sulphide occurrence, the Pb - and Zn -content of the skarn drop sharply. The assay results also indicate that the skarn zones carry silver values only in the intervals of concentrations of galena and sphalerite.

## 5.ø CONCLUSIONS

The Com claims are underlain by metasedimentary and metavolcanic strata within the slide Mountain Structural Terrane of the Cordillera, and border on the Omineca Crystalline Complex.

The strata of the Slide Mountain Group strike fairly consistently at 095 degrees and dip to the south at 70 degrees. Although the rocks appear to have undergone fairly intense metamorphism and deformation, no fold structures have been found to close in the claim area. The strata are crosscut by several faults, some of which may be related to the McLeod River Fault system.

Zones of epidote- and garnet-skarn alteration occur in the property area along the contact of limestone and stratigraphically underlying gneissic rocks. Sulphide mineralization occurs as discontinuous lenses and pods of sphalerite and galena within zones of strong skarn alteration. Locally, mineralized zones are argentiferous.

The western claim area is the best area of mineralization explored thus far. Drilifing here delineated a well defined, fairly continuous skarn zone containing intermittent intervals of massive sulphides

## TABLE 2

## Intersections of Economic Interest

| Drill Hole | Footage Interval | Ag ( $\mathrm{Oz} / \mathrm{t}$ ) | Pb (\%) | Zn (\%) |
| :---: | :---: | :---: | :---: | :---: |
| DDH-88-1 | $84.5-87.5$ | 0.63 | 0.48 | 0.67 |
|  | $87.5-89.5$ | 0.60 | 0.48 | 0.65 |
|  | 178.ø - $182 . \square$ | 1.62 | 0.49 | 3.36 |
|  | 182.0 - 191.ø | 0.16 | 1.60 | 1.54 |
|  | 195.ø - 198.0 | 1.86 | 2.47 | 3.26 |
|  | 198.6-202.0 | 2.68 | 2.31 | 3.36 |
|  | 205.0 - 298.5 | 2.40 | 1.75 | 4.11 |
|  | 256.ø - 259.0 | 4.16 | 2.31 | 7.95 |
|  | $302.5-308.5$ | 0.71 | 0.47 | 1.68 |
|  | $376 . \emptyset-379 . \square$ | 3.96 | 2.34 | 5.74 |
|  | 379.0 - 384.0 | 0.77 | 1.31 | 4.11 |
|  | 384.0 - 387.0 | 0.63 | 0.29 | 3.97 |
| DDH-88-2 | 348.0-351.5 | 0.07 | 1.20 | 1.18 |
|  | $410.0-415.0$ | 0.16 | 1.34 | 1.22 |
|  | 415.0 - 420.0 | 0.10 | 0.58 | 0.78 |
|  | 433.5 - 438.0 | 0.08 | 1.87 | 1.71 |
|  | 438.0 - 442.5 | 0.07 | 0.47 | 0.36 |
|  | 1442.5-446.5 | 0.54 | 0.93 | 1.39 |
| DDH-88-4 | 89.ø - 90.5 | -- | -- | 2.27 |
|  | 99.5-101.0 | 1.16 | -- | 2.36 |
|  | 138.0-140.0 | 0.35 | 0.005 | 0.01 |
| DDH-88-5 | 75.0-76.0 | 0.70 | 0.93 | 1.26 |
|  | 140.0 - 145.0 | 0.26 | Ø. 28 | 0.38 |

surrounded by zones of lower grade mineralization. Sulphide mineralization is discontinuous along strike and at depth. Continuity of this skarn zone along strike appears to be complicated by faulting and by the emplacement of intrusions.

## 6.ø RECOMMENDATIONS

The results from the 1988 drill programme outlined a zone of low grade skarn mineralization in the western property area. Further work is recommended to test extensions of this zone, with particular attention given to investigation of the geochemical anomalies and galena-sphalerite float occurrences in the eastern property area.

To this end, surface mapping of the property area at 1:2500 scale is recommended to identify favorable zones for exploration for additional skarn zones and associated economic mineralization. A better understanding is needed of the stratigraphy and its complexities. Mapping might further identify and define the nature of offset on the fault structures which crosscut the property area, and which may disrupt the skarn and massive sulfide bodies.

In conjunction with this, a VLF-em geophysical survey should be conducted at a line spacing of 25 m . An overall review of old geophysical, geochemical and drill data should be made in the light of results returned from these surveys.

Diamond drilling is recommended to explore any targets generated by this work. Special attention should be given to the eastern property area and to any possible extensions to the skarn zone identified in the 1988 drill programme.


## 7.冋 COSTS STATEMENT

## GISCOME PROPERTY <br> 1988 Diamond Drilling

FOOD \& ACCOMMODATION: Feb. 8-Feb. 26 ..... \$ 898.90
AIRPLANE TICKETS: ..... \$ 1447.9ø
FUEL: ..... \$ $\quad 196.28$
TRUCK RENTAL: ..... \$ 1382.14
TRAILER RENTAL: ..... \$ 513.63
CONSULTANTS FEES:
John Payne, 6 days @ $\$ 350 . \not 0 \varnothing$ ..... \$ 2100.00
Wendy Sisson, $33 \mathrm{l} / 2$ days @ $\$ 180.00$ ..... 6030.00
LABODR: \$ 150.00
Labourer, 1 day ..... 90.00
ASSAYS AND ANALYSIS:
70 samples @ \$ 33.00 ..... \$ 2310.00
18 samples @ \$ $14 . \emptyset \emptyset$ ..... 486.00 ..... 252.00 ..... 12.00
SHIPPING: ..... \$ $\quad 110.28$
SUPPLIES: ..... \$ $42 \emptyset .90$
DRAFTING AND REPRODUCTIONS: ..... \$ 379.12
MISCELLANEOUS:
Airport Transportation ..... \$ 109.80
Long Distance Telephone ..... 25.00
TOTAL COST OF PROGRAM:\$ 16913.95

## DIAMOND DRILLING

## GISCOME PROJECT, FEBRUARY 1988

CONTRACTOR: H. ALLEN DIAMOND DRILLING LTD., MERRIT, B.C.

| ```Drilling, NQ core, 2858 ft.(871.1m) at \$20/ft.``` | \$57 160.00 |
| :---: | :---: |
| Tools consumed, mud | 2823.00 |
| Water haul, water truck rental | 16633.09 |
| D6 cat, snow plowing, site prep, brush clearing, 126 hours at $\$ 50 / \mathrm{hr}$. | 6300.00 |
| Mobilization, demobilization | 3000.00 |
| Crew meals and accommodation | $3 \quad 187.47$ |
| TOTAL DRILLING COSTS | \$89 103.56 |

### 8.0 REFERENCES

Allan, Alfred R., 1973. Report on the Giscome property, report for Central B.C. Explorations, Ltd., unpublished.

Central B.C. Explorations, Ltd., Diamond Drill Logs, 1966-1969, incomplete.

Monger, James $W$, $H$, . 1984. Cordilleran Tectonics: a Canadian Perspective, found in Bull. Soc. Geol. Erance, XXVI No. $2, \mathrm{p}$ 255-278.

Payne, John G., 1974. Geological Report on the Giscome property, for Central B.C. Explorations, Ltd., unpublished.

Payne, John G., 1976. Geological Report on the Giscome property, for Central B.C. Explorations, Ltd., unpublished.

Payne, John G., 1987. Geological Report, Com l-6 Claim Groups, Cariboo Mining District, A Pb-Zn-Ag Prospect, report for Mr. Gary Brown, unpublished.

Tipper, H.W. et al., 1979. Parsnip River,B.C., Sheet 93, 1:1øøøøøø, G.S.C. Map 1424A

Tipper, H.W., et al., 1962. McLeod Lake, B.C., Sheet $93 \mathrm{~J}, \mathrm{l}$ Inch to Four Miles, G.S.C. Map 2-1962.

### 9.0 CERTIFICATES OF QUALIFICATIONS

I, John G. payne , do hereby certify that:

1. I am a consulting geological engineer.
2. I graduated from Queen's University in Kingston, ontario, in 1961 with a B. Sc. in Geological Engineering. I received a PhD in Geochemistry from McMaster University, Hamilton, Ontario, in 1966.
3. I have practiced geology since graduation from university, mainly in the North American Cordillera.
4. This report is based on a diamond drill programme conducted on the Giscome property during February 1988. Six no diamond drill holes were completed, logged and sampled. Results from this drilling were compiled and compared with earlier drill data.
5. I am a fellow of the Geological Association of Canada.
6. My address is 877 Old Lillooet Rd., North Vancouver, B.C., V7J 2H6.
7. I am under contract for this report to Garry Brown of Castello Resources, Ltd., Vancouver, B.C..
8. I have no direct or indirect interest in the com claim group.
9. This report may be used by Garry Brown in a statement of Material Facts or prospectus for public financing.

Dated at North Vancouver, B.C., April 4, 1988.


I, Wendy G. Sisson, do hereby certify that:
l. I am a consulting geologist.
2. I graduated from the University of British Columbia, in Vancouver. B.C., in 1985 with a B. SC. in Geological Science.
3. I have been active in the mining industry in B.C. since 1981 and have been employed as a geologist since my graduation.
4. My address is 4264 West lith Ave., Vancouver, B.C., V6R 2 TB.
5. I am under contract for this report to Garry Brown of Castello Resources, Ltd., Vancouver, B.C..
6. I have no direct or indirect interest in the com claim group.
7. This report may be used by Garry Brown in a Statement of Material Facts or prospectus for public financing.

Dated at North Vancouver, B.C., April 4, 1988.


Wendy G. Sisson





## CASTELLO RESOURCES LTD.

 GISCOME PROPERTY CARIBOO M.D., B.C.CROSS SECTION DDH-88-4



SCALE: '1:750

## CASTELLO RESOURCES LTD.

 GISCOME PROPERTYCROSS SECTION DDH-88-5

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Chemex Labs Ltd
Analytical Chemists * Geochemists * Reglstered Assayers
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P.O. $\quad$ : NONE

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