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**REPORT AND WORK PROPOSAL**  
**ON THE**  
**ANGE GOLD EXPLORATION LTD.**

**ZEBALLOS PROPERTY, VANCOUVER ISLAND**  
**BRITISH COLUMBIA**

**ALBERNI M. D.**

**N.T.S. 92L/2W**

**BY**

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## TABLE OF CONTENTS

	PAGE
SUMMARY	1
INTRODUCTION	4
LOCATION AND ACCESS	5
GEOGRAPHY AND CLIMATE	6
LOCAL INFRASTRUCTURE	7
PROPERTY AND OWNERSHIP	9
MINING HISTORY	9
ZEBALLOS CAMP	9
C.D. MINE	11
RIMY	12
GENERAL GEOLOGY - ZEBALLOS CAMP	13
MINERALIZATION - ZEBALLOS CAMP	14
GEOLOGY AND MINERALIZATION: C.D. AND RIMY VEINS	15
LOCAL GEOLOGY	15
MINERALIZATION - C.D.	15
MINERALIZATION - RIMY	21
MINERAL POTENTIAL - C.D. AND RIMY VEINS	23
CONCLUSIONS	24
RECOMMENDATION	25
EXPLORATION AND DEVELOPMENT BUDGET - ANGE GOLD EXPL.	26
REFERENCES	29
CERTIFICATE	30

TABLE OF CONTENTS CON'T.

	PAGE
<b>FIGURES</b>	
1. LOCATION MAP	3
2. TOPOGRAPHIC MAP - CLAIM MAP	9
3. ZEBALLOS MINING CAMP - AREAL GEOLOGY	pocket
4. LONG ASSAY SECTION - No. 4 VEIN	pocket
5. LONG ASSAY SECTION - 14-1 STOPE	pocket
6. PLAN OF RIMY ADITS	20
7. TUNNEL PLAN AND ASSAYS	pocket
8. CLAIM MAP AND LONGITUDINAL SECTION	pocket
 <b>PLATES</b>	
1. ZEBALLOS - LOOKING NORTH	
2. LOOKING WEST - DOWN GOLDVALLEY CREEK TOWARD ZEBALLOS RIVER	
3. LOOKING SOUTHEAST - GOLDVALLEY CREEK	
4. NEW ROAD CUT - C.D. No. 4 VEIN	
5. ROAD CUT - C.D. No. 4 VEIN	
6. ROAD CUT - C.D. No. 4 VEIN SHOWING SULFIDE RIBBONING	
7. RIMY MAIN VEIN - No. 4 ADIT	
8. RIMY VEIN - No. 4 ADIT	
9. RIMY MAIN VEIN - No. 3 ADIT	
10. RIMY VEIN - No. 3 ADIT	

APPENDIX I

APPENDIX II



SUMMARY

Ange Gold Exploration Ltd.'s Zeballos property comprises six Crown Granted mineral claims which include the C.D. and Rimy mine operations. Seven gold bearing fissure veins are known on the C.D. claims and one of these, the No. 4, mined from 1938 to 1941, produced 7,473 tons from which 4,600 ounces of gold and 1,425 ounces of silver were produced. The C.D. mine was developed along the vein on the 1200 adit level and by an internal winze which are now partly caved or flooded. The mine closed because of the low gold price, and the high cost of development which was at that time partly due to the lack of good access.

The RIMY claims include at least three gold bearing fissure veins, one of which has been partly developed by two short adits. Some ore was shipped from the vein and returned 44 ounces of gold and 51 ounces of silver. Work on the Rimy veins was abandoned in 1939, probably in large part due to poor access and the low gold price.

A new road linking Zeballos to the Island Highway and a new logging road up Goldvalley Creek to the C.D. mine site places the property in an excellent position for development. During the construction of the new logging road a new high grade mineral zone was uncovered well above and east of the old No. 4 vein workings. Assays confirm the grade of this exposure at over 14 ounces of gold per ton across an average width of 16 inches. The potential for an ore shoot in this portion of the vein is good. In 1982 the company drifted north along this new mineralized zone for a distance of 85 feet. Although sheared, the vein has been shown to be continuous. The vein has not yet been explored

in sufficient detail to estimate overall grade and tonnage potential, but there is room between the new surface exposure and the main 1200 adit level and to the northeast along the vein to develop significant reserves.

Current mineral reserves based upon mine data show about 4,810 tons grading 0.50 ounce gold/ton between the 1300 and 1400 levels in the C.D. No. 4 vein, and about 2,400 tons of geological reserves in the Rimy vein grading about 0.34 ounces gold/ton at No. 3 and No. 4 adit levels.

A program of underground drifting along the C.D. vein and core drilling to test the Rimy from two levels to develop potential ore shoots is recommended. The cost of the three phase program is estimated at \$850,000.



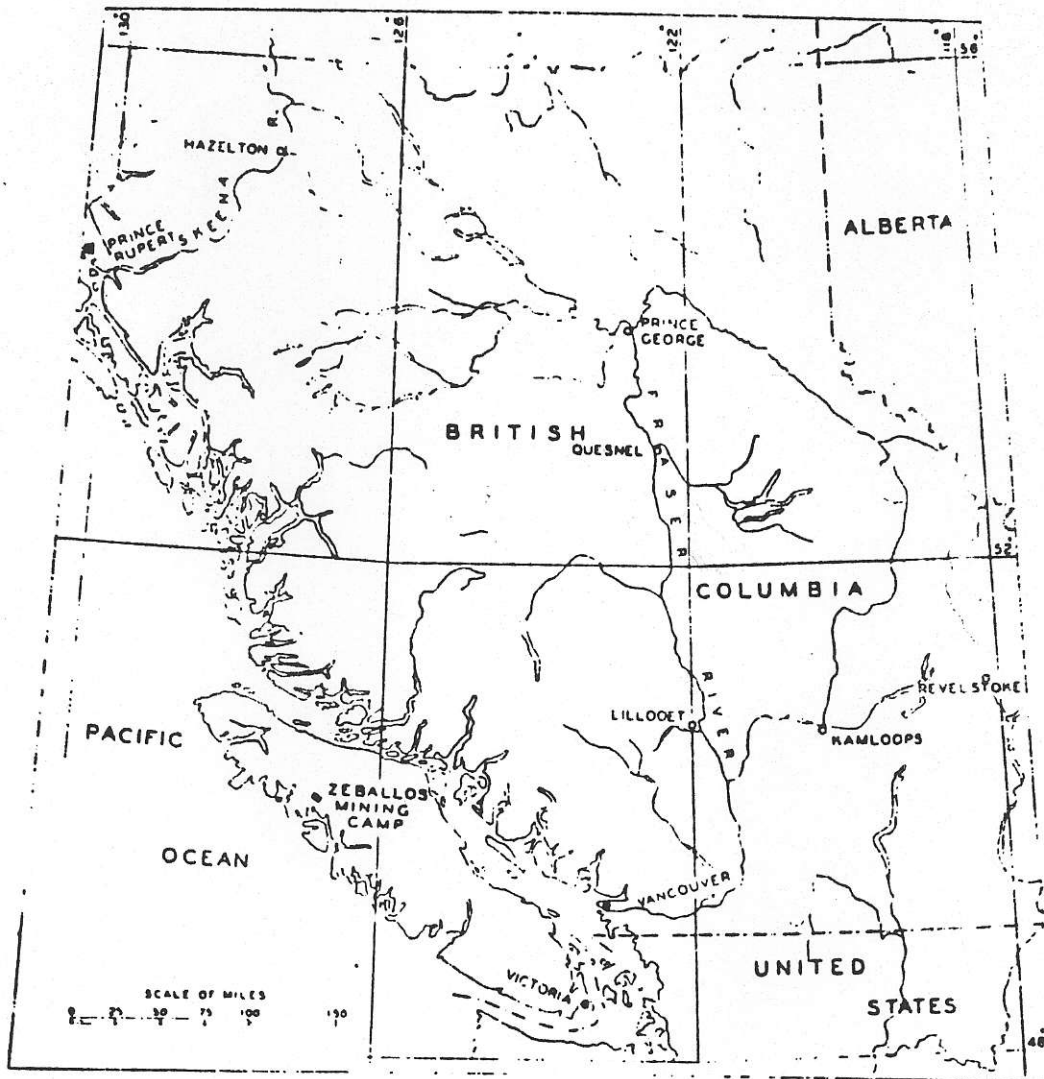
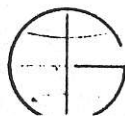


Figure 1

LOCATION MAP



## INTRODUCTION

The writer was retained by Mr. A. Lorinde, President of Ange Gold Exploration Ltd., to examine the company's C.D. and RIMY property located on Goldvalley Creek northeast of Zeballos, Vancouver Island. Two days were spent in March 1981 examining the workings, mapping the accessible veins and taking samples for check assays. The property was visited again in April 1981 to check on the logging situation as it affected mine access. The property was examined again in late March 1983 in order to map and sample the No. 4 vein in the new road adit.

Zeballos was an active gold camp during the period 1934 to 1948 largely as a result of spectacular gold found and mined at the Privateer, the camp's major producer. The C.D. mine produced 4,600 ounces of gold and 1,425 ounces of silver from 7,473 tons mined between March 1938 and August 1941. Like all veins in the Zeballos camp, the C.D. No. 4 vein is extensive along its length, narrow and confined to well defined shear zones. Most of these veins are confined to the Zeballos pluton, a Tertiary intrusive of quartz diorite composition.

The Zeballos veins are typically fissure veins comprising quartz, with pyrite, sphalerite, galena, arsenopyrite and some marcasite. Free gold is present in most veins as specks or coarse masses. The C.D. No. 4 vein and Rimy main vein are variably sheared, and have sulfide streaks and lenses which contain the particles of free gold.

Like most of the mines in the Zeballos camp, the C.D. closed down in 1941 because of the then low gold price,



the high costs of mining in such a remote area, and labour shortages because of World War II. In recent years Zeballos has been opened by good roads for easy access, and a new logging road now provides easy access to the C.D. and RIMY claims for the first time. The new road cut a previously unknown high grade portion of the C.D. No. 4 vein providing the company with an excellent incentive for exploration of the vein and consideration for reopening the mine.

#### LOCATION AND ACCESS

The Ange Gold Exploration Ltd. property is approximately 6 kilometers northeast of the Village of Zeballos, a logging and mining community located on the west coast of Vancouver Island about 305 kilometers northwest of Vancouver, British Columbia (Figure 1). The six Crown Granted claims including the C.D. and RIMY mine workings owned by Ange Gold Exploration Ltd. are located on Goldvalley Creek, a northwesterly flowing tributary of the Zeballos River (Figure 2). A newly reconstructed gravel road provides good access from Zeballos up the east side of the Zeballos River to Goldvalley Creek, then up Goldvalley Creek to the LONE STAR claim (L. 1052) which includes the old C.D. mine. Under normal conditions this trip would take from 30 to 40 minutes.

For many years the Zeballos mining camp was isolated on the northwest coast of Vancouver Island with access limited to float plane or coastal shipping. In recent years logging has revitalized the area and Zeballos is now linked to the main Island Highway by a 43 kilometer gravel road. The driving distance from Zeballos





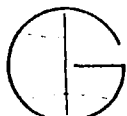
to Campbell River is 233 kilometers and to Victoria 499 kilometers. Boat and aircraft access to Zeballos are still available as required.

### GEOGRAPNY AND CLIMATE

Zeballos lies at the head of Zeballos Inlet, one of several short fiords that bisect the rugged mountainous northwest coast of Vancouver Island. At the C.D.-RIMY property in Goldvalley Creek at elevation 260 meters on the lower west end of the claims the easterly slope rises to over 850 meters at the claim boundary below the ridge top. At the RIMY tunnels below the main ridge, the oldtimers used a cable system to haul materials from their camp to the workings. This cable parallels the hillside and has a slope of about 38 degrees. Most slopes lie at about 25 to 30 degrees.

The climate at Zeballos is fairly typical of the west coast with mild wet winters and warm often sunny summers. The combination has produced heavily timbered coastal forests which are now being harvested. Recent cutting of the mature mixed timber on the Ange Gold Exploration Ltd. property has resulted in opening up a large part of the property for the first time.

Snow can be expected throughout much of the area during winter but except at high elevations tends to be erratic and melts rapidly. Records at Tahsis, the nearest station, indicate a mean annual snowfall of about 72 centimeters (28 in.). Unusually heavy rainfalls are probably more of a problem with respect to road maintenance



than the snow.

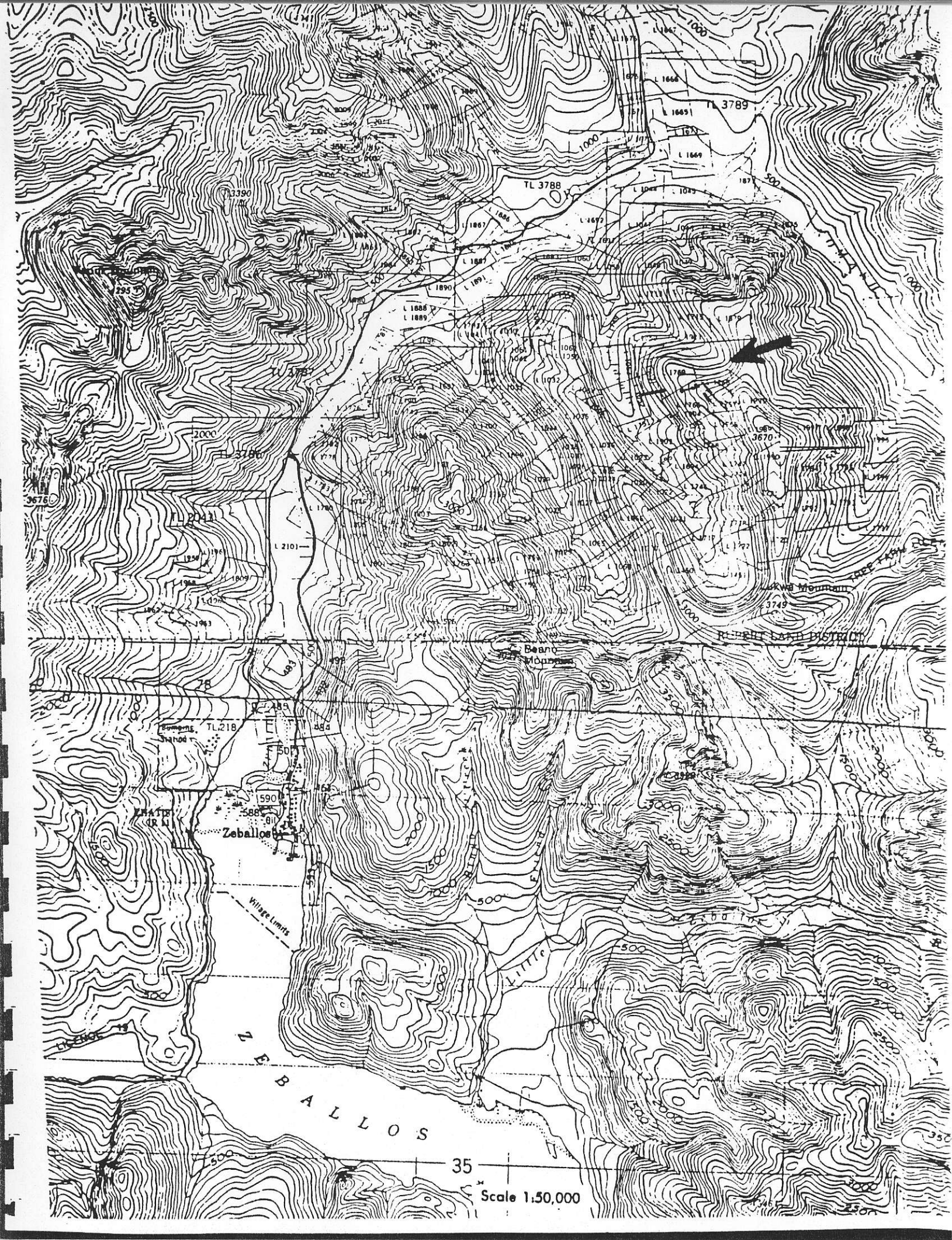
### LOCAL INFRASTRUCTURE

As previously indicated, access into the Zeballos camp and the C.D.-RIMY mine property is no longer a serious problem. Vehicles can reach Zeballos via the paved Island Highway and a relatively short, easy, gravel road. Zeballos has good wharfage capable of taking coastal shipping and is open year round; and float planes have easy access limited by weather.

Because of logging the village has been expanded and cleaned up. The Village has 23 serviced homesites available for sale. At present Ange Gold Exploration Ltd. has a large mobile home which will provide living quarters and office space erected on a serviced lot in the small older trailer park on the outskirts of the village. The village has a store, hotel, restaurant, garage, recreation center, and currently receives satellite T.V. broadcasts. The local power supply comprises stationary B.C Hydro units which are capable of supplying only the immediate community.

During the few years the C.D. mine operated (1938-1941) access was very difficult to both Zeballos and the mine. As a result a small permanent camp was established on Goldvalley Creek adjacent to the main tunnel. Power was supplied by a small hydro unit sited at a small waterfall just east of camp. A short tractor road and elevated punched road connected the old mine camp to the main Zeballos River Road. To gain access to the timber in Goldvalley Creek, Tahsis Co. Ltd. recently constructed a new





ZEBALLOS

35  
Scale 1,50,000

REPT. LAND DISTRICT

Beano Mountain

Lakwa Mountain

Zeballos

Village limits

KHATIP (P. A.)

TL 218

TL 210

TL 3788

TL 3789

3390

295

3676

2000

TL 2011

1000

1000

L 1889

L 1887

L 1669

L 1666

L 1665

3670

3749

590

588

500

500

500

500

500

500

500

500

500

500

500

road up the creek well onto the LONE STAR claim just above the old camp. Because of this new road and the good facilities in Zeballos no camp is required at Ange's property now or in the near future.

PROPERTY AND OWNERSHIP

Ange Gold Exploration Ltd.'s Zeballos property includes six contiguous Crown Granted mineral claims as follows:

<u>Name</u>	<u>Lot Number</u>	<u>Hectares</u>
LONE STAR	L. 1052 ✓	20.73
J. & E.	L. 1056 ✓	3.76
K. FRACTION	L. 1751 ✓	11.68
AXE FRACTION	L. 1752 ✓	4.72
RIMY No. 2	L. 1769 ✓	18.45
RIMY No. 3	L. 1765 ✓	<u>18.43</u>
	Total	77.77

MINING HISTORY

ZEBALLOS CAMP

Small amounts of placer gold were obtained from the Zeballos River as early as 1907. In 1924 the first lode deposit - the Tagore property - was staked, and by 1929 the first ore shipment was made. It was not until 1934 that high grade gold ore was found on Spud Valley Creek and mining on the White Star Gold Mines property commenced. In 1936 the Privateer No. 1 vein was found and in 1938 the

Privateer and Spud Valley mines were in operation. At that time nearly 400 men were employed on thirty properties in the camp. By 1948 all the mines had shut down because of the fixed price of gold and high operating costs.

During the period 1934 to 1938 the Zeballos camp produced 287,811 ounces gold and 124,700 ounces silver from 370,750 tons. The main producers are shown in the following table:

ZEBALLOS GOLD PRODUCTION, 1934 TO 1948  
(Stevenson, 1950)

	Oz.
Privateer	154,381
Spud Valley (incl. Big Star)	54,039
Mount Zeballos	30,525
Central Zeballos	29,472
Prident	13,937
White Star	7,081
C.D. (Rey Oro)	4,600
Homeward	1,491
Van Isle	1,178
Rimy	44
Tagore	38
Golden Portal	20
King Midas	<u>5</u>
 TOTAL	 287,811

As Stevenson noted, the overall grade of 0.44 oz. Au/ton of the ore produced in the Zeballos camp did not reflect the true value of the mineralized veins because of high dilution. The veins were narrow and with the open



stopping methods employed considerable waste was taken. Because of the high grade of the vein material, hand sorting methods were used to cob the mine run ore before milling or direct shipment to the Tacoma smelter.

C.D. MINE

The C.D. claims including the LONE STAR (L. 1052), J. & E. (L. 1056), K FRACTION (L. 1751), and AXE FRACTION (L. 1752) were staked in 1934. In 1937 the property was taken over by the Rey Oro Gold Mining Company which started a trail, built the mine camp and drove the main 1200 adit level. About \$63,000 in gold was produced from above the adit and below the 590 foot level adit (Hopkins, 1941). In late 1939 the property was acquired by the C.D. Mining Company, Limited which completed the puncheon road, enlarged the camp, sank a winze from the 1200 to 1400 level, and developed the 1300 and 1400 levels from the winze. Instead of milling on site the C.D. company shipped hand sorted ore to the Tacoma smelter. From May 1940 to the end of the year they shipped 204.75 tons of ore which returned 1,160.7 ounces of gold at that time valued at \$44,500. To the end of 1940 the total C.D. production was valued at \$107,500. Final production figures for the C.D. mine follow (from Stevenson, 1950):

PRODUCTION DATA, C.D. (REY ORO) MINE

	<u>Ore (Tons)</u>	<u>Gold (Oz.)</u>	<u>Silver (Oz)</u>
1938 (March 1 to Dec. 31)	2,250	1,102	204
1939	3,368	843	227
1940	1,675	1,319	532
1941	<u>180</u>	<u>1,336</u>	<u>462</u>
Totals	7,473	4,600	1,425

*Dilution*

The 7,473 tons mined at the C.D. were taken from the main or No. 4 vein which was followed from Goldvalley Creek to the east above and below the main 1200 level (1,390 foot elevation). The average grade of the mine run material was 0.62 ounces gold per s.t. and 0.19 oz. silver per s.t. The open stope mining method used caused heavy dilution. No work was done on the C.D. property from 1941 until 1980 when the new road exposed the high grade section of the No. 4 vein at elevation 1,550 feet. In 1982 an 85 foot long adit was driven on the No. 4 vein by Ange Gold Exploration Ltd. to test continuity.

RIMY

The Rimy group of claims was staked between 1934 and 1935 and was Crown Granted in 1942. The property then comprised the RIMY No. 3 (L. 1765), RIMY No. 8 (L. 1766), RIMY No. 5 (L. 1767), RIMY No. 7 (L. 1768), RIMY No. 2 (L. 1769), RIMY No. 6 (L. 1901), and RIMY No. 1 (L. 1902). The claims adjoin the C.D. on the east and were reached by pack trail from the C.D. camp. By 1938 the claims were held by Man-of-War Mines, Limited which drove two short adits on the main vein and shipped 19 tons of development ore that returned 44 ounces of gold and 51 ounces of silver. Work on the RIMY ceased in 1939 and no further work has been accomplished since. The new road to the LONE STAR claim puts the RIMY workings within a short but steep climbing distance.



GENERAL GEOLOGY - ZEBALLOS CAMP

The geology of the Zeballos area, and the mines, has been thoroughly documented in excellent reports by H.C. Gunning (1932) and by John S. Stevenson (1950). These reports still comprise the only good references to the Zeballos area and Stevenson's report remains the only comprehensive detailed study of the ore deposits in the Zeballos camp.

The Zeballos mining camp can be limited to a relatively small area lying west of the junction of the Zeballos and Nomash rivers. More than 30 mine properties are found here in a zone with a diameter of about 7 kilometers.

The main geological feature of the Zeballos camp is the Zeballos quartz diorite pluton, a northwesterly trending intrusive forming part of the extensive Island Intrusions of Tertiary age. In the mining camp the Zeballos pluton has intruded a complex of Late Triassic sediments and volcanics and Early Jurassic volcanics. Just as recent rock age dating has shown the age of the Zeballos pluton to be of Eocene age, lead isotope work suggests that the age of the gold veins which cut the pluton is about 30 Ma. and the veins are therefore very likely genetically related to the quartz diorite pluton.

In the camp gold bearing veins are found in virtually all the country rocks, but the greatest concentration is found in the contact zone and in the periphery of the Zeballos stock. Most of the gold veins occur as narrow quartz-sulfide fillings in sharply defined





fault fissures. Stevenson (op cit) suggested that the fault fissures correspond to directions of maximum shear stress during deformation of the area. The two most common fissure vein (tension) directions are roughly N62°E and N28°W. Fissure veins of the N62°E set include the Privateer No. 3 vein, and part of the No. 1 vein, parts of the Spud Valley Goldfield vein, Big Star, and Rimy veins. The latter set includes veins at the Privateer, Prident, Spud Valley, Central Zeballos, and C.D. properties.

#### MINERALIZATION - ZEBALLOS CAMP

Although short-lived the Zeballos camp became famous in 1935 because of the rich, often spectacular, gold bearing veins found in and near the Zeballos quartz diorite pluton. Few of the veins averaged more than one foot in width, but were noted for uniformity over considerable strike length and dip.

Most of the veins were of the fissure filling type with quartz the dominant gangue with some carbonate, and a small variety of relatively simple sulfide minerals and native gold. Sulfide minerals were abundant in most of the Zeballos veins and in order of abundance included pyrite, sphalerite, arsenopyrite, chalcopyrite, galena, pyrrhotite, and a little marcasite (Stevenson, op cit, p. 40). Stevenson studied the distribution of native gold in the veins in considerable detail and reported "Gold is visible in much of the vein matter, but commercial ore may contain no gold recognizable by the unaided eye." He continues "The distribution of gold is fairly constant. In the quartz-sulfide ore the amount of gold is not only

proportional to the sulfide content, but is also dependant on the presence of sphalerite and galena" (op cit, p. 42).

## GEOLOGY AND MINERALIZATION; C.D. AND RIMY VEINS

### LOCAL GEOLOGY

Ange Gold Exploration Ltd.'s C.D. and RIMY properties both lie entirely within the central zone of the Zeballos pluton (Figure 3). Veins on the C.D. ground including the main No. 4 vein are found localized along well defined, extensive fissures that strike about N45°E and dip 78 to 80 degrees southeasterly. The Rimy veins have a strike of N84°W and dip 85 degrees southerly. These fissure directions correspond roughly with the two main shear directions that include the major properties localized along the westerly contact zone of the pluton.

On the C.D. and RIMY ground the country rock quartz diorite is gray, medium to coarse grained, and massive. Widely spaced uniform joints are typical, but near the fissure vein shears joint frequency increases markedly from a few meters to a few centimeters. As shown in the accompanying plates the closely spaced joints roughly parallel the vein structures and create a fracture zone up to several meters wide.

### MINERALIZATION - C.D.

At least seven quartz-sulfide veins are known on the C.D. ground and have been explored to varying degrees (Stevenson, op cit, p. 100-101). Of these the No. 4 vein



has been most extensively explored and has been developed over a strike length of more than 600 meters and vertically over a depth of more than 100 meters. During the operation of the C.D. mine the bulk of the ore produced came from stopes on the No. 4 vein. A long section showing the old workings, assays, and the new road cut is included here (Figure 4).

When Stevenson (op cit) visited the C.D. property in 1945 he was able to view only parts of the 1200 level and surface workings. He described the No. 4 vein as consisting of quartz, usually with abundant sulfides, of which pyrite was dominant, and was accompanied by minor amounts of arsenopyrite, sphalerite, galena and chalcopyrite and "the vein matter had a maximum width of 5 inches and was not continuous along the vein shear." Stevenson (1938, p. F59) previously reported: "In the 1200 adit level, quartz with abundant sulfides usually ran high in gold. A 4-inch sample of high-grade material assayed: Gold, 4.24 ounces per ton; silver, 1.5 ounces per ton; lead, 0.5 per cent. One sample taken along a 2-inch ribbon of sulfides assayed: Gold, 13.2 ounces per ton; silver, 2 ounces per ton; lead, trace; zinc, 2.1 per cent."

The writer visited the Ange Gold Exploration Ltd. property in mid-March, and again in mid-April, 1981 to examine the workings, the veins, general environment, and to sample the mineralized vein exposed by the new road at the 1,550 foot elevation (480 m). The road cut the No. 4 vein well east of the main ore shoots mined below 1200 level (Figure 4). On the road the vein consisted of dense white quartz with bands of fine grained dark sulfide that forms more than 60 per cent of the vein matter bordered by crushed



vein material and quartz diorite. The vein width averaged about 15 centimeters on an exposed face about 2.4 meters (8 feet) high. The vein is shown in detail in the accompanying plates.

Visual examination of the vein material in the new cut showed that the sulfides comprise mainly fine grained acicular arsenopyrite, with fine grained interstitial sphalerite and galena. Visible free gold can be seen with the eye in polished sections as interstitial grains throughout the felted arsenopyrite ribbons. In addition to the arsenopyrite the vein minerals include galena, sphalerite, and pyrite. Several polished sections of the vein were also examined under the microscope. This revealed a significant number of gold particles ranging in size from 2 millimeters (visible to eye) to 0.01 mm (microscopic) lying between the bladed arsenopyrite crystals. On the basis of this preliminary examination it would appear that much of the gold in the samples was free.

Assays of the vein cut by the new road were taken to confirm previously reported high grade assays. These follow:

C.D. No. 4 VEIN - ROAD CUT ASSAYS

No. *	Au oz/t	Ag oz/t	Cu ppm	Pb ppm	Zn ppm	As ppm	Hg ppm	Sb ppm
7979	7.27	2.89	50	450	560	>1,000	450	15
7980	4.12	0.89	135	295	1,180	>1,000	350	7

7979 - vein width 35 cm. (channel sample)

7980 - vein length 2.4 meters (full width)

\* see Appendix I



As a test several samples of No. 4 vein material were slabbed and the gold content measured with the new EG & G Ortec Model 9604 Portable Gold Assayer. Statistically averaged results indicated that these selected samples contained about 21 ounces/ton gold, mainly as the native element.

A visual examination of the crushed material along both sides of the solid vein with a hand lens showed that the apparently lenticular nature of the vein at this cut is partly due to crushing of the vein to produce gouge. This gouge includes dark streaks of finely crushed sulfide - mainly arsenopyrite - and scattered flakes of free gold. It is fairly obvious that in any future mining operation considerable care must be exercised to save and process the fines.

Examination of the new 1,550 foot elevation road adit on the No. 4 during March 1983 showed that the vein is continuous for at least another 85 feet and becomes sheared to the northeast. Because of timbering/lagging of the back and muck on the sill of the adit sampling of the vein was limited to a few exposed gouge sections. The analyses are as follows (Appendix II):

Station	Width feet	Au oz/t	Ag oz/t	Pb %	Zn %	As %	W ppm	Hg ppm	Sb ppm
0 + 74'	1' (back)	0.046	0.04	0.01	0.02	0.56	4	30	<2
0 + 58'	(back)	0.369	0.14	0.07	0.19	8.32	5	120	14
0 + 54'	(back)	0.121	0.11	0.10	0.06	5.01	5	130	10
0 + 48'	(sill)	0.060	0.09	0.06	0.07	2.46	3	140	6
0 + 42'	(sill)	0.013	0.02	0.01	0.01	0.34	3	30	4
0 + 34'	(sill)	0.008	0.02	<0.01	<0.01	0.26	3	20	<2



The nature of the crushed material and the above analyses as compared to the results of the road cut vein suggest significant leaching of the vein metals. The sill samples were also difficult to take and were diluted by including crushed quartz diorite.

Although it was noted that at least seven veins are known on the C.D. ground only one - No. 4 - was examined in any detail during the inspection. Once the logging operation has been completed development can proceed. Until recently the presence of mature forest, heavy underbrush and thick overburden and the lack of access stymied exploration.

A review of the long assay section (Figure 4) shows the vein ore shoots stoped between 1938 and 1941 and the location of the new road cut. The section illustrates and documents a number of important items about the No. 4 vein mineralization including, shape and attitude of ore shoots, extent of ore shoots, grades of the ore shoots, and the potential for new ore. Widths and grades of the No. 4 vein shoots were:

<u>Stope</u>	<u>Vein Width</u>	<u>Ore Grade (@ \$38.40/oz Au)</u>
13-1	1 foot	\$289 over 2 inches
13-2	5 inches	\$289 over 2 inches
14-1	5 inches	\$900 over 2 inches

Although only three main ore shoots were mined there is a suggestion that the expected size of any nearby ore shoot would be up to 42 meters (140 feet) long and up to 25 meters (80 feet) 'high', and would have a low to moderate southwesterly plunge. Stope 14-1 is shown in detail in



Figure 5 as an example of No. 4 vein ore grade and width. A review of stope size at other mines in the Zeballos camp suggests the above to be fairly typical of ore shoots in other properties as well (see Stevenson, op cit).

MINERALIZATION - RIMY

The main Rimy vein follows a well defined fissure in quartz diorite which strikes N84°W and dips 75° to 80° south. Development includes two short adits at elevations 2,410 feet and 2,560 feet. Most of the vein material now visible in the two adits consists of sheared quartz, sulfide and country rock. According to Stevenson (p. 101-102) the main Rimy vein has a width of from 1 to 3 inches and averaged 0.1 to 9 ounces of gold per ton. The width of the shear and therefore the crushed vein and wall rock is up to 10 inches (25 cm). The relationship of the two adits is shown in Figure 6 and assays and assay width recorded by Man-of-War Mines, Limited are shown in Figure 7. Complete sections of the vein were taken for assay by the writer in March, 1981. The results follow:

RIMY No. 3 AND No. 4 ADITS

No. *	Au oz/t	Ag oz/t	Cu ppm	Pb ppm	Zn ppm	As ppm	Hg ppm	Sb ppm
7976	0.95	3.67	205	11,900	1,040	>1,000	280	155
7977	0.96	0.67	73	1,520	1,940	>1,000	130	83
7978	0.74	1.89	53	12,000	730	>1,000	195	135
7981	0.072	0.16	45	107	200	>1,000	15	27



<u>Location</u>	<u>Sample No.</u>	<u>Average Width</u>	<u>Sample Footage</u>
Rimy No. 3	7977	0.4'	89-93'
	7981	0.2'	face at 189'
Rimy No. 4	7978	0.6'	29-34'
	7976	0.5'	69-73'

\* see Appendix I

The two adits and sections of vein material are shown in the accompanying plates. As can be seen in the photos the country rock quartz diorite forms very competent vein walls as compared to the more closely fractured walls of the C.D. No. 4 vein. The close ups of the Rimy vein also show the extent of shearing and the manner in which small fragments of the wall rock have been incorporated into the crushed vein material - now mainly a sulfide streaked mud. In spite of the crushing the vein minerals - quartz, fine grained arsenopyrite, galena and sphalerite - can still be determined. The assays listed above also confirm the grades reported by earlier workers (Figure 7). In addition to severe crushing the main Rimy vein has also been subjected to considerable oxidation by groundwater movement.

Two other veins are mentioned in old reports; one of which has a short adit (Figure 6) while the other has not yet been located.

A comparison of the Rimy and C.D. vein mineralization shows a similarity in mineral composition, that is, they appear to be free gold bearing and arsenopyrite rich as opposed to the pyrite-sphalerite-galena dominated veins found along and within the main contact of the Zeballos pluton. Mineral zoning on a camp wide basis is implied but not yet substantiated.





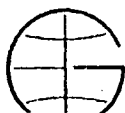
MINERAL POTENTIAL - C.D. AND RIMY

When the C.D. mine closed in 1941 the only mineral potential recognized was two small blocks of ore between the 1300 and 1400 foot levels totalling about 4,810 tons with a grade of about 0.5 ounce gold/ton (Hopkins). Because of the natural difficulties of heavy overburden and timber no surface program had been mounted and exploration was entirely by drifting and raising which proved too costly at the time.

The new road cut which has intersected the No. 4 vein (Figure 4) has now shown the presence of a high grade mineralization of currently unknown extent well above and east of all previously known ore shoots. In addition to providing easy access to the property the road can serve to allow underground exploration to the northeast along the No. 4 vein and allow diamond drilling of the Rimy vein from underground. Additionally, the main 1200 elevation camp area can now be accessed by a spur road from the new logging road on the south side of Goldvalley Creek.

As regards the current underground situation, the main 1200 level is caved 84 meters (275 feet) in from the portal and the winze and headings are completely flooded. As a result the old mine workings do not allow immediate access for further exploration and testing.

Exploration and development of the Rimy main vein depends upon better access. This may be accomplished when the logging road is extended east. An alternative is also possible. Because the C.D. and Rimy veins intersect it should be possible to extend the C.D. underground workings



along the No. 4 vein structure to intersect the Rimy vein. Calculations based upon the data presented here show a measured geological ore reserve of about 2,400 tons grading about 0.34 ounce gold/ton for the Rimy vein (No. 3 and No. 4 adits). The Rimy vein can also be drilled from the underground headings to explore the potential at depth and along strike.

Because of the selective mining practices during the operation of the C.D. and Rimy, mineralization grading less than 2 ounces Au/ton was commonly left behind. Resampling of the various headings and working places should be part of the reopening program.

### CONCLUSIONS

Experience in the Zeballos mining camp has shown that the gold bearing quartz-sulfide veins show considerable continuity over strike length and depth. A new road cut exposure on the C.D. No. 4 vein indicated the presence of previously unknown high grade mineralization well above and east of the old mine workings, and suggested the possibility of a new ore shoot above the 1200 level in a previously unexplored portion of the vein.

Good access to Zeballos by road, and the new road to the C.D./Rimy area now allow exploration and development to proceed in a reasonable manner. In addition, because economic conditions warrant exploration and development of gold deposits at this time, the 1200, 1300 and 1400 foot levels and workings should be reevaluated by mapping and sampling.



RECOMMENDATION

In order to explore and evaluate the new high grade zone on the C.D. No. 4 vein two adits at the 1470 and 1550 foot (road adit) elevations should be driven roughly on line (6 x 8 feet at a 1/4% grade) towards the Rimy vein. This will entail about 140 meters on the upper 1550 foot level and 250 meters on the 1470 foot level. As a separate phase the Rimy vein can be drilled from these two underground headings.

It is also recommended that the C.D. winze be dewatered, and the 1200 level main heading be cleaned out and retimbered to allow access for mapping and resampling of the workings. The 1200 level should also be driven along the vein system about 140 meters so that the Rimy vein can be core drilled.

This work will also entail construction of a short spur road to the 1470 foot elevation area west of the No. 4 vein, and a spur road from the logging road south of Goldvalley Creek to the old camp area.

The results of this program should determine the measured and indicated ore reserves on the C.D. No. 4 vein, and the indicated and potential ore reserves in the Rimy vein. This will allow a decision on how to mine and mill the mineralization.

