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M.R. # \_\_\_\_\_\_ \$ \_\_\_\_\_ VANCOUVER, B.C.

# A REPORT ON THE GEOLOGICAL AND GEOCHEMICAL SURVEYS CONDUCTED ON THE YHWH CLAIM

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CLINTON MINING DIVISION 92 0/4E 123° 40' Longitude 51° 05' Latitude

BY

R.A. QUARTERMAIN, M.Sc. A A CONSOLIDATED SILVER STANDARD MINES LIMITED A Z SUB-OPERATOR Z Z

FOR

LORD RIVER GOLD MINES LTD. 1100 - 1199 West Hastings Street Vancouver, B.C. V6E 3V4

JANUARY 15, 1988

ARIS SUMMARY SHEET

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District G	eologist, Prince George	Off Confide	ntial: 89.	01.21
ASSESSMENT	REPORT 16919 MINING DIVISION: Cli	nton		
PROPERTY: LOCATION:	YHWH LAT 51 05 00 LONG 123 40 00 UTM 10 5659084 453302 NTS 092004E			
OPERATOR(S): AUTHOR(S): REPORT YEA	): Lord River Gold Mines Cathedral Gold Quartermain, R. R: 1988, 21 Pages S			
SEARCHED F GEOLOGICAL	OR: Gold,Silver,Copper,Molybdenum/Molybde	nite		
SUMMARY:	The claim is underlain by Late Creta granodiorite. An auriferous chalcopyrite shear 3 metres wide is exposed 160 metres anomalous gold values in soil samples wer area.	ceous Coast and molybd along stri e collected	Plutonic enite-bear ke. Weakl in the sh	Complex ing Y eared
WORK DONE:	Geological,Geochemical GEOL 120.0 ha Map(s) - 1: Scale(s) - 1:5000			
$\bigcap$	ROCK 5 sample(s) ;AU,AG			

SILT 5 sample(s) ;CU,MO,AU,AG SOIL 87 sample(s) ;CU,MO,AU,AG

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# APPENDIX I - CERTIFICATES OF ANALYSIS AND ANALYTICAL PROCEDURES

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MAPS AND FIGURES

- 1. Location Map
- 2. Claim Map
- 3. Regional Geology
- Geology and Rock, Soil and Silt Geochemistry - Gold, Silver, Copper and Molybdenum
- after page 1 / after page 2 / enclosed / enclosed /

# INTRODUCTION

This assessment report describes the reconnaissance mapping and silt, soil and rock geochemical sampling program conducted on the YHWH claim on behalf of the Lord River Gold Mines - Cathedral Gold Corporation Joint Venture. The work was carried out by a 3-man crew on September 26, 1987.

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# 1.1 Location, Access, Physiography

The claim is located on the north side of Falls River between Beehive Peak and the river, in the Taseko Lakes Region of southwestern British Columbia (Figure 1). Vancouver is about 205 km to the south and Williams Lake lies 140 km northeast of the claim. Access to the property was by helicopter from Pemberton via the main camp at the Pellaire gold property about 4 km to the east.

The claim covers a steep sided hanging cirque and extends from 9500 feet to 5800 feet elevation. Below 7500 feet elevation is forested with jackpine and black spruce. Above that elevation only minor alpine vegetation is found. The cirque floor is covered with moraine and scree.

# 1.2 History

A short adit was found on the claim but there is no written record of who drove it. The only recorded work in the vicinity of the present claim was carried out in 1965 by Noranda Exploration Co. on the Zen claim. The Zen claim group appears to have been just south of the YHWH claim but may have overlapped the present YHWH claim. Noranda carried out geological mapping, trenching, stripping and sampling on mineralization reported to be chalcopyrite, pyrite and molybdenite in porphyry dykes within granodiorite.



The YHWH claim was staked in April 1987 following release of B.C. Ministry of Mines Open File 1986-6.

# 1.3 Claims (Figure 2)

The claim, located in the Clinton Mining Division, is held in the name of Lord River Gold Mines Ltd. and is subject to a 50:50 joint venture agreement with Cathedral Gold Corp.

<u>Claim Name</u>	Units	Record No.	Record Date	Expiry*
YHWH	15	2192	29 April	1990

\* with credits for assessment work reported upon herein.

# 1.4 1987 Work Programme

The YHWH claim was examined on September 26, 1987 by the author and two assistants. The work programme consisted of reconnaissance mapping and silt, soil and rock-chip sampling. A total of 5 silt samples and 87 soil samples were collected and analysed for gold, silver, copper and molybdenum. Five rock-chip samples were analysed for gold and silver.

# 2. GEOLOGY

# 2.1 Regional Geology (Figure 3)

The region is underlain by a sequence of Middle Triassic to Upper Cretaceous volcanics and sediments and Late Cretaceous intrusives of the Coast Plutonic Complex. The northwest trending boundary between these units lies just to the northeast of the property with stratified rocks to the northeast and intrusives to the southwest.



Late Cretaceous Coast Plutonic rocks are predominantly granodiorite or quartz diorite with lesser diorite. In the vicinity of the property volcanic and sedimentary units are of the Early Cretaceous (Albain) Taylor Creek Group. Taylor Creek Group rocks were deposited in the Tyaughton Trough, dominantly a marine environment with lesser sub-aerial deposition.

While thrust faulting has taken place regionally, the dominant structural features in stratified rocks are numerous, northwesterly trending, right lateral transcurrent faults with displacements of up to 100 km or more.

# 2.2 Property Geology (Figure 4)

The claim was found to be underlain by granodiorite of the Coast Plutonic Complex. The granodiorite is massive and holocrystalline with subhedral, 3 mm diameter quartz, feldspar, biotite and hornblende crystals. The unit is cut by a number of north striking vertical, lamprophyre dykes with 5 mm biotite lathes. The granodiorite has small zenolithic areas of more mafic material. North and east - striking fractures have cut the granodiorite into large angular blocks.

The only area of geological interest is located in the northeast corner of the claim. A shear zone up to 3 metres in width contains chalcopyrite and rosettes of molybdenite up to 3 cm in diameter. The shear is exposed for 160 metres.

### 3. GEOCHEMISTRY (Figure 4)

Sample numbers and analysis are shown in figure 4. Analysis certificates and analytical procedures are in Appendix 1. All analysis were carried out by Chemex Labs Ltd. of 212 Brooksbank Avenue, North Vancouver, B.C.



# 3.1 Silt Sampling

A total of 5 silt samples were collected from the stream draining the claim area. The samples were collected in kraft paper bags, numbered and sent to Chemex Labs Ltd. Silver, copper and molybdenum values were determined by atomic absorption and gold by fire assay with an atomic absorption finish.

Copper values range from 3 to 20 ppm, molybdenum was 1 ppm and silver 0.1 ppm in all samples and gold was <5 ppb except for one sample of 5 ppb and one of 10 ppb.

# 3.2 Soil Sampling

Two soil sampling lines were taken along the forested north slope of Falls River. Samples were taken at 25 m intervals, depths of 5 to 30 cm (averaging 20 cm), and the B-horizon was sampled. Copper values range from 6 to 58 ppm. Molybdenum was detected in only 5 samples, with 3 to 9 ppm. All samples were below the detection limit for silver. Twenty-five samples contained detectable gold values. Gold-in-soils values ranged from 5 to 155 ppb including one each of 100, 105 and 155 ppb. High gold values do not correlate with high copper values or detectable molybdenum values.

# 3.3 Rock Chip Sampling

Five rock chip and grab samples were collected from the property. The samples contain low values of gold and silver except one sample, 27270, collected from the shear zone.

		Au ppb	Ag ppm
27269:	Grab of typical granodiorite minor sulfide	5	0.1
27270:	Grab from east end of sulfide rich zone. Contains pyrite, chalcopyrite and molybdenite	835	>100.0
27271:	Grab 25 m west of 27270, from sulfide zone	25	13.5
27272:	Altered granodiorite	<5	2.7
27273:	Altered granodiorite	<5	0.5

Samples 27270 and 27271 indicate the mineralized shear zone contains anomalous gold and silver. The erratic and poddy nature of the sulfides and limited extent of the shear indicates it has limited economic potential.

## 4. CONCLUSIONS AND RECOMMENDATIONS

Although reconnaissance failed to locate any mineralization of economic significance, an auriferous sulfide-rich shear was located. The shear zone is limited in extent and a 5 metre deep adit was driven on it at one time. The shear zone is exposed for only 160 metres and then disappears under scree. It has a strike of 092° to 096° True. If one were to project this to the east it lines up with an area of copper and gold anomalies in soils.

Additional work on this property is given low priority. Trenching in the area of the anomalies would be the next step. Additional sampling of the adit could also be undertaken. A one-day follow-up from the Pellaire property will cost on the order of \$2500.

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# 5. COST STATEMENT

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As a result of the 1987 programme assessment work recorded is:

Claim	Units	Assessment Years	Value	of	Assessment	Work
YHWH	15	2		\$3	8,000.00	
Itemi	zed Costs					
	R.A. Quartermain Sept. 26 - 1	- Geologist day @ \$201/day		\$	201.00	
	W. Millar - Assis Sept. 26 - 1	tant day @ \$105/day		\$	105.00	
	P. Daubeny - Assi Sept. 26 - 1	stant day @ \$116/day		\$	116.00	
	Assays 92 soil and @ \$12.35	silt geochem Au, Ag, ( /sample	Cu, Mo	\$1	,136.20	
	5 Au - Ag ro @ \$12.00	ck analyses /sample		\$	60.00	
	Helicopter 3.3 hours @	\$522.42/hour		\$1	,724.00	
1	Vehicle Rental - 380 km @ 25¢	(Vancouver-Pemberton, /km	return)	\$	95.00	
	Living Expenses 3	man-days @ \$25/day		\$	75.00	
   	Drafting and repo 8 hours draf Supplies Report Writi	rt preparation ting @ \$23.00/hr (\$184 (\$100 ng 1 day @ \$201/day (\$201	4) ))	\$	485.00	

Total \$3,997.20

-6-

# 6. **REFERENCES**

 McLaren, G.P.: Stream Sediment Geochemistry of the Chilko-Taseko Lakes Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1986-6.

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- McLaren, G.P.: Geology and Mineral Potential of the Chilko-Taseko Lakes Area, B.C. Ministry of Energy, Mines and Petroleum Resources Geological Fieldwork, Paper 1986-1, p.265.
- 3. McLaren, G.P.: Geology and Lithogeochemistry of the Chilko-Taseko Lakes Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1987-12.
- 4. B.C. Department of Mines Annual Report: 1965, p.143.

# CERTIFICATE OF QUALIFICATIONS

# R.A. QUARTERMAIN, M.Sc.

- I, hereby certify that:
- I am a graduate of the University of New Brunswick (B.Sc. [Honours] Geology - 1977) and Queens University (M.Sc. Geology - 1981).
- 2. I have worked since graduation as an exploration geologist in Canada and the United States.
- 3. The work described within was done under my direct supervision.

R.A. Quartermain, M.Sc.

January 15, 1988

Vancouver, British Columbia

APPENDIX I

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CERTIFICATES OF ANALYSIS AND ANALYTICAL PROCEDURES



# Chemex Labs Ltd Analytical Chemista \* Geochemista \* Registered Assayers

PHONE (604) 984-0221

212 BROOKSBANK AVE , NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1 To AD RIVER GOLD MINES INC.

1100 - 1199 W. HASTINGS ST. VANCOUVER, BC V6E 3V4 roject : L 1001 \*\*Page No. Tot. Pages: 3 Date : 19-OCT-87 Invoice #: I-8723751 P.O. # NONE

Project: L 1001 Comments: ATTN: R. QUARTERMAIN CC: M. HOLTBY

# CERTIFICATE OF ANALYSIS A8723751

SAMPLE DESCRIPTION	PREP CODE	Cu ppm	Mo ppm	Ag ppm Aqua R	Ац ррь Гл+лл			
001 002 003 004 005	202 202 202 202 202 202 202	 2 1 3 4 2 8 5 2 2 3		0.1 0.1 0.1 0.1 0.1	<			
006 007 008 009 010	202 202 202 202 202 202 202 202	 26 31 32 58 32		0.1 0.1 0.1 0.1 0.1	< 5 < 5 < 5 25 < 5			
011 012 013 014 015	202 - 202 - 202 - 202 - 202 - 202 -	 20 14 17 14 16		0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5 &lt; 5 10 &lt; 5 &lt; 5 &lt; 5</pre>			
016 017 018 019 020	202 - 202 - 202 - 202 - 202 - 202 -	 6 6 9 15 11	1 1 4 1	0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5 5 5 5 </pre> <pre></pre>			
021 022 023 024 025	202 202 202 202 202 202 202 202	 26 29 40 27 30		0.1 0.1 0.1 0.1 0.1	15 < 5 < 5 < 5 < 5			
026 027 028 029 030	202 202 202 202 202 202 202	2 0 9 2 3 2 0 2 4	           	0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5 &lt; 5 &lt; 5 &lt; 5 &lt; 5 &lt; 45</pre>			
031 032 033 034 035	202 202 202 202 202 202 202 202	 26 29 28 27 27	1 1 1 1	0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5</pre>			
036 037 038 039 040	202 202 202 202 202 202 202	 1 5 2 2 1 7 3 4 3 8	4	0.1 0.1 0.1 0.1 0.1	<pre>     </pre> <pre>         <pre>             </pre>         </pre> <pre>             </pre>			

CERTIFICATION : \_

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# Chemex Labs Ltd.

212 BROOKSBANK AVE , NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

#### PHONE (604) 984-0221

TORD RIVER GOLD MINES INC.

1100 - 1199 W. HASTINGS ST. VANCOUVER, BC V6E 3V4 Project : L 1001 Comments: ATTN: R. QUARTERMAIN CC: M. HOLTBY

# CERTIFICATE OF ANALYSIS A8723751

SAMPLE DESCRIPTION	PREP CODE	C F	Cu ppm	Mo ppm	Ag ppm Aqua R	Ац ррђ ГА+АА			
041 042 043 044 045	202 - 202 - 202 - 202 - 202 - 202 -	-	27 27 13 19 16	1 1 1 1 1	0.1 0.1 0.1 0.1 0.1 0.1	< 5 < 5 < 5 < 5 20			
046 047 048 049 050	202 - 202 - 202 - 202 - 202 - 202 - 202 -	-	15 27 40 29 25	1 1 1 1 1	0.1 0.1 0.1 0.1 0.1	<pre>&lt; s &lt; s &lt; &lt; s &lt; &lt; s &lt; &lt; s &lt; s &lt; s &lt; s &lt;</pre>			
051 052 053 054 055	202 - 202 - 202 - 202 - 202 - 202 -	-	18 26 27 19 24	1	0.1 0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5 &lt; 5 &lt; 5 &lt; 5 &lt; 5 155</pre>			
056 057 058 059 060	202 - 202 - 202 - 202 - 202 - 202 -	-	15 23 24 42 23		0.1 0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5 20 &lt; 5 &lt; 5 &lt; 5 &lt; 5 &lt; 5 </pre>			
061 062 063 064 065	202 - 202 - 202 - 202 - 202 - 202 -		24 36 25 39 26		0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5 &lt; 5 &lt; 5 &lt; 5 &lt; 5 &lt; 5 </pre>			
066 067 068 069 070	202 202 202 202 202 202 202		30 35 30 28 25		0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5 75 100 25 &lt; 5</pre>			
071 072 073 074 075	202 202 202 202 202 202 202	-	23 29 13 17 25	1 1 7 1	0.1 0.1 0.1 0.1 0.1	10 105 < 5 < 5 65			
076 077 078 079 080	202 202 202 202 202 202 202		3 1 3 1 1 7 2 4 1 7		0.1 0.1 0.1 0.1 0.1	<pre>&lt; 5 10 25 &lt; 5 &lt; 5 &lt; 5</pre>			

CERTIFICATION :

Sant Bichler



# Chemex Labs Ltd.

212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1 PHONE (604) 984-0221 To ORD RIVER GOLD MINES INC.

1100 - 1199 W. HASTINGS ST. VANCOUVER, BC V6E 3V4 Project : L 1001 \*\*Page No. 3 Tot. Pages: 3 Date : 19-OCT-87 Invoice #: I-8723751 P.O. # :NONE

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Project : L 1001 Comments: ATTN: R. QUARTERMAIN CC: M. HOLTBY

# CERTIFICATE OF ANALYSIS A8723751

SAMPLE DESCRIPTION	PREP CODE	Cu ppm	Mo ppm	Ag ppm Aqua R	Ац ррђ FA+AA			
081 082 083 084 085	202        202        202        202        202        202	14 18 16 13 11	1 9 1 3 1	0.1 0.1 0.1 0.1 0.1 0.1	10 10 < 5 < 5 < 5			
086 087 SS01 SS02 SS03	202        202        202        202        202        202	14 18 5 20 4		0.1 0.1 0.1 0.1 0.1 0.1	< 5 5 10 < 5 5			
SS04 SS05	202 202	33	1	0.1 0.1	< 5 < 5			

CERTIFICATION :

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Analytical Chemists \* Geochemists \* Registered Assayers

212 BROOKSBANK AVE , NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1 PHONE (604) 984-0221

D RIVER GOLD MINES INC. To

1100 - 1199 W. HASTINGS ST. VANCOUVER, BC V6E 3V4 Project : L 1001 Comments: ATTN: R QUARTERMAIN CC: M. HOLTBY



#### CERTIFICATE OF ANALYSIS A8723752

SAMPLE DESCRIPTION	PRE COD	P	Ag ppm Aqua R	Ац ррЪ FA+AA							
27269 27270 27271 27272 27273	205 205 205 205 205		0.1 >100.0 13.5 2.7 0.5	8 3 5 2 5 < 5 < 5							
						-	CERTIFICATIO	. 4	rant	Bich	ler_

#### ASSAY PREPERATION

- 1.) Samples are sorted, then listed on assay sheets.
- 2.) The entire sample is crushed first in a primary jaw crusher, then in a secondary cone crusher.
- 3.) The crushed sample is reduced to 200-400 gram sub-sample in a Jones Riffler, then dried.
- 4.) The dried material is pulverized to pass a 100 mesh screen, then rolled to homogenize.

#### ASSAY ANALYTICAL METHODS

1.) Cu (%)

A 2 gram sub-sample is digested in a hot perchloric-nitric acid mixture for two hours, cooled, then transfered into a 250 ml. volumetric flask. Aluminum Chloride is added as an ionization suppressant for Mo. The solfutions are then analyzed on an atomic absorption instrument.

2.) Pb, Zn (%)

These elements are analyzed as above with the addition of nitric acid to the final sample and standard solutions.

3.) Ag, Au (oz/ton)

Silver and gold analyses are done by standard fire assay techniques. In the sample preperation stage the screens are checked for metallics which, if present, are assayed seperately and calculated into the results obtained from the pulp assay. Geochem:

### Copper, Lead, Zinc, Silver ppm:

1.0 gm sample is digested with perchloric-nitric acid (HC104-HN03) for approximately 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Copper, lead, zinc and silver are determined by atomic absorption techniques. Silver and lead are corrected for background absorption.

Detection limit: Copper, Zinc - 1 ppm Silver - 0.2 ppm Lead - 2 ppm

#### Gold F.A.-A.A. Combo Method ppb:

For low grade samples and geochemical materials, 10 gram samples are fused in litharge, carbonate and siliceous flux with the addition of 10 mg of Au-free Ag metal and cupelled. The silver bead is parted with dilute HNO3 and then treated with aqua regia. The salts are dissolved in dilute HC1 and analyzed for Au on an atomic absorption spectrophotometer.

Detection limit: 5 ppb

#### Lead, Molybdenum, Copper:

An aliquot from an acid-preserved filtered sample is taken and digested to dryness with concentrated nitric acid. The residue is dissolved in warm perchloric acid and sufficient water is added to restore the sample to proper dilution. The concentration of each element is then determined by its atomic absorption with Varian AA-5 spectrophotometer calibrated with blanks and standard metal solutions prepared similarly. Background absorption corrections was applied to the measurement of lead. The detection limit for all elements by this method is 0.01 g/ml.

CHEMEX

