GEOLOGICAL REPORT
ON THE
EAST 1 & WEST 1 MINERAL CLAIMS

CARIBOO MINING DIVISION, B.C.
NTS 93I/045 5W,
(54°15.4'N, 121°45'W)

for

Owner/Operator. HIGH RIVER RESOURCES LTD.
1088 - 999 W. Hastings St.
Vancouver, B.C. V6

GEOLOGICAL BRANCH
ASSESSMENT REPORT

by

15,200

CARL G. VERLEY, B.Sc., Geologist
Amerlin Exploration Services Ltd.
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Vancouver, B.C. V6B 3H7
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October 1986
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SUMMARY AND CONCLUSIONS

The East 1 and West 1 mineral claims, held by High River Resources Ltd., consist of 18 units located in the Cariboo Mining Division (NTS 931/4W,5W). The property is situated 105 kilometres northeast of Prince George and is accessible by road.

A sequence of Lower Cambrian metasediments underlies the property.

Copper mineralization, consisting of chalcopyrite, occurs in quartz-carbonate veins in phyllitic rocks at the hinge of an anticline. Chip samples across veins range up to 2.82% Cu, 0.09 oz/ton Ag and 0.002 oz/ton Au over a width of 1.5 metres. Selected grab samples of mineralized vein material assayed up to 5.02% Cu, 0.01 oz/ton Ag and 0.004 oz/ton Au.

During the September 1986 property examination the copper showings were mapped and sampled. As well, old trenches were located and resampled.

Results of the exploration work indicate that there is potential for locating high grade copper
mineralization associated with dilatant zones in the hinge of the anticline. However, no further work is currently recommended for the copper showings because of the depressed price of this commodity. Carbonate strata on the southern half of the property have potential for hosting silver-lead-zinc mineralization. Further work on the property should be directed toward this type of mineralization.
Location

The property is located approximately 30 kilometres north of the McGregor River logging camp or a total of 105 kilometres northeast of Prince George. Centered at latitude 54°15'N and longitude 121°45'W, the claims are in the Cariboo Mining Division (NTS 931/4W, 5W).

Access

Excellent access is provided by an all weather road from Prince George to McGregor River. From McGregor River a well maintained logging road leads to the property.

Previous Work

Copper mineralization was first discovered in the McGregor River area in the 1920's. The first systematic work carried out on the copper occurrences on the East and West claims was a small diamond drill program by Rio Canadian Exploration Ltd. in 1956. Noranda Exploration Company Limited conducted a geochemical and geophysical program in

Physiography

The claims are located on the edge of the McGregor Plateau in an area of relatively subdued topography where elevations range from 600 to 900 metres (ASL). Locally, and particularly in the drainage crossing the copper showing, the topography is rugged. The ground is forest covered with spruce and cedar. Devil's Club is common as underbrush.

Summary of Current Work

This report describes the results of a summary program of geological mapping performed on the East 1 and West 1 claims. Detailed mapping of the copper showing and sampling of occurrences in the vicinity was conducted. Reconnaissance mapping was undertaken over the remainder of the property.
The East 1 and West 1 mineral claims are owned by High River Resources Ltd. The property, consisting of 18 units, is located in the Cariboo Mining division (NTS 931/4W, 5W) approximately 105 kilometres northeast of Prince George.

<table>
<thead>
<tr>
<th>Claim</th>
<th>Units</th>
<th>Record Number</th>
<th>Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>East 1</td>
<td>9</td>
<td>5736</td>
<td>December 22, 1986</td>
</tr>
<tr>
<td>West 1</td>
<td>9</td>
<td>5740</td>
<td>December 22, 1986</td>
</tr>
</tbody>
</table>
CLAIM LOCATION MAP

East 1, West 1 Mineral Claims

High River Resources Ltd.
Cariboo Mining Division, B.C.
NTS 931/4W, 5W
Scale 1:50,000

Figure 2.
GEOLOGY

The East and West claims are situated in the Rocky Mountain Trench, a major northwesterly trending tectonic break that separates the Omineca terrane from the Rocky Mountains Thrust Belt. The property is underlain by a succession of Lower Cambrian sediments. The lithologies in general appear to be steeply dipping to the northeast. However, small scale isoclinal folds and a foliation that is nearly parallel compositional layering indicates that the succession has been intensely deformed. A relatively large scale anticline is inferred to be associated with copper mineralization located on the claims.

The lithologic subdivision presented below is the result of reconnaissance mapping on the property. Formational nomenclature is from Taylor et al. (1979).

Lithologies

Lower Cambrian - McNaugton Formation

A sequence of interbedded fine-grained clastics with minor carbonate beds underlies approximately 60 percent of the property. This unit consists predominantly of medium
to dark grey and carbonaceous phyllite. Fine-grained arenaceous intervals (meta-arkose or quartzite?), in the order of tens of metres in thickness, occur within the section. Locally thin (4-8 cm) light grey weathering limestone beds are interbedded within the carbonaceous phyllite. Copper mineralization occurs in quartz veins which are hosted by this formation on the claims. The thickness of this unit on the property is unknown.

**Lower Cambrian - Mural Formation**

The southern part of the claim group is underlain by light grey weathering, massive, medium to light grey coloured, finely crystalline, laminated limestone. Stingers of white calcite are common within this unit. Porosity and dolomitization are devoid within the limestone. The thickness of this formation on the property is unknown.
Copper mineralization occurs in a northwesterly trending, steep dipping vein system on the East 1 claim. The mineralization is concentrated in the hinge zone of a northwesterly plunging anticline in the dark grey phyllites. The veins consist of milky white quartz and lessor carbonate (ankerite?). Veins vary in thickness from 4 to 6 cm in what appear to be dilatant zones in hinge area to 0.3 to 2 metres in areas that may represent the sheared out limbs of minor folds. No alteration is observable in the wallrock to the veins, suggesting that the mineralization is the product of metamorphism and reflects locally derived solutions rather than exotic hydrothermal solutions.

Sulphide mineralization consists predominantly of chalcopyrite with lessor pyrite. Chalcopyrite is found disseminated or as narrow lenses along the borders of some veins. Assay data of vein samples is presented below (refer to Figure 3 and Appendix A for locations and descriptions of samples).
LEGEND

Lower Cambrian

- Mural formation: carbonates
- McNaughton formation: clastics

Lithologic contact

Outcrop distribution

Cliff or abrupt steepening of slope

Rock sample site

Quartz vein

Bedding

Foliation

Lineations

Trench

Helicopter pad

Skidder trail

PLAN OF COPPER SHOWING

EAST 1 CLAIM

NTS 931/5W

Scale 1:3,000

Note: Refer to Plate 1 for location of this figure with respect to topography and claims.

Figure 3.
Table 1
Copper Showing Assay Data

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Cu</th>
<th>Ag oz/t</th>
<th>Au oz/t</th>
</tr>
</thead>
<tbody>
<tr>
<td>7601</td>
<td>1.48</td>
<td>0.02</td>
<td>0.001</td>
</tr>
<tr>
<td>7602</td>
<td>0.01</td>
<td>0.03</td>
<td>0.001</td>
</tr>
<tr>
<td>7603</td>
<td>5.02</td>
<td>0.01</td>
<td>0.004</td>
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<tr>
<td>7604</td>
<td>0.82</td>
<td>0.01</td>
<td>0.001</td>
</tr>
<tr>
<td>7605</td>
<td>2.82</td>
<td>0.09</td>
<td>0.002</td>
</tr>
<tr>
<td>7606</td>
<td>0.63</td>
<td>0.01</td>
<td>0.001</td>
</tr>
</tbody>
</table>

The concentration and grade of copper mineralization along the quartz-carbonate veins is sufficient to suggest that there is potential for locating high grade shoots of this material along these structures. Assay and analytical results (appendix A) for Au, Ag, Pt, Mo, Pb, Zn, As, Sb and Ga suggests that there is only a low probability for locating economic concentrations of these elements in the vein system.
RECOMMENDATIONS

No further work is currently recommended for the copper showings. However, should the demand for this commodity improve a review of the property will be warranted.

Carbonate strata of the Mural formation, underlying the southern part of the claims, have potential for hosting silver-lead-zinc mineralization (Campbell et al., 1973). Further work on the property should be directed towards locating deposits of these commodities.

Respectfully submitted,
Amerlin Exploration Services Ltd.

Carl G. Verley, F.G.A.C.

Vancouver, B.C.
October 10, 1986.
REFERENCES


Verzosa, R. S., 1984: Assessment Report on the West 1 and East 1 Claims for High River Resources Ltd.
APPENDIX A
ASSAY AND ANALYTICAL DATA
ASSAY AND ANALYTICAL DATA

ROCK SAMPLE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Sample</th>
<th>Description</th>
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<tbody>
<tr>
<td>PGR-1</td>
<td>Chips from pyrrhotite-bearing quartz vein (15 cm wide) in fine-grained sandstone.</td>
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<tr>
<td>PGR-2</td>
<td>Chips of pyritic, carbonaceous phyllite.</td>
</tr>
<tr>
<td>7601</td>
<td>Chips from chalcopryite-rich section of 1.5 m wide quartz-carbonate vein.</td>
</tr>
<tr>
<td>7602</td>
<td>Chips from pyrite-rich section of 2 m wide quartz vein.</td>
</tr>
<tr>
<td>7603</td>
<td>Chips of chalcopryite from quartz-carbonate vein system.</td>
</tr>
<tr>
<td>7604</td>
<td>Chips across 1 m thick section of vein system (as in 7603) containing chalcopryite-rich lenses.</td>
</tr>
<tr>
<td>7605</td>
<td>Chips across a 1 m width of chalcopryite-bearing quartz vein exposed in an old trench.</td>
</tr>
<tr>
<td>7606</td>
<td>Chips across a 1 m width of chalcopryite-bearing quartz vein exposed in an old trench - location is approximately 2 m north of 7605.</td>
</tr>
</tbody>
</table>
SAMPLE TYPE: ROCK CHIPS  Au** AND Ag** BY FIRE ASSAY

ASSAYER: DEAN TOYE. CERTIFIED B.C. ASSAYER.

AMERLIN EXPLORATION  PROJECT-EAST-WEST FILE# 86-2654A

<table>
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<th>SAMPLE#</th>
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<th>Au**</th>
<th>Pt**</th>
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GEOCHEMICAL ICP ANALYSIS

.500 gPAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-NN03-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN,FE,CA,P,CR,MG,BA,TI,B,AL,NA,K,W,SI,ZR,CE,SN,Y,NB AND T. AU DETECTION LIMIT BY ICP IS 3 PPM.

SAMPLE TYPE: ROCK CHIPS GA+ HF+AR AND ANALYSIS BY AA.

ASSAYER: DEAN TOYE. CERTIFIED B.C. ASSAYER.

<table>
<thead>
<tr>
<th>SAMPLE#</th>
<th>Mo (PPM)</th>
<th>Pb (PPM)</th>
<th>Zn (PPM)</th>
<th>As (PPM)</th>
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<td>2</td>
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<td>1</td>
</tr>
</tbody>
</table>
GEOCHEMICAL ICP ANALYSIS

.500 gram sample is digested with 3ml 3-1-2 HCl-HNO3-H2O at 95 deg. C for one hour and is diluted to 10 ml with water. This leach is partial for Mn,Fe,Ca,P,CR,Mg,BA,AT,AL,MA,K,F,SI,ZR,CE,SN,Y,NB and Ta. Au detection limit by ICP is 3 PPM.

- SAMPLE TYPE: SOILS/ROCKS  Au** Pt** BY FA+AA

ASSAYER: DEAN TOYE. CERTIFIED B.C. ASSAYER.

AMERLIN EXPLORATION PROJECT-EAST-WEST FILE#86-2654 PAGE 1

<table>
<thead>
<tr>
<th>SAMPLE#</th>
<th>Cu (PPM)</th>
<th>Pb (PPM)</th>
<th>Zn (PPM)</th>
<th>Ag (PPM)</th>
<th>As (PPM)</th>
<th>Au** (PPM)</th>
<th>Pt** (PPB)</th>
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<td>CS-1</td>
<td>30</td>
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<td>115</td>
<td>.2</td>
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<td>3</td>
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<td>12</td>
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<td>2</td>
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<tr>
<td>PGR-2</td>
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<td>139</td>
<td>.5</td>
<td>27</td>
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STATEMENT OF EXPENDITURES

Personnel

C.G. Verley, geologist, 8 days @ $300/day. $2,400.00

Assay and Analytical Costs. 250.75

Field Costs

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<td>Vehicle rental, 4 days @ $50/day.</td>
<td>.200.00</td>
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Report Preparation. 21.22

Total $3,308.94

The above costs were incurred in carrying out the work program described in the attached report.

Carl G. Verley, F.G.A.C.
APPENDIX C

WRITER'S CERTIFICATE
WRITER'S CERTIFICATE

I, Carl G. Verley of Vancouver, British Columbia hereby certify that:

1. I am a geologist residing at 301 - 1867 West 3rd Avenue, Vancouver B.C.

2. I am a graduate of the University of British Columbia, B.Sc. in 1974, and have practised my profession since that time.

3. I am a Fellow of the Geological Association of Canada.

4. I am the author of this report which is based on work conducted by me on the East 1 and West 1 mineral claims during the period September 11 to 14, 1986.

Amerlin Exploration Services Ltd.

Carl G. Verley, F.G.A.C.

October 10, 1986.
Vancouver, B.C.