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A REPORT ON THE
ATHELSTAN-JACKPOT MINERAL PROPERTY
OF
RIMACAN RESOURCES LTD.

BY

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Report No. C83-13

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Kamloops, B. C.


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SUMMARY AND CONCLUSIONS

The Athelstan-Jackpot property is a former minor producer of good-grade gold-silver-copper ore in the Greenwood-Phoenix district of south-central British Columbia.

The ore was recovered from a gently dipping tabular mass of serpentinite believed to be a highly altered stratabound ultramafic sill or flow; the ore zones are massive sulphide lenses within carbonate-altered, silicified and sheared zones which roughly parallel the contacts of the serpentinite host.

Production from the property was intermittent from 1901 to 1940. In more recent years several companies carried out exploration programs on the property the most important of which was work done by Arrowhead Resources during 1978, 1979 and 1981. In addition to surface work this program included 28 short vertical percussion drill holes and three short vertical diamond drill holes. The favourable serpentinite was found to be the predominant rock type throughout the property and to contain erratic but interesting gold values over an area of 240 metres by 960 metres.

The drilling program failed to delineate an anticipated low-grade near surface gold ore zone around the former workings, nor was any appreciable extension of prior high grade lenses encountered. (Results of the percussion drilling are highly suspect, however, due to indicated gold loss as compared with diamond drilling results).

Although past exploration results have not been encouraging, the property is considered to have a significant untested mineral potential as summarized below:

(1) A potential for other gold-bearing massive sulphide lenses, lying within the known serpentinite body, outside of the area tested by previous work; some geochemical and geophysical targets have not been tested.

(2) Although previous interpretations appear to indicate that the favourable serpentinite is cut off at depth on the property by younger intrusive rocks, it is the writer's opinion that there is good chance for additional serpentinite layers as is the case on at least two other properties in the vicinity.

(2)

(3) Some of the rocks mapped previously as intrusive diorite may in fact be volcanic flows or pyroclastics which in themselves are favourable host rocks (the main gold ore zone at the Grenoble/Teck property is in dacitic pyroclastics adjacent to the serpentinite and gold values on the nearby Golden Crown property occur in andesitic volcanics near serpentinite layers.

(4) There is a significant potential for steeply-dipping gold-bearing veins representing feeder channels underneath the known stratiform sulphide lenses.

The Athelstan-Jackpot property is therefore considered worthy of further exploration to explore the possibilities listed above.

RECOMMENDATIONS

A program of exploration, as outlined below and estimated to cost \$240,000 is recommended.

Items (1) and (2) are designed to provide as much detailed geological and geochemical as possible prior to drilling and should be completed before commencing item (3).

Deep penetrating geophysics, either EM or IP, would also be a highly desirable prelude to drilling. However, the interference of power and telephone lines crossing the property would render the results of such surveys suspect and for this reason they have been deleted from the normal exploration sequence.

The recommended diamond drilling program (Item 3) includes:

(a) short vertical holes to test for additional near-surface ore lenses similar to those previously exploited.

(b) deeper inclined holes to test anticipated additional favorable formations at depth.

Outline of Program and Cost Estimates

(1) Re-establish access to old workings; map remnants of ore zones in detail and collect samples for thin section work:

(a) Two miners for 10 days @ \$200	\$ 4000
(b) Rental on loader-backhoe 50 hrs @ \$60	3000
(c) Materials - timber etc.	2000
(d) Survey of underground workings	2000
(e) Geologist 4 days @ \$300	1200
(f) Assistant to Geologist 4 days @ \$150	600
(g) Assaying and drafting	1500
(h) Thin-sections	500
(i) Contingency	<u>2200</u>
Subtotal	\$17000

(2) Re-establish picket line grid and extend it to limits of property, complete magnetometer, geological and geochemical surveys:

(a) Rehabilitate old lines: 10 line km @ \$100	\$ 1000
(b) Cut and picket new lines: 5 km @ \$200	1000
(c) Re-do ground magnetometer survey over entire property: 15 km @ \$100	1500
(d) Geochemical Soil Survey	5000
(e) Geological Mapping	2400
(f) Consulting and Supervision	<u>2100</u>
Subtotal	<u>\$13000</u>

(3) Diamond Drilling:

(a) Provision for drilling of short vertical holes to test for near-surface sulphide lenses:

10 holes @ 60 m = 600 m @ \$100	\$ 60000
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(b) Provision for deeper drilling to obtain critical geological information and test for deeper targets:

4 holes @ 300 m = 1200 m @ \$100	120000
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(c) Geology, supervision, assaying and consulting	<u>30000</u>
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Grand Total Items 1, 2 and 3	\$240000
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INTRODUCTION

This report pertains to the geology and economic mineral potential of the Athelstan-Jackpot Mineral property comprising nine crown-granted mineral claims, a mineral lease and one staked fractional claim which form a contiguous block located in the Greenwood/Phoenix area of south-central British Columbia.

The property is held under option by:

Rimacan Resources Ltd.

P.O. Box 1977

Grand Forks, B.C.

VOH 1H0

This report was commissioned by Mr. J.W. Carson, President, Rimacan Resources Ltd.

The writer visited the property on May 14, 1983 in company with Messrs. J.W. Carson and Ed Carson of Grand Forks and Mr. W.E. McArthur Jr. of Greenwood, the latter a former owner of the property. This report is based upon personal observations at the time of this visit as well as a study of all available plans, reports and other data. At the time of the visit the only accessible underground working was a lower adit which did not intersect ore. First hand observation of ore in place was thus not possible and the writer has relied on descriptions by others for this aspect.

The Greenwood-Phoenix area has a long history of copper, gold and silver production dating from 1900. There is currently no mineral production from the area, however, the recent discovery of new gold mineralization on several properties has revived exploration interest and new geological models are emerging. Many previously exploited deposits, including those on the Athelstan-Jackpot property, are being re-examined in the light of these new theories.

MINERAL DISPOSITIONS AND OWNERSHIP

The Athelstan-Jackpot property is a contiguous block of nine crown-granted mineral claims, one mineral lease and one staked fractional claims which covers a total of 132 hectares (325 acres).

Crown Grants

<u>Name</u>	<u>Lot Number</u>	<u>Registered Owner</u>	<u>Hectares</u>
Coronet Fr.	677	W. G. Haullauer	1.78
Athelstan Fr.	1065	"	7.63
Butte	1067	"	20.81
Oro	1167	"	18.01
Althelstan Fr.	1320	"	2.76
Iron Clad	1489	"	20.79
Molley Pritchard	1554	"	16.19
Jackpot	2224	"	18.01
Jackpot Fr.	3158	"	9.79

Mining Lease

M 276	3386	W. G. Haullauer	7.24
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Staked Claim Record Number

MP. Fraction	916	W. G. Haullauer	<u>8.76</u>
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Total	131.77
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(325.6 acres)

Mr. J.W. Carson, President of Rimacan Resources Ltd., has advised the writer that agreements have been signed with Mr. Haullauer providing Rimacan Resources Ltd. with an option to purchase the above listed mineral dispositions.

LOCATION ACCESS TRANSPORTATION POWER

The Athelstan-Jackpot property is located in south-central British Columbia (NTS E/2) at longitude 118° 34' and latitude 49° 04'; it is, respectively, ten kilometres northwest of Grand Forks, nine kilometres southeast of Greenwood, four kilometres south-southeast of the Phoenix minesite and seven kilometres north of the international boundary.

B.C. Highway #3 follows July Creek valley one mile east of the property. Existing mine roads connect the property with both the highway and the CPR railway at Greenwood.

Local hydro power lines cross the property and a major new hydro line passes six kilometres north of the property.

The district has a stable labour reserve which contributed substantially to the efficiency of former mining operations in the area.

The above factors combined with a very pleasant climate make the area exceptionally favourable for mineral development.

PHYSIOGRAPHY

The Greenwood-Phoenix area lies within the Monashee Mountains which form the southeastern extremity of the Interior Plateau of the Cordilleran Region of British Columbia. Mountains here tend to be rounded, with relatively gentle slopes and are separated by either the flat-bottomed valleys of major rivers or the V-shaped valleys of smaller tributary streams. Elevations within the map area range from 520 metres (1706 feet) above sea level at Grand Forks to 1836 metres (6023 feet) at the peak of Mount Roderick Dhu, immediately north of Jewel Lake. Flat-bottomed valleys have been cleared for agriculture. Most sloping areas are treed, for the most part with merchantable timber.

The Athelstan-Jackpot property lies on the west flank of a north-south valley occupied by July Creek and the terrain slopes east and south at from 18 to 41 percent. It is three kilometres northeast of Mount Atwood and four kilometres southeast of Knob Hill. Elevations on the property range from 945 to 1341 metres above sea level.

The entire property is forested with a variety of coniferous and deciduous trees.

Bedrock is moderately well exposed in natural outcrops and along road and railway cuts.

MINERAL HISTORY OF THE GREENWOOD-PHOENIX AREA

(See Map C83-13-2)

Significant mineral discoveries in the area date from the 1880's and by 1900 several mines, the most important of which was the large Phoenix operation of The Granby Mining Company Limited, had been put into production. Smelters were established in Grand Forks and Greenwood to handle the low-grade, direct smelting copper ore which also contained significant gold and silver values. A town of 5000 to 6000 people developed at the Phoenix mine site; today not a vestige of this once bustling community remains. The Phoenix operations continued until 1919 when dwindling ore supplies and shortages of coking coal induced a closure of the mines.

A number of deposits were worked sporadically during the 1930's and 1940's chiefly for the gold recovered.

In 1955 The Granby Mining Company Limited regained control of several of the original properties which had, in the interim, been relinquished. A small (700 tpd) copper flotation mill was erected and several deposits were put into production in 1959 as salvage open pits, re-mining the former underground mine areas. The operation proved viable and eventually the mill was expanded to 2000 tons per day and a modern, electrified open pit established on the Old Ironsides orebody. Production continued to 1978; interestingly, the duration of the operations was the same as in the earlier operation: 19 years.

Several attempts were made during the 1960's to revive the mines in the Motherlode/Deadwood areas west of Greenwood in a manner similar to that at Phoenix. In fact, a mill capable of processing 2000 tons of ore per day was actually built; unfortunately insufficient ore was found to support more than a few months of operation and the salvage operation failed.

While by far the largest production in the area was from Granby's Phoenix operation and the Motherlode deposit, production is recorded from some 15 other deposits in the area. Several were disseminated copper deposits with gold and silver, similar to Phoenix, others were gold and silver-bearing quartz veins.

Table I listed production figures to date from most of the former producers in the area.

Noranda Mines Limited purchased the Zapata Granby Company in 1980 thereby acquiring the Phoenix mine property. Kettle River Resources Limited optioned the ground from Noranda in 1981, staked additional adjacent property and carried out a exploration program which resulted in the discovery, in 1982 of a significant new gold zone.

Other recent notable developments in the area include:

- (1) Diamond drilling and underground work to delineate a gold deposit on a property being explored jointly by Grenoble Resources and Teck Corporation.
- (2) Re-opening of the Dentonia gold mine near Jewel Lake by Dentonia Resources Limited.
- (3) The intersection of potentially economic gold mineralization by Maymac Explorations Ltd. on its property near Midway, B.C.

HISTORY OF THE ATHELSTAN-JACKPOT PROPERTY

Most of the claims within the present property were staked by separate owners prior to 1900. Minor production of gold-silver-copper is recorded from the Athelstan and Jackpost mines during the following periods: 1901 to 1904, 1908, 1911, 1912, 1934 and 1936 to 1940.

The British Columbia Department of Energy Mines and Resources Minfile records a total production to date as follows:

Ore:	16739 (metric) tonnes	(18542 tons)
Gold:	157195 grams	(5054 ounces)
	9.39 grams per tonne	(0.274 ounces per ton)
Silver:	186.681 grams	(6002 ounces)
	11.2 grams per tonne	(.325 ounces per ton)
Copper:	50796 kg.	(111984 pounds)
	0.30%	(0.30%)

W.E. McArthur Sr. operated the mines during the latter production period and reported a post-1930 production of 2051 tons grading 0.582 ounces per ton gold, 0.72 ounces per ton silver, 0.15% copper, 0.04% nickel and 12.47% arsenic.

Limited exploration programs were carried out on the property in the late 1960's and early 1970's by Sabina Mines, Colby Resources and Scurry Rainbow Oil and Gas. Unfortunately, no written records of this work could be located. Mr. Dan Turcotte who was involved with the property at that time verbally reports as follows:

"Scurry Rainbow carried out surface sampling which returned good gold values."

"Colby Resources drilled 12 percussion drill holes of which 8 encountered open stopes; no significant results were reported."

During 1978, 1980 and 1981 an exploration program was carried out on the property by Arrowhead Resources Ltd. supervised by Dr. Alan Robert Grant, a Consulting Geologist of Langley, Washington. The programs included:

- (1) Geological mapping of surface outcrops and workings.
- (2) Sampling of dumps and mineralized workings on surface.
- (3) Sampling of remnant mineralization in the Athelstan and Jackpot stopes.
- (4) Soil sampling over the grid area.
- (5) A magnetometer survey.
- (6) A VLF electromagnetic survey.
- (7) Drilling of 28 vertical percussion drill holes averaging 54 metres in depth.
- (8) Drilling of three vertical diamond drill holes averaging 41 metres in depth.

Most of the records relating to the above work were located and results are summarized later in this report.

DISTRICT GEOLOGY AND MINERALIZATION

(See Map C83-13-3)

The following description applies to a block of territory extending east-west from Rock Creek to Grand Forks and for some thirty kilometres north from the international boundary.

In the east half of this block (Greenwood, Phoenix, Grand Forks) the predominant bedrock is a typical eugeosynclinal assemblage of volcanics (mainly andesitic) and sediments all folded and metamorphosed to greenschist facies. H.W. Little of the Geological Survey of Canada (3), mapping regionally, termed these rocks the Anarchist Group and for much of the area under discussion this generalization is the only published map information (undivided Anarchist Group rocks are designated "A" on attached map C83-13-3).

More detailed work in the vicinity of the Phoenix Mine has resulted in a subdivision of the Anarchist Group as follows:

- (a) An older (Permian?) sequence of bedded chert followed by alternating massive chert, argillite, greywacke and greenstone (andesitic flows and tuffs) known as the Knobhill Formation.
- (b) A younger (Triassic?) sequence unconformably overlying the Knobhill and consisting of lower "Sharpstone Conglomerate" followed by the Brooklyn Formation consisting chiefly of limestone and calcareous argillite with minor shale and chert; locally the Brooklyn rocks are altered to a typical skarn mineral assemblage.

The subdivisions of the Anarchist Group (A) are designated by number.

Detailed work in the vicinity of the old Lexington and City of Paris Mines south of Phoenix has resulted in a subdivision of rocks which is difficult to correlate with those established at Phoenix. They are therefore shown as Roman numerals on Map C83-13-3 with a separate legend.

They include:

- V Sandstone, siltstone and pebble conglomerate
- IV Argillite; phyllitic and cherty
- III Intermediate flows and pyroclastics
- II Serpentinite; altered sills, flows or tuffs?
- I Chloritic and amphibolitic gneiss and schist; may be altered equivalents of III and IV.

Tertiary rocks in the area, which unconformably overlie previously described rocks include:

- Kettle River Formation: rhyolite and dacite tuff; locally conglomerate, sandstone and arkose.
- Phoenix Volcanic Group (later known as Marron Group): sandstone, trachyte, minor basalt and tuffs.

The Tertiary rocks cover large parts of the area west of Greenwood and occur as isolated remnants east of Greenwood, notably at the Phoenix Mine and capping Thimble Mountain.

Along the north boundary of the rectangular district being described, Anarchist stratified rocks grade into intrusive bodies of batholithic proportions consisting essentially of:

- Cretaceous Intrusions: Nelson granodiorites and Valhalla granites.
- Tertiary Intrusion: Coryell syenites.

Smaller plugs and irregular masses representing Nelson Intrusives intrude the Anarchist Group here and there throughout the area of interest.

Similarly, small syenitic bodies believed to represent the Coryell event intrude both Anarchist and Tertiary stratified rocks.

Economic mineral deposits in the area can be conveniently divided into four groups:

(1) Deposits of disseminated chalcopyrite with significant gold and silver values occurring with Brooklyn crystalline limestone, calcareous argillites and "skarns" derived therefrom; the Old Ironsides deposit and Phoenix was the largest and best example.

(2) Gold- and/or silver-bearing quartz veins often occurring on or near the contact of Nelson granodioritic intrusions and stratified Knobhill rocks; the Providence and Dentonia mines are examples.

(3) Gold values associated with altered ultramafic sills (or flows) interlayered with dacitic tuffs as at the Grenoble-Teck property; there the best mineralization is associated with pyrite and chalcopyrite wisps and disseminations within the dacite tuff.

(4) Gold values associated with stratiform lenses of near massive sulphides (pyrite, pyrrhotite and some chalcopyrite) interbedded with cherty argillites and tuff (Sylvester K deposit of Kettle River Resources Ltd.).

Virtually all the important known mineral deposits in the area are within pre-Tertiary rocks and as such the older rocks must be considered more favourable. However, it should be noted that gold was produced from veins in Tertiary volcanics near Republic Washington 50 kilometres south of Midway and the new large, rich gold orebody on the Asamera/Breakwater deposit at Wenatchee, Washington (190 km. south) occurs in a quartz stockwork within Tertiary sandstone. All stratified rocks in the Greenwood-Midway area are therefore worthy of exploration.

Nickel values have been found associated with ultramafic intrusives in the vicinity of Rock Creek. Any ultramafic bodies in the district should be investigated for possible nickel and platinum group mineralization.

GEOLOGY AND ECONOMIC MINERAL POTENTIAL
OF THE ATHELSTAN-JACKPOT PROPERTY

Lithology

A speculative interpretation of the property geology by the writer, based in part on outcrop observations recorded by Grant (3), is depicted on attached drawings C83-13-5 and 7.

The most prevalent rock, at least on surface, on the property is a serpentinite believed to be derived from an ultramafic igneous rock (sill, flow or pyroclastic?). Available information suggested it occurs in a tabular mass formed into an open fold plunging easterly at from 0° to 40°, averaging somewhat steeper than the slope of the ground.

The total lateral extent of the serpentinites is not known but it is believed to be the predominant rock throughout most of the property and probably extends beyond. (Serpentinite layers intersected in diamond drill holes on the nearby Golden Crown property may correlate in part with the Athelstan-Jackpot serpentinite.) The rock is light to dark greenish gray on fresh surfaces and commonly weathers to a limonite brown color. Intense carbonatization (calcite and ankerite?) are common in the serpentinite, the outcrop color being due to brown-weathering carbonate.

At least part of the serpentinite is thought to be stratabound (i.e. either flows, pyroclastic beds or sills injected into stratified rocks) for the following reasons:

(a) The stratiform nature of similar rock at the Grenoble/Teck property seven kilometres to the south is well established; there the serpentinite is interlayered with dacitic pyroclastics.

(b) Intermediate volcanic flows and pyroclastics have been observed on the Athelstan-Jackpot property.

(c) Carbonate alteration, silicification and sulphide leases within the ultramafic tend to be oriented in zones parallel to the contacts of the tabular mass.

A prominent circular airborne magnetic anomaly is centred immediately northwest of the Athelstan-Jackpot property (at the Winnipeg mine), the serpentinite is quite magnetic and may well be causing this anomaly; the displacement of the anomaly from the surface outcrop of the serpentinite may suggest a feeder plug of ultramafic rock plunging northwest from the property. (Grant (3) reports that the serpentinite on the property is thickening to the north).

The next most prevalent rock on the property is a rock given a field classification of diorite. Certainly many specimens look intrusive and it is probable that dikes of diorite composition do cut the serpentinite. Other specimens, however, are of questionable origin and could represent dacitic pyroclastics.

Both dikes and flows of andesitic composition were observed.

Northwest of the property McNaughton (5) records andesite intruded by a plug-like mass of diorite.

Structure

McNaughton (5) reports that two of the main ore lenses in the Jackpot slope were crescentic in plan view and plunged 10° to 40° east. If these are in fact stratiform sulphide lenses, as implied above, they suggest a shallow, east-plunging syncline. Coincidentally or otherwise, an interpretation of the few outcrops of apparently stratified rocks on the property (andesite/dacite flows and tuffs) fit with such an interpretation (see C83-13-4).

Church (2) records two northeast trending faults offsetting serpentinite masses in the Lexington area. The writer observed faults of this attitude offsetting serpentinite and ore-in-dacite in the Lexington adit. McNaughton (5) reports that "the ore deposits (at Athelstan-Jackpot) are displaced by a number of northeasterly striking normal faults that dip 40 to 60 degrees northwest." On the basis of magnetic data and geological mapping by Church (2), the writer interprets two prominent members of this set, one lying immediately southeast of Athelstan-Jackpot and another lying about one kilometre northwest of the property.

Ore Mineralization

Known gold and silver values on the property occur within massive arsenopyrite and pyrite lenses within carbonatized, silicified and sheared zones within the serpentinite; these zones are crudely parallel to the contacts of the tabular mass of serpentinite thus plunging gently easterly. McNaughton (5) described these zones as "replacement deposits in talc-carbonate rocks"; Grant (3) interprets them as "sulfide fillings and deposition along pre-existing low angle shears". Either may be correct, however, the writer feels that there is a possibility they are syngenetic stratiform lenses and that further investigation of this possibility is imperative. At the Jackpot mine two lenses of ore, each ranging up to 7.6 metres in true thickness and with horizontal dimension of about 12 by 30 metres were mined. At the Athelstan the main ore lense measured about 12 by 18 metres and had a true thickness of 0.9 and 2.4 metres. Other smaller lenses were mined at both locations. Ore mineralization is exposed in pits on the Butte crown grant. The overall extent of mineralization in the Butte-Athelstan-Jackpot zone appears to be about 100 metres north-south by 1000 metres east-west. In addition, ore-type mineralization occurs in pits on the Iron Clad crown grant, 400 metres northeast of the Jackpot. Green fuchsite (or mariposite) is a common alteration feature in, and adjacent to ore zones within the serpentinite.

In addition to the above described ore zones, Grant (3) reports that "within the (diorite) stock numerous massive sulphide lenses, dominantly pyrrhotite are found. Some of these contain argentiferous galena and silver values range from 0.58 to 4.16 (ounces)/ton".

Sampling Results from Work to Date

Total production from the mines on the property is listed under "History" earlier in this report.

Stope sampling was carried out by Grant (3) with results as summarized below:

Athelstan Stope:

29 samples taken in 1980 averaged 0.105 ounces per ton gold (3.6 grams per metric ton); those in sulphide shear zones ranged from 0.14 to 0.80 ounces per ton (4.8 to 30.5 grams per metric ton) over widths varying from 0.30 to 2.0 metres.

Jackpot Stope:

23 samples averaged 0.127 ounces per ton gold (4.35 grams per metric ton). Those in sulphide ore ranged from 0.06 to 0.84 ounces per ton (2.1 to 28.8 grams per metric ton) over widths varying from 1.0 to 2.2 metres.

These results are plotted in plan view on attached drawing C83-13-7. Grant (3) reports surface dump samples taken in 1978 as follows:

		Au		Ag	
		oz/ton	gm/mt	oz/ton	gm/mt
Athelstan stockpile	siliceous ore	0.356	12.2	0.44	15.1
Upper Jackpot Dump	oxidized massive pyrite	0.360	12.3	0.38	13.0
Lower Jackpot Dump	massive pyrite	0.680	23.3	2.76	94.6
Dump on RR Cut	pyritic breccia	0.996	34.1	5.26	180.3

The writer took seven surface samples from dumps and exposed workings which are summarized in Table II.

Soil sampling by Grant (3) from Arrowhead Resources indicated a number of zones anomalous in gold (+100 ppb) trending through and extending beyond the known mineralized workings (see map C83-13-5).

The Arrowhead Resources Ltd. percussion drilling program tested an area of about 200 metres by 600 metres primarily with the objective of establishing a tonnage of low-grade ore, mineable by open pit. Values were found to be erratic and overall grades well below ore grade although a few interesting intersections were encountered in the vicinity of the Jackpot workings.

Three diamond drill holes were drilled adjacent to percussion holes near the Jackpot workings. Values in the diamond drill holes were in some cases more than three times those in corresponding percussion drill holes. Similar variation between percussion and diamond drill holes is being experienced on the Grenoble-Teck property. For this reason the percussion drill hole results are highly suspect.

Grant (3) reports an interesting EM anomaly outside the area tested by workings and drill holes. Unfortunately the writer has been unable to locate copies of the geophysical maps.

List of References

- (1) British Columbia Ministry of Energy Mines and Resources,
Minfile 082ESE 047.
- (2) Church, B.N. : B.C. Ministry of Energy Mines and
Resources: Geology, Exploration and Mining 1970,
Lexington Mines Ltd. (property now being jointly explored
by Grenoble Resources and Teck Corporation).
- (3) Grant, A.R. : Private reports and memos to Arrowhead
Resources Ltd. dated March 1979, November 1980, June 1981
and November 1981.
- (4) Little, H.W. : Geological Survey of Canada Map 6-1957,
Kettle River East Half with marginal notes.
- (5) McNaughton, D.A. : Geological Survey of Canada Paper
45-20, Greenwood Phoenix Area, British Columbia, 1945.

CERTIFICATE

I, JAMES SEATON KERMEEN, do hereby certify:

(1) That I am a Consulting Geological Engineer with offices at 55 Whiteshield Crescent, South, Kamloops, B.C.

(2) That I am a member in good standing of the Associations of Professional Engineers of British Columbia and Saskatchewan.

(3) That I hold the following degrees from the University of Saskatchewan:

Bachelor of Science, Geological Engineering, 1951

Master of Science, Geology, 1955.

(4) That the attached report on the Athelstan-Jackpot property of Rimacan Resources Ltd. is based on a personal visit to the property as well as a study of all available relevant data.

(5) That I have no interest, either directly or indirectly in the property or securities of Rimacan Resources Ltd. nor do I expect to receive such interest.

(6) That the attached report on the Athelstan-Jackpot property may be used as part of a Statement of Material Facts relating to the raising of funds to explore the said property.

Dated this 3rd day of June, 1983 in Grand Forks, British Columbia.


James Seaton Kermeen

TABLE I
MINES AND APPROXIMATE MINERAL PRODUCTION
GREENWOOD/PHOENIX AREA
(Refer to nos. on Map C83-1-2 for locations)

MINES		TONS	METALS RECOVERED		COPPER (Lbs.)
			GOLD (Ounces)	SILVER (Ounces)	
Granby Phoenix Group(1-12)					
1. Old Ironsides					
2. Knobhill					
3. Grey Eagle					
4. War Eagle	1899-1919	15,000,000	450,000	7,500,000	450,000,000
5. Monarch			*		
6. Rawhide					
7. Snowshoe	1959-1978	<u>12,000,000</u>	<u>195,000</u>	<u>1,500,000</u>	<u>118,000,000</u>
8. Gold Drop					
9. Curlew	Total Phoenix	27,000,000	645,000	9,000,000	568,000,000
10. Idhao					
11. Brooklyn					
12. Stemwinder					
13. Motherlode	1898-1919	3,772,723	159,349	632,652	70,101,000
14. Sunset	1958-1962	706,569	13,973	55,562	6,874,000
15. Emma	1901-1921	254,597	6,804	78,065	5,132,000
16. Oro Denoro	1903-1917	136,447	3,744	30,652	3,727,000
17. B.C.	1900-1919	103,476	1,002	214,275	9,025,000
18. Mountain Rose	1904-1910	11,629	6	178	49,000
19. R. Bell	1901-1902	294		3,559	46,000
20. Blue Bell					
21. Providence	1896- ?	11,451	5,867	1,361 433	
22. Elkhorn	? -1938	163	260	13,360	
23. Skylark					
24. E.P.U					
25. Bay	? -1930	83	249	114	
26. Dynamo	? -1934	20	8	165	
27. Jewel					
28. Dentonia		95,884	23,731	157,620	
29. Athelstan	? -1930	36,614	5,781	6 757	16,000
30. Jackpot					
31. Golden Crown					
32. Winnipeg					
33. Skomac	1962-1964	738	32	3,995	
34. Ruby					
35. No. 7	?	15,152	2,971	99,987	
36. Lexington					
37. City of Paris					
38. Hesperus					
39. Yankee Boy					
40. Lone Star					
	TOTAL	<u>32,000,000</u>	<u>868,777</u>	<u>11,658 374</u>	<u>662,961,000</u>

*Includes post 1960 production from Oro Denoro and Lone Star

TABLE II
ASSAYS ON SURFACE SAMPLES FROM JACKPOT-ATHELSTAN PROPERTY

(taken by J.S. Kermeen, May 14, 1983)

Sample No.	Gold		Silver		Description
	oz/ton	g/tonne	oz/ton	g/tonne	
0582	0.270	9.26	0.83	31.9	Athelstan caved stope area; chip across 0.7 m on rusty shear zone in altered ultramafic.
0583	0.500	17.1	1.25	42.9	Grab sample from small dump at Butte workings; much arsenopyrite in altered ultramafic
0584	0.011	0.38	0.23	7.9	Jackpot caved stope area; chip sample across 0.6 m in rusty shear zone in "dacite" with sparse disseminated arsenopyrite.
0585	0.001	0.03	0.09	3.1	Jackpot: sample of split core on RR grade; "dacite" with disseminated sulphides.
0586	0.240	8.23	0.85	29.3	Jackpot: representative grab sample along 5 m of dump; rusty, altered rock.
0587	0.034	1.17	0.20	6.9	Athelstan: caved area around main stope; chip sample across 0.6 m of a rusty shear zone in "dolomitic quartzite"?, abundant green mica (mariposite or fuchsite).
0588	0.460	15.8	0.58	19.9	Athelstan: grab sample from small ore dump along road immediately east of main stope area; abundant pyrite and arsenopyrite.

J. CARSON

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June 25, 1984

Rimacan Resources Ltd.,
1520 - 625 Howe Street,
Vancouver, B. C.
V6C 2T6

Attention: Mr. James Rodgers, Solicitor

Gentlemen:

EVALUATION OPINION

RE: The Athelstan-Jackpot and Greenwood
Group Mineral properties of Rimacan Resources
Limited in the Greenwood Mining Division, B.C.

I understand from Mr. John W. Carson, President of Rimacan Resources Ltd., that certain funds have been raised for the exploration of the Greenwood Group of mineral claims and that financing for the Athelstan-Jackpot property, has until recently, been deferred due to complications relating to the acquisition agreement.

Mr. Carson now advises that the agreement to acquire the Athelstan-Jackpot property has been clarified and duly signed and that there are no further hindrances to the prosecution of an exploration program on the property. In view of this recent development, Mr. Carson has asked for my opinion as to where the Company might best spend its currently available funds; in particular in regard to the relative merits of the Athelstan-Jackpot and Greenwood Group properties.

I am familiar with Greenwood-Phoenix camp in which both properties lie, having worked there for a cumulative total of some 12 years.

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Within the past year, I have examined both of the aforementioned properties, have supervised an exploration program on the Greenwood Group and have prepared qualifying reports with recommendations for further exploration on both properties.

The Greenwood Group of mineral claims covers a belt of volcanic and sedimentary rocks, intruded by granite and syenite which is considered geologically favorable for stratiform volcanogenic sulphide deposits with a high potential for gold mineralization. Exploration activities to date have indicated several areas of interest warranting further work but to date no potentially economic mineralization has been found in place.

The Athelstan-Jackpot property is also geologically favorable for volcanogenic base and precious metal mineralization. It has the added advantage of having been the source of a modest but highly significant tonnage of good grade ore in the past:

	<u>Imperial</u>	<u>Metric</u>
Tonnes (Tons) Ore	18542	16739
Grade Gold	0.274 ounces/ton	9.39 grams/tonne
Grade Silver	0.325 ounces/ton	11.2 grams/tonne

This ore was recovered from lenses of sulphide mineralization lying conformably within ultramafic flow rocks. Although the known lenses of mineralization appear to have been largely mined out, there is an excellent chance of finding new ore in favorable geological environments expected to recur at depth below the old workings and elsewhere on the property. This inference is supported by drilling results over the past two years on the adjoining Golden Crown property (Consolidated Boundary Exploration optioned to S&J Resources) where at least three repetitions of the favorable sequence of rocks were encountered and where values up to 0.6 ounces gold per ton were found associated with stratiform volcanogenic sulphides.

Both the Greenwood Group and Athelstan-Jackpot properties warrant continued exploration expenditures. However, in view of its past history of production and recent developments on an adjoining property, the Athelstan-Jackpot property is considered to have the better potential for early exploration success. It is therefore considered to be in the best interest of the shareholders of Rimacan Resources Ltd. to expend currently available exploration funds on the Athelstan-Jackpot property rather than the Greenwood Group.


I understand the terms of the option-purchase agreement providing for the eventual acquisition of 100% interest in the Athelstan-Jackpot property by Rimacan Resources to be as follows:

- (1) Payable on signing of an agreement: \$12,500
- (2) Payable on July 9th, 1984: \$12,500
- (3) Payments of equal installments of \$5,000 commencing July 1st, 1985 and every 60 days thereafter until a total purchase price of \$70,000 is paid
- (4) A 5% net profit royalty on production up to a maximum of \$1,000,000.

These terms are considered to be reasonable and justified.

I have no interest either directly or indirectly in the property or securities of Rimacan Resources Ltd., nor do I expect to receive such interest.

Yours truly,



J. S. Kermeen, P.Eng.

JSK/lg