MINNOVA Inc.

1991 ANNUAL REPORT BRENDA - OKANAGAN JOINT VENTURE

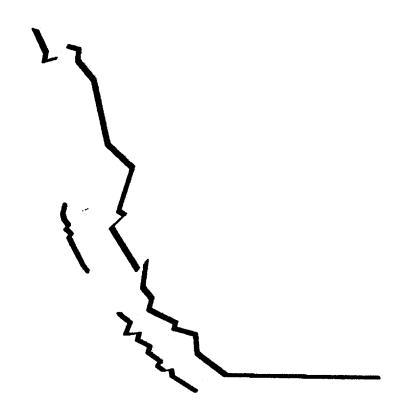


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SUMMARY AND HIGHLIGHTS

I. D. Pirie

A total of 4,089.9 meters of diamond drilling was carried out on three properties in the Brenda - Minnova Joint venture in 1991. The most significant results were on the Rainbow - Tam O'Shanter option where values of up to 1.09 g/t Au over 27.07 m were returned from areas of porphyry and epithermal alteration.

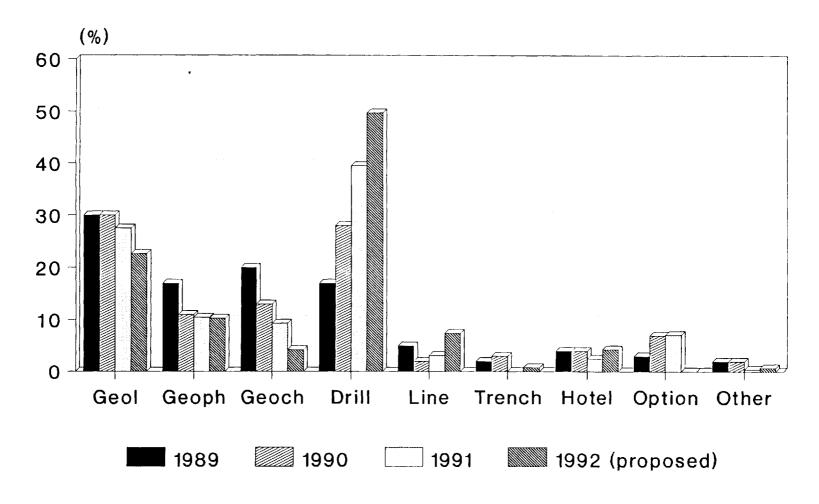
A major effort to introduce a new, relatively advanced stage project into the JV proved a somewhat frustrating experience. While two projects were found to meet our acquisition criteria, deals on both fell through after lengthy negotiations. However, late in the year an excellent porphyry prospect on Vancouver island, the LeMare property, came to our attention and a deal is imminent.

Exploration expenditures under the JV since its' inception now total \$2,265,555.79. The expenditure breakdown for 1991 is shown in Figure 1. Figure 2 illustrates the type of work that has been carried out on the JV over its' life. Most significantly, the drilling component has increased to 40% of expenditures in 1991 and is projected to increase again, to 50%, in 1992. The proposed 1992 budget (see separate report) will complete Brenda's earn in.

A summary of work done, results and expenditures is attached for all projects except Last Chance and Other. Expenditures on Last Chance relate to compilation work done leading to the decision not to pursue the project further. "Other" pertains to office work done on the Whipsaw property prior to the vendors reneging on an agreement in principle.

ANALYSIS OF EXPENDITURES

By Work Type



BRENDA – MINNOVA JV 1991 EXPENDITURES

Summary by Work Type

<u>Project</u>	<u>Geol</u>	<u>Geoph</u>	<u>Geoch</u>	<u>Drill</u>	<u>Line</u>	<u>Trench</u>	<u>Hotels</u>	*Options	<u>Other</u>	<u>Total</u>	% of Budget
GENERAL	73063	0	1196	0	0	0	2510	0	0	76769	10.4%
RICHTER	4607	0	4939	0	0	0	774	0	0	10320	1.4%
ATH-JACKPOT	7712	0	798	56253	0	0	1416	10132	0	76311	10.3%
RAINBOW TAM	97782	52510	43820	201205	11947	0	11736	20000	1865	440865	59.5%
WILD ROSE	19414	25106	17950	33714	10939	0	2269	22500	795	132687	17.9%
LAST CHANCE	1661	0	972	0	0	0	0	0	0	2633	0.4%
OTHER	1159	0	0	0	0	0	0	0	0	1159	0.2%
TOTALS	205398	77616	69675	291172	22886	0	18705	52632	2660	740744	
% of Budget	27.7%	10.5%	9.4%	39.3%	3.1%	0.0%	2.5%	7.1%	0.4%		

DIRECT EXPENDITURES ADMINISTRATION TOTAL

= \$740,744 = \$82,517 = \$823,261

BRENDA GENERAL

PN 658

D.R. Heberlein

<u>INTRODUCTION</u>

The Brenda General budget is designed to allow reconnaissance work and property examinations within the Brenda JV area.

Properties reviewed in 1991 included epithermal Au, mesothermal Au, porphyry Cu and Cu-Au, skarn, and shear hosted copper targets. The property submittals resulted in the acquisition of one new project, Wild Rose, for the JV. Wild Rose is located in the Greenwood Camp. It adjoins the east boundary of the Rainbow Tam O'Shanter property and cover part of the Tam porphyry Cu-Au occurrence.

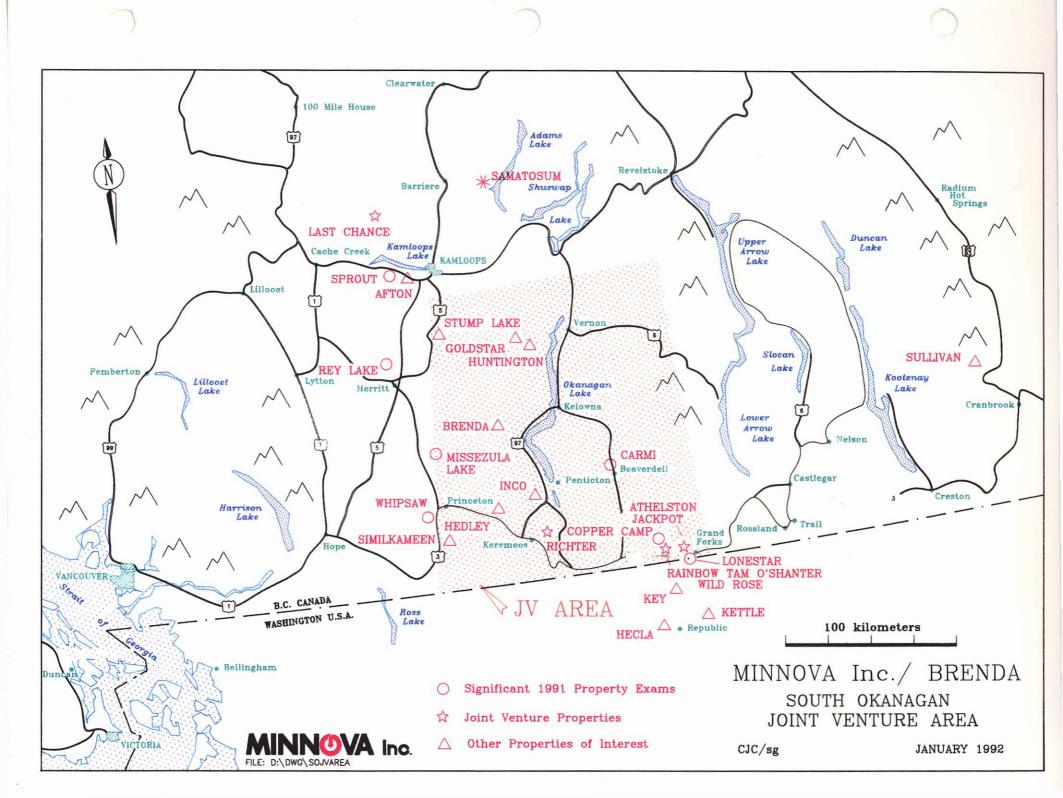
Offers were also made on several other properties in the JV area, but for one reason of another deals could not be completed. The most notable are the Whipsaw Creek porphyry Cu prospect and the Prime/Man porphyry Cu-Au property. On Whipsaw an agreement in principle was reached with the vendor, but at the last minute the property was lost to another party. The JV came close to acquiring the Prime and Man properties, however an agreement could not be reached with the vendor and negotiations were terminated. Below is a summary of properties reviewed by the JV:

Property	<u>Vendor</u>	Summary
Sprout	CRC Explorations Ltd. Shoreham Resources Ltd.	Epithermal Au target on shore of Kamloops Lake near Savona. Very grass-roots. Declined.
Randi 1-2	Arctex Engineering Serv. Madrona Resources Inc.	Mesothermal load gold target near Boston Bar. Small vein type target. Declined.

Property	Vendor	Summary
Rey Lake	Brenda	Porphyry Cu-Mo and poly-metallic skarn target in Nicola Volcanics north potential. Declined.
Wild Rose	Randsberg Gold Corp. Sam Bombini K. Schiller	Cu-Au Porphyry and epithermal Au target on east border of Tam O'Shanter property. Property optioned.
Carmi	Jim Hinks/John Olinger	Mesothermal Au/Ag target near Beaverdell. Limited size potential. Declined.
Joe Dandy	Leo Reichert	Re-evaluation of meso-thermal Au vein target limited tonnage potential. Declined.
Copper Camp	Jeff Chiachurski	Cu-Au skarn target near Greenwood. Good potential for Crown Jewel type. Examination in 1992.
No. 7	Andy Dupras Barry Sherman	Polymetallic quartz vein occurrence near Greenwood. Small target and poor land position.
Whipsaw Creek	Worldwide Minerals Ltd.	Porphyry Cu-Au prospect in Nicola volcanics, SW of Princeton. Offer made, deal fell through.
Cat	Jim Randa	Cu-Au skarn and shear hosted Cu occurrence. Close to Aspen Grove. Limited exploration potential. Declined.
Nakusp	Hascarl and Brenda	Disseminated Cp and mag-netite in Slocan Gp seds. East of Nakusp. Limited.

Property	Vendor	Summary
Lone Star	Chris Diakowski.	Porphyry Cu-Au deposit on international border south of Greenwood. Prohibitive stripping ratio but good potential. Continuing to monitor.
Missezula	Austar Resources Ltd.	Porphyry Cu-Au play in Nicola Volcanics at south end of Missezula Lake. Offer made but not accepted.
Snowflake	Quilchena Resources Ltd. Snowflake Resources Ltd.	Porphyry Cu-Au target in Nicola volcanics east of Merritt. Interesting property. Offer discussed but nothing formalized. Continuing to monitor.
Le Mare	Stow Resources Ltd.	Exciting new porphyry Cu discovery on the northwest coast of Vancouver Island. Offer made.

PROJECT NAME:	BRENDA GENERA		PROJECT NO.	658	
GEOLOGY					
		Salaries	\$51,674		
		Travel Expenses	\$2,176		
		Contract Payments	\$6,567		
		Field Expenses	\$12,646		
		Analyses	\$0	<u>\$73,063</u>	95.2%
GEOPHYSICS					
		Salaries	\$0		
		Travel Expenses	\$0		
		Contract Payments	\$0		
		Field Expenses	\$0	<u>\$0</u>	0.0%
GEOCHEMISTRY					
		Salaries	\$281		
		Travel Expenses	\$0		
		Contract Payments	\$0		
		Field Expenses	\$90		
		Analyses	\$825	<u>\$1,196</u>	1.6%
DRILLING					
		Salaries	\$0		
		Travel Expenses	\$0		
		Contract Payments	\$0		
		Field Expenses	\$0		
		Analyses	\$0	<u>\$0</u>	0.0%
	Line Cutting			<u>\$0</u>	0.0%
	Trenching			<u>\$0</u>	0.0%
	Hotels and Meals			<u>\$2,510</u>	3.3%
	Option Payments			<u>\$0</u>	0.0%
	Property Maintena	ince		<u>\$0</u>	0.0%
	Other			<u>\$0</u>	0.0%
		TOTAL DIRECT EXPE	NOITURES	\$76,769	
		TOTAL DITLOT LAFE	LINDIIOIILO	Ψ/0,/03	



RICHTER

PN 656

C.J. Clayton

INTRODUCTION

The Richter property, consisting of 212 contiguous claim units, is situated within the Osoyoos Mining Division between Oliver and Keremeos, B.C. Palaeozoic metavolcanics and meta-sediments intruded by Mesozoic plutons underlie the area. It was staked in 1988 to cover several multi-element heavy mineral anomalies. Work in 1989 resulted in the identification of several potential drill targets within strongly albitized and quartz vein stockwork zones proximal to Mesozoic intrusions.

Gold mineralization appears to be associated with zones of albite alteration. Albite alteration and albitite dykes have been important ore indicators in other regions such as the Bralorne area, and the Abitibi-Lake Chicobi area. Skarn potential must also be considered on the Richter property as satellite intrusions from larger plutonic bodies are found near wide bands of calcareous sediments.

1991 PROGRAM

The 1991 program consisted of:

Geology - 1:5000 scale reconnaissance mapping along 12.1 km

of compassed lines.

Geochemistry - 12 rock samples analysed for a 31 element ICP

package + fire geochem for Au, and major oxides.

242 soil samples analysed for a 31 element ICP

package + fire geochem for Au

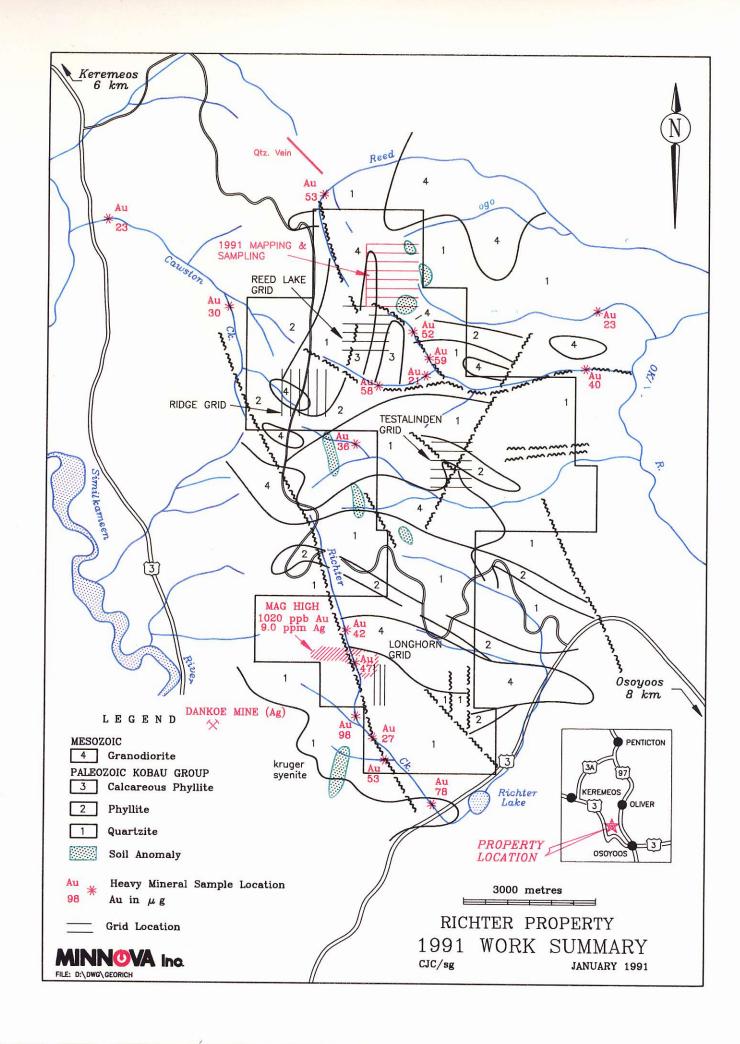
RESULTS

Mapping focused on north and east extensions of the Reed Lake grid in an area underlain by Jurassic/Cretaceous age diorite and calcareous Triassic metasediments and meta-volcanics. The margins of the intrusion were outlined fairly well but no significant Au or Cu values were returned from rock samples taken in the area. Results from soil sampling, too, showed only one area to be anomalous in gold with a maximum value of 362 ppb Au.

Contour soil geochemistry and heavy mineral samples taken from streams draining the eastern region between Ridge grid and Reed Lake grid were anomalous (52 and 59 micrograms Au in heavy mineral sample). This area has not been evaluated.

RECOMMENDATIONS

1. After three years of work on the Richter property no high quality target areas have been generated. It is recommended this project be terminated.



PROJECT NAME:	RICHTER		PROJECT NO.	656	
GEOLOGY					
		Salaries	\$3,238		
		Travel Expenses	\$0		
		Contract Payments	\$0		
		Field Expenses	\$1,369		
		Analyses	\$0	<u>\$4,607</u>	45%
GEOPHYSICS					
		Salaries	\$0		
		Travel Expenses	\$0		
		Contract Payments	\$0		
		Field Expenses	\$0	<u>\$0</u>	0%
GEOCHEMISTRY					
geos 12 @ \$18.75		Salaries	\$1,244		
soils 242 @ \$13.25		Travel Expenses	\$0		
	_	Contract Payments	\$0		
		Field Expenses	\$0		
		Analyses	\$3,695	<u>\$4,939</u>	48%
DRILLING					
		Salaries	\$0		
		Travel Expenses	\$0		
		Contract Payments	\$0		
		Field Expenses	\$0		
		Analyses	\$0	<u>\$0</u>	0%
	Line Cutting			<u>\$0</u>	0%
	Trenching			<u>\$0</u>	0%
	Hotels and Meals			<u>\$774</u>	8%
	Option Payments			<u>\$0</u>	0%
	Property Mainter	nance		<u>\$0</u>	0%
	Other			<u>\$0</u>	0%

TOTAL DIRECT EXPENDITURES

\$10,320

RAINBOW-TAM O'SHANTER

PN 661

C.J. Clayton

INTRODUCTION

The Rainbow Tam O'Shanter property consists of 345 claim units in the Greenwood Mining Division of B.C. The property was optioned in January of 1990 to cover a large part of the eastern margin of the Tertiary Toroda Creek Graben, just west of Greenwood. The potential for skarn, porphyry, and epithermal mineralization on the property is significant.

High Au and Cu values obtained from rock samples of a Cretaceous (?) aged diorite porophyry in the northeastern portion of the property influenced the focus of 1991 exploration. Patterns in Cu/Au soil geochemistry, rock geochemistry, IP and magnetometer geophysics, known deposit locations, and alteration zonations indicated this area had excellent potential for a large tonnage Cu/Au porphyry system.

1991 PROGRAM

Work by Minnova in 1991 focussed on exploring the porphyry system in the northeastern area of the property. The Tam 91 grid was expanded from a preexisting grid to the north, south, and east to eover the system.

In addition to this area, the Rain 91 grid was established in the Midway area of the property to search for epithermal mineralization along prominant faults within the graben. Geophysics, geological mapping and sampling, and soil sampling were completed over both areas.

Work culminated in a 2594 metre drilling program in October and November on the Tam 91 grid area.

Linecutting - 56.65 km on Rain 91 and Tam 91 grids

Geology - 45.05 km @ 1:2500

Geophysics - 33.5 km IP

45.05 km Mag and VLF

Geochemistry - 1802 soils

224 rocks for 31 element ICP + Au

100 rocks for 31 element ICP + Au + major oxides

Drilling - 2594.48 metres in 19 holes - Tam 91 grid

902 core samples from drilling

RESULTS

Surface work on the Rain 91 grid in the Midway area was unsuccessful in locating any anomalous areas that warrant follow-up work. Geological mapping, geochemistry, and geophysics were of limited use in this area due to poor outcrop exposure, poorly developed soil horizons, and thickness of Tertiary cover.

Work on the Tam 91 grid area was successful in delineating and defining a number of anomalous zones indicating a large mineralized porphyry system. This was defined by geology, geochemistry, and geophysics. Subsequent drilling of the porphyry system in the northern portion of the Tam 91 grid failed to identify any zones of economic significance. Three holes in the southern portion of the grid did, however, intersect Au mineralization approaching economic grades. These three holes (TM 91-16, -19, -20A), located on the same line, intersected Au mineralization over a lateral distance of 400 metres. The best intersections are 26.14 m @ 0.754 g/t Au, 145 ppm Cu (incl. 5.51 m @ 2.5 g/t Au, 69 ppm Cu), 53.5 m @ 0.26 g/t Au, 155 ppm Cu (incl. 9.0 m @ 0.51 g/t Au, 171 ppm Cu), and 27.07 m @ 1.09 g/t Au, 0.14% Cu (incl. 3.3 m @ 7.3 g/t Au, 0.83% Cu).

The relationship of mineralization between these holes is not fully understood at this time as it is related to Tertiary structure in one hole, yet related to a Cretaceous (?) diorite intrusion in another.

RECOMMENDATIONS

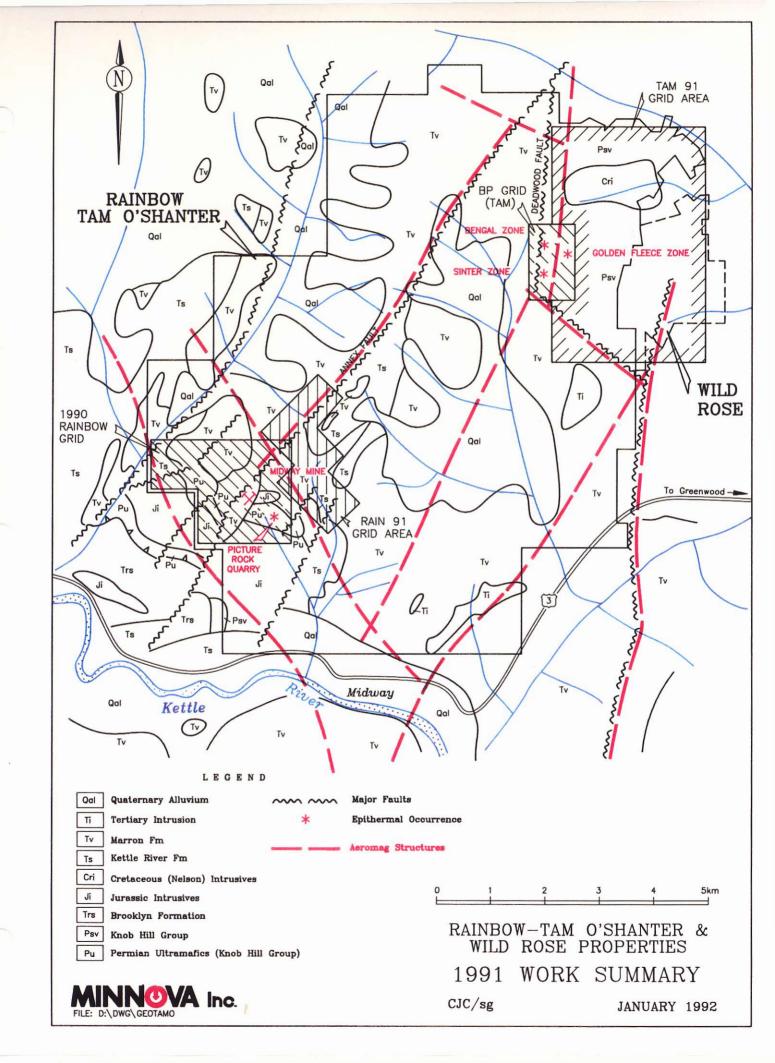
1. Follow-up drilling around gold mineralization at the south end of the Tam 91 grid.

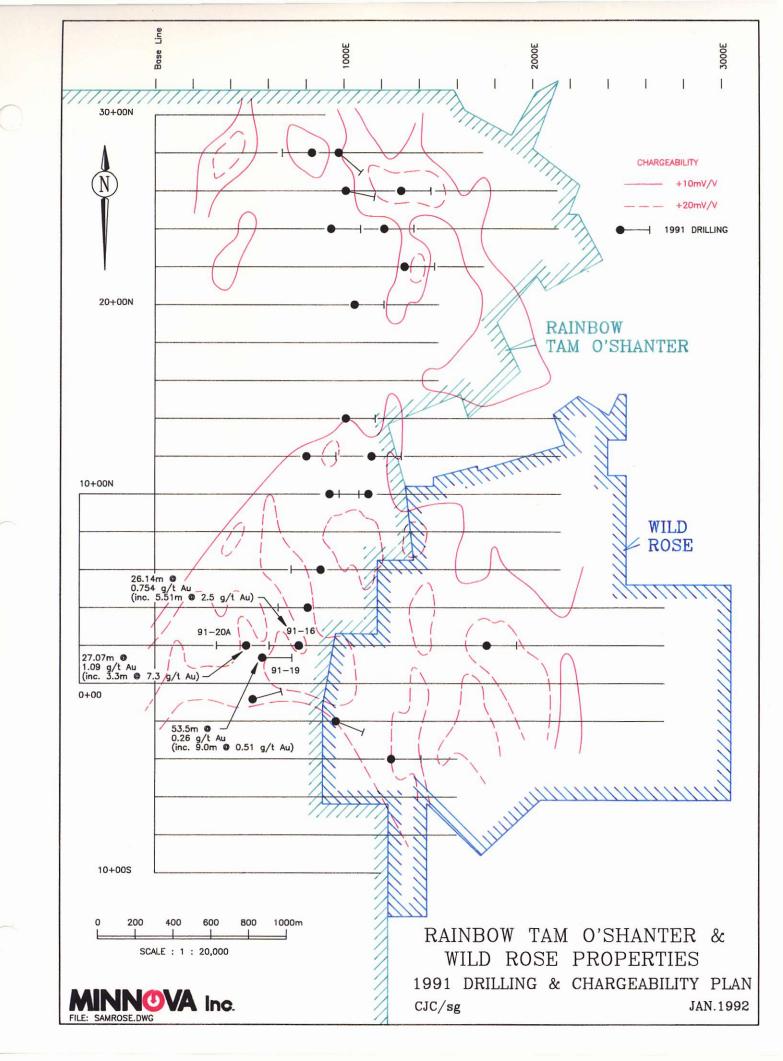
PROJECT NAM		RAINBOW TAM O'SHANTER		PROJECT NO.	661	
GEOLOGY						
			Salaries Travel Expenses Contract Payments Field Expenses Analyses	\$50,202 \$2,340 \$0 \$44,818 \$423	\$97 <u>,</u> 782	22.2%
GEOPHYSICS						
IP-33.5km @ Mag/VLF-45km	\$1306/km @\$189/km		Salaries Travel Expenses Contract Payments Field Expenses	\$183 \$0 \$52,250 \$77	<u>\$52,510</u>	11.9%
GEOCHEMISTE	?Y					
soils 1802 \$13 lithos 100 \$25. Geos 224 \$18	• 1		Salaries Travel Expenses Contract Payments Field Expenses Analyses	\$6,198 \$0 \$3,595 \$2,512 \$31,514	<u>\$43,820</u>	9.9%
DRILLING						
# holes metres cost/m contract salaries field exp analyses	19 2594m \$77.05 \$54.19 \$12.05 \$4.75 \$5.91		Salaries Travel Expenses Contract Payments Field Expenses Analyses	\$32,562 \$382 \$140,564 \$12,330 \$15,366	<u>\$201,205</u>	45.6%
		Line Cutting Trenching Hotels and Meals Option Payments Property Mainten Other	:		\$11,947 \$0 \$11,736 \$20,000 \$1,865 \$0	2.7% 0.0% 2.7% 4.5% 0.4% 0.0%

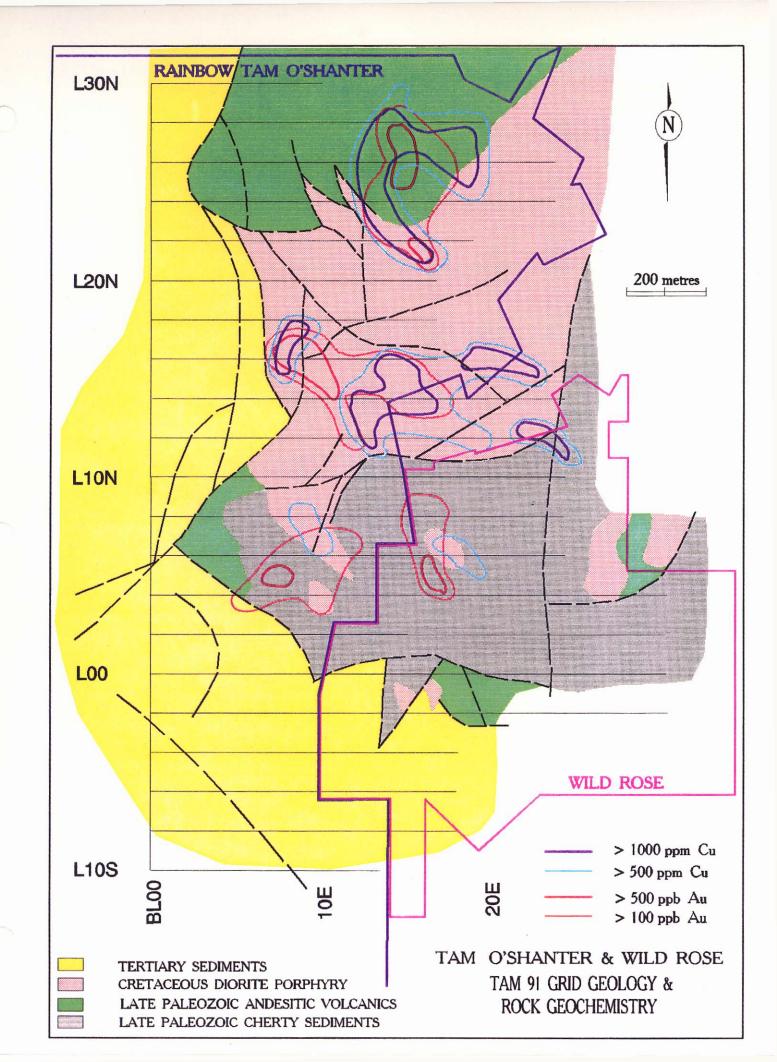
TOTAL DIRECT EXPENDITURES

\$440,866

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ATHELSTAN-JACKPOT

PN 666

C.J. Clayton

<u>INTRODUCTION</u>

The Athelstan-Jackpot property is situated within the Greenwood Mining Division of south-central British Columbia, approximately 9 km east-southeast of Greenwood, 4 km southeast of the Phoenix mine, and 12 road km northwest of Grand Forks, B.C. The property was acquired in 1990 and covers an area that has been worked intermittently in the past. Gold is associated with massive arsenopyrite and pyrite lenses within carbonate altered serpentinite (listwanite), forming large tabular lodes, as well as smaller vein-like mineralized zones. The base of the serpentinite is defined by the Lind Creek Thrust, an east-northeast trending, shallow north dipping fault. Mineralizing solutions are thought to have moved along the basal thrust and upward along steep northeast trending faults that intersect the thrust.

1991 PROGRAM

Minnova's 1991 program consisted of a re-analysis of mapping completed in 1990 with emphasis on the determination of orientations of controlling structures for mineralization. A limited number of rock samples were collected to augment those taken in 1990. This was followed by a 945.7 metre drill program in early spring.

Geology - 1:2000 structural mapping of remaining 17 km of grid

Geochemistry - 30 surface rock samples were taken; three for major oxides, one assayed for Au, Ag, Cu, Pb, and Zn.

225 drill core samples were taken; these were analysed for Ag, As, Ba, Cu, Pb, Sb, Zn, and Au by fire geochem. Twenty-five of these were analysed for major oxides.

Drilling

6 holes totalling 945.78 metres

Assays & Geochem-

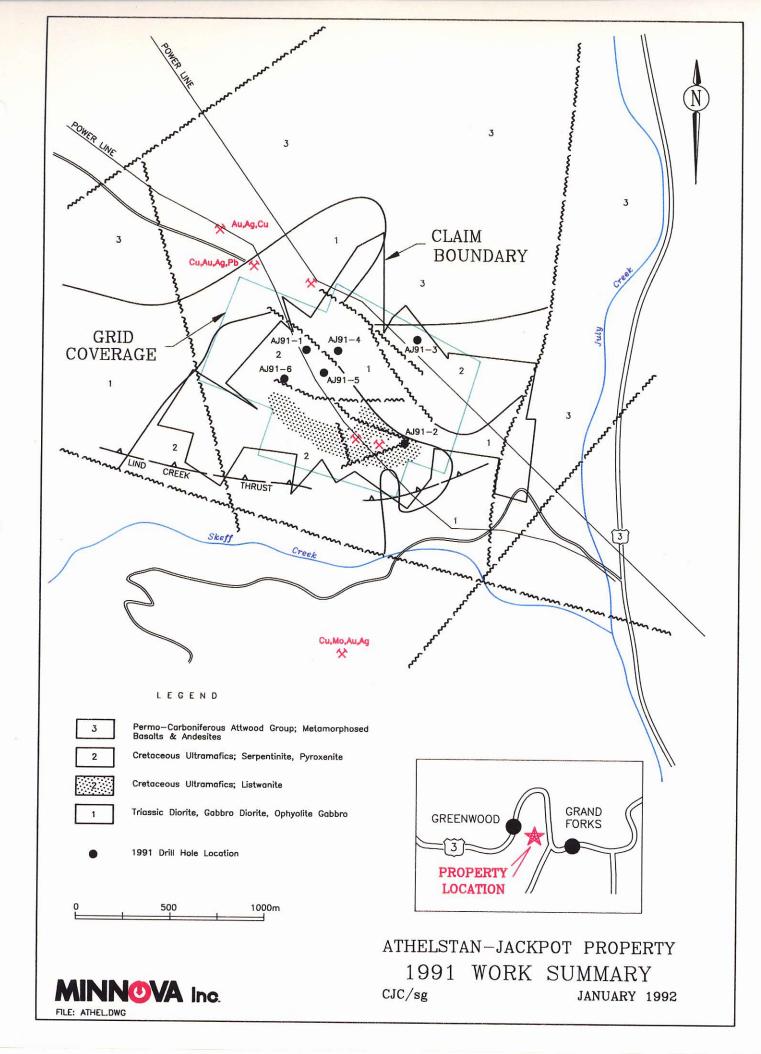
225 core samples from drilling; 25 of these analysed for major oxides.

RESULTS

Surface mapping resulted in the formation of an exploration model for the mineralization. A six hole diamond drill program was completed to test targets. The best results of surface sampling were from sample BCS15265 (0.24 g Au/tonne, 258 g Ag/tonne, 3.220% Cu, 2.1% Pb, 1.49% Zn) taken of listwanite in an old pit.

No significant economic mineralisation was returned from any of the core samples. Occasional veinlets of pyrite and pyrrhotite, and traces of sphalerite and galena were seen in a number of holes, but Au values were subeconomic throughout, while combined Pb and Zn values were never greater than 0.72% and more commonly less than 0.1%. The most interesting aspect of the drilling program was the intensity of alteration and complexity of structure. Apart from these, drilling failed to provide any reason for continuing with the project. The option has been terminated.

PROJECT	NAME:	ATHELSTAN JACKPOT		PROJECT NO.	666	
GEOLOGY						
			Salaries	\$5,727		
			Travel Expenses	\$157		
			Contract Payments	\$0		
			Field Expenses	\$1,828		
			Analyses	\$0	<u>\$7,712</u>	10.1%
GEOPHYSI	CS					
			Salaries	\$0		
			Travel Expenses	\$0		
			Contract Payments	\$0		
			Field Expenses	\$0	<u>\$0</u>	0.0%
GEOCHEMI	STRY					
Geos 35 @	D \$18.75		Salaries	\$0		
			Travel Expenses	\$0		
			Contract Payments	\$0		
			Field Expenses	\$141		
			Analyses	\$656	<u>\$798</u>	1.0%
DRILLING						
# holes	6		Salaries	\$6,791		
metres	945.7		Travel Expenses	\$0		
cost/m	\$59.49		Contract Payments	\$44,454		
contract	\$47.01		Field Expenses	\$1,377		
salaries	\$7.18		Analyses	\$3,632	<u>\$56,253</u>	73.7%
field exp	\$1.46					
analyses	\$3.84					
	٠	Line Cutting			<u>\$0</u>	0.0%
		Trenching			\$0	0.0%
		Hotels and Meals			\$1,416	1.9%
		Option Payments			\$10,132	13.3%
		Property Maintena	ance		<u>\$0</u>	0.0%
		Other			<u>\$0</u>	0.0%



WILD ROSE

PN 672

C.J. Clayton

INTRODUCTION

The Wild Rose property consists of 22 claim units located in the Greenwood Mining Division of B.C. just west of Greenwood. The property was optioned from Randsburg Gold Corporation in 1991 as an eastern extension of the Rainbow-Tam O'Shanter property. Geophysical work and geological mapping on the adjacent Tam 91 grid indicated the presence of a mineralized porphyry system that trends onto the Wild Rose property. Known mineralization on the Wild Rose property consists of structurally controlled massive pyrite, chalcopyrite, magnetite veins.

The claims are underlain by a sequence of Permo-Triassic chert, ash tuff and crystal tuff, Tertiary volcaniclastics, conglomerate, and argillite, and minor Jurassic/Cretaceous diorite. The property lies at the eastern margin of the Toroda Creek Graben and is dissected by a number of extensional faults related to Tertiary graben formation.

1991 PROGRAM

Work in 1991 concentrated on extending the Tam 91 grid lines on the Rainbow-Tam O'Shanter property across the Wild Rose property. These were subsequently mapped and sampled, soil sampled, and surveyed geophysically. Four target areas were drilled.

Linecutting - 13 km of line extended from Tam 91 grid

Geology - 13 km @ 1:2500

Geophysics - 13 km Induced Polarization

13 km Mag and VLF

Geochemistry - 520 soils

358 rocks

Drilling - 550.16 m in 4 holes

Assays & Geochem- 147 core samples from drilling

RESULTS

Several strong linear north-south trending zones of high chargeability (>+20 mV/V and up to +52 mV/V locally) with coincident low resistivities (<100 ohm-m) were delineated by the I.P. survey. Soil geochemistry associated with some of these anomalies was anomalous for Cu and Au. Rock geochemistry did not return any significant results except from sulphide veins previously worked. Drilling did not intersect any significant mineralization and many of the geophysical anomalies were explained by pyritic sediments, and argillaceous units.

RECOMMENDATIONS

1. Retain control of the property until the potential of the "gold zone" on the adjacent Rainbow-Tam O'Shanter property has been assessed. There is some indication that the structure that may be controlling the highest grades intersected by drilling on that property may be fault offset and trend on to the Wild Rose property and the property should be retained for protection.

- 2. If results of 1992 drilling on the Rainbow-Tam O'Shanter "gold zone" are encouraging and a definite structural trend to mineralization can be traced on to the Wild Rose, follow-up drilling should be conducted to test the projected zone on the Wild Rose property.
- 3. If results from drilling are not encouraging and the Rainbow-Tam O'Shanter project is terminated, this project should be terminated as well. This project does not have sufficient potential to survive as an individual property.

\$132,686 18

PROJECT EXPENDITURE SUMMARY 1991

PROJECT N	AME:	WILD ROSE		PROJECT NO.	672	
GEOLOGY						
			Salaries	\$15,726		
			Travel Expenses	\$169		
			Contract Payments	\$0		
			Field Expenses	\$3,518		
			Analyses	\$0	<u>\$19,414</u>	14.6%
GEOPHYSIC	es					
IP - 12.9km	@ \$1646/km	n	Salaries	\$276		
	.9km @\$278/km	,	Travel Expenses	\$0		
			Contract Payments	\$24,820		
			Field Expenses	\$10	<u>\$25,106</u>	18.9%
GEOCHEMIS	STRY					
soils 520	\$13.75/smple		Salaries	\$2,852		
lithos 100	\$25.35/smple		Travel Expenses	\$0		
geos 258	\$18.75/smple		Contract Payments	\$0		
0	<u></u>		Field Expenses	\$573		
			Analyses	\$14,526	<u>\$17,950</u>	13.5%
DRILLING						
Holes	4		Salaries	\$5,301		
metres	550.2		Travel Expenses	\$382		
cost/m	\$61.28		Contract Payments	\$23,522		
contract	\$42.75		Field Expenses	\$2,007		
salaries	\$9.63		Analyses	\$2,501	\$33,714	25.4%
field exp	\$3.65		•			
analyses	\$4.55					
		Line Cutting	12.9km @ \$848/km		\$10,939	8.2%
		Trenching		•	<u>\$0</u>	0.0%
		Hotels and M	eals		\$2,269	1.7%
		Option Payme	ents		\$22,500	17.0%
		Property Mair	ntenance		<u>\$595</u>	0.4%
		Property Acqu	uisition		<u>\$200</u>	0.2%

TOTAL DIRECT EXPENDITURES