

**ASSESSMENT REPORT**

**on the**

**CRONIN PROPERTY**

**MT. CRONIN AREA**

**OMINECA MINING DIVISION, B.C.**

NTS: 093L/15W  
Latitude: 54°55'30"N  
Longitude: 126°48'50"W  
Owner: T.H. Carpenter  
Operator: Discovery Consultants  
Author: T.H. Carpenter, P.Geo.  
Date: July 26, 2002

**GEOLOGICAL SURVEY BRANCH**  
**ASSESSMENT**

26,909

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## SUMMARY

The Cronin property is described as a polymetallic silver +/- gold, lead, zinc vein deposit contained within rhyolite sills of supposed late Cretaceous to Tertiary age which had intruded middle to upper Jurassic sedimentary rocks of the Ashman Formation of the Bowser Lake Group. Two distinct rhyolitic intrusive(?) units occur on the property. Age dating carried out in 2002 on rhyolitic rocks collected in 2001 indicates that the younger(?) of the rhyolites on the property is Eocene in age.

The Cronin Mine is located 28 kilometres northeast of Smithers and 3 kilometres east of the summit of Mount Cronin..

Exploration work has been carried out on the property since 1909. Mineralization comprises galena, boulangerite, tetrahedrite, arsenopyrite, sphalerite, freibergite, chalcopyrite and pyrite.

In 2001 a program of rock sampling was carried out on the property.

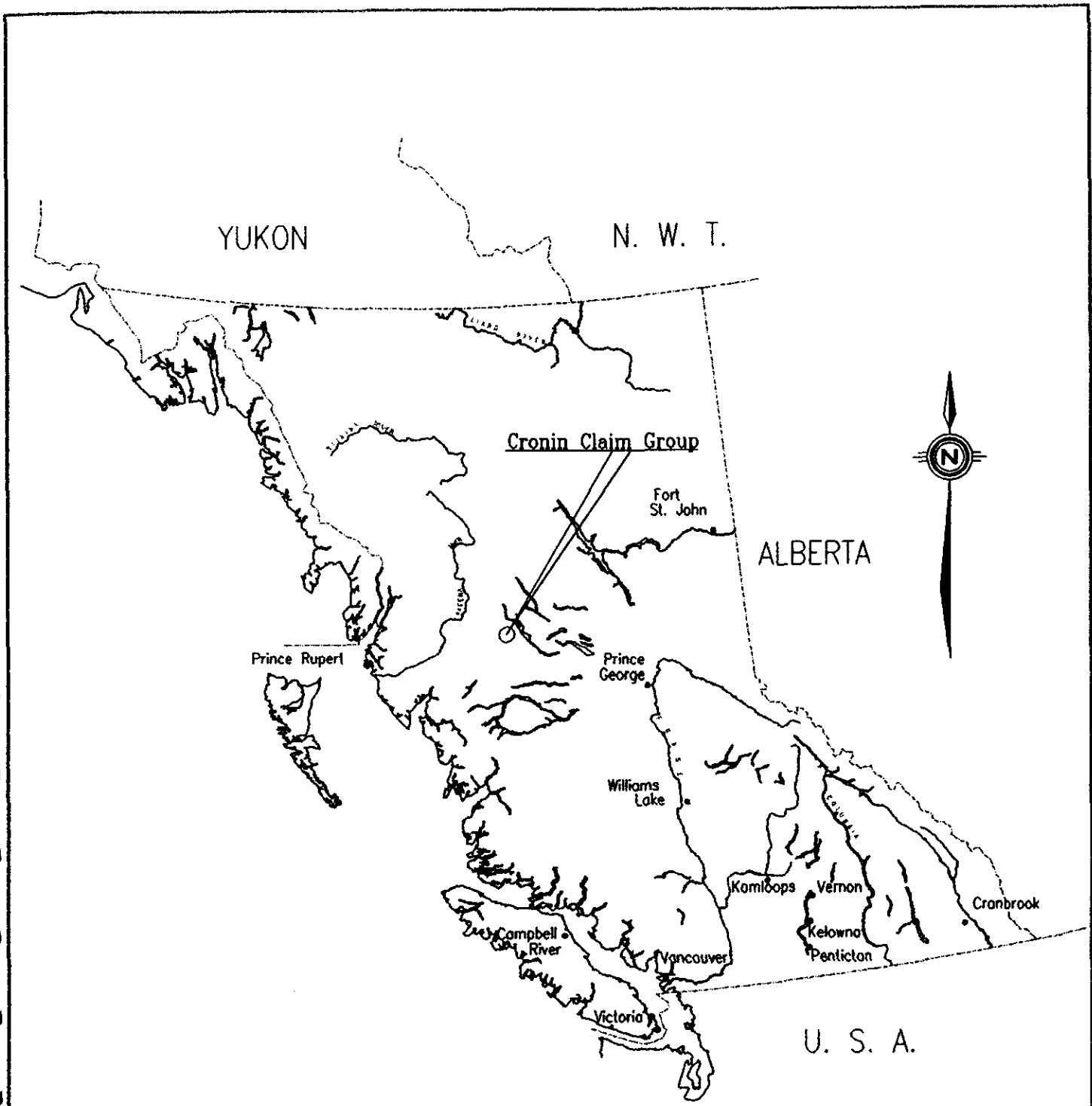
## LOCATION AND ACCESS

The Cronin property is centred at latitude 54° 55'30" north and longitude 126°48'50" west, 28 kilometres northeast of Smithers (Figure 1).

Access to the property can be gained by helicopter from Smithers or by road via 10 km long a four-wheel drive road that leaves the Babine Highway at kilometre 32. This road is accessed by a locked gate, the key to which is obtainable from the Ministry of Forests in Smithers. The Babine Highway leaves Highway 16 approximately 5 kilometres south of Smithers..

## TOPOGRAPHY

The Cronin property lies on the eastern flanks of the Babine Range, with elevations in the vicinity of the property ranging in excess of 2,375 metres. The majority of the old workings lie between 1,450 and 1,600 metres. To the west of the property, elevations reach 2,100 metres.



**DISCOVERY** Consultants

PEREGRINE SYNDICATE

Cronin Claim Group

LOCATION MAP

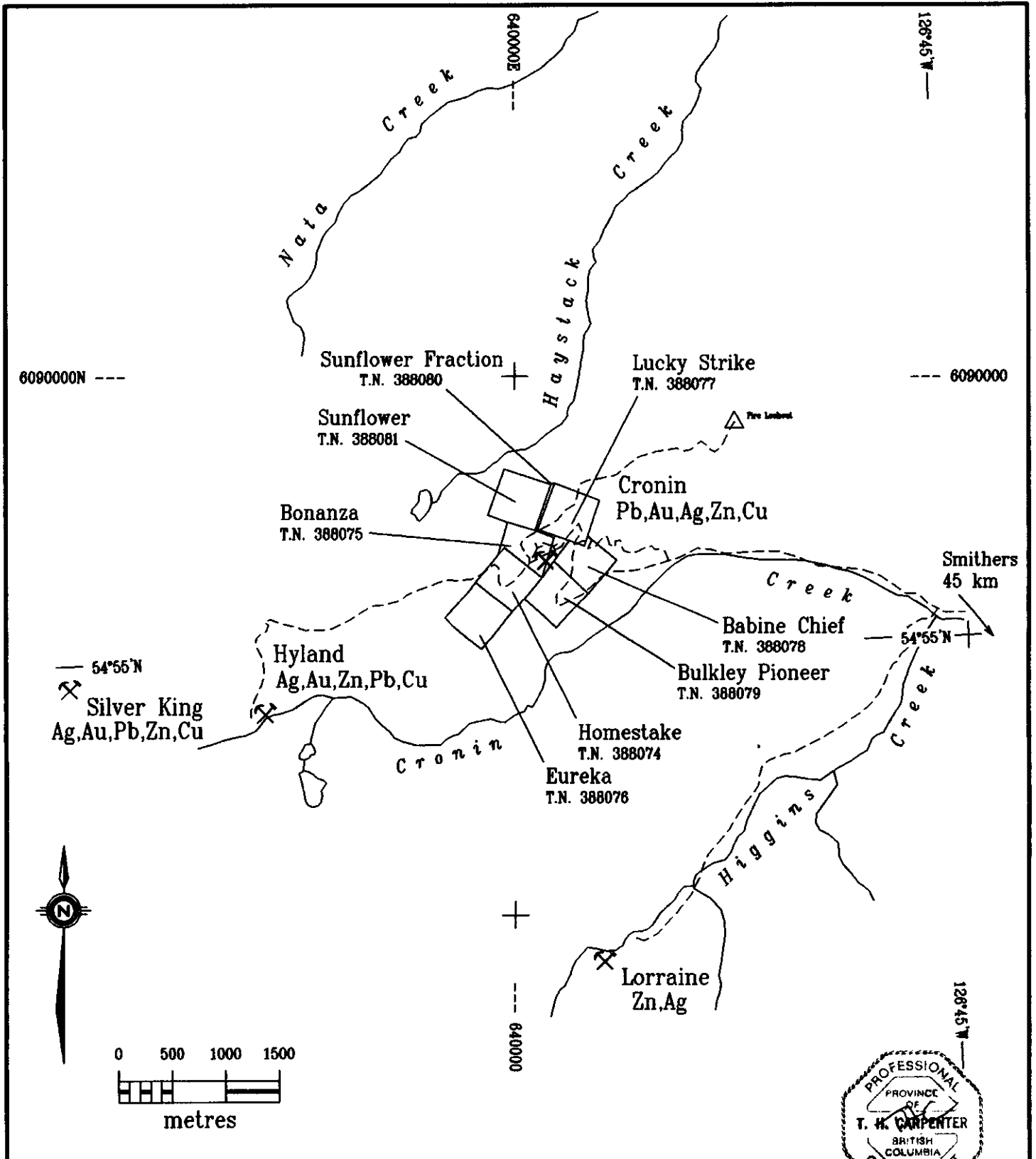
## PROPERTY

The Cronin property (Figure 2) comprises eight reverted crown grants as follows:

Claim Name	Record No.	Owner of Record	Anniversary Date *
Lot 1859a (Homestake)	388074	T.H. Carpenter	July 18, 2006
Lot 1860a (Bonanza)	388075	T.H. Carpenter	July 18, 2006
Lot 1861a (Eureka)	388076	T.H. Carpenter	July 18, 2006
Lot 1862a (Lucky Strike)	388077	T.H. Carpenter	July 18, 2006
Lot 1863a (Babine Chief)	388078	T.H. Carpenter	July 18, 2006
Lot 1864 (Bulkley Pioneer)	388079	T.H. Carpenter	July 18, 2006
Lot 7417 (Sunflower Fr.)	388080	T.H. Carpenter	July 18, 2006
Lot 7418 (Sunflower)	388081	T.H. Carpenter	July 18, 2006

The claims are held by T.H. Carpenter in trust for the Peregrine Syndicate.

\* Pending acceptance of this report.



**DISCOVERY** Consultants

PEREGRINE SYNDICATE

Cronin Claim Group

Claim Location Map

## HISTORY

The Cronin property was first staked in 1905. From 1909 to 1911 J. Cronin and Associates obtained the property and extensive underground exploration was carried out. Between 1914 and 1925 exploration and exploitation were limited to the summer months. Hand-cobbed ore from the mine was shipped each winter.

From 1928 to 1931 Babine Bonanza Metals Limited continued work until depression conditions halted further work.

From 1948 to 1957 Cronin-Babine Mines Limited carried out surface and underground diamond drilling and limited production. A 50-ton per day mill was installed in 1948 and 3000 tons of ore were produced till 1952 when the mine shut down due to low metal prices. Work resumed on the property in 1956 and a further 10,000 tons of ore were produced.

Between 1958 and 1972 the Cronin Mine was leased and shipments of metal concentrate were made annually. From 1972 to 1974 Hallmark Resources carried out underground and surface exploration, mined and milled ore and shipped concentrate.

Various exploration programs were carried out on the property from 1975 to 1987 but no production was carried out. The property was acquired by the Peregrine Syndicate in 2000.



## GENERAL GEOLOGY

The Cronin property is underlain by rocks of the Middle to Upper Jurassic Ashman Formation of the Bowser Lake Group intruded by two late Cretaceous to Tertiary sub-volcanic intrusives. Published reports indicate that the Bowser Lake Group is in fault contact with the Lower to Upper Cretaceous rocks of the Kasalka Group immediately to the west of the showing area. The Kasalka Group largely comprises volcanic rocks. The Ashman Formation is made up of black shale, siltstone, quartzose wacke and pebble conglomerate.

The mineralization on the property is hosted by mineralized structures contained within the Ashman Formation and the two rhyolite units on the property.

The rhyolite units are described by Schroeter (1975) as follows:

-rhyolite porphyry: grey, massive, medium to fine-grained porphyry with 20 to 40 per cent 1 by 3-millimetre albite laths in an aphanitic groundmass of quartz, calcite, 'sericite', zoisite and chloritoid.

-rhyolite: strongly altered white to pale unit that intrudes the rhyolite porphyry. This unit is aphanitic for the most part, but may contain up to 15 per cent 1 to 2 millimetre quartz phenocrysts. Micro-sized quartz, 'sericite', and calcite make up the bulk of the rock,

Both rhyolite units have undergone low-grade regional metamorphism..

## MINERALIZATION

Three major rock types on the property host mineralized structures on the property.

These comprise argillite of the Ashman Formation and the two rhyolite intrusions on the property.

Moderate to intense quartz veining (1 to 4 millimetres in width) with minor galena occurs within argillite of the Ashman Formation.

Sulphide mineralization occurs as dilation veins associated with quartz, in quartz stockworks, as coatings on dry fractures in the rhyolite and rhyolite porhyry, and as trace disseminations in the rhyolite. The most common minerals, in order of abundance are: pyrite, sphalerite, galena, chalcopyrite, boulangerite and tetrahedrite. Widths of mineralization vary dramatically over short distances.

## WORK COMPLETED

In 2001 a work program carried out on the Cronin property included a sampling of the felsic rocks to determine an age date for these rocks. Samples were collected from both the rhyolite porphyry and the rhyolite. As noted above, based on field relationships, the rhyolite porphyry appears to be the older of the two rhyolite units on the property as the rhyolite appears to be intruding the rhyolite porphyry.

One five-gallon pail of rhyolite was collected and submitted for U-Pb age dating to Dr. Larry Heaman at the University of Alberta in Edmonton, Alberta. At the U. of A. three zircon fractions were produced from the crushed rhyolite from which an age date of 51.1 million years was derived. This date corresponds to the Eocene. A complete report on the age determination is contained in Appendix A.

## CONCLUSIONS AND RECOMMENDATIONS

An Eocene age of 51.1 ma (million years) for the felsic rocks on the Cronin property has been determined as the best estimate for the age of the rhyolites. This age confirms the previously estimated date for the rhyolites. However evidence also suggests a possible Late Cretaceous age for the rhyolites. It is suggested that the older dates could reflect the presence of a small inherited Pb component.

It is perhaps noteworthy that the older dates correspond to the age of the Kasalka Group volcanic rocks that occur immediately to the west of the Cronin Mine area. Whether the felsic volcanic rocks are directly related to and coeval with the Kasalka rocks or whether the felsic volcanic rocks incorporate a portion of the Kasalka rocks has yet to be determined.

It is recommended that further exploration on the property should be carried out with the possibility that additional mineralization may occur within the Kasalka Group rocks in the area.

Respectfully submitted,

T.H. Carpenter, P.Geo.

Vernon, BC

July 26, 2002

## BIBLIOGRAPHY

### British Columbia Ministry of Energy, Mines and Petroleum Resources – Annual Reports

1910-p.86	1911-p.108, 287-288	1914-p.229-233	1916- p.128-130
1917-p.108-111	1918-p.121	1919-p.103	1920- p.87-89
1921-p.101	1923-p. 111	1924-p.97	1928-p.167
1929-p.168	1930-p.141	1931-p.73	1948-p.85
1949-p.94-98	1950-p.101	1951-p.112	1952-p.94
1956-p.94	1957-p.12	1962-p.16	1963-p.26
1964-p.52	1965-p.73	1966-p.82	1967-p.89

### British Columbia Ministry of Energy, Mines and Petroleum Resources – Assessment Reports

#5526, #5674, #16603, #16721 and #17712

### British Columbia Ministry of Energy, Mines and Petroleum Resources- Geology, Exploration and Mining in British Columbia

1969-p.100	1970-p.164	1971-p.178	1972-p.420
1973-p.347	1974-p.263	1975-p.E144	

### British Columbia Ministry of Energy, Mines and Petroleum Resources- Exploration in British Columbia

1978-p.E221	1987-p.C310	1988-p.C174
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### British Columbia Ministry of Energy, Mines and Petroleum Resources- Geological Fieldwork

1974-p.81	1987-p.191-192	1988-p.195-208	1991-p.93-101
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### Geological Survey of Canada Bulletin 270

Schroeter, T.G., 1975. Cronin Mine *in* Geology in British Columbia, Province of British Columbia Ministry of Mines and Petroleum Resources

## STATEMENT OF COSTS

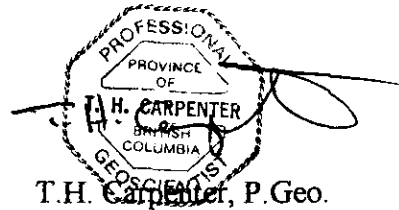
### CRONIN PROPERTY

1. Professional Services			
Thomas H. Carpenter			
Planning, Data Interpretation, and Report Writing			
1.75 days @ \$400/day			\$ 700.00
2. Personnel			
Prospecting and Sampling (August 25, 2001)			
D. Strain			
1.0 day @\$325.47/day	\$ 325.47		
R. Mitchell			
1.0 day @\$299.78/day	299.78		
R. Ancil			
1.0 day @\$280.00/day	280.00		
	-----		\$ 905.25
Drafting			816.00
Secretarial			136.00
			-----
			1,857.25
3. Expenses			
Analyses - University of Alberta (age dating)		1,500.00	
Communications		14.43	
Office		15.00	
Data Processing		114.00	
Lodging & Meals		180.40	
Maps & Publications		26.82	
Equipment Rentals		36.00	
Field Supplies		31.00	
		-----	1,917.65
			-----
		<b>Total:</b>	<b>\$4,474.90</b>
4. Transportation			
a) Helicopter		\$ 386.48	
Helicopter			
b) 4x4 truck	700 km @30¢/km	210.00	
		-----	596.48
			-----
		<b>TOTAL:</b>	<b><u>\$5,071.38</u></b>

## STATEMENT OF QUALIFICATIONS

I, THOMAS H. CARPENTER of 3902 14<sup>th</sup> Street, Vernon, B.C., V1T 3V2, DO  
HEREBY CERTIFY that:

1. I am a consulting geologist in mineral exploration with Discovery Consultants, Vernon, B.C.
2. I have been practicing my profession since graduation.
3. I am a 1971 graduate of the Memorial University of Newfoundland with a Bachelor of Science degree in geology.
4. I am a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia.
5. This report is based upon knowledge of the Cronin property gained from a review of earlier work and supervision of the present program.
6. The Cronin property is held by me in trust for the Peregrine Syndicate.



Vernon, B.C.  
July 26, 2002

**APPENDIX A**

**Report on the U-Pb age results for Santa Maria Rhyolite Sample SM01-1**



## Report on the U-Pb age result for Discovery 2002 Rhyolite Sample

One pail of Cronin property rhyolite was submitted by Tom Carpenter of Discovery Consultants for U-Pb geochronology in May 2002. The sample was pulverized using a jaw crusher and Bico disk mill. Zircon was isolated using a series of mineral separation steps including a Wilfley Table, Frantz isodynamic separator and heavy liquids. Stringent cleaning procedures were employed at all stages to reduce as much as possible the chance for laboratory contamination. The zircon grains were individually selected using a binocular microscope and only the best quality grains were chosen (i.e. generally only those grains that are devoid of fractures, inclusions and turbidity). Three small multi-grain fractions were selected for analysis (Table 1). They were weighed with an ultra-microbalance, cleaned and dissolved in a mixture of acids (HF and HNO<sub>3</sub>). Uranium and lead were purified using anion exchange chromatography. The isotopic composition of U and Pb were determined on a VG354 thermal ionization mass spectrometer operating in single collector mode.

A small amount (~200-300 crystals) of dominantly colourless zircon was recovered from this rock. Some of the larger crystals tend towards a tan colour. A turbid lower relief colourless mineral (barite?) was quite abundant in the least magnetic fractions. Small grains of a yellow mineral displaying twinning were noted in a more magnetic fraction and are likely rutile. The zircon grains display a large range in crystal morphology. Common types include: 1) round equant multi-faceted euhedral, 2) long prismatic euhedral, 3) equant with triangular tips, 4) fragments, and 5) subhedral 3:1 (length:width) prisms. Visible core-overgrowth relationships were not observed. Three small (3-5 grains) multi-grain fractions were selected to test the age of different zircon populations. Fraction #1 consisted of 3 larger slightly tan long prismatic euhedral grains with small fluid inclusions, fraction #2 consisted of 5 colourless equant multi-faceted euhedral grains with some fluid inclusions, and fraction #3 consisted of 3 colourless anhedral irregular grains.

The U-Pb results for three zircon fractions are presented in Table 1. The errors listed in this table are quoted at 1 sigma. Zircon in this sample contains low to moderate uranium concentrations (204-348 ppm) and low Th/U ratios in the range 0.13-0.22, which is consistent with zircon crystallizing directly from a felsic magma. All three fractions are displayed on a Concordia diagram in Figure 1 and generally plot within error of the concordia curve. Fraction #1 is the youngest fraction analysed and is most concordant (closed system) with identical <sup>206</sup>Pb/<sup>238</sup>U and <sup>207</sup>Pb/<sup>235</sup>U dates of 51.1 Ma. The weighted average of these two dates is 51.1±0.2 Ma and is interpreted as the best estimate for the age of the rhyolite. The other two fractions are slightly older with Cretaceous U-Pb dates (see Table 1) and could reflect the presence of a small inherited Pb component. Considering that fractions 2 and 3 plot close to the concordia curve it is likely that the age of zircon inheritance cannot be much older than about 300 Ma – the upper intercept date of a reference line constructed to pass through analyses 1 and 2.

June 25, 2002.

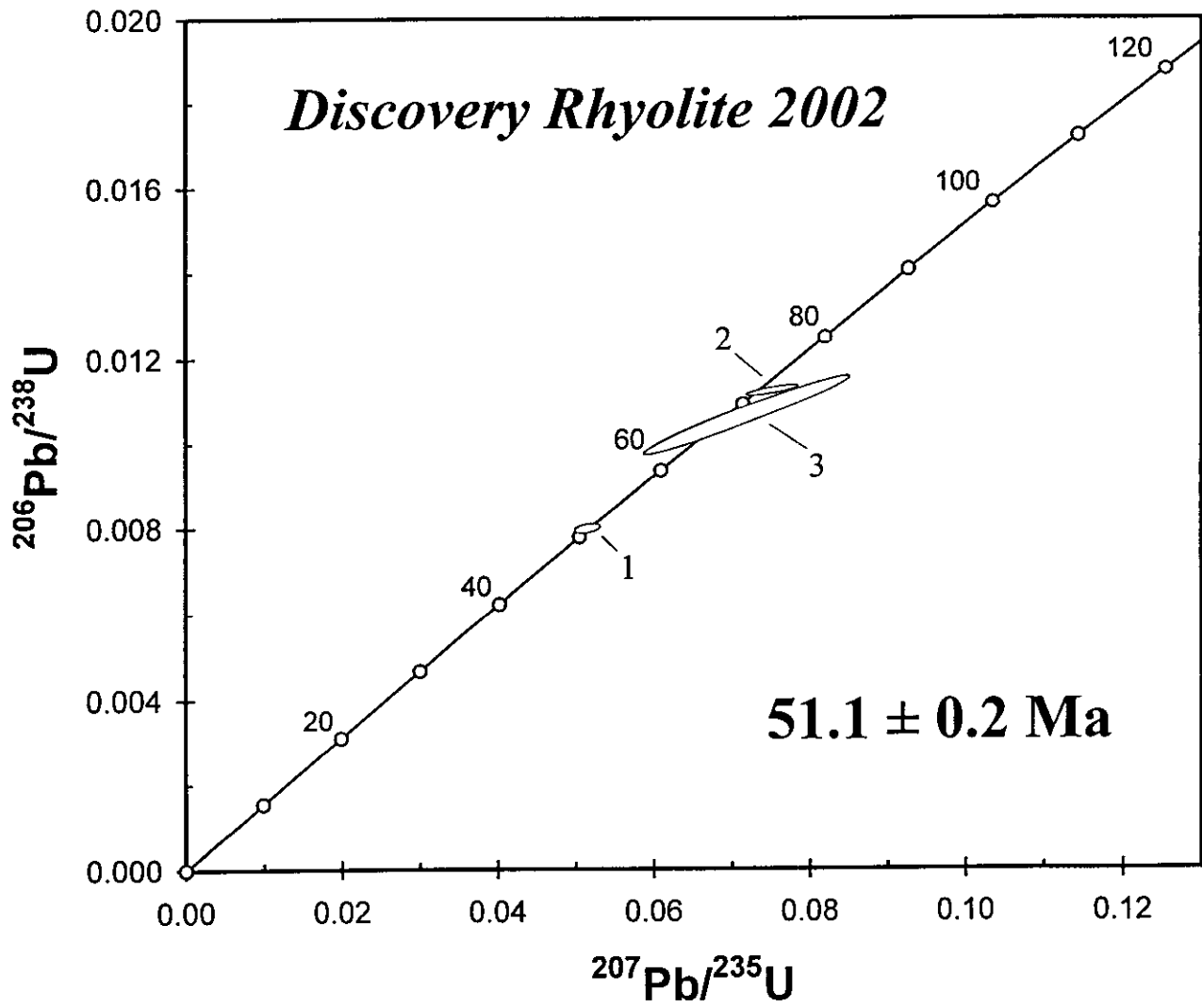
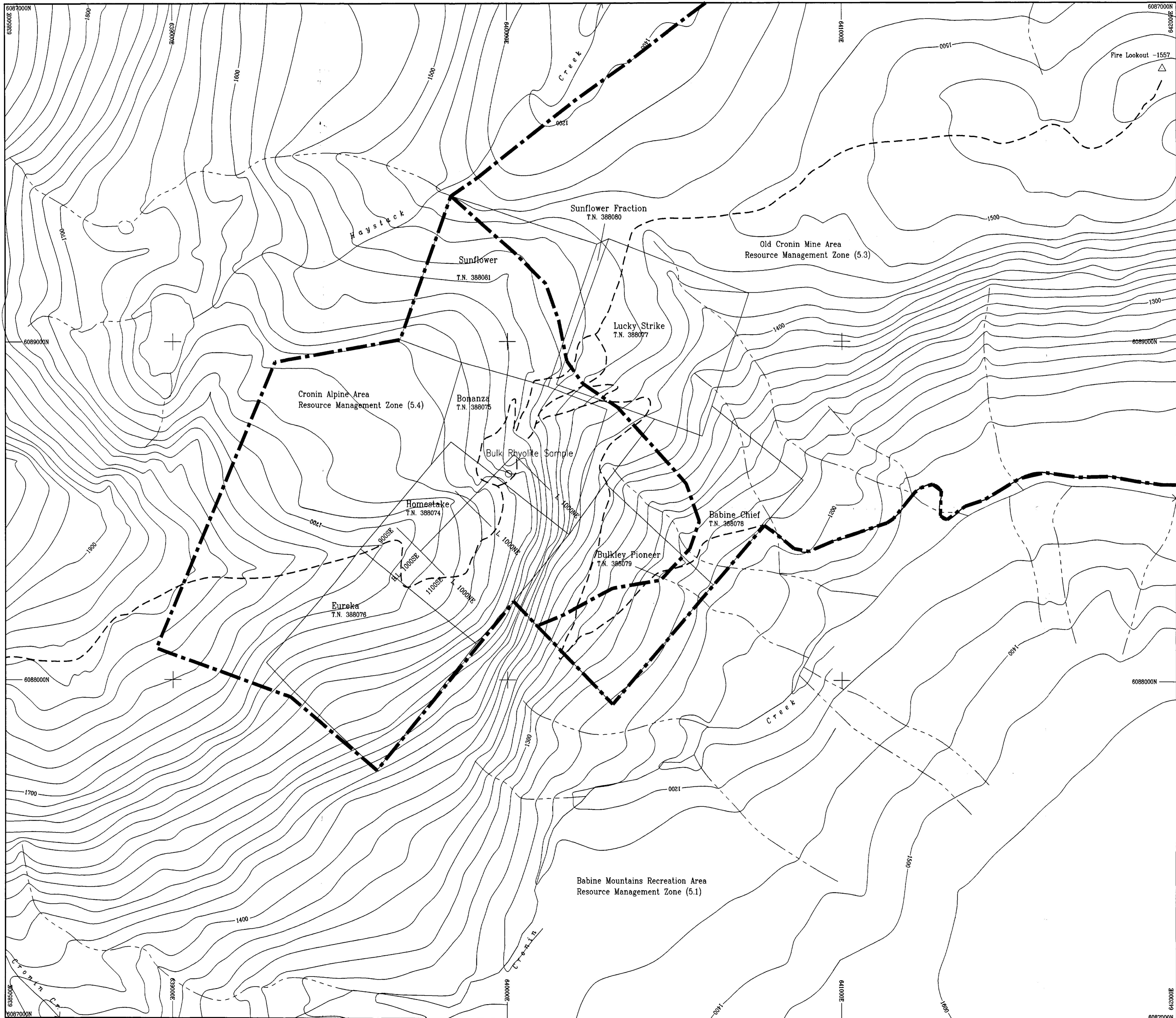


Table 1. U-Pb Zircon Results for Discovery Consultants 2002 Rhyolite sample

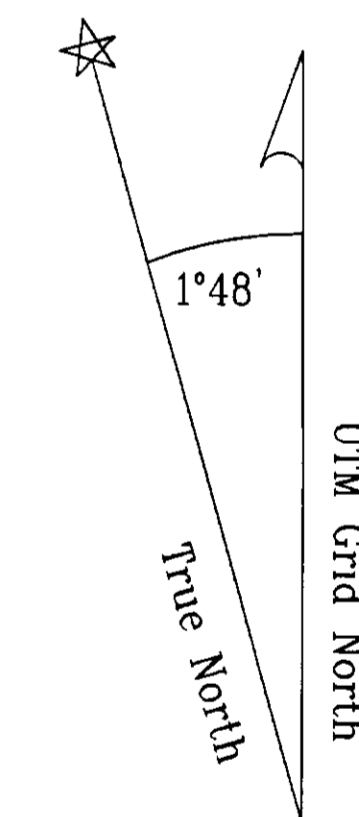
Description*	Weight ( $\mu\text{g}$ )	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	TCPb (pg)	$^{206}\text{Pb}/$ $^{204}\text{Pb}$	$^{206}\text{Pb}/$ $^{238}\text{U}$	$^{207}\text{Pb}/$ $^{235}\text{U}$	Model Ages (Ma)				%Disc	
										$^{207}\text{Pb}/$ $^{206}\text{Pb}$	$^{206}\text{Pb}/$ $^{238}\text{U}$	$^{207}\text{Pb}/$ $^{235}\text{U}$	$^{207}\text{Pb}/$ $^{206}\text{Pb}$		
<i>Discovery 2002-1 Rhyolite</i>															
1 z, col long prisms 1NM (3)	19	348	75	3	0.22	7	504	0.00796 $\pm$ 2	0.0516 $\pm$ 5	0.0469 $\pm$ 4	51.1 $\pm$ 0.1	51.1 $\pm$ 0.5	48.8 $\pm$ 20.7	-4.7	
2 z, col multi faceted equant 1NM (5)	43	204	28	2	0.14	3	1889	0.01120 $\pm$ 3	0.0754 $\pm$ 12	0.0489 $\pm$ 7	71.8 $\pm$ 0.2	73.8 $\pm$ 1.1	138.9 $\pm$ 33.4	48.6	
3 z, col irregular anhedral 1NM (3)	21	275	34	10	0.13	138	46	0.01066 $\pm$ 34	0.0717 $\pm$ 50	0.0488 $\pm$ 33	68.4 $\pm$ 2.2	70.3 $\pm$ 4.7	136.9 $\pm$ 100.0	50.4	

\* col = colourless; number in parentheses corresponds to the total number of zircon grains analysed  
 1NM = non-magnetic fraction at one degree side tilt on a Frantz Isodynamic Separator  
 atomic ratios corrected for blank (2pg Pb; 0.5pg U), spike and initial common Pb (Stacey and Kramers, 1975)  
 All errors reported at 1 sigma.

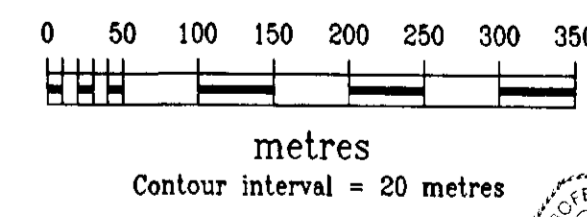


**LEGEND**

Bulk Sample Bulk Rhyolite Sample Location



REVISION DATE	REVISION BY	REVISION



**DISCOVERY** Consultant

**PEREGRINE SYNDICATE**

**CRONIN PROPERTY**  
 Age Date Sample 26909  
 Sample Location Map ①

Location:	Smithers, BC	Mining Jurisdiction:	Omineca
Datum:	NAD83	Map Ref.:	093L.096
Scale:	1:5,000	UTM:	9
Project:	663	Date:	July 25, 2002
Drawn By:	RM	Figure:	3

642000E  
6087000N