



130° To Stewart PO 11 kilometres

To Hazelton 160 kilometres 129°



800703

RIOCANEX INC.	
TODD CREEK PROJECT LOCATION MAP	
SCALE 1:600,000	
J. R. WOODCOCK CONSULTANTS LTD.	
JANUARY 1982	FIGURE NO. 1

List of Figures

Page No

Figure 1.	Location Map (Scale. 1:600,000)	
2.	Claim Map (Scale 1:50,000)	10
3.	Geology. (Scale. 1:5,000)	
4.	Survey Map Scale 1:1000)	
5.	Geology - Detail Area (Scale 1:1000)	
6.	Sample Numbers (Rock and Silt) Scale 1:5000	
7.	Sample Numbers (Barite) Scale 1:5000	
8.	Pb Geochemistry	" "
9.	Zn Geochemistry	" "
10.	Cu, Mo "	" "
11.	Ag, Au "	" "

List of Tables

1. Geochemistry of the Detailed Area.
2. Geochemistry of the Jasper-Barite zone
3. ~~Assays and~~ Geochemistry of the Barite-Galenite Mineralization
4. Geochemistry of the Dull Creek Cu-Au Mineralization

1. GEOCHEMISTRY

(All tables together)

2. ~~Geochemistry~~ GENERAL

a total of 241 rock samples, 132 barite samples and 97 silt samples were taken.

Rock samples were analyzed for Mo, Pb, Zn, Cu, and occasionally Au. ~~and~~ Silt samples were analyzed for Mo, Pb, Zn, Ag and occasionally Au. Most barite samples were not analyzed. Ten samples from the mineralization at Fall Creek ~~and~~ were assayed for ~~Copper~~ ^{Au} and/or ~~Ag~~ ^{Cu (Table 4)}. Nine samples of ~~barite~~ barite-galena mineralization were assayed for ~~lead~~ Pb and Ag (Table 3).

→ The most persistent feature of all ^(See Figures 8-11) the geochemical maps indicate that the zones of intense to medium alteration contain anomalous lead, zinc and silver and sporadically anomalous copper and molybdenum. Copper and molybdenum values are for the most part background. ^{However} but a cluster of ^{slightly} marginally anomalous ~~to anomalous~~ copper and molybdenum occurs

just to the south of the jasper-barite zone. This
~~conglomerate zone~~ ~~is~~ ~~in~~ ~~addition~~ ~~to~~ ~~the~~ ~~poppy~~ ~~-~~ ~~molybdenum~~ ~~valley~~,
~~roughly~~ ~~bounded~~ ~~to~~ ~~the~~ ~~south~~ ~~by~~ ~~a~~
major branch of ~~the~~ ~~river~~ ~~also~~ ~~contains~~ ~~conspicuous~~
~~signs~~ ~~of~~ ~~a~~ ~~cluster~~ ~~of~~ ~~anomalous~~ ~~Pb~~, ~~Zn~~ ~~and~~ ~~Ag~~
~~lead~~, ~~zinc~~ ~~and~~ ~~silver~~ ~~values~~ ~~as~~ ~~anomalous~~

~~barite~~ scattered

~~Selected~~ rock and silt samples were selected
analyzed for gold, ^{analyses.} these results returned were
disappointing with few results greater than 10 ppb.
One the barite samples returned a value of 110 ppb
and one of the silt samples returned a value of
120 ppb.

Geochemistry of the Detailed Area

Geochemical results from the detailed area (Figure 5) are given on Table 1. Although there are too few samples to interpret geochemical trends, one can note the following ~~features~~ features in the geochemistry:

1. The zones of medium to intense alteration are generally high in ~~contain many anomalous values~~ lead, zinc and silver with many anomalous values. ~~Values and overall such zones are relatively high in these metals.~~

2. Copper values ~~are low.~~ ~~are not significantly anomalous~~ are relatively lower than that of lead, zinc and silver (generally < 30 ppm). The few sporadic highs are within the zones of intense alteration.

3. Anomalous metal values ~~are~~ ~~found on either side~~ ~~of the jasper-beaite zone.~~ occur within the altered rocks to the northeast and southwest of the jasper-beaite zone.

4. There is a sharp contrast ~~in the~~ between the metal values returned from the unaltered and non-pyritic red agglomerate ^{northwest of the beaite zone} and those returned

from the Jasper-barite zone and ^{from} the altered rocks
to the south and east ^{of the barite zone.} The metal values (especially
silver) are ~~much~~ ^{very} lower ~~than~~ within the red
agglomerate.

Geochemistry of Jasper-Barite Zone

Sub heading under Geochem.
of Detailed
area.

3 Geochemistry of the Jasper-Baite Zone

Geochemical analyses returned from the jasper-baite zone (Table 2) indicate sporadic anomalous values in copper, lead and zinc. There seems to be ^{mineralization, control} a zonation ~~to~~ the copper, lead and zinc values with the ^{eastern} ~~western~~ ^{half} more barite-rich zone having ^{values} a significantly higher concentration of these metals as compared to the jasper-rich eastern half. Silver values returned are more uniformly anomalous with most values greater than ~~4~~ 4 ppm.

Assayed galena-rich barite samples ^{returned} ~~range~~ up to 10.56 g H Ag. However ^{in general} ~~one should~~ note the relatively low ^{the} silver to lead ratios. ~~are~~ ^{are} not as high as desirable for a precious metal camp.

Subheading

3 Geochemistry of Barite Mineralization

Only a few barite samples were geochemically analysed or assayed. The results returned from these samples were sporadically anomalous in copper, lead and zinc and uniformly anomalous in silver (≥ 3.0 ppm)

Subheading

3 Geochemistry of Copper-Gold Mineralization (Fall Creek)

~~within the trenches~~
As indicated on Table 4 ~~except~~ copper, lead, zinc, molybdenum, silver and gold are all sporadically anomalous ~~within~~ in the area of mineralization ^{on Fall Creek}. One should also note ~~the nearby~~ there are also some additional anomalous copper values ^{in the volcanic rocks adjacent to the} ~~along~~ Fall Creek ^{trenches} (Figure 10),

1. Conclusions

lies ~~along the west~~ west of Todd Creek. It

1. The property is underlain by fine to coarse ~~pyro~~ pyroclastics of the Lower to Middle Tertiary Hazelton Group, ~~along with~~ ^{a few} minor amounts of limestone and basic ~~intrusion rocks~~ dykes are also present.
2. Brilliantly ironstained, highly pyritic and silicified altered rock occurs extensively in the centre of the property. The alteration consists of quartz, pyrite and minor sericite. Four zones of medium to intense alteration occur the largest being 1000m by 500m.
3. Across the northwestern border of the main zone of alteration there is a marked zonation in the geology which, ^{from south to north,} is as follows:
 1. White to medium grey highly silicified and pyritic volcanics
 2. Hematite-rich and highly silicified rock which is less pyritic
 3. Jasper - Barite zone
 4. Non pyritic, non-altered red agglomerate.

4. Sphalerite is the most abundant ~~form~~ form of mineralization. Associated with the zones of alteration it is primarily finely disseminated.

5. Barite mineralization is also widespread and is also found predominantly within the zones of alteration. However ~~many~~ barite ^{in some veins also} ~~structures~~ occur well beyond the zones of alteration. The mineralization consists of barite with minor galena and pyrite and varying amounts of calcite, jasper and jasper breccia. The mineralization is found ~~in~~ as pods (up to 30m by 7m), veins and small concentrations (4cm across). Most veins are discontinuous but two structures ~~may~~ have lengths of 300-500m. The most attractive of the large structures is the ^b jasper-barite zone. Geochemical analyses and assays of such mineralization returned sporadically anomalous Cu, Pb, Zn and Ag with up to 18.56 g/t Ag.

Copper-Gold
6. Mineralization within brecciated, carbonate-rich volcanics
~~cut by old trenches~~ occurs along
Fall Creek. The samples of this mineralization
returned ~~several~~ anomalous Cu, Pb, Zn, Mo, Ag and Au
values.

7. The zones of alteration are anomalous in lead, zinc,
and silver and sporadically anomalous in copper
and molybdenum and ~~silver~~

8. Gold analyses ~~per se~~ are disappointly low.

3 Miscellaneous Mineralization ← Sub heading to Mineralization

Occasionally chalcopyrite or ~~noted~~ malachite were noted within the zones of intense alteration. Copper stains ~~was~~ ^{was} also noted along several of the ~~glass~~ quartz-pyrite veins ~~that~~ ^{that} occurring along Fall Creek. The most interesting copper showing ^{occurs along a small shear at} G81-567 ~~is at~~ ^{sample site} G-81-567 (Figure 5). This ^{small} showing ~~is very small in size and~~ ^{consisting} of malachite and a mineral tentatively identified perhaps tetrahedrite returned a value of $>100\text{ppm Ag}$.

Sphalerite was noted at only one locality but the many high zinc values (up to 3350ppm) ~~returned~~ suggest that ^{traces of} zinc mineralization must be ~~more~~ widespread. ~~than it appears to be.~~

66
49
19-6-3

Table 1 Geochemistry of the Detailed Area (Figure 5)

Sample No	Sample Type	Ca (ppm)	Mn (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)
G-81-153	rock	36		35	1100	3.9
154	"	12		5	330	2.8
155	"	10		36	70	0.4
156	"	24		55	48	1.3
157	barite	320		36	180	3.0
158	rock	120		30	168	6.6
159	"	12		40	28	1.3
160	barite	31		115	2200	12.5
161	rock	55		35	970	9.0
162	"	16		35	75	2.1
163	barite	107		80	270	4.7
166	rock	50	8	20	170	7.0
169	"	40	2	145	535	5.0
372	"	18	5	65	55	0.9
373	"	9	7	84	150	1.8
376	"	355	7	1650	3300	10.0
381	"	25	1	86	235	1.6
382	"	14	1	45	60	0.9
383	"	23	2	145	52	5.3
384	"	25	2	175	820	14.0
386	"	6	1	35	72	1.6
391	"	14	1	260	205	2.3
394	"	32	1	1050	90	14.0
398	"	25	3	145	28	0.5
406	"	54	2	145	1200	2.8
539	"	12		25	27	18.0
540	"	27		12	80	0.3
541	"	30		4	90	0.2
543	"	36		190	1100	15.0
544	"	17		12	140	0.3
546	"	10	1	90	43	2.8
547	"	9	1	20	95	1.2
554	"	10	1	33	150	4.1
555	"	18	1	22	112	4.5

170
142
143

410
8
3
5
2

280
15
52
63
22
4.5
1.7

403

18

4-3
2

220
160

5.3

Sample No.	Sample Type	Cu (ppm)	Mo (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)
G81-556	rock	5	1	37	42	0.9
557	"	4	1	55	170	1.0
560	"	15	1	52	105	4.2
562	"	11	1	38	70	1.9
563	"	66	1	96	90	2.4
564	barite	100	1	170	61	8.4
565	barite	105	1	88	330	18.1
566	rock	26	1	75	100	5.0
567	"	2200	1	2850	480	7100.0
568	"	88	1	300	108	9.6
569	"	19	1	61	155	3.4
570	"	54	1	120	95	13.8
571	"	97	1	205	200	11.9
580	"	27	1	17	95	1.6

A81-133	salt	53		185	670	3.5
134	salt	115		430	1350	7.5
135	"	375		1000	2900	6.2
147	"		9	240	960	3.5

Table 2

Geochemistry of the Jasper-Barite Zone.
(Proceeding ~~from~~ along strike from West to East)

94
27-133

Sample No	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Pb%	Assays Ag oz/t	Zn
525	150	214	550	11.5			
519	200	100	1650	18.0			
520	80	28	100	6.0			
521	700	140	135	15.0			
522	470		240		12.8%	6.78	
393	350				26.8%	18.56	.02
392	not	analysed					
523	80	158	400	3.8			
524	170	100	510	8.0			
548	375	420	310	14.6			
534	46						
535	45						
536	270		340	4.5	0.86	1.48	
537	30	22	36	4.5 9.5			
538	16	37	14	4.5			
388	not	analysed	112	4.5			
555	18	22	112	4.5 4.5			
545	18	3	200 52	5.0 4.5			
557A	23	14	58 200	5.0 3.3			
558	17	110	105 58	2.2			
559	42	50	50 705	9.5			
365	not	analysed					
383	23	145	52	5.3			
408	not	analysed					
407	not	analysed					
166	50	20	170	7.0			
165 (float)					15.5	2.64	0.52

Ag - <.003 oz/t

Table 3 ~~Assays and~~ Geochemistry of ^{the} Sulfide-Galena Mineralization

Sample No.	Width of Sample	Pb %	Assays Zn %	Ag %
661-150	grab	0.69	0.33	0.3
165	grab	15.5	0.52	2.64
314	grab	1.17		0.42
378	grab	0.79		1.00
379	grab	0.58		2.24
380	grab	27.7		5.82
393	grab	26.8	0.02	18.56
440	grab	3.65	2.13	1.18
442	grab	1.37	1.99	1.06
522	0.7m	12.80		6.78
536	1.9m	0.86		1.48

Geochemistry

Sample No.	Width	Ca (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)
661-151	grab	75	79	50	30
152	grab	17	220	68	3.2
157	grab	330	36	190	30
160	grab	31	115	2200	12.5
163	grab	107	80	270	4.7
167	grab	120	1500	920	9.0
522	0.7m	470	(assayed)	240	(assayed)
536	1.9m	270	(assayed)	340	(assayed)
564	grab	100	170	61	8.4
565	grab	105	88	330	18.1