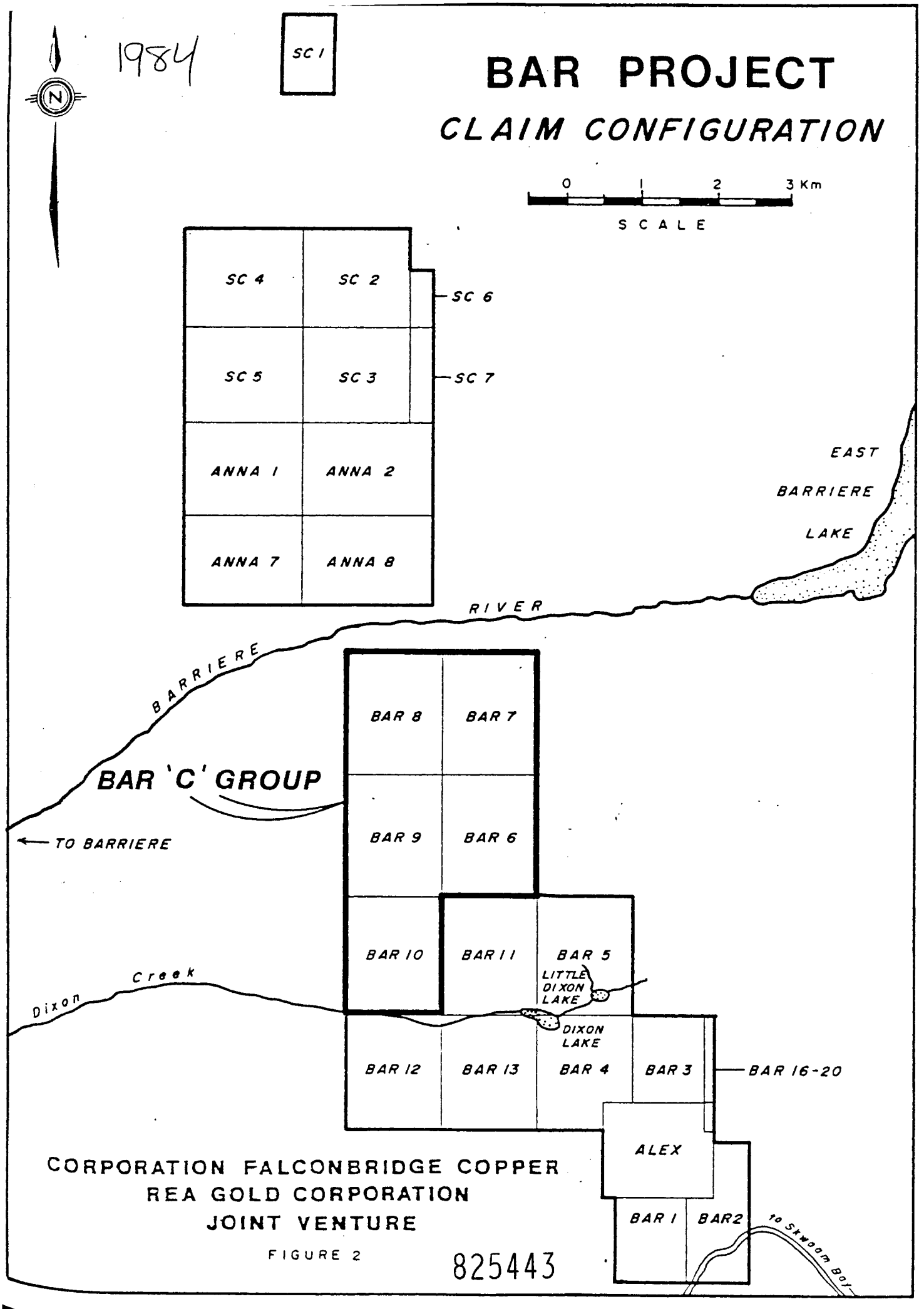
1984
SC 1
BAR PROJECT
CLAIM CONFIGURATION
0 1 2 3 Km
SCALE
SC 4
SC 2
SC 6
SC 5
SC 3
SC 7
ANNA 1
ANNA 2
ANNA 7
ANNA 8
EAST
BARRIERE
LAKE
RIVER
BARRIERE
BAR 8
BAR 7
BAR 'C' GROUP
BAR 9
BAR 6
TO BARRIERE
BAR 10
BAR 11
BAR 5
LITTLE
DIXON
LAKE
Dixon Creek
DIXON
LAKE
BAR 12
BAR 13
BAR 4
BAR 3
BAR 16-20
ALEX
BAR 1
BAR2
to Skwaam Bay
CORPORATION FALCONBRIDGE COPPER
REA GOLD CORPORATION
JOINT VENTURE
FIGURE 2
825443

RESULTS

Geology (Map 1)

Although sufficient outcrop was found in the south part of the map area to get a reasonable idea of the geology, exposure is generally not the best, especially in the valley of the Barriere River. Glacial overburden has been deposited on north facing slopes and includes boulders of house size.

The area is underlain by a NW trending, easterly dipping sequence of volcanics and sediments, part of the Paleozoic Eagle Bay formation. Local folding is apparent, especially within the sediments, but units appear quite continuous and are believed to young eastwards.

The oldest exposed rocks on the property are greywackes. They are locally bedded, quite heterogeneous and generally devoid of mineralization.

Immediately overlying the sediments is a predominantly basaltic unit. It consists of vesicular flows and pillowed flows with interbedded chloritic tuff and mudstone. Minor bleaching (silicification) is noted at one location and pyrite, although not extensive, is locally present.

Overlying the basalts is a mixed sequence of sediments, volcaniclastics and intrusions. The sediments are generally coarser grained than those to the west although they seem to become more argillitic northwards. The volcaniclastics are relatively distal mafic lapilli tuffs and debris flows. Intrusions are dioritic and gabbroic. No significant mineralization was noted.

The eastern part of the package exposed on the property is predominantly felsic to intermediate in character. Mapping of this area was hampered by active logging operations and sparse exposure. It is dominated by a large oval, dacite plug containing quartz and feldspar phenocrysts. Flanking this are andesitic to rhyolitic fragmental rocks. Fragment size, shape, heterogeneoity and lack of sorting indicate these to be mainly debris flows. Argillite is occasionally found in the matrix. Pyrite is common and carbonate, chlorite and sericite alteration locally present. In part, the apparent thickness of this section is due to a shallowing of the easterly dips.

Just off of the eastern edge of the property sediments, including limestone, were noted interbedded with or infolded with the volcaniclastics.

Lithogeochemistry

A total of 81 representative samples were taken of the different lithologies in the mapped area. Samples were of fresh rock and weighed 1 1/2 - 2 lbs. These were analyzed for Cu, Zn, Ba, SiO_2, TiO_2, CaO, MgO and Na_2O at Terramin Research Labs in Calgary. Cu and Zn were determined by aqua regia digestion with AA finish while the rest were determined by Lithium Borate fusion, dilute HCl leach and AA finish.

Volcanic rocks were sampled mainly since these show better geochemical homogeneiity and thus geochemical anomalies are more readily apparent. The sample locations are plotted on Map 2 with the elemental data on Maps 3 and 4. Appendix I consists of a listing of the data.

In analyzing the data, samples are divided according to rock type and the statistics on each element looked at separately. Unlike soil geochemical data, the populations for elements in rocks are rarely normally or log normally distributed and therefore rigorous statistical definition of anomalous values is not possible. However, given sound geological groundwork, abnormalities may be recognized.

Table 2 summarizes the data for the volcanic rocks. The mafic rocks are high TiO_2 basalts. They show a wide range of alkalis (Na_2O, CaO) and MgO as well as Zn and Ba. This suggests that hydrothermal alteration of their primary mineralogy has occurred. No particular locus of this alteration is apparent from the current sample distribution.

The intermediate volcanics show a very wide range of SiO_2 and TiO_2. As noted in the geology, these rocks are mainly debris flows and it seems likely that they were derived from a bimodal (felsic-mafic) succession or from two separate areas. The wide range of the other elements may also be a reflection of this.

The visually inferred rhyolites are rhyolitic from a chemical standpoint as well. The mean Na_2O content of 1.5% is low and may indicated Na - depletion during hydrothermal activity, but there are not enough samples to be sure. High Zn and Ba is also a positive indicator.

The QFP intrusion, despite its quartz and feldspar phenocrysts, is listinctly andesitic in composition. It shows little in the way of truly inomalous values but does show more heterogeneiity than would normally be

Table 2

Summary Statistics - Volcanic Rocks

Rocktype	Basalt (28)	Andesite (24)	Rhyolite (6)	QFP (8)
Element				
SiO_2(%)	range 32.7-58.6 $\bar{x}$ = 42.6 96% < 49	range 42.3-71.7 $\bar{x}$ = 58.8; fairly normal, single population	range 71.2-86.0 $\bar{x}$ = 75.4	range 51.3-68.7 $\bar{x}$ = 62.8
TiO_2(%)	range 1.55-5.5 $\bar{x}$ = 3.28; modes at 3.25 and 5.25 two populations	range 0.15-2.17 $\bar{x}$ = 0.74; samples > 1.2 not part of main population	range 0.12-0.35 $\bar{x}$ = 0.21	range 0.18-0.40 $\bar{x}$ = 0.31
Na_2O (%)	range 0.12-5.77 $\bar{x}$ = 2.18; irregular distribution	range 1.18-7.32 $\bar{x}$ = 3.16 > 4 is anomalous	range 0.07-3.14 $\bar{x}$ = 1.50 2 pop. >2, <1	range 1.24-4.99 $\bar{x}$ = 3.00
CaO (%)	range 0.56-19.6 $\bar{x}$ = 7.49; extended population 'tail' 12%	range 0.64-8.48 $\bar{x}$ = 3.57; 2nd population >5.5	range 0.06-1.54 $\bar{x}$ = 0.47 (1.54 is anomalous)	range 0.37-12.2 $\bar{x}$ = 2.36 (12.2 is anomalous)
MgO (%)	range 0.59-10.6 $\bar{x}$ = 5.41; erratic population	range 0.73-7.59 $\bar{x}$ = 3.11 single population	range 0.25-1.05 $\bar{x}$ = 0.56	range 0.42-3.13 $\bar{x}$ = 1.64
Cu (ppm)	range 1-69 $\bar{x}$ = 34; modes at 5, 55. no anomalous values	range 5-100 $\bar{x}$ = 27·5; 2 pop. 0-40 and 40-70; >70 anomalous	range 11-31 $\bar{x}$ = 19.5	range 2-11 $\bar{x}$ = 7.2
Zn (ppm)	range 77-310 $\bar{x}$ = 120; 96% < 190	range 17-101 $\bar{x}$ = 64.4 no anomalous values	range 21-132 $\bar{x}$ = 35.8 (132 is anomalous)	range 12-57 $\bar{x}$ = 32
Ba (ppm)	range 30-2010 $\bar{x}$ = 778; 96% < 1550	range 150-5400 $\bar{x}$ = 1295; > 3500 anomalous	range 290-2250 $\bar{x}$ = 1208	range 930-2400 $\bar{x}$ = 1377

expected from an intrusion of this type. This suggests an active hydrothermal environment.

The statistics for sediments sampled during the survey have not been included in Table 2. As a rule, major element chemistry in sediments is only useful at a very detailed stage of exploration. However, the Ba, Cu and Zn may aid in identifying mineralized environments at a larger scale and these are shown in Table 3. Although not particularily high, the values of Ba and Zn are noisey.

CONCLUSIONS AND RECOMMENDATIONS

Semi-detailed reconnaissance scale geological mapping has identified a series of volcanics and sediments which include a mafic to felsic transition. This package formed in an oceanic environment proximal to an emerging island arc. The abundance and nature of volcaniclastics and often coarse nature of the sediments indicates very active volcanism and rapid uplift.

Evidence of hydrothermal activity can be seen both visually, in the rocks, and in the lithogeochemical data, although no particular focus for activity has been recognized. Also at this scale of work, no specific target horizon has been located.

The following programme is recommended to further explore this area:

1) conduct fill in mapping and sampling where active logging prevented access during 1984 and in favourable areas of the stratigraphy

2) correlate Dighem conductors with geology. Grid the more attractive targets.

3) conduct detailed mapping, rock and soil sampling around favourable conductors and drill test as necessary.