

COMINCO LTD.

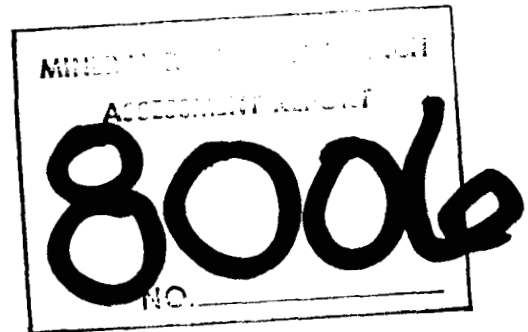
EXPLORATION

WESTERN DISTRICT

NTS: 82F/10

Assessment Report  
Geochemical Survey  
on the  
Craw Property  
Slocan Mining District, B.C.

Claims: CRAW 1 to 31  
Latitude: 49° 38' N  
Longitude: 116° 50' W  
Period of Work: September 6  
to 19, 1979.



March 24, 1980

D. Brabec

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## ATTACHMENTS

Statement of Expenditures (General)

Statement of Expenditures  
(Exhibit "A" - breakdown of costs)

Statement of Qualifications

Table 1. Means and Ranges of Zn, Pb, Mn, and Ag

2. Data Classification

Plate 1. Location Map

2. Pb and Zn in Soil, CRAW Property

3. Pb and Mn in Soil, CRAW Property

SUMMARY

Soil surveys on the CRAW Property were undertaken in an attempt to outline the extension of a known Zn-Pb anomaly. The data obtained on 750 samples support the view that both the soil anomaly and the mineralized float found on the property originate from a local source.

The southern part of the anomaly has probably been shaped by glacial transport but its northwest extension suggests structural control. The source area may be within the western half of Grid 2 (see Plate 2).

INTRODUCTION

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Assessment Report: GEOCHEM SURVEY - CRAW

INTRODUCTION

The property consists of 31 claims situated on Crawford Bay Peninsula, Kootenay Lake, B.C., some 12 km south of the former Bluebell Mine (Plate 1). Exploration potential of the area is indicated by the following factors:

- 1) Presence of abundant high grade Pb and Zn-mineralized float of unknown source.
- 2) Badshot Limestone which hosts ore at the nearby Bluebell Mine underlies part of the property area.
- 3) Presence of a broad and strong Zn-Pb anomaly in soil, partly coincident with geophysical anomalies (EM and mag.).
- 4) Anomalous sediments in some streams on Crawford Peninsula.

The recent geochemical and geophysical work by Cominco, combined with air-photo interpretation, culminated by drilling of four diamond drill holes, totalling 300 m. Only traces of sulphides were found, but it should be taken into account that location of drilling targets in this area presents problems because the geophysical response from sulphides may be obscured by the graphitic horizons in metasediments, and the largest part of the geochemical anomaly, as well as the mineralized float, do not necessarily overlie the source area.

GEOLOGY

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Assessment Report: GEOCHEM SURVEY - CRAW

GEOLOGY

In brief, the property is underlain by Lower Cambrian carbonates and meta-clastics. Several small granitic stocks of Jurassic or Cretaceous age occur in the nearby areas. The sediments strike northeasterly and dip at low angles to the northwest. They have undergone complex folding and faulting, possibly including overturning. The main unit of interest is a limestone believed to be equivalent to the Badshot Formation hosting the Bluebell deposit. This unit is situated between clastic beds which include siltstone, amphibolite, marble, dolomite and quartzite. Some of the siltstone beds contain graphite and pyrrhotite with minor amounts of Cu, Pb and Zn sulphides. This material, however, is quite different from the float boulders of massive pyrrhotite and knebelite found on the surface at numerous locations both on the property and the adjacent areas.

GEOCHEMICAL SURVEY

FIELD AND ANALYTICAL TECHNIQUES:

Soil sampling on the property covered two areas identified as Grid 1 and Grid 2 (Plates 2 & 3). Samples were taken every 25m along the lines spaced at 200m. B-horizon soil was sampled wherever practicable. A number of sites, however, were in a shallow poorly developed soil where only C-horizon soil was obtainable. Such situation was usually encountered over the areas of frequent outcrop, particularly on Grid 1.

All samples were dried, sieved to -80 mesh and the fines digested in hot 20% nitric acid. The resulting solutions were analyzed for Ag, Pb, Zn and Mn by atomic absorption spectrophotometry.

RESULTS

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Assessment Report: GEOCHEM SURVEY - CRAW

RESULTS

The means and ranges of the grid data are given in Table 1. The histograms and probability plots for each of Pb, Zn, Ag and Mn (not shown here) indicate multi-modal distributions which cannot be effectively resolved into their component populations. The data classification given in Table 2 is consistent with the distributions observed, and is believed to optimize the definition of anomalies.

The threshold contour for Zn (500 ppm) extrapolated eastward using the results of an earlier Cominco survey, is plotted on Plate 2. The new results outline a fairly narrow north-westerly extension of the Zn anomaly. The Pb anomaly follows the same pattern although the highs of the two metals do not always coincide. The anomaly seems to taper off in both width and intensity towards the northwest corner of the grid.

No anomalous values for either Pb and Zn are found on Grid 1 which also has the lowest overall concentration level of these elements.

Most of the Ag values are below the detection limit of 0.4 ppm. Presumably anything above that limit is possibly anomalous and indeed such values roughly follow the Pb-Zn anomalous zone. The Mn pattern on Grid 2 is similar to that of the other three metals. Mn highs on Grid 1 form a southwesterly zone, possibly along a structure.

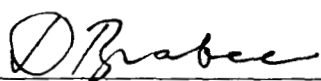
CONCLUSIONS

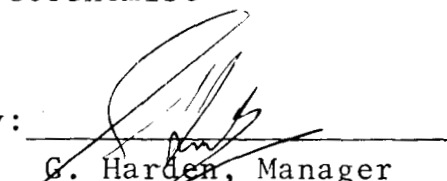
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Assessment Report: GEOCHEM SURVEY - CRAW

CONCLUSIONS

The results obtained suggest that the anomalous material including the sulphide boulders, originates from a local source, possibly within the western half of Grid 2. The shape of the anomaly may be a result of a combination of structural control and glacial transport both of which had been active in the same direction (roughly northwest-southeast).

Report By:   
D. Brabec  
Geochemist

Approved for Release By:   
G. Harden, Manager  
Exploration, Western District

24 March 1980

Table 1. Means and Ranges for  
Different Survey Areas (ppm)

|    | <u>Grid 1 (N=199)</u>      |              | <u>Grid 2(N=551)</u>       |              |
|----|----------------------------|--------------|----------------------------|--------------|
|    | <u>Geometric<br/>Means</u> | <u>Range</u> | <u>Geometric<br/>Means</u> | <u>Range</u> |
| Zn | 140                        | 66- 150      | 313                        | 69-1700      |
| Pb | 29                         | <4- 266      | 83                         | 8-1380       |
| Mn | 703                        | 152-3670     | 657                        | 34-3700      |
| Ag | N.C.                       | <0.4-0.4     | N.C.                       | <0.4-3.9     |

N.C. = Not Calculated



Table 2. Data Classification  
(Values in ppm)

|    | <u>Background</u> | <u>Possibly<br/>Anomalous</u> | <u>Anomalous</u> |
|----|-------------------|-------------------------------|------------------|
| Zn | <150              | 150-500                       | >500             |
| Pb | <60               | 60-200                        | >200             |
| Mn | <1500             | ≥1500                         | 2<br>.           |
| Ag | <0.4              | 0.4-1                         | >1               |

IN THE MATTER OF THE

B.C. MINERAL ACT

AND

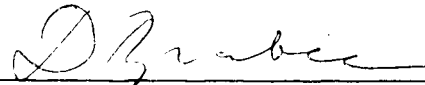
IN THE MATTER OF A GEOCHEMICAL PROGRAM CARRIED  
OUT ON THE CRAW CLAIMS LOCATED IN THE SLOCAN MINING DISTRICT  
OF THE PROVINCE OF BRITISH COLUMBIA

More Particularly N.T.S. 82F/10

STATEMENT OF EXPENDITURES

I, DRAGAN BRABEC, of the City of Vancouver, in the Province of British Columbia, make oath and say:

1. That I am employed as a Geochemist by Cominco Ltd., and as such have a personal knowledge of the facts to which I hereinafter depose;
2. That annexed hereto and marked as "Exhibit A" to this statement is a true copy of expenditures of a geochemical program carried out on the Craw mineral claims;
3. That the said expenditures were incurred between the 6th day of September 1979 and the 19th day of September 1979.



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Dragan Brabec  
Geochemist

24 March 1980

COMINCO LTD.  
STATEMENT OF EXPENDITURES  
CRAW GROUP  
SLOCAN M.D., B.C.  
JANUARY 1 TO DECEMBER 31, 1979

|                         |             |
|-------------------------|-------------|
| Geology                 | \$ 1,083    |
| Linecutting             | 600         |
| Geochemistry            | 9,390       |
| Transportation          | 537         |
| Domicile                | 572         |
| Tenure                  | 620         |
| Cash in Lieu of work    | 6,200       |
| Administrative services | 1,900       |
|                         | <hr/>       |
|                         | \$ 20,902   |
|                         | <hr/> <hr/> |

R. Craig  
Vancouver Office  
February 20, 1980

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Supervisor, Exploration  
& Foreign Accounting

EXHIBIT "A"

STATEMENT OF EXPENDITURES

FOR A GEOCHEMICAL SURVEY

ON AND NORTH OF THE CRAW MINERAL CLAIMS, 1979

SALARIES

D. Brabec, 14 days @ \$150/day (supervision,  
field work, and report writing) . . . \$2,100.00

M. Waskett-Myers, 20 days @ \$105/day  
(field work & drafting) . . . . . 2,100.00

LINECUTTING 3 km @ \$200/km . . . . . 600.00

DOMICILE

Accommodation and food in Crawford Bay, 28 days  
@ \$30/person/day . . . . . 840.00

EQUIPMENT 1 chain saw + accessories . . . . . 200.00

ASSAYS

750 soil samples @ \$3.70/sample . . . . . 2,775.00  
(Pb, Zn, Ag, Mn)

TRANSPORTATION

Truck for 14 days, plus gas . . . . . 350.00

2 air fares: Vancouver-Cranbrook return . . . . . 246.00

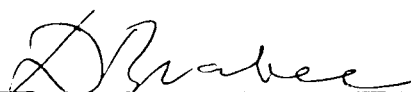
TOTAL \$9,211.00

STATEMENT OF QUALIFICATIONS

I, Dragan Brabec, of the City of Vancouver, British Columbia, hereby certify:

1. That I am a geochemist residing at 923 Clements Avenue, North Vancouver, British Columbia with business address at 855-409 Granville Street, Vancouver, British Columbia.
2. That I graduated with B.Sc. equivalent degree in geology from the University of Belgrade, Yugoslavia in 1961, D.I.C. degree in applied geochemistry from the University of London, England in 1964 and a Ph.D. degree in geology from the University of British Columbia in 1971.
3. That I have practised geochemistry with Cominco Ltd. from 1974 to 1980.

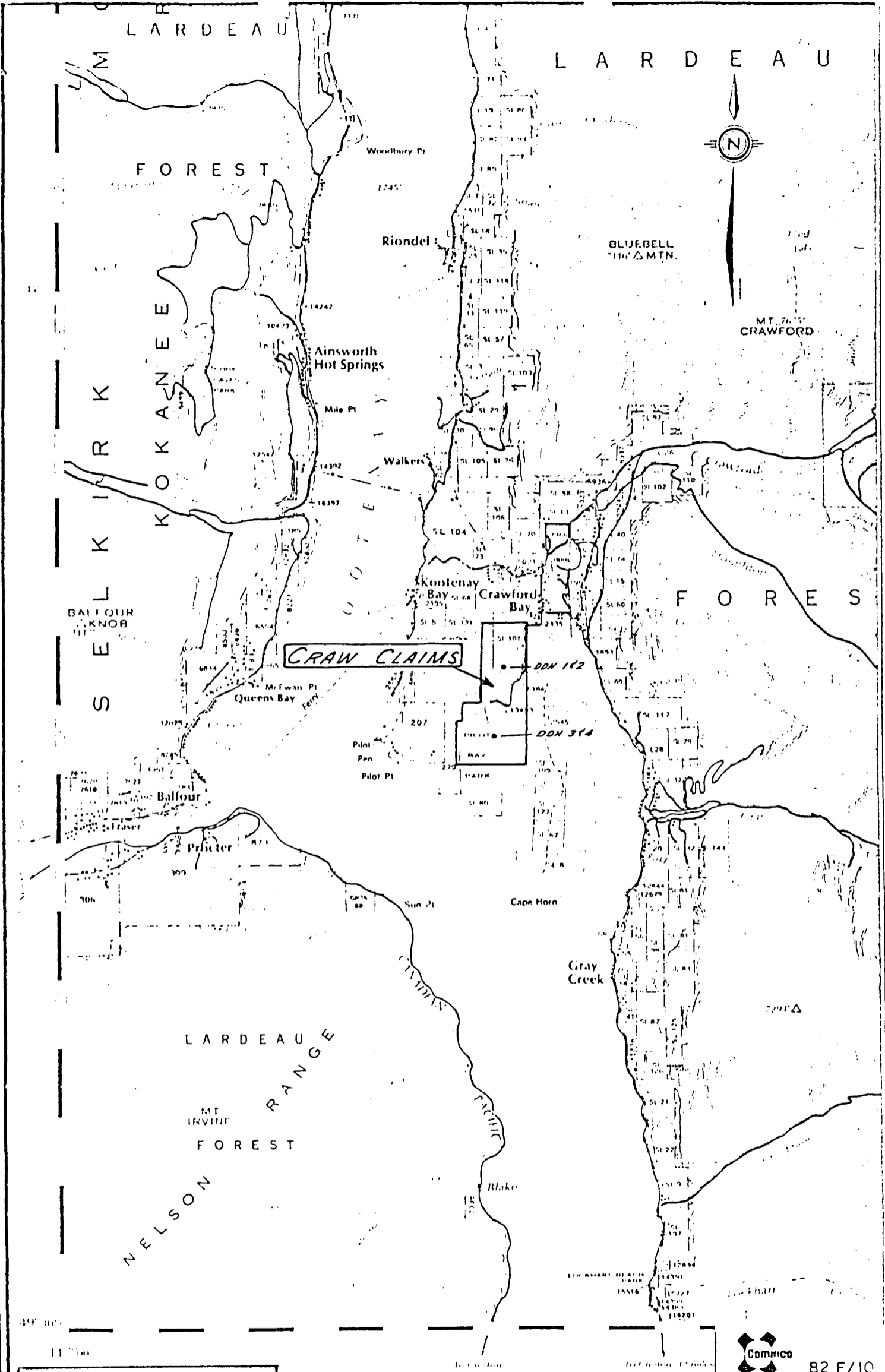
Dated this 24th day of March 1980, at Vancouver, British Columbia.



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Dragan Brabec  
Geochemist

24 March 1980



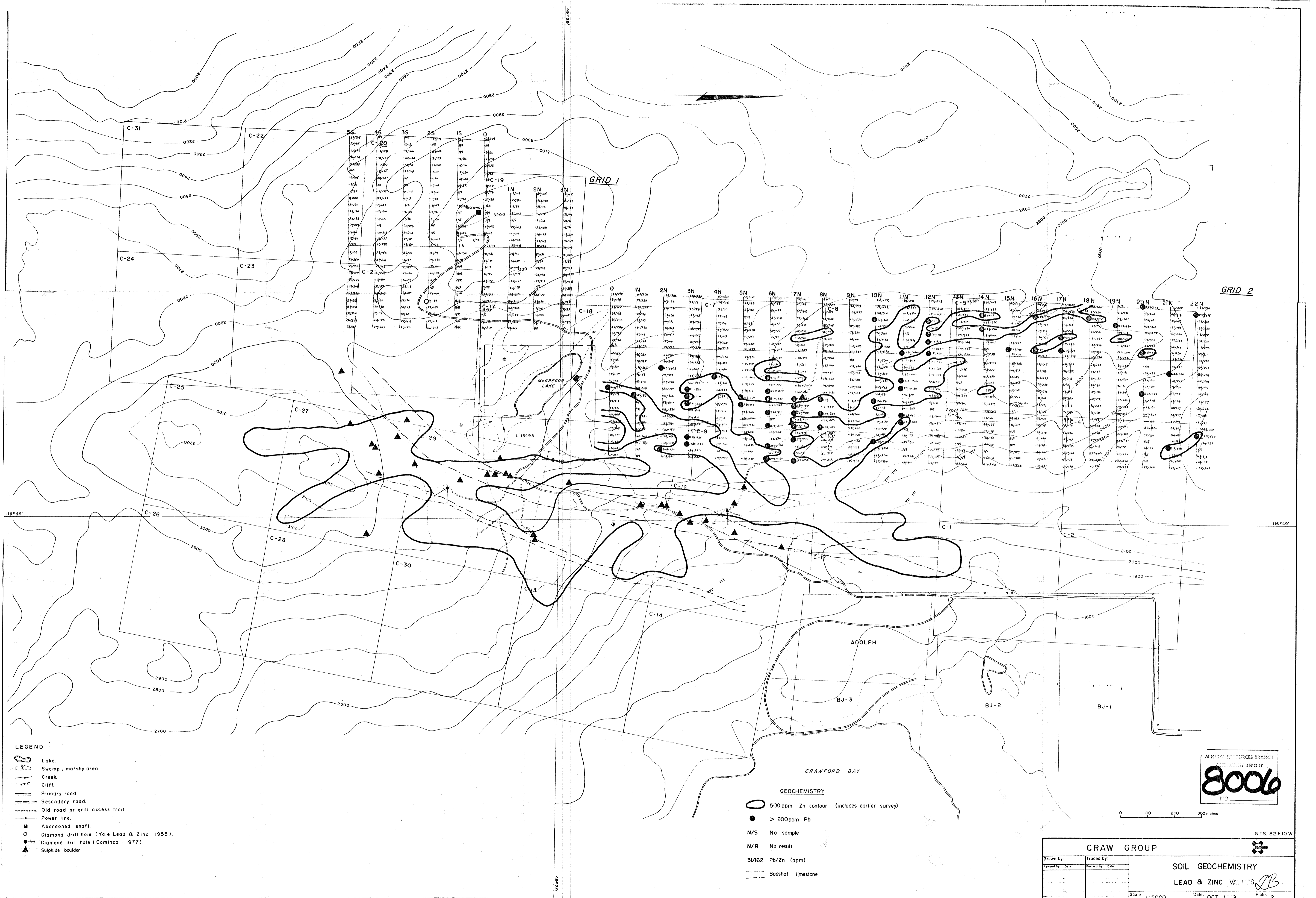
MINERAL RECORDS BRANCH  
 Traced by  
 ASSESSMENT DISTRICT  
**8006**  
 NO.

*DB*

CRAW CLAIMS - LOCATION MAP

Scale 1:125,000      Date APRIL, 1977      Plate 1

Comico 82 F/10



- LEGEND**
- Lake.
  - Swamp, marshy area
  - Creek.
  - Cliff.
  - Primary road.
  - Secondary road.
  - Old road or drill access trail.
  - Power line.
  - Abandoned shaft
  - Diamond drill hole (Yale Lead & Zinc - 1955).
  - Diamond drill hole (Cominco - 1977).
  - Sulphide boulder

- GEOCHEMISTRY**
- 500ppm Zn contour (includes earlier survey)
  - > 200ppm Pb
  - N/S No sample
  - N/R No result
  - 3/162 Pb/Zn (ppm)
  - Badshot limestone

MINERAL RESOURCES BRANCH  
 GEOCHEMISTRY REPORT  
**8006**

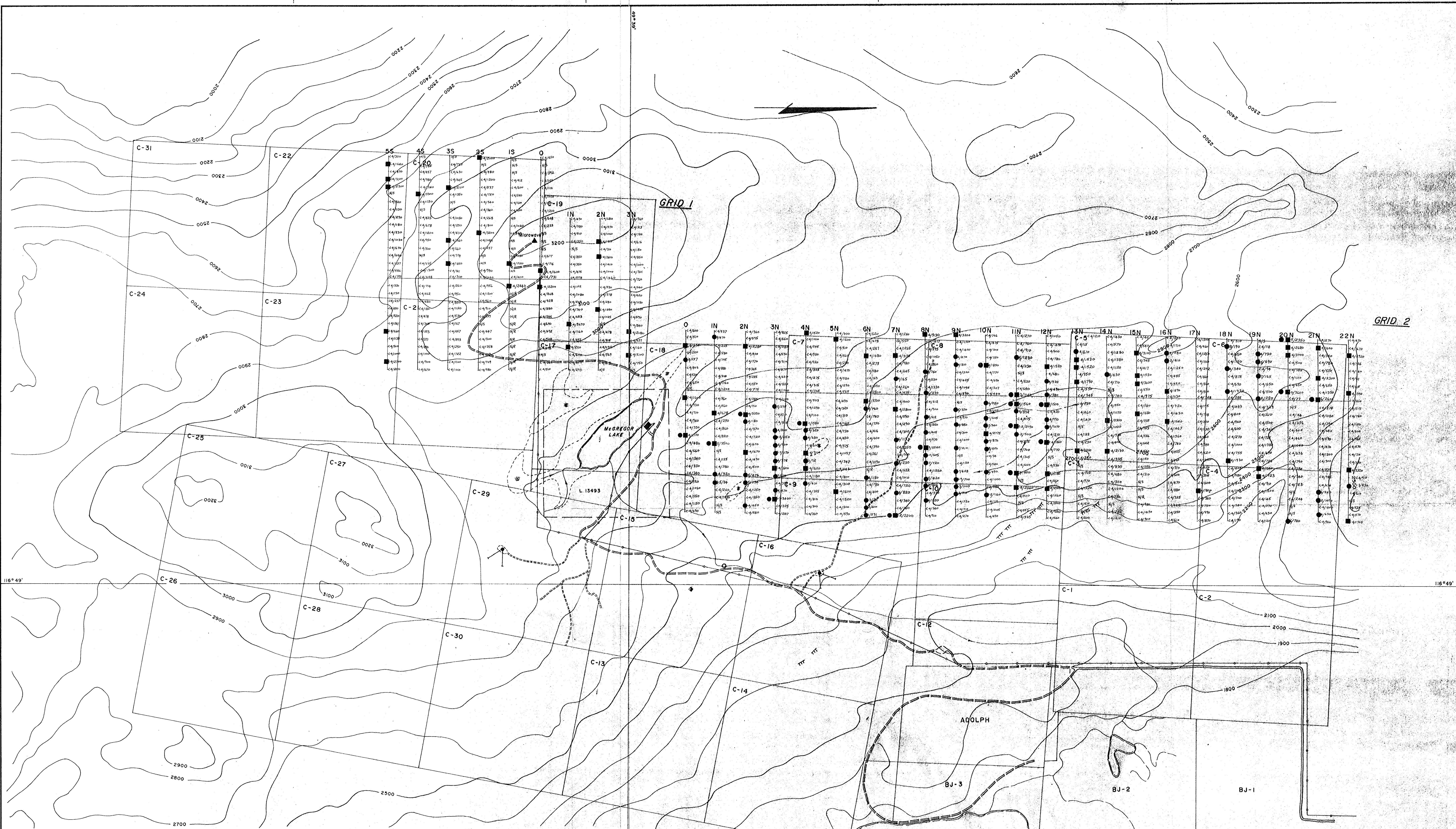
NTS 82 F10W

**CRAW GROUP**

|            |            |
|------------|------------|
| Drawn by   | Traced by  |
| Revised by | Revised by |
| Date       | Date       |

**SOIL GEOCHEMISTRY**  
**LEAD & ZINC VALUES**

Scale 1:5000 Date: OCT. 1979 Plate 2



- LEGEND**
- Lake.
  - Swamp, marshy area.
  - Creek.
  - Cliff.
  - Primary road.
  - Secondary road.
  - Old road or drill access trail.
  - Power line.
  - Abandoned shaft.
  - Diamond drill hole (Yale Lead & Zinc - 1955).
  - Diamond drill hole (Cominco - 1977).

- Mn > 1500ppm
- Ag > 0.4ppm
- N/S NO SAMPLE
- N/R NO RESULT
- 6/740 Ag/Mn (ppm)

MINERAL  
ACCOUNT NO.  
**8006**  
NO.

0 100 200 300 metres

NTS B2F10W

**CRAW GROUP**

|             |             |
|-------------|-------------|
| Drawn by:   | Traced by:  |
| Checked by: | Checked by: |
|             |             |
|             |             |

**SOIL GEOCHEMISTRY**

**SILVER & MANGANESE VALUES**

Scale: 1:5000    Date: OCT. 1979    Plate: 3