



GEOCHEMICAL REPORT

ON

BLACK 1-32 AND IDA 1-32 CLAIMS

MAYO DISTRICT

YUKON TERRITORY

106C-2

SEPTEMBER 1st - OCTOBER 21st, 1977

Latitude - 64°06'N

Longitude - 132°37'W



Toronto, Ontario
November 22, 1977

I. S. Thompson, P.Eng.



18,800.00

[Signature]

[Signature]

B. R. BAXTER
Supervising Mining Recorder

[Signature]

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 Mayo District, September 1st-October 20th, 1977

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INTRODUCTION

A geochemical survey was carried out by I. S. Thompson, P.Eng., of Derry, Michener & Booth, consultants from Toronto, assisted by R. A. Granger, of Whitehorse, on the Black 1-32 and Ida 1-32 claims, Sheet 106C-2, Mayo District, Yukon Territory, between September 1st and October 21st, 1977.

This work was undertaken on behalf of Dejour Mines Limited and Nova-Co Exploration Limited on all 64 claims under an option-purchase agreement with D. A. McLeod, J. W. MacLeod, J. E. Millette and G. A. Bleiler, dated August 24th, 1977.

The geochemical programme was initiated and directed by D. R. Derry, Ph.D., P.Eng., who visited the area from September 6th to 8th, 1977 to inspect the claims and to lay out this programme.

The claims lie about 7 miles ENE of Ortel Lake, the nearest lake suitable for fixed-wing aircraft, and about 3 miles N of the Stewart River.

There is no record on file of any exploration having been undertaken previously on the claims.

GENERAL GEOLOGY

The properties are reported to lie within a Precambrian grit unit of Hadrynian age (HIs) (ref. G.S.C. Paper 70-1, Part A). This unit is described as gritty quartzite, shale and conglomerate with less common limestone.

About 2,000 ft. north of the claims a markedly straight series of valleys marks a prominent fault between the grit unit and the Road River formation of Ordovician to Silurian to Lower Devonian age (OSDr.). The Road River rocks are buff to orange, massive, cliff and pinnacle forming limestones and dolomites in contrast to more rounded and lower benches of the grit unit; outcrops are rare in the latter unit.

The geological setting, on the basis of reported geology, is analagous to the area of the McIntyre properties located about 10 miles to the west and where several silver-lead-zinc showings are reported to lie within a limestone member of the grit unit but near to, and perhaps genetically related to, the major E-W trending fault.

During geochemical sampling of the Black and Ida claims, red and black shales/argillites, cherts and conglomerates were observed on the western Black claims above the timberline. A few outcropping ledges of sediments were observed from a distance on the Ida claims but no outcrops were seen in traversing nor in the stream courses at the lower altitudes.

GEOMORPHOLOGY

The majority of the Black and Ida claims range in altitude from 3,000 to 3,500 ft. a.s.l. and are heavily forested with spruce and balsam; outcrops are rare. The western nine claims of the Black group lie at about 4,700 ft. a.s.l. and above the timberline, which generally follows the 4,500 ft. contour.

The claims lie on the Stewart River watershed. An unnamed mature river, which drains a 1-mile long shallow marsh to the north of the claim groups, flows southeasterly through the Ida claims to join the Stewart River, about 7 miles beyond the claims. Its flood plain is approximately 2,000 ft. wide, consisting of alluvium overlain by muskeg soils.

A small, 10 ft. wide, tributary creek flows northeast through the Black group to join the main creek at the boundary between the Black and Ida groups and a sand bar at this location is the best available landing site for the helicopter on the creek.

Soils

On the western and highermost claims, soil profiles are absent, the soil being brown earth mixed with bedrock rubble. Sampling on these areas was done at a depth of 3-4" with a hammer mattock. On the lower ground the soils are clayey podzols with definite profile development into:-

- (1) A dark brown to black, organic layer of 3" (Ao).
- (2) A leached or eluviated gray layer of 2-3" (Ae).
- (3) A light to ruddy brown oxidized layer of 3-6" (B).
- (4) A slightly stoney parent soil (C).

The southwest corner of the Ida group is underlain by extensive muskeg and alluvial sand, associated with the flood plain of the southeasterly-flowing creek. On the hill slopes we have found that the presence of a light green moss is an indication of locally well-drained and therefore less organic soils.

Stream Sediments

Stream sediments are, in general, quite coarse, being derived in the higher ground from the erosion of subjacent bedrock. Stream flow in October was strong; however, the water was clear. The river trending southeast through the Ida claims is deep and flows between muskeg and/or sand banks. As such, this portion is unsuitable for geochemical sampling.

GEOCHEMICAL SAMPLING

Field Operations

The soil sampling programme was designed to sample the residual (and glacial) soils of the generally easterly-trending sedimentary rocks by traversing N-S or 90° to the regional trend. Lines were run using topo-fill and by pace and compass at 1,500 ft. intervals, more or less, depending on the location of the claim posts and on bearings of either 188° or 008° . Samples were collected initially at 500 ft. intervals but for the majority of the area were collected at 250 ft. intervals. A helicopter was used only for mobilization to the western higher ground.

Initially a topo-fill control line was run south from Post No. 1 of Ida 1 and 2, along the theoretical boundary between the two groups. A control line was then run west from the southeast corner and soil traverse lines were turned off at 1,500 ft. intervals from the south boundary line. Soil traverses on the Ida claims were turned off from the northerly internal claim line. Posts were tagged at the same time as the survey and claim boundaries are shown as they approximately occur in the field, where sufficient control is available, otherwise they are shown as 1,500 ft. squares. Altimeter readings were taken at each sample site and the location of samples was marked by red flagging.

In the southwest part of the Black group, the south-facing slopes were too steep to maintain N-S traverse lines; therefore, contour line sampling was carried out. No samples were taken in the southwest part of the Ida group due to the prevalence of muskeg and alluvium.

Soils were collected with a hammer mattock but also with a 2 ft. long auger. Generally 1/4 to 1/3 of an 8" by 3" Kraft paper sample bag was filled. At each sample site, the "B" zone was taken; however, in places where it was absent either the organic "A" or the parent "C" zone was collected. A record was kept of the soil type and organic content of each sample.

Stream silt samples were taken at 500 ft. intervals on the creek flowing northeast through the east part of the Black group and other smaller creeks were sampled when soil traverse lines crossed them. A few seeps and springs were also sampled. The sediments were in general quite coarse necessitating the collection of a large sample and thus the 8" by 3" Kraft geochemical bag was half filled and in some cases three-quarters filled, so that sufficient -80 mesh fraction would be recovered. Normally, up to six grabs had to be made in each sample area to collect enough fine sediment.

Laboratory Treatment

All samples were shipped to Bondar-Clegg's Whitehorse laboratory where they were oven-dried, crushed lightly and sieved through 80 mesh

screening. The -80 mesh fraction was digested completely in an HCl.HNO_3 solution and the resultant solution aspirated into an atomic absorptiometer equipped with cathodes for silver, lead and zinc. Results were corrected for background variation in the laboratory and the resultant values for Ag, Pb and Zn, in ppm, are shown at each of the stream and soil sample sites.

Sample cuts of the dried -80 mesh fraction of the stream silts were sent to Bondar-Clegg's Ottawa laboratory for cold-extractable zinc analysis (cxZn). This sample was stirred in a weak ascorbic acid solution which was then aspirated into an atomic absorptiometer for determination of readily-extractable Zn content. This value is shown in parentheses next to the total metal values for each stream silt sample.

INTERPRETATION OF RESULTS

Geochemical values for silver, lead and zinc, in ppm, are shown on the attached map at a scale of 1:12,500 (1"= 1,042'). Twenty stream silts and 254 soil samples are shown on the map. Frequency distribution of zinc has been plotted in 25 ppm groups on the attached histogram.

Silver

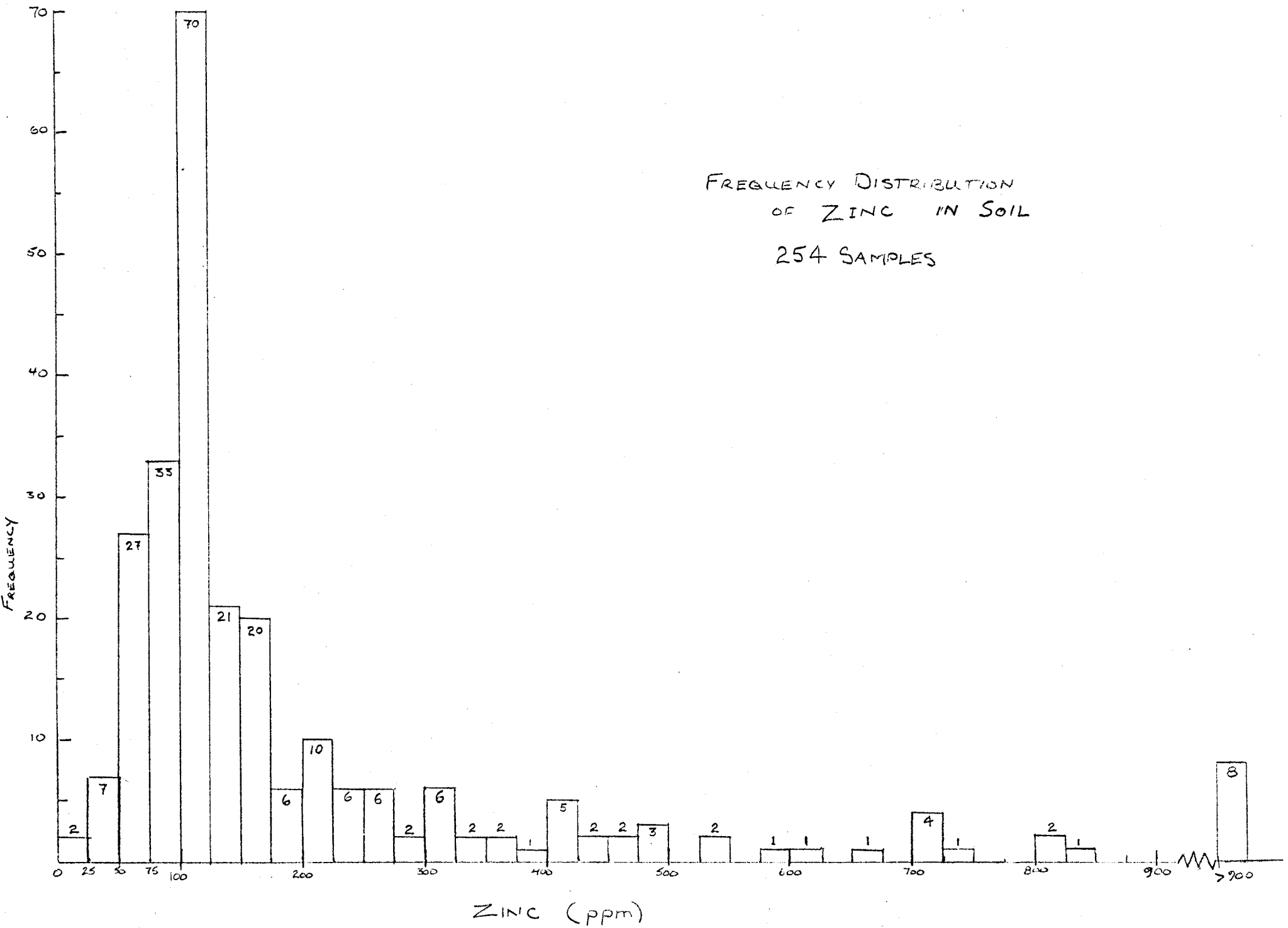
Silver content is minor and, for the most part, non-detectable. However, there are random highs of up to 1.8 ppm, the latter associated with the highest zinc content of 3,500 ppm. As a result of this negligible content, 45 soil samples of the 254 were not analysed for silver. Of the remaining 209 samples, there are 36 that contain recordable content of silver, varying from 0.2 to 1.8 ppm and none of these are particularly associated with anomalous zinc or lead values.

Lead

Lead content varies from 5 to 55 ppm with only two erratic highs of 720 and 1,650 ppm which are associated with values of 320 and 3,500 ppm Zn respectively. Both of these samples are considered anomalous.

FREQUENCY DISTRIBUTION
OF ZINC IN SOIL

254 SAMPLES



Zinc

As shown on the accompanying histogram and the printout from our programmable calculator, the sample data is contained in two populations, the first from 0 to 399 ppm and the second from 400 to 975 ppm. There are six higher values of 1125, 1175, 1370, 1625, 2700 and 3500 ppm Zn. Basic statistical calculations are:-

(a) Arithmetic mean of normal range of 248 values	180 ppm
Geometric mean of normal range of 248 values	<u>136 ppm</u>
Standard deviation of normal range of 248 values	<u>169 ppm</u>
(b) Arithmetic mean of all 254 samples	221 ppm
Geometric mean of all 254 samples	<u>144 ppm</u>
Standard deviation of all 254 samples	<u>340 ppm</u>

Calculation (a), excluding the six erratic highs, is a more realistic analysis of zinc distribution and we have selected a mean value of 136 ppm. Threshold is arbitrarily set a mean plus two standard deviations or 474 ppm Zn. Values exceeding this are considered to be significant and therefore the 475 ppm contour is shown on the map.

A second contour line, of 305 ppm, represents values of mean plus one standard deviation; the interval between 305 and 475 ppm Zn could be assumed to be high background.

Comment

(1) It is apparent that high zinc content in soil, possibly anomalous, is present on the Ida group over a length of about 7,500 ft., extending through Ida claims 3, 5, 7, 11 and 13, and diminishing to low background on Ida 15, on the east, and Ida 1, on the west.

The zone outlined by that contour is about 1,500 ft. wide and extends south into Ida 4, 6, 8, 10 and possibly into part of 12; however, the line between 10 and 12 was not sampled.

(2) A significant value of 0.7 ppm Ag, 720 ppm Pb and 320 ppm Zn occurs on the Black 26 claim, between two sample lines.

(3) An isolated high of 1.8 ppm Ag, 1650 ppm Pb and 3500 ppm Zn occurs on the 4,000 ft. contour on Black 20 claim.

(4) Three high background values occur on Black 14 and 16 claims on the north side of the tributary.

Stream Sediments

Values range from 110 to 510 ppm total Zn and from 18 to 135 ppm weakly-extractable Zn with a correspondence of both high and low values from each method of extraction. The arithmetic mean of the cxZn is 47 ppm and there are two values of about twice the mean or higher that are of interest:-

(a) A value of 135 ppm cxZn (510 ppm total Zn) occurs as a spring seepage on the claim line at Post No. 2 of Ida 7 and 8 and obviously confirms anomalous contents of up to 975 ppm Zn in soils in the immediate vicinity.

(b) A stream flowing northeast through the southeast corner of the Black group shows an increasing Zn content from the field camp, where it is 40 ppm cxZn, to the southerly limit sampled near the south boundary of the Ida 30 claims, where it is 92 ppm cxZn (300 ppm total Zn).

(c) The streams flowing east from Black 6 through to Black 11 contain background zinc metal and, not surprisingly, these values are almost identical to the zinc content of the surrounding soils. As noted previously, the sediment particles in the streams are largely rock clasts and silt-sized particles have been derived from the erosion of the subjacent bedrock.

CONCLUSIONS AND RECOMMENDATIONS

The Black and Ida claims are believed to be underlain, in part, by geological formations similar to those of the McIntyre properties to the west where significant Pb, Ag and Zn mineralization was found initially by geochemical sampling and prospecting.

The majority of the property, being forested, has not been subjected to intensive visual prospecting.

Reconnaissance grid soil sampling on the Black and Ida claims has shown to be a relatively quick method of outlining anomalous zinc patterns in sedimentary rocks. Analysis of available stream sediments indicates that anomalous metal content is also locally reflected in minor creeks but not in the major drainage network.

A zinc anomaly, with approximate dimensions of 7,500 ft. by 1,500 ft., and found on the Ida group, is therefore a significant new discovery and additional exploration work is warranted.

I recommend initially that a programme of detailed soil sampling, prospecting, and geological mapping be carried out on cut grid lines on the Ida claims to accurately define the zinc anomaly and to search for corroborative mineralization in float and in outcrop. Provision should be made for ground geophysical surveys, preferably induced polarization, as well as bulldozer trenching.

All results from the above programme should be compiled and reviewed prior to a decision to initiate drilling on this anomaly. The cost of such work has not yet been estimated.

The other isolated anomalous zinc and lead soil values on the Black claims should be prospected and additional soil sampling be carried out around them.

Respectfully submitted,

DERRY, MICHENER & BOOTH

A handwritten signature in black ink, appearing to read "I. S. Thompson". The signature is written in a cursive style with a horizontal line at the end.

I. S. Thompson, P.Eng.

Toronto, Ontario
November 15, 1977

APPENDIX I

List of Claims
Personnel Employed

(i)

List of Claims *

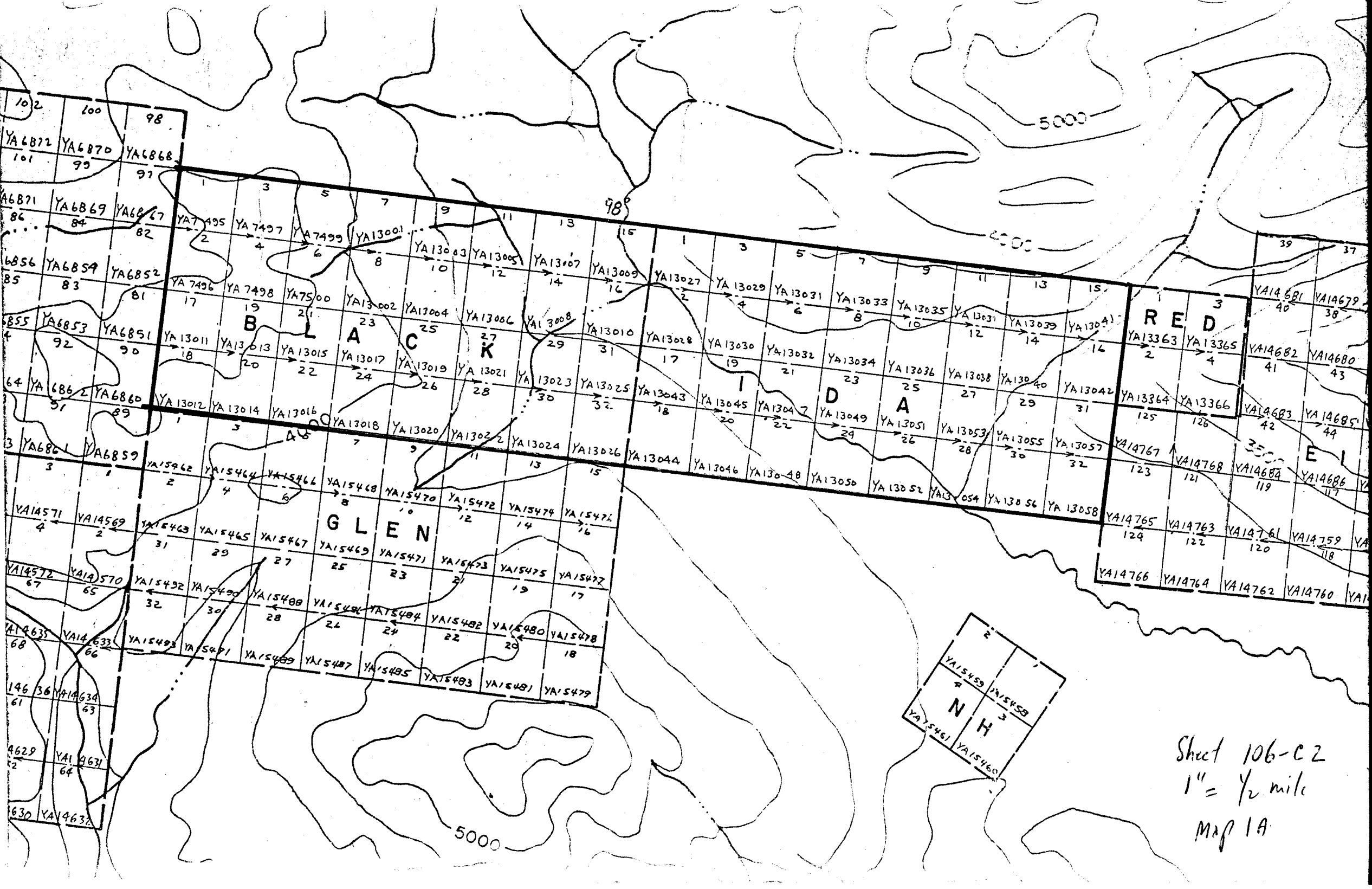
<u>Black</u>		<u>Ida</u>	
<u>No.</u>	<u>Grant No.</u>	<u>No.</u>	<u>Tag No.</u>
1	**YA 7495	1	**YA 13027
2	7496	2	13028
3	7497	3	13029
4	7498	4	13030
5	7499	5	13031
6	7500	6	13032
7	13001	7	13033
8	13002	8	13034
9	13003	9	13035
10	13004	10	13036
11	13005	11	13037
12	13006	12	13038
13	13007	13	13039
14	13008	14	13040
15	13009	15	13041
16	13010	16	13042
17	13011	17	13043
18	13012	18	13044
19	13013	19	13045
20	13014	20	13046
21	13015	21	13047
22	13016	22	13048
23	13017	23	13049
24	13018	24	13050
25	13019	25	13051
26	13020	26	13052
27	13021	27	13053
28	13022	28	13054
29	13023	29	13055
30	13024	30	13056
31	13025	31	13057
32	13026	32	13058

* - Optioned by Dejour Mines Limited from D. A. McLeod, J. W. MacLeod, J. E. Millette and G. A. Bleiler (on August 24th, 1977).

** - All claims are prefixed by YA.

APPENDIX II

Total Zinc Content in Soils



102 100 98

YA 6872 YA 6870 YA 6868
101 99 97

YA 6871 YA 6869 YA 6867
86 84 82

YA 6856 YA 6854 YA 6852
85 83 81

YA 6855 YA 6853 YA 6851
85 83 81

YA 6864 YA 6862 YA 6860
84 82 80

YA 6863 YA 6861 YA 6859
83 81 79

YA 14571 YA 14569
4 2

YA 14572 YA 14570
67 65

YA 14635 YA 14633
68 66

YA 14629 YA 14631
62 64

YA 14630 YA 14632
63 61

YA 7495 YA 7497 YA 7499 YA 13001
2 4 6 8

YA 13003 YA 13005 YA 13007 YA 13009
10 12 14 16

YA 13002 YA 13004 YA 13006 YA 13008
23 25 27 29

YA 13011 YA 13013 YA 13015 YA 13017
18 20 22 24

YA 13012 YA 13014 YA 13016 YA 13018
1 3 5 7

YA 15462 YA 15464 YA 15466 YA 15468
2 4 6 8

YA 15470 YA 15472 YA 15474 YA 15476
10 12 14 16

YA 15469 YA 15471 YA 15473 YA 15475
25 27 29 31

YA 15492 YA 15494 YA 15496 YA 15498
32 30 28 26

YA 15493 YA 15495 YA 15497 YA 15499
31 29 27 25

YA 15481 YA 15483 YA 15485 YA 15487
30 28 26 24

YA 15482 YA 15484 YA 15486 YA 15488
22 20 18 16

YA 15489 YA 15491 YA 15493 YA 15495
21 19 17 15

YA 15480 YA 15482 YA 15484 YA 15486
19 17 15 13

YA 15481 YA 15483 YA 15485 YA 15487
18 16 14 12

YA 15482 YA 15484 YA 15486 YA 15488
17 15 13 11

98°

5000

4000

RED

GLEN

NH

Sheet 106-C2
1" = 1/2 mile
Map 1A

5000

Zn
Yukon

180.
155.
180.
110.
120.
120.
110.
135.
120.
130.
80.
100.
70.
110.
150.
125.
110.
95.
75.
120.
90.
135.
255.
220.
370.
280.
110.
150.
150.
130.
120.
125.
110.
190.
140.
160.
280.
150.
120.
140.
155.
115.
90.
105.
100.
95.
120.
120.
110.
110.
130.
165.
115.
80.
100.
70.
85.

BLACK AND IDA CLAIMS

Total Zinc Content in Soils

Print-out from Programmable
Calculator - Texas Instruments
#T1-59

DERRY, MICHENER & BOOTH
October 1977

140.
150.
65.
140.
180.
225.
240.
205.
120.
90.
95.
120.
140.
80.
120.
60.
10.
120.
60.
110.
35.
260.
180.
160.
220.
170.
85.
105.
65.
50.
110.
170.
80.
40.
50.
100.
130.
80.
50.
70.
20.
35.
70.
80.
155.
135.
120.
105.
105.
305.
120.
400.
200.
70.
320.
200.
110.
110.
220.
150.
145.
130.
100.
145.

155.
130.
100.
105.
110.
105.
90.
100.
110.
110.
120.
110.
115.
110.
315.
360.
460.
430.
410.
210.
115.
320.
240.
110.
100.
60.
80.
100.
130.
90.
140.
100.
65.
100.
120.
110.
100.
100.
95.
170.
200.
80.
110.
130.
300.
160.
100.
100.
50.
60.
50.
60.
70.
55.
230.
90.
45.
50.
110.
75.
50.
30.
40.

60.
80.
90.
70.
90.
85.
70.
80.
80.
85.
100.
115.
100.
115.
65.
80.
100.
80.
80.
100.
90.
155.
110.
450.
220.
265.
230.
265.
390.
800.
170.
975.
720.
700.
330.
705.
825.
930.
820.
120.
735.
495.
580.
260.
400.
710.
45.
70.
160.
175.
300.
340.
475.
600.
525.
650.
220.
245.
475.
445.
410.
400.

250.
525.
 $\Sigma X =$
44845.
 $\bar{x} =$
180.8266129
GEOM MEAN =
135.9664038
STD DEV =
168.7908319
VAR =
28490.34494
1125.
1175.
1370.
1625.
2700.
3500.

$\Sigma X =$
56340.
 $\bar{x} =$
221.8110236
GEOM MEAN =
144.4067659
STD DEV =
340.1118212
VAR =
115676.0509

BLACK GROUP
(1-32)

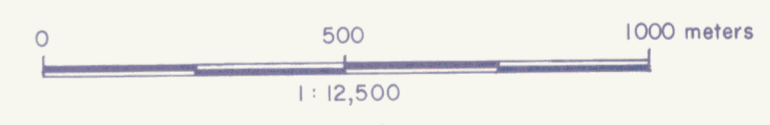
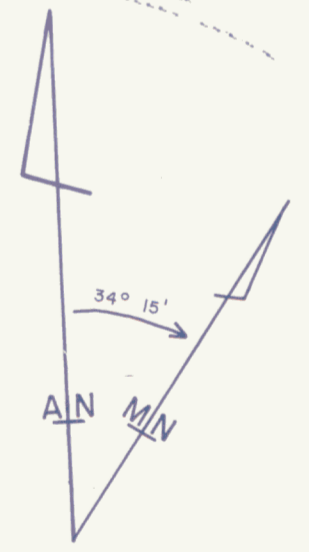
IDA GROUP
(1-32)



LEGEND

- 0-4,25,160(40) Ag, Pb, Zn in ppm. (cx Zn in silts)
- ND Not detected
- + , □ Claim post assumed, observed
- , ● Soil, stream silt
- rock timber Rock, timber
- + Claim post & assumed claim corner
- 13017 Grant number (prefixed by Y)
- 22 Claim number

475 ppm Zn
305 ppm Zn



DERRY, MICHENER & BOOTH		
DEJOUR MINES LTD. NOVA-CO EXPLORATIONS LTD.		
BLACK 1-32 & IDA 1-32 CLAIMS YUKON TERRITORY		
GEOCHEMICAL SURVEY		
DATE: OCT. 77.	DRAWN: I.S.T.	DWG. NO. 1