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A Report on a  
Geochemical Soil Survey  
of the  
McArthur Property  
of  
Bagdad Exploration Assoc. Inc.  
McArthur Township, District of  
Timiskaming, Ontario  
by  
C. F. Gleeson PhD, P.Eng.

**RECEIVED**

JUN - 21 1980

Mining Lands Section

November 12, 1979

C.F. Gleeson & Associates Ltd.,  
764 Belfast Rd., Ottawa, Ontario.  
K1G 0Z5 - 613-232-0796

## INTRODUCTION:

Between October 4th and 9th, 1979 some 98 samples were collected over a block of six contiguous claims (numbers 525621, 525622, 525623, 525624, 525625, 525626) situated in McArthur Township, District of Timiskaming, Ontario.

This survey was carried out for Bagdad Exploration Associates Inc. by Bondar-Clegg & Co., Ltd. personnel, with all samples being analysed in the Bondar-Clegg Ottawa Laboratory, for Au, as well as Cu, Pb, Zn, Hg and Ag.

In this report field and laboratory procedures used in the survey are described and results obtained are discussed.

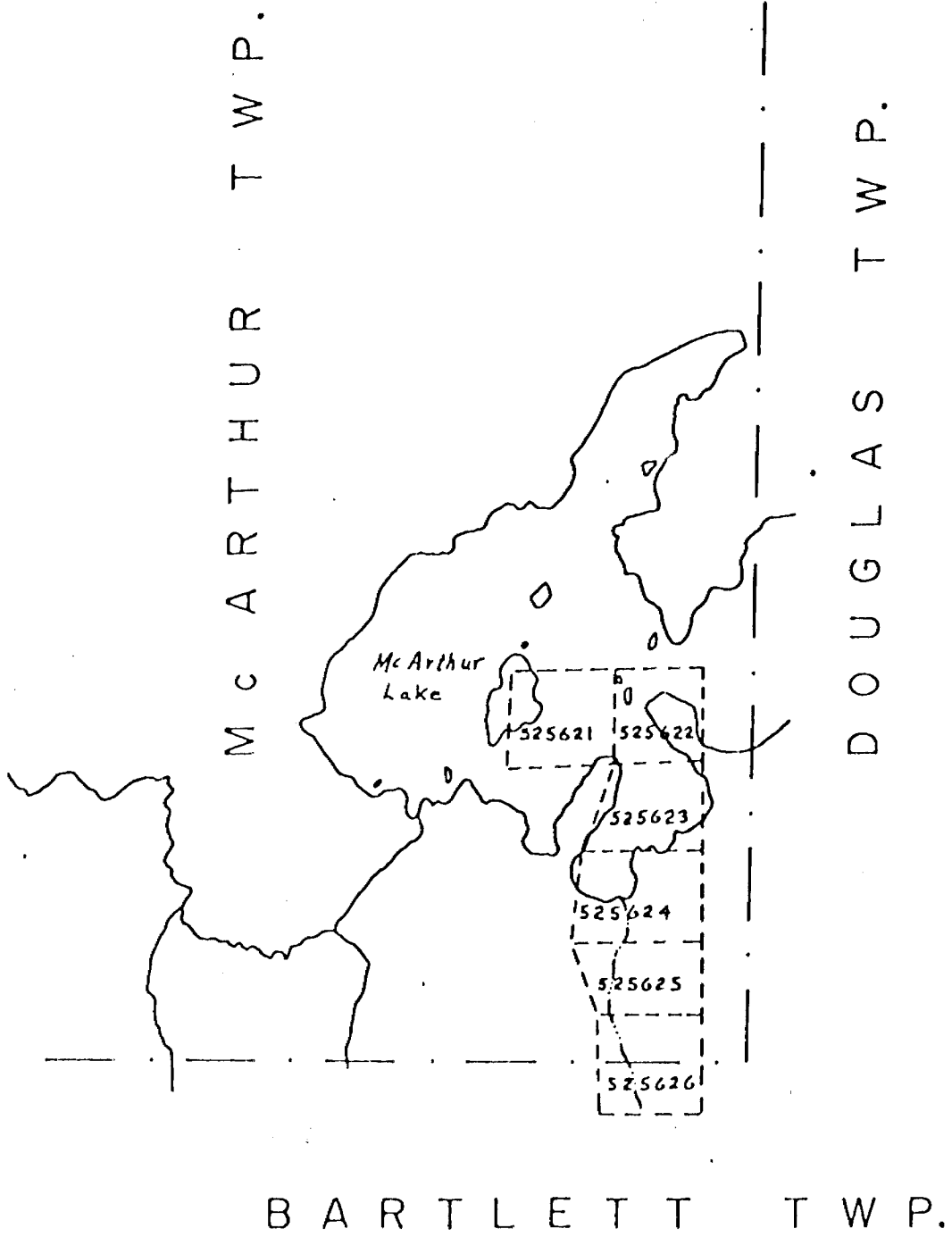
## LOCATION AND ACCESS:

The McArthur Property, which consists of six contiguous claims (numbers 525621, 525622, 525623, 525624, 525625, 525626) is situated in the south-east corner of McArthur Township, and covers part of McArthur Lake, in the District of Timiskaming, Ontario (see Index Map, Figure 1). Access to the property was achieved by float plane from Timmins, 19 miles to the north. A gravel road from Timmins passes 3 miles west of the property.

## PHYSIOGRAPHY AND GEOLOGY:

Physiographically the property lies within the Abitibi Upland. Low lying inter-outcrop areas are underlain by lake, streams and swamps, the higher ground contains sandy, glacial moraine. The last direction of glacial advance was from the north.

Figure 1: Index Map



Scale 1" : 2640'

The claims are underlain mainly by Archean ultramafic volcanics (Pyke\*) which strike northwest; they are made up of serpentized flows and carbonated ultramafics. On the south shore of the peninsula in the northeast part of the claims there are intrusive rocks varying in composition from granodiorite to gabbro. A late Precambrian dyke of olivine diabase also occurs here.

Gold occurrences are known in the carbonated ultramafics on the property which adjoins this one to the west.

FIELD PROCEDURE:

Sampling was carried out by Bondar-Clegg & Co. Ltd. personnel between October 4th and 9th, 1979, on a flagged grid. Most lines were run east-west at 400 foot intervals and samples were collected every 100 feet on these lines (see Map 1, Sample Locations). A 500 gm sample of the decayed humus material was collected at each site just above the A<sub>2</sub> (leached) horizon, a total of 98 samples were taken. Data on the soil and sample conditions were recorded in the field on 80 digit cards (Figure 2) according to the code shown in Figure 3. Following this, at each sample site, an orange ribbon was hung indicating the number of the sample collected. About 40 samples could be collected per man per day in this way.

At approximately every twenty sample sites, a duplicate sample was taken, given a separate number, and submitted to the same treatment as the other samples, to check field sampling and laboratory reproductibility. On return to camp each evening, all samples were laid out to dry, checked

\*Pyke, D.R., (1976): McArthur and Douglas Townships: Ont. Dept. Mines, Map 2363

Figure 2: Soil Data Card

Project:										Area (NTS):										Photo No.:										Collector:										Date:									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40										
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80										
GEOCHEMICAL SOIL CARD																				BONDAR-CLEGG & COMPANY LTD.																													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40										
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80										
REMARKS:																																																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40										
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80										
REMARKS:																																																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40										
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80										
REMARKS:																																																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40										
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80										
REMARKS:																																																	

4...

FIGURE 3 - LEGEND SOIL CARD

COLS	FIELD SPECIFICATIONS	DIGITS	EXAMPLES
1 - 7	Sample number: Col 1 = yr, 2 - 3 = sampler Col 4 - 7 = Number	X <sub>1</sub> - X <sub>7</sub>	6 GI 3010; Soil samples start at 3001
8	Soil horizon sampled	X <sub>8</sub>	A, B, or C
9 - 11	Thickness of Horizon sampled	X <sub>9</sub> - X <sub>11</sub>	In feet - estimate to nearest 1/10 foot Eg - 1.5
12 - 14	Depth of sample	X <sub>12</sub> - X <sub>14</sub>	Nearest 1/10 foot
15	Color of soil sampled	X <sub>15</sub>	1 = green, 2 = red, 3 = brown, 4 = grey, 5 = black, 6 = white, 7 = orange, 8 = yellow
16	Soil type	X <sub>16</sub>	1 = Colluvial; 2 = Alluvial; 3 = Glacial; 4 = Residual
17	Soil classification	X <sub>17</sub>	1 = Podsol, 2 = Bog, 3 = half bog, 4 = Gleisolic, 5 = Brown Forest, 6 = Grey-wooded, 7 = Cultivated
18	General Relief	X <sub>18</sub>	1 = low, 2 = gentle, 3 = moderate, 4 = high
19 - 22	Slope and slope direction	X <sub>19</sub> - X <sub>22</sub>	Cols. 19 + 20 = Approx. Degree of slope Cols. 21 - 22 = Approx. Direction of slope Eg. 10SE = 10 degrees -South - east
23	Drainage	X <sub>23</sub>	1 = Poorly, 2 = Imperfect (Moderate) 3 = Well Drained
24 - 28	Description of soil grain size. Ranked 1 to 9 - to total 10	X <sub>24</sub> - X <sub>28</sub>	10% <sup>sand</sup> gravel, 40% silt, 40% clay, 10% organic would be 1 4 4 1
29-37	Dominant Vegetation	X <sub>29</sub> -X <sub>37</sub>	S=Spruce, C=Cedar, P=Pine, M=Maple, B=Birch, R=Poplar, A=Alder, W=Willow, Y=Cherry, F=Fir, N=Mountain Ash, K=Bull Rush.
38-39	Humification	X <sub>38</sub> -X <sub>39</sub>	0=raw vegetation 10=well decomposed humus
40	Intensity of tree cover	X <sub>40</sub>	0=open, 1=sparce, 2=moderate, 3=well wooded
41-44	Line	X <sub>41</sub> -X <sub>44</sub>	
45-50	Station	X <sub>45</sub> -X <sub>50</sub>	

for missing or inadvertent duplication or damaged bags, the corresponding data cards checked for completeness and error, and the plotted locations rechecked. Following this the samples were carefully boxed and shipped by bus through Timmins to the Bondar-Clegg laboratory in Ottawa for drying, sample preparation and analysis.

#### SAMPLE PREPARATION:

On receipt, samples were air dried in the bags they were collected in, at a temperature of approximately 110°F, and then passed through 10 mesh stainless steel (U.S. Series) sieves.

#### ANALYTICAL TECHNIQUES:

Cu, Pb, Zn and Ag were determined by atomic absorption on the same sample dissolution. The base metals were extracted for 2 hours at temperatures of 90°C - 95°C with a Le Fort aqua-regia acid mixture, then diluted to a total acid concentration of 20% v/v before aspiration into the AA Varian Tektron atomic absorption spectrometer. Background correction was applied for Pb and Ag.

Au was determined by a fire assay-atomic absorption combined technique. Samples were concentrated by ashing at 500°C. (The fire assay concentrates the sample; 5000:1, 10 grams test material: 2 g dore bead). The dore bead was then dissolved and the solution tested for Au by atomic absorption spectroscopy.

Hg was determined by a flameless atomic absorption technique. Each sample was treated with reagents (HNO<sub>3</sub> acid, KMnO<sub>4</sub>) to first oxidize all the mercury to the mercuric form and then reduce (using SnCl<sub>2</sub>) the mercury to metallic mercury. The resultant mercury vapour was then passed

through an absorption cell from which energy changes were electronically measured.

#### DATA TREATMENT:

On return from the field, all data cards were rechecked for errors and completeness, and base maps on mylar film draughted at a scale of 1 inch to 200 feet, indicating corrected claim boundaries, physiography, and sample locations.

As analytical results were received from the lab, histograms as well as the arithmetic mean and standard deviation were calculated for each element analysed. A summary of these values is shown in Table 1 and the histograms are presented in Appendix 1 of this report.

Results from replicate sampling pairs are listed in Table 2 and for the most part the reproducibility is acceptable.

#### RESULTS:

##### Gold

The most intense gold anomaly (50-215ppb) occurs near the east side of the claims on lines 10N and 13N and may continue northward under the lake to line C. Hg and in part Ag, Pb and Zn are anomalous in this area.

One station gold anomalies ranging from 130 to 200ppb Au are present at the following locations: L 0, 13E, L45, 7E and L4N, 0. The latter site is near a gold showing in carbonated ultramafics. At the first site Pb is also anomalous.



ELEMENT	NUMBER OF SAMPLES USED (N)	PUBLISHED DETECTION LIMIT	RANGE	MEAN ( $\mu$ )	STANDARD DEVIATION ( $\sigma$ )
Cu (ppm)	98	1ppm	6-163	17.1	16.0
Pb (ppm)	98	2ppm	5-138	60.5	30
Zn (ppm)	98	1ppm	9-280	71.5	51.6
Ag (ppm)	98	0.1ppm	0.2-1.1	0.4	0.2
Au (ppb)	97	5ppb	5-215	47	43
Hg (ppb)	98	5ppb	120-430	234	61.5

Table 1: Summary of Values from Soil Analysis

SAMPLE PAIR	Cu	Pb	Zn	Ag	Au	Hg
BDA 021	12	58	26	0.4	20	205
501	14	73	41	0.2	30	225
BDA 041	20	64	61	0.6	65	305
502	22	70	65	0.4	55	285
BDA 061	19	89	69	0.3	25	245
503	17	85	56	0.2	55	225
BDA 080	10	38	40	0.2	30	285
504	10	39	51	0.2	30	285

Table 2: Results of Replicate Sampling

At the south end of the property there is a general increase in Au values (50-90ppb). Ultramafic flows and carbonated ultramafics flows intruded to the west by quartz feldspar porphyry are present in this area. Ag, Hg, Cu and Pb are anomalous in places within this anomaly.

### Silver

Values in excess of 0.8ppm Ag occur as one station anomalies at the east end of L14S and at the west ends of L 0 and 8S. The latter would appear to be related to a carbonated ultramafic-porphyry contact along which gold is known to occur. Also there are 2 values of 0.8ppm on L A and B on the island in the northwest sector of the claims. Ultramafic flows outcrop in this area. At the west end of L 0, Hg and Au are anomalous and at the east end of L14S, Pb and to a lesser extend Au and Hg are above normal.

### Mercury

Mercury is highest (300-430ppb) on L 0 to 13N, 9 to 16E. Au is also anomalous in this area. The Hg anomalies would appear to continue northward to L C. Ultramafic flows outcrop on the lakeshore north of L 13N. The increase in Hg (370ppb) at the west end of L 0 coincides with an above normal Ag (0.8ppm) value and it occurs in an area where carbonated ultramafics are in contact to the west with feldspar porphyry. Increases in Hg are apparant also over ultramafic flow rocks near the south end of the property (8S to 17S, 10E and L14S to 17S, 16E). There is some overlap with above normal Pb and on L14S there is also a coincidence with a Ag anomaly (0.9ppm).

Copper

Except for two values of 163ppm at L4N, 9E and 65ppm at L8S, 6E all humus samples contain 30ppm Cu or less.

Lead

Lead anomalies (75-138ppm) trend south and appear to be restricted to the ultramafic flow rocks. There is some overlap with anomalous Au and Hg values at L13N, 17E; L 0-13N, 13E and L4S-17S, 10E. Coincident Pb, Ag and Au highs are present at L14S, 15E.

Zinc

There are two values of 275 and 280ppm Zn on L10N at 13E and 14E respectively, Au and Pb are also above normal at these sites. Except for two values of 187 and 193ppm near the west end of L17S all Zn values south of 13N are less than 146ppm. On L C there are 3 values of 172, 167 and 193ppm which are associated with above normal Pb (82 to 110ppm), Au (85 to 95ppb) and Hg (320-385ppb) values. Serpentinized ultramafic volcanic flows underlie the anomalous samples.

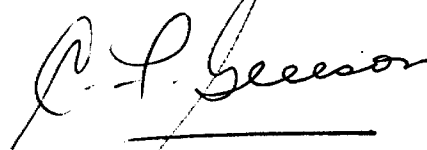
SUMMARY AND RECOMMENDATIONS:

The McArthur Property is underlain mainly by serpentinized ultramafic volcanic flows that in places are carbonated. Minor gold occurrences are known on the adjoining property to the west where quartz-feldspar porphyry intrudes the ultramafics.

Humus sampling of the dry areas has outlined gold anomalies in the following places: in the northeast part of the claims (L10N, 13N, C); on L O, 13E; at L4S, 7E; at L4N, 0; and between L8S and 17S, 0 to 16E. In places Hg, Ag and Pb coincide with the Au anomalies.

The property should be geologically mapped in detail (200':1"), the anomalous gold zones should be thoroughly prospected, rock samples should be taken and analyzed geochemically for Au. Where necessary the Au anomalies should be trenched with a backhoe. To evaluate the swampy region and the area under McArthur lake overburden sampling at depth would have to be carried out.

Submitted by,



C.F. Gleeson PhD, P.Eng.

November 12, 1979



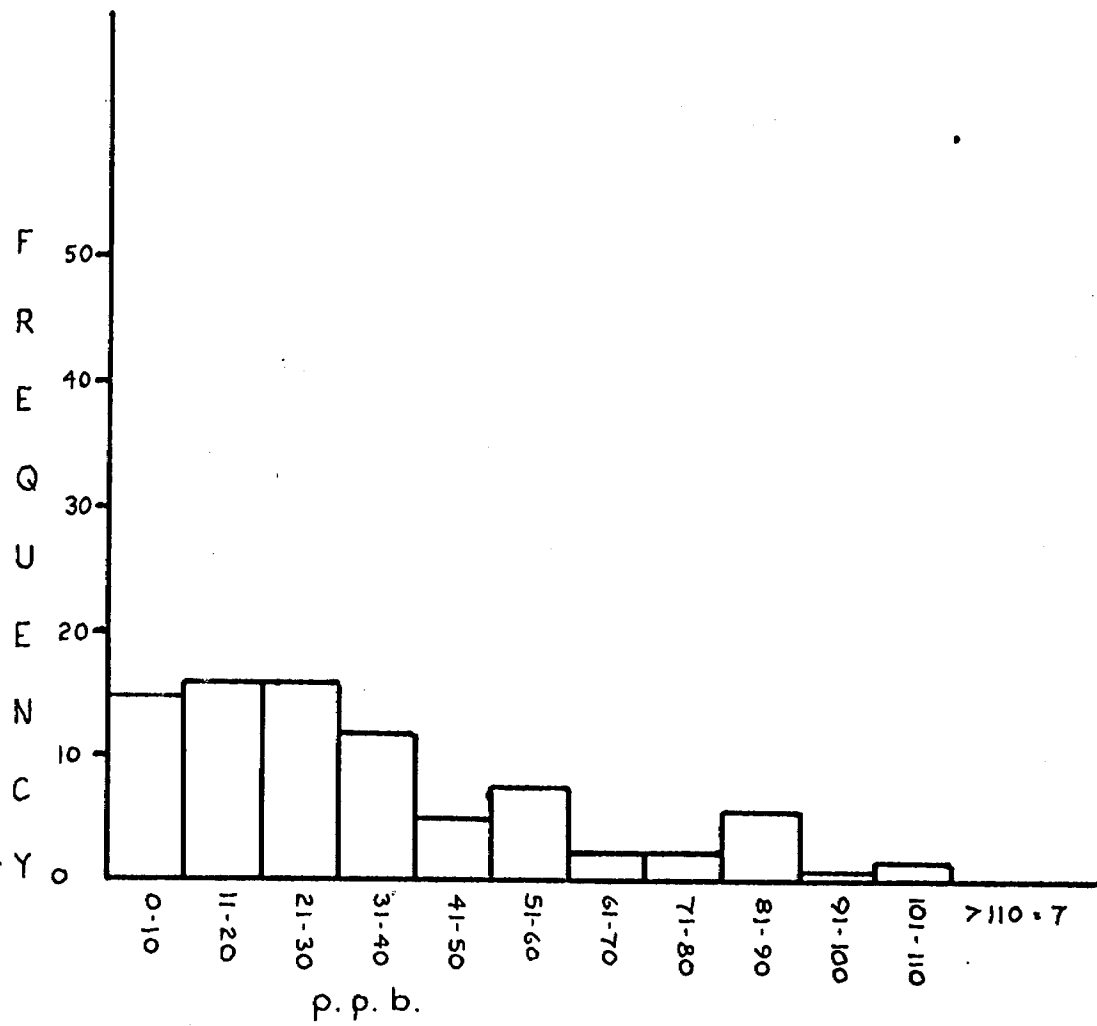
# McARTHUR PROPERTY

## GOLD HISTOGRAM

N = 97

$\mu = 47$

$\sigma = 43$

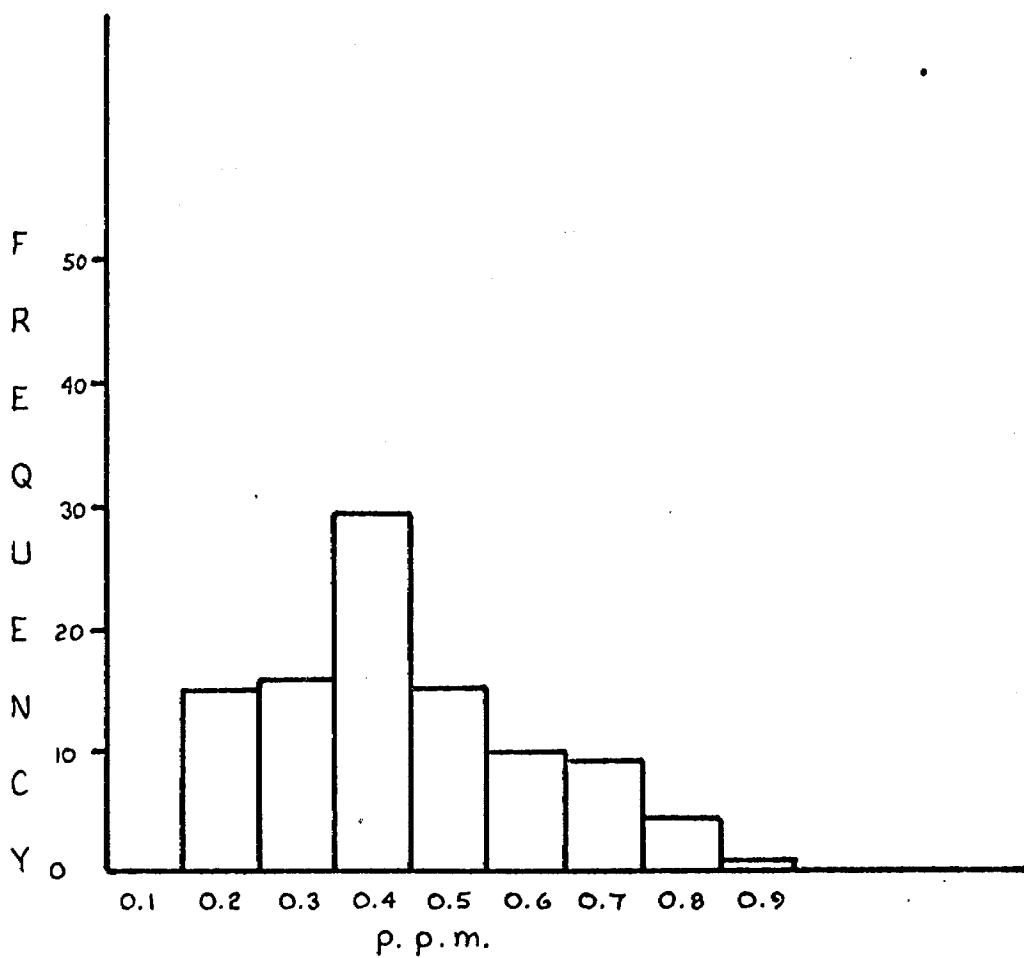


Mc ARTHUR PROPERTY  
SILVER HISTOGRAM

N = 98

$\mu = 0.4$

$\sigma = 0.2$

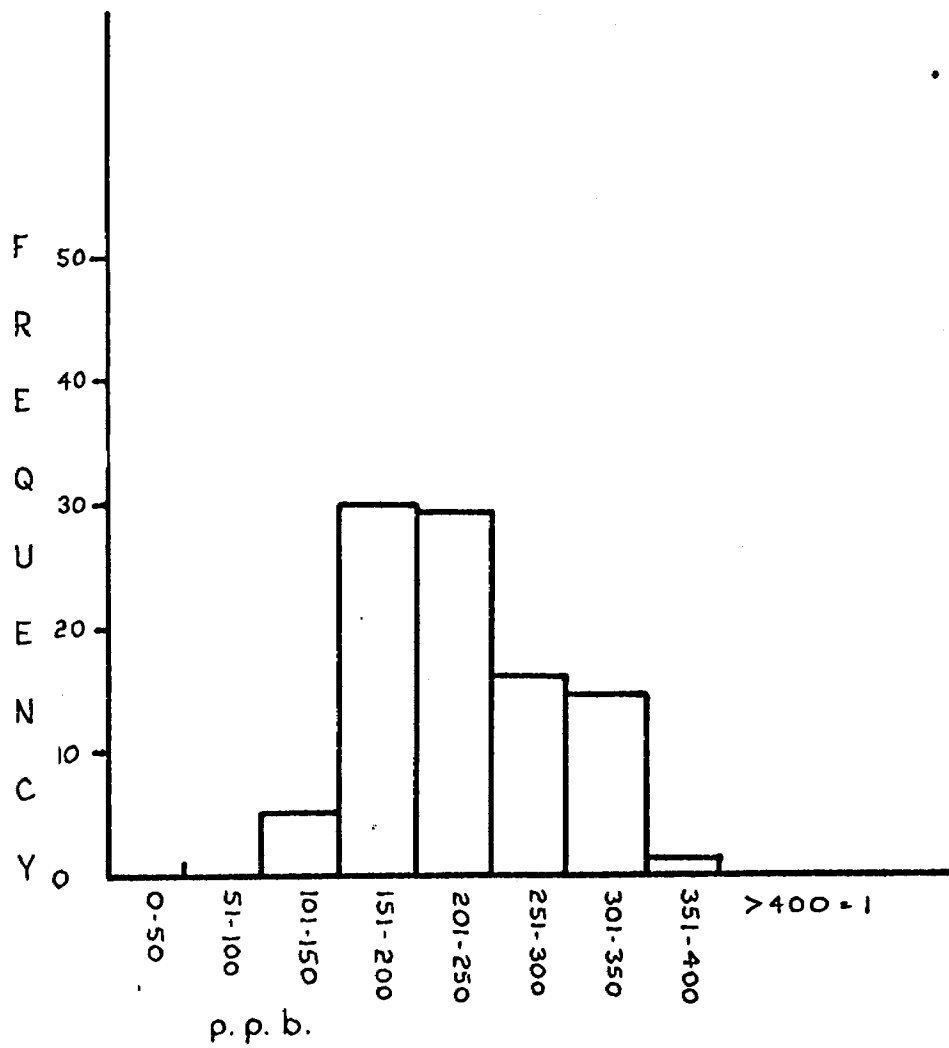


McARTHUR PROPERTY  
MERCURY HISTOGRAM

N = 98

$\mu = 234.4$

$\sigma = 61.5$



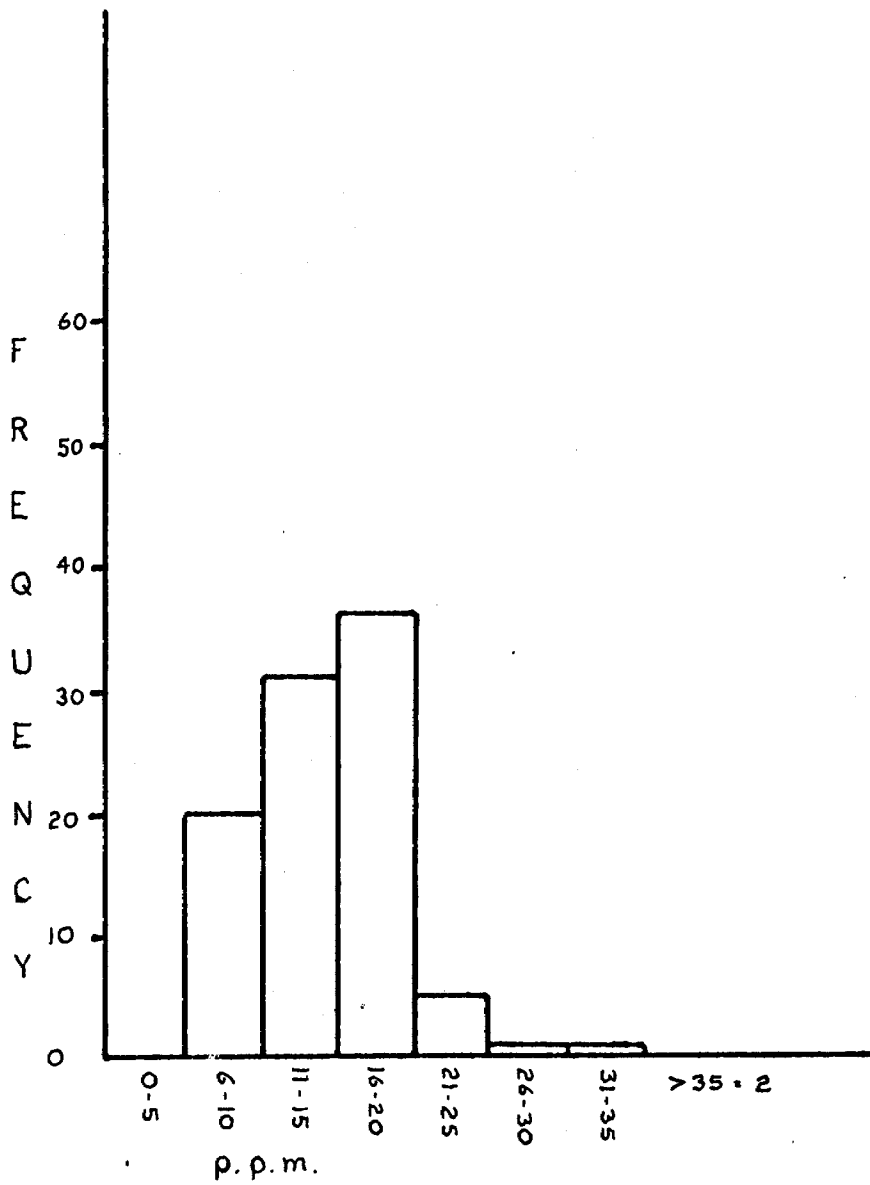


McARTHUR PROPERTY  
COPPER HISTOGRAM

N = 98

$\mu = 17.1$

$\sigma = 16.$



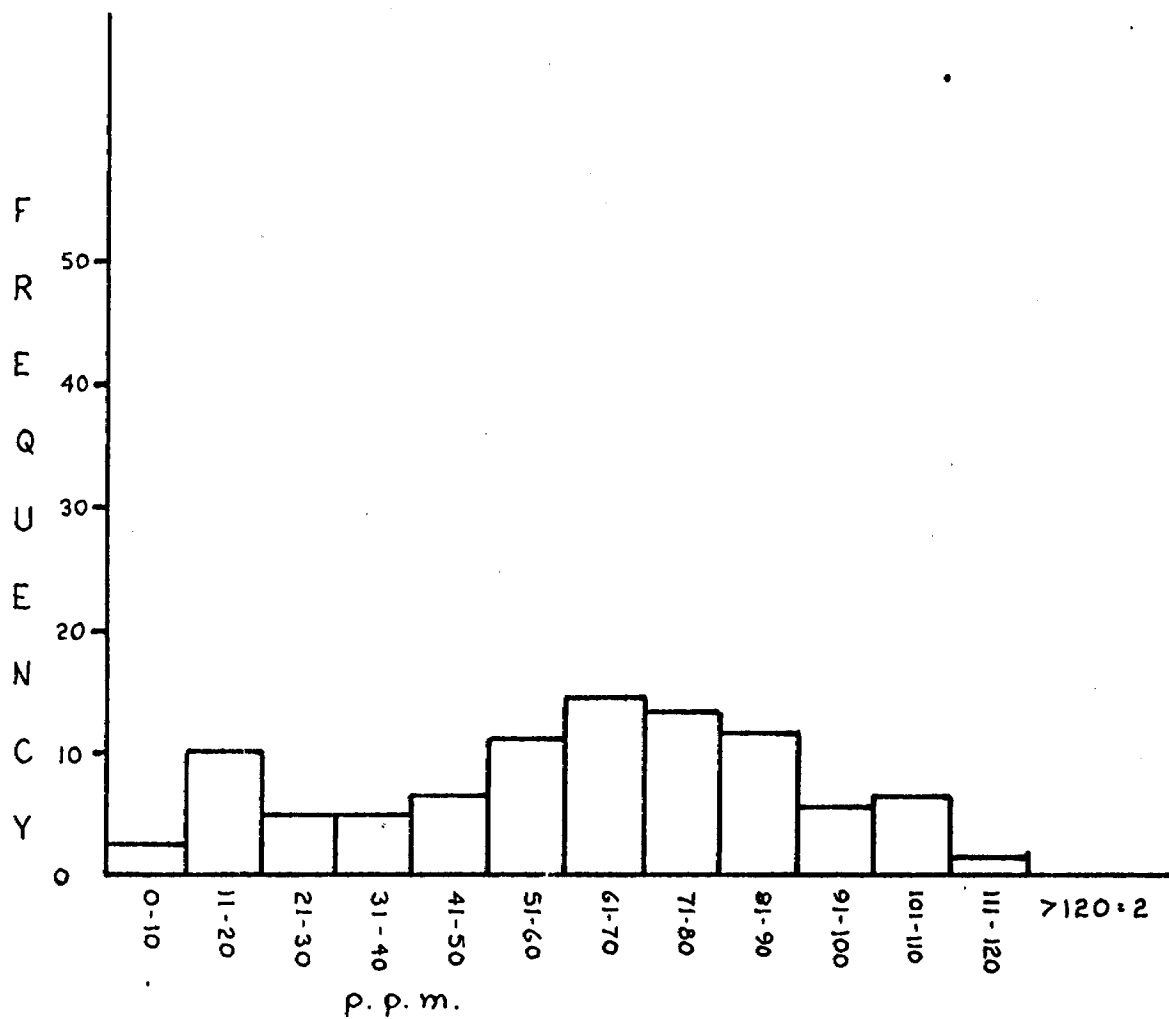
# McARTHUR PROPERTY

## LEAD HISTOGRAM

N = 98 .

$\mu = 60.5$

$\sigma = 30$



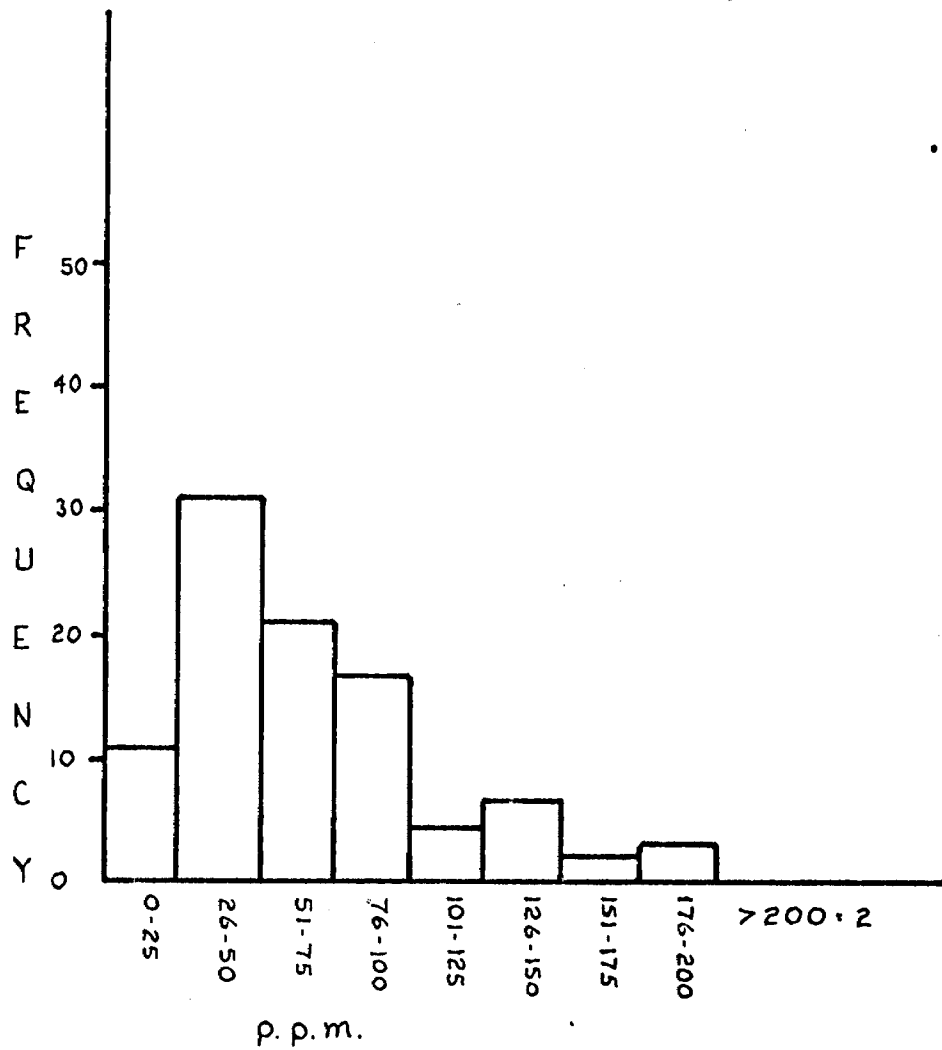
# Mc ARTHUR PROPERTY

## ZINC HISTOGRAM

N = 98

$\mu$  = 71.5

$\sigma$  = 51.6





# BONDAR-CLEGG & COMPANY LTD.

764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5

PHONE: 237-3110

## Geochemical Lab Report

Extraction Cu, Pb, Zn, Ag, Au-HNO<sub>3</sub>-HCl, Hg-HNO<sub>3</sub>-HCl-KMnO<sub>4</sub> Report No. 2104-79

Method A.A. FA-AA From Bagdad Exploration Associates Limited

Fraction Used -10 mesh humus Organics Date November 6, 19 79

SAMPLE NO.	Cu ppm	Pb corr. ppm	Zn ppm	Ag corr. ppm	Au ppb	Hg ppb	REMARKS
9 BDA-1	14	79	41	0.8	10	370	
2	12	52	32	0.4	5	280	
3	8	11	14	0.4	10	245	
4	8	27	40	0.2	15	165	
5	12	17	33	0.3	15	205	
6	6	5	9	0.5	15	120.	
7	12	10	9	0.4	30	180	
8	10	11	28	0.4	25	245	
9	9	103	94	0.3	200	160	
10	14	63	40	0.7	15	230	
11	13	73	27	0.7	20	260	
12	14	44	42	0.7	10	170	
13	17	84	146	0.7	20	200	
14	9	21	22	0.3	30	220	
15	20	5	12	0.5	10	220	
16	9	44	27	0.6	10	205	
17	15	92	92	0.5	10	180	
18	20	116	92	0.4	5	170	
19	14	61	80	0.4	40	125	
20	20	89	116	0.5	130	265	
21	12	58	26	0.4	20	205	
22	10	19	9	0.5	10	170	
23	18	19	49	0.2	20	170	
24	33	28	50	0.4	10	220	
25	17	22	30	0.4	10	210	
26	10	40	57	0.8	35	230	
27	17	45	90	0.8	35	345	
28	12	62	117	0.4	80	270	
29	14	64	84	0.4	20	360	
30	17	65	80	0.4	30	170	
31	23	97	132	0.6	35	200	

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# BONDAR-CLEGG & COMPANY LTD.

Report No. 2104-79

## Geochemical Lab Report

Page No. 2

SAMPLE NO.	Cu ppm	Pb corr. ppm	Zn ppm	As corr. ppm	Au ppb	Hg ppb	REMARKS
9-BDA-32	22	78	187	0.7	45	190	
33	14	59	131	0.5	55	200	
34	20	107	193	0.6	25	180	
35	15	76	85	0.4	20	260	
36	16	90	68	0.4	10	145	
37	13	52	64	0.4	25	305	
38	14	60	40	0.5	90	255	
39	12	15	63	0.3	15	200	
40	18	65	52	0.4	25	200	
41	20	64	61	0.6	65	385	
42	8	31	36	0.4	40	135	
43	16	101	46	0.9	80	280	
44	11	46	37	0.8	30	190	
45	18	42	61	0.2	85	165	
46	14	73	29	0.7	80	265	
47	18	79	62	0.5	90	175	
48	24	90	146	0.4	55	190	
49	14	58	78	0.6	65	180	
50	12	52	44	0.3	60	205	
51	13	23	35	1.1	45	180	
52	65	31	51	0.4	20	145	
53	15	50	62	0.2	40	200	
54	12	62	44	0.2	15	215	
55	22	105	105	0.3	50	245	
56	16	77	69	0.3	35	330	
57	18	75	86	0.3	70	225	
58	18	91	145	0.4	20	210	
59	17	58	71	0.3	30	190	
60	17	72	79	0.3	10	155	
61	19	89	69	0.3	25	245	
62	7	41	24	0.3	35	190	
63	18	90	48	0.2	40	245	
64	15	67	128	0.2	20	165	
65	20	115	94	0.5	25	275	
66	16	65	53	0.5	20	265	
67	18	81	99	0.4	15	210	

*[Signature]*

# BONDAR-CLEGG & COMPANY LTD.

## Geochemical Lab Report

Report No. 2104-79

Page No. 3

SAMPLE NO.		Cu ppm	Pb corr. ppm	Zn ppm	As corr. ppm	Au ppb	Hg ppb	REMARKS
9-BDA- 68		16	74	127	0.2	30	245	
69		20	79	62	0.7	25	235	
70		16	79	56	0.4	45	210	
71		10	56	40	0.6	40	225	
72		163	18	17	0.4	85	310	
73		8	19	18	0.2	20	190	
74		12	20	11	0.3	140	160	
75		6	14	27	0.2	15	310	
76		10	64	63	0.6	110	340	
77		12	53	86	0.7	85	340	
78		18	104	93	0.4	155	350	
79		9	26	37	0.4	55	430	
80		10	38	40	0.2	30	285	
81		6	19	49	0.2	40	300	
82		20	138	66	0.3	110	245	
83		12	53	62	0.4	50	240	
84		10	30	18	0.4	55	305	
85		17	83	220	0.3	65	205	
86		18	99	275	0.5	150	180	
87		16	67	40	0.5	215	260	
88		13	60	57	0.5	185	350	
89		17	110	172	0.6	95	320	
90		29	27	35	0.5	35	220	
91		16	109	104	0.6	85	340	
92		15	99	167	0.4	85	385	
93		16	82	193	0.3	30	260	
94		15	63	70	0.5	35	260	
501		14	73	41	0.2	30	225	
02		22	70	65	0.4	55	285	
03		17	85	56	0.2	55	225	
04		10	39	51	0.2	30	285	
9 B D D 996		23	81	59	0.4	40	220	
97		26	129	72	0.5	30	240	
98		25	92	66	0.6	15	255	
99		19	89	58	0.6	35	165	

*Handwritten signature*

ADDRESS OF CLAIM HOLDER

Bagdad Exploration Associates Ltd.,  
Suite 601, 3600 Park Avenue,  
Montreal, Quebec, M2X 3R2

ADDRESS OF CONSULTANT

C.F. Gleeson & Associates Ltd.,  
R.R.#1, Lakeshore Drive,  
IROQUOIS, ONTARIO, KOE IKO

ADDRESS OF LABORATORY

Bondar Clegg & Company Ltd.,  
764 Belfast Road,  
Ottawa, Ontario K1G 0Z5

ADDRESSES OF SOIL SAMPLERS

Philip Brameld,  
Orient Wood,  
St. Pascal Baylon, Ontario.

Simon Brameld,  
Box 104,  
Hammond, Ontario.



TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) Geochemical
Township or Area McArthur & Bartlett
Claim Holder(s) W.D. Beaton
522 Victoria Avenue, Westmount, Que.
Survey Company Bondar-Clegg & Co. Ltd.
Author of Report Dr. C.F. Gleeson
Address of Author R.R. #1, Iroquois, Ontario KOE 1K0
Covering Dates of Survey October 4-9, 1979.
(linecutting to office)
Total Miles of Line Cut

MINING CLAIMS TRAVERSED
List numerically

Table with columns for (prefix) and (number). Contains claim numbers 525621 through 525628.

If space insufficient, attach list

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.
ENTER 20 days for each additional survey using same grid.

Geophysical
-Electromagnetic
-Magnetometer
-Radiometric
-Other
Geological
Geochemical

DAYS per claim

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer Electromagnetic Radiometric
(enter days per claim)

DATE: SIGNATURE: [Signature]

Author of Report or Agent

Res. Geol. Qualifications 2. 1959 + on this File

Previous Surveys

Table with columns for File No., Type, Date, Claim Holder. Contains handwritten 'L.O' in the Claim Holder column.

TOTAL CLAIMS 8



GEOCHEMICAL SURVEY - PROCEDURE RECORD

8

Numbers of claims from which samples taken \_\_\_\_\_

Total Number of Samples 98

Type of Sample Soil  
(Nature of Material)

Average Sample Weight 500 grams

Method of Collection shovel

Soil Horizon Sampled A<sub>0</sub>

Horizon Development Podsol

Sample Depth 1-5 inches

Terrain Rolling

Drainage Development Well drained

Estimated Range of Overburden Thickness \_\_\_\_\_

0 - 40 feet

**SAMPLE PREPARATION**

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis \_\_\_\_\_

Dried 110°C

Screened -10 mesh

Ashed at 500°C

General \_\_\_\_\_

**ANALYTICAL METHODS**

Values expressed in: per cent   
p. p. m.   
p. p. b.

Cu, Pb, Zn, Ni, Co, Ag, Mo, As (circle)  
Others Au (ppb), Hg (ppb)

Field Analysis (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Field Laboratory Analysis

No. (\_\_\_\_\_ tests)

Extraction Method \_\_\_\_\_

Analytical Method \_\_\_\_\_

Reagents Used \_\_\_\_\_

Commercial Laboratory (588 tests)

Name of Laboratory Bondar-Clegg & Co. Ltd.

Extraction Method Hot Acid-Fire Assay

Analytical Method A.A.

Reagents Used Aqua Regia (Cu, Pb, Zn, Ag)

HNO<sub>3</sub> (Hg)

Fire Assay (Au)

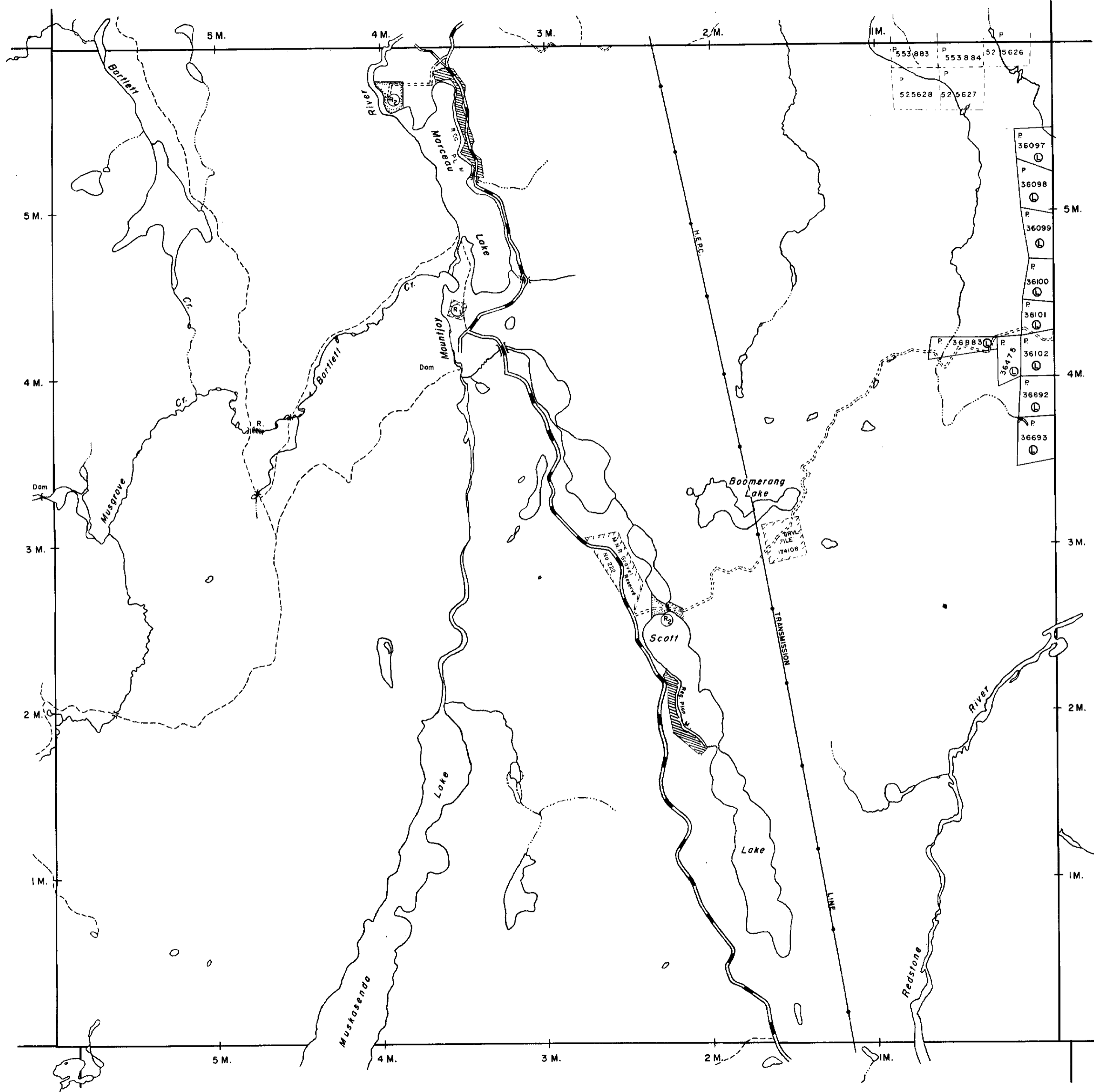
General \_\_\_\_\_

McArthur Tp. - M. 298

THE TOWNSHIP OF  
2.3321 OF  
**BARTLETT**  
 DISTRICT OF  
 TIMISKAMING  
 PORCUPINE  
 MINING DIVISION  
 SCALE: 1-INCH=40 CHAINS

Musgrove Tp. - M. 304

Geikie Tp. - M. 320



LEGEND

PATENTED LAND	● or ⊕
CROWN LAND SALE	C.S.
LEASES	⊕
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	—
IMPROVED ROADS	—
KING'S HIGHWAYS	—
RAILWAYS	—
POWER LINES	—
MARSH OR MUSKEG	—
MINES	✕
CANCELLED	○
PATENTED S.R.O.	⊙

NOTES

400' Surface Rights Reservation along the shores of all lakes and rivers.

Areas withdrawn from staking under Section 43 of the Mining Act (R.S.O. 1970).

Order No.	File	Date	Disposition
(R <sub>1</sub> )	W. 19/77 174108	1/3/77	S.R.O.
(R <sub>2</sub> )	W. 19/77 188543	10/4/78	S.R.O.

DATE OF ISSUE  
 JUN 10 1980  
 SURVEYS AND MAPPING  
 BRANCH

PLAN NO. - M-262

ONTARIO  
 MINISTRY OF NATURAL RESOURCES  
 SURVEYS AND MAPPING BRANCH

English Tp. - M. 787



42A03NE0035 2.3321 BARTLETT

Adams Twp. - M.261

2.3321  
 THE TOWNSHIP OF  
**McARTHUR**

DISTRICT OF  
 TIMISKAMING

PORCUPINE  
 MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓞ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	—
IMPROVED ROADS	—
KING'S HIGHWAYS	—
RAILWAYS	—
POWER LINES	—
MARSH OR MUSKEG	+
MINES	X
CANCELLED	C.

NOTES

400' surface rights reservation along the shores of all lakes and rivers.

RESERVATIONS:  
 (R) - Reserved for recreational purposes under Sec. 3 P.L.A. File 188543.

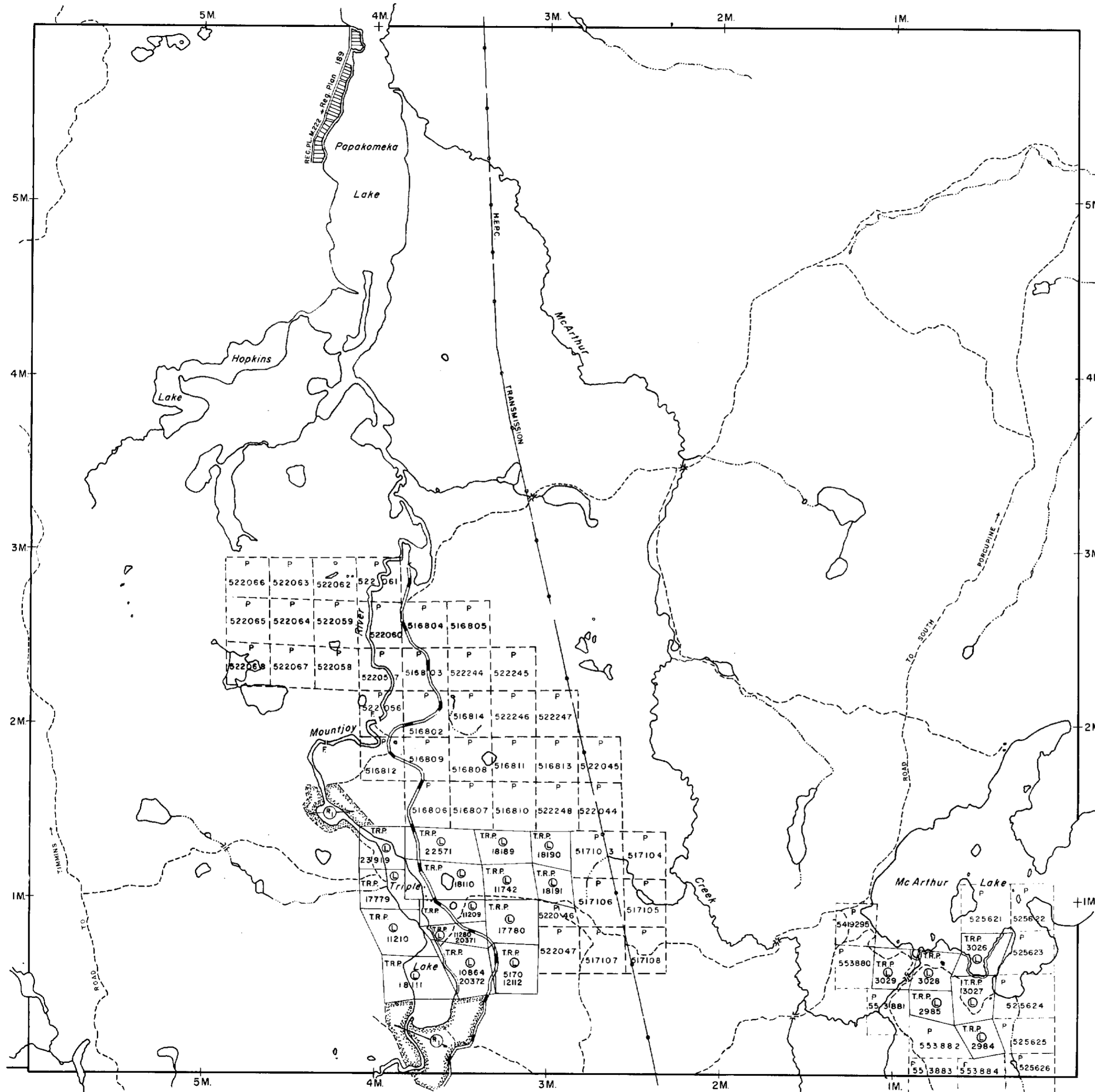
DATE OF ISSUE  
 JUN 10 1990  
 SURVEYS AND MAPPING  
 BRANCH

PLAN NO. - **M.298**

ONTARIO  
 MINISTRY OF NATURAL RESOURCES  
 SURVEYS AND MAPPING BRANCH

Frapp Twp. - M.281

Douglas Twp. - M.274



Bartlett Twp. - M.262



**LEGEND**

PRECAMBRIAN  
MIDDLE AND LATE PRECAMBRIAN  
MAFIC INTRUSIVE ROCKS

EARLY PRECAMBRIAN  
FELSIC TO INTERMEDIATE INTRUSIVE ROCKS

METAMORPHOSED INTERMEDIATE TO MAFIC  
INTRUSIVE ROCKS

4a gabbro, hornblende gabbro  
4b mafic dike  
4c amphibolite  
4d amphibolite

METAVOLCANICS AND METASEDIMENTS

3a Unaltered  
3b Hornblende-feldspar-quartz schist or gneiss  
3c Chlorite schist  
3d Chlorite schist  
3e Chert, ferruginous chert  
3f Pebble (or porphyroblastic) sandstone

METAVOLCANICS

Felsic to intermediate Metavolcanics

2a Unaltered  
2b Flow to lapilli-tuff, banded tuff  
2c Lapillastone, tuff  
2d Tuff-breccia to pyroclastic breccia  
2e Flow breccia  
2f Flow breccia  
2g Unaltered  
2h Periphytic flow (feldspar porphyry)  
2i Sparganite and/or variolite  
2j Sparganite  
2k Periphytic  
2l Quartz and/or feldspar porphyry  
2m Chlorite schist, amphibolite schist  
2n Sand breccia

Mafic to intermediate Metavolcanics

1a Coarse-grained hornblende-rich rocks

IF IF Iron formation

**GEOLOGICAL AND MINING SYMBOLS**

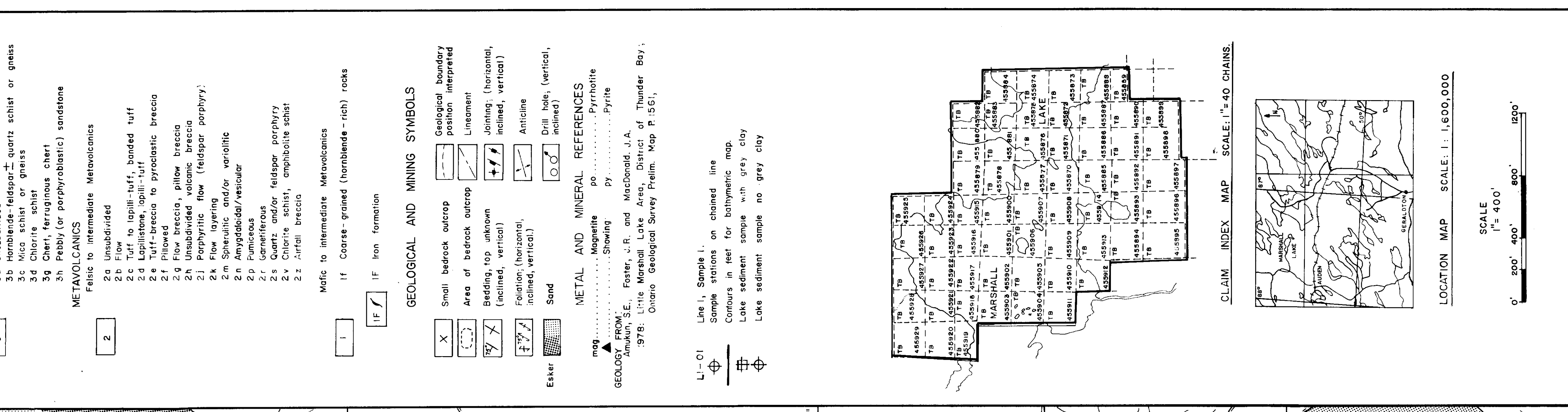
Small bedrock outcrop  
Area of bedrock outcrop  
Bedding, top unknown (inclined, horizontal, vertical)  
Foliation (horizontal, inclined, vertical)  
Sand  
Dike hole (vertical, inclined)  
Esker

Geological boundary position, interpreted  
Lineament  
Joining (horizontal, inclined, vertical)  
Anticline  
Dike hole (vertical, inclined)

**METAL AND MINERAL REFERENCES**

mag. Magnetite  
py. Pyrite  
GEOLOGY FROM: Amund, E.E., Foster, G.R. and Macdonald, J.A., 1978, Little Moreau Lake Area, District of Thunder Bay, Ontario Geological Survey Prelim. Map P. 9301.

L-01  
Line 1, Sample 1.  
Sample interval on shaded line  
Core sediment sample with grey clay  
Lake sediment sample no grey clay



**BAGDAD EXPLORATION PARTNERSHIP**

**MARSHALL LAKE**  
LAKE SEDIMENT SURVEY

MAP NO 1

**SAMPLE NUMBER & BATHYMETRIC MAP**

DATE: FEB. 1980  
GEOCHEMISTRY: J. H. ADAMS  
MAP NO 1  
DRAWN BY: J. N. SMITH

LOCATION MAP SCALE: 1:1600,000  
SCALE 1" = 400'  
0 200' 400' 600' 800'



BAGDAD EXPLORATION ASSOCIATES INC.

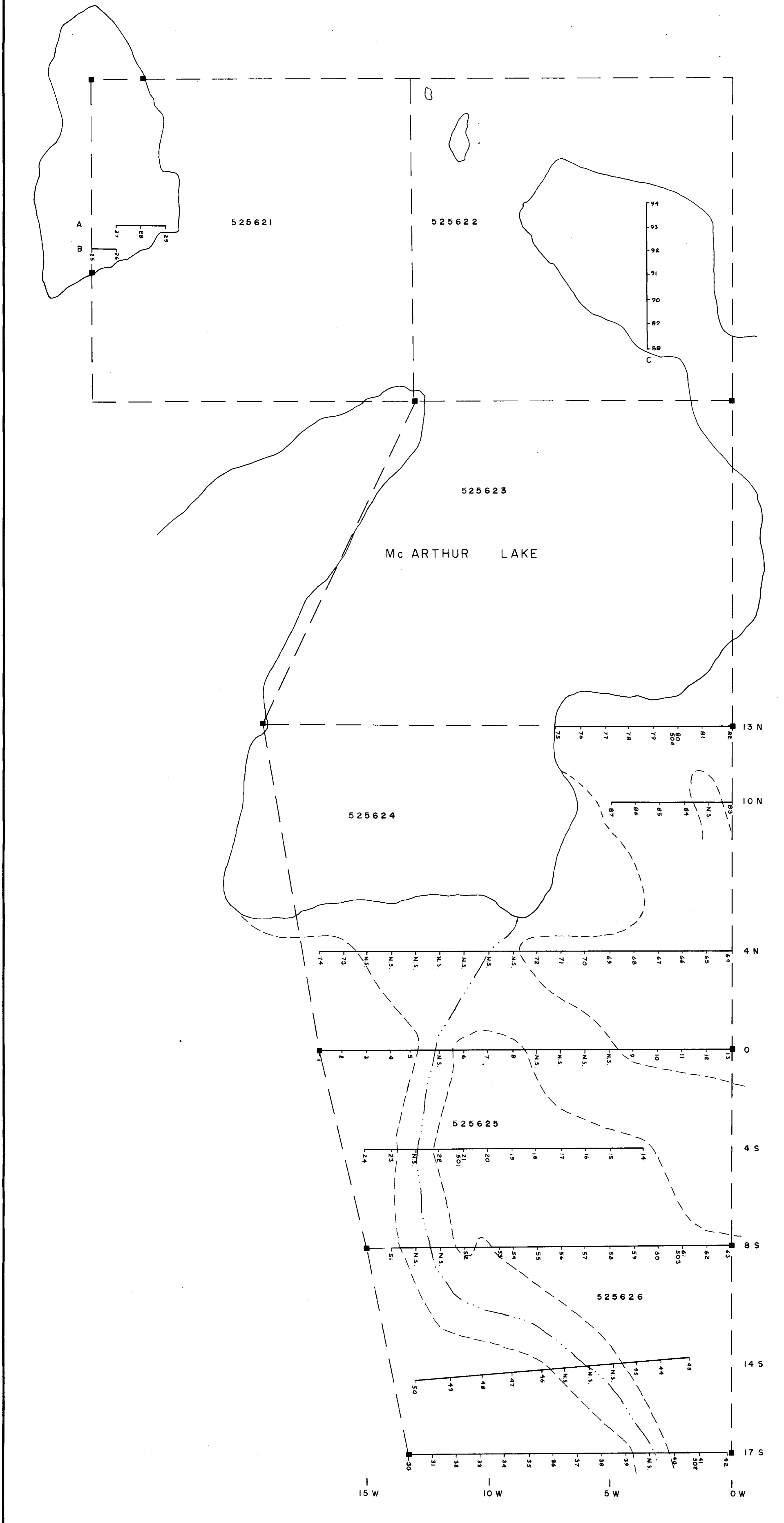
McARTHUR PROPERTY

SOIL GEOCHEMISTRY - HUMUS

SAMPLE LOCATIONS

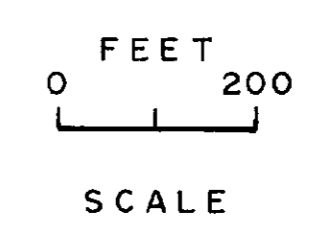
BONDAR-CLEGG & CO. LTD.

OCTOBER 1979 MAP NUMBER 1



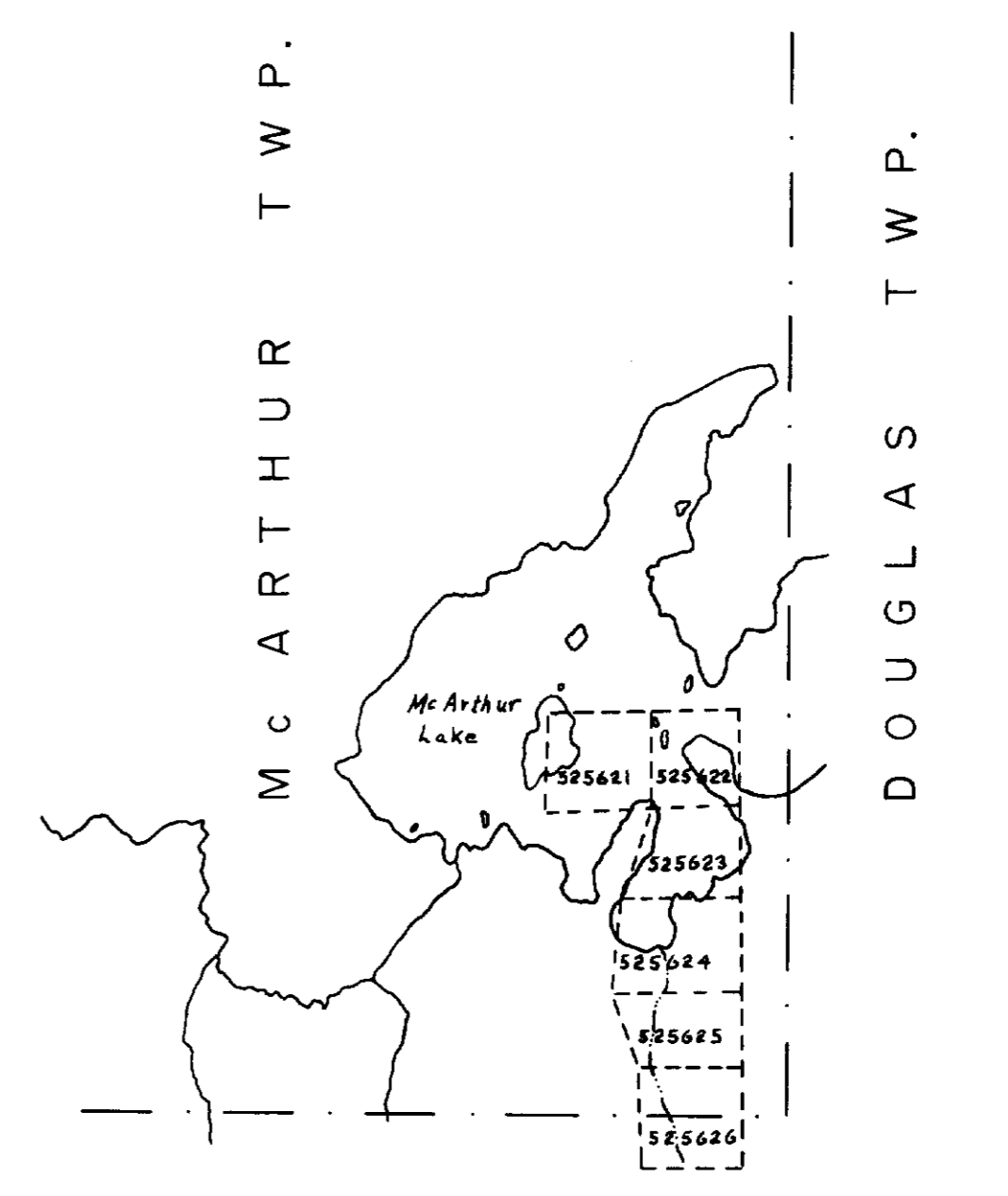
LEGEND

- CLAIM LINE (approx)
- SAMPLE LINE (flagged)
- STREAM
- - - SWAMP
- CLAIM POST
- n.s. NO SAMPLE TAKEN
- 525625 CLAIM NUMBER



INDEX MAP

SCALE 1"=2640'



BARTLETT TWP.



BAGDAD EXPLORATION ASSOCIATES INC.

McARTHUR PROPERTY

SOIL GEOCHEMISTRY—HUMUS

GOLD

BONDAR-CLEGG & CO. LTD.

OCTOBER 1979

MAP NUMBER 2

LEGEND

- CLAIM LINE (approx)
- SAMPLE LINE (flagged)
- STREAM
- SWAMP
- CLAIM POST
- 20,0.3,225 Au (ppb), Ag (ppm), Hg (ppb)

FEET  
0 200  
SCALE

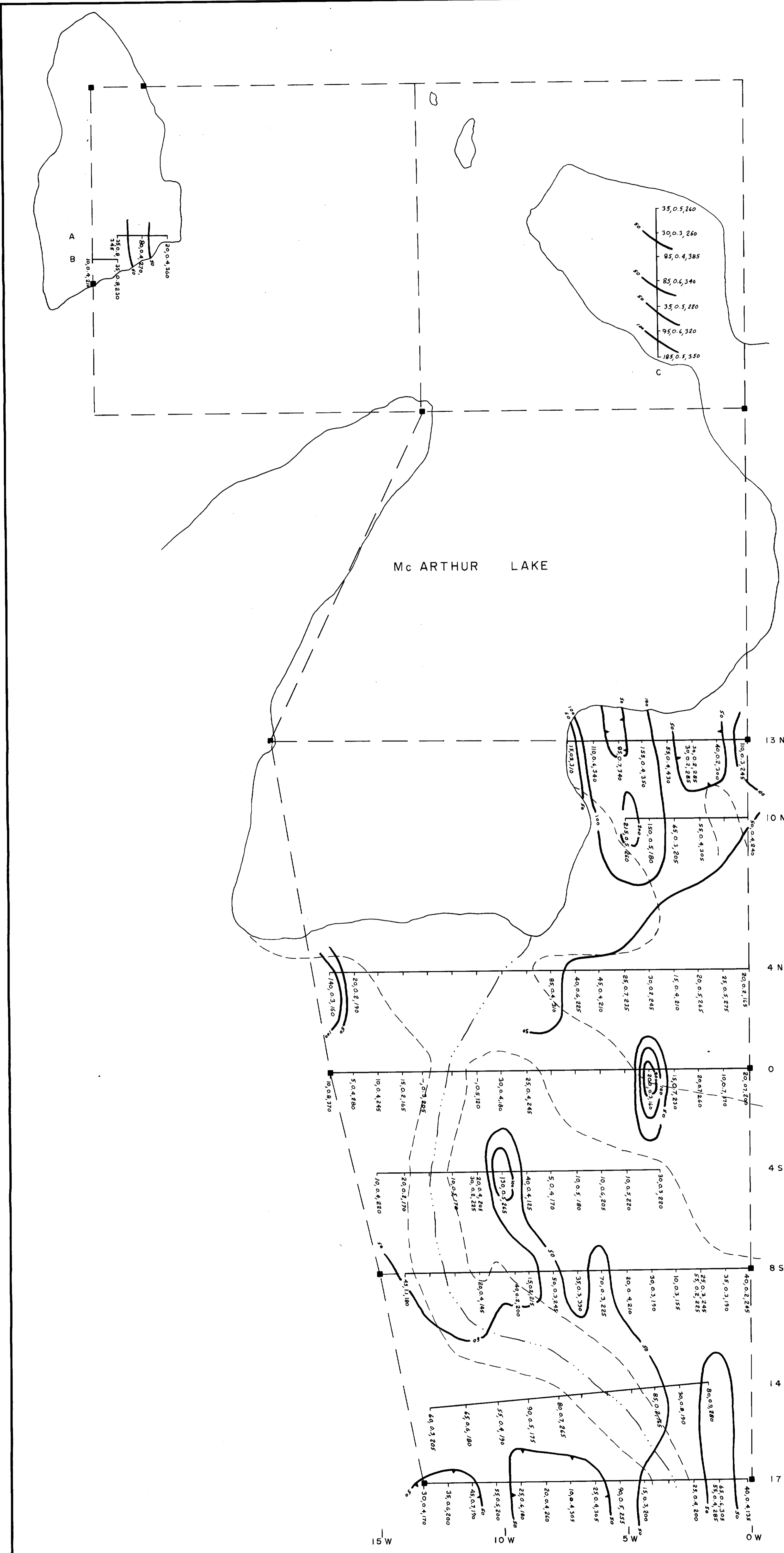
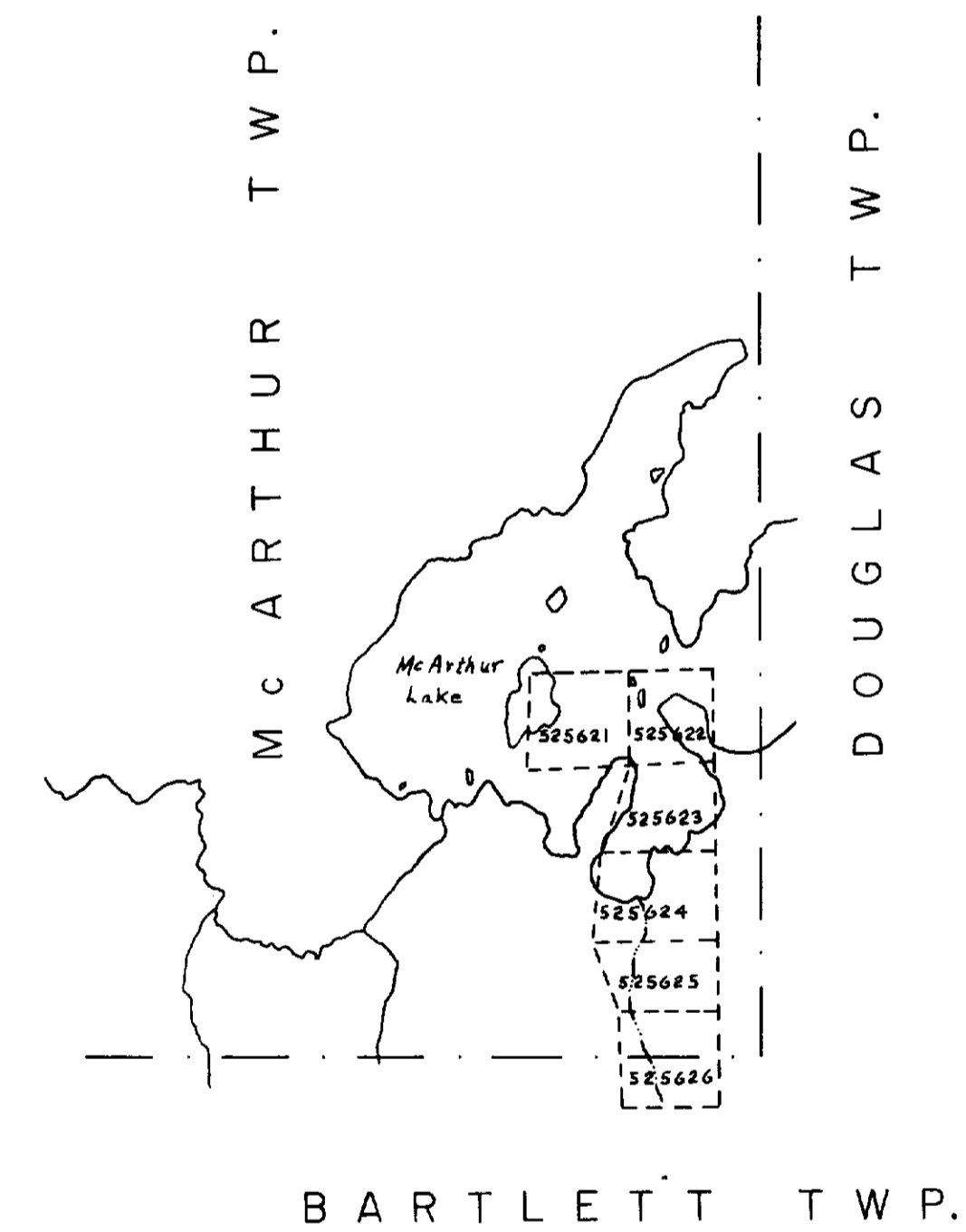
CONTOUR INTERVALS

- 50 ppb □
- 100 ppb □
- 150 ppb □



INDEX MAP

SCALE 1:2640



BAGDAD EXPLORATION ASSOCIATES INC.

Mc ARTHUR PROPERTY

SOIL GEOCHEMISTRY—HUMUS

MERCURY

BONDAR-CLEGG & CO. LTD.

OCTOBER 1979

MAP NUMBER 4

LEGEND

- CLAIM LINE (approx)
- SAMPLE LINE (flagged)
- STREAM
- SWAMP
- CLAIM POST
- 20,03,225 Au (ppb), Ag (ppm), Hg (ppb)

0 FEET 200 SCALE

CONTOUR INTERVALS

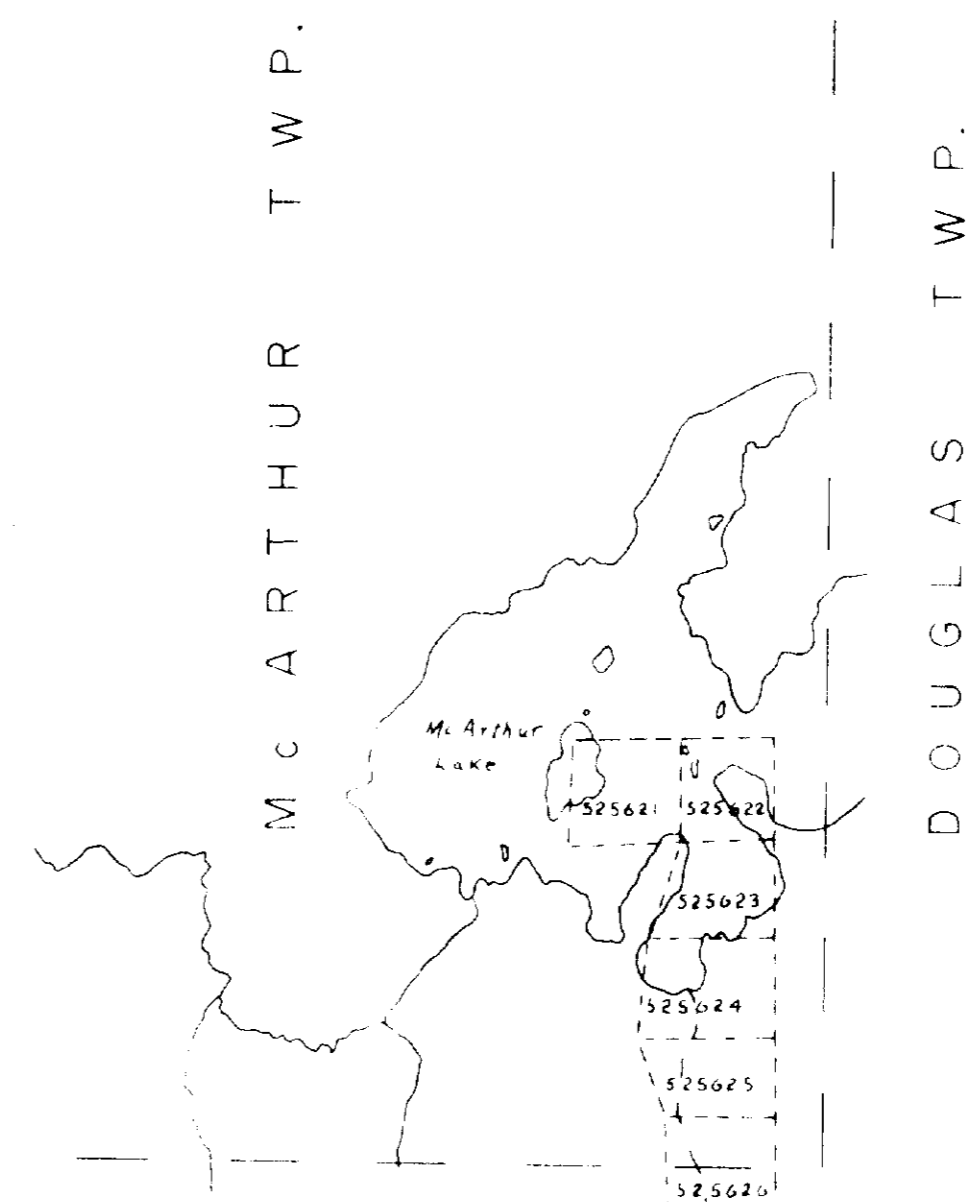
- 250 ppb
- 300 ppb
- 400 ppb

N

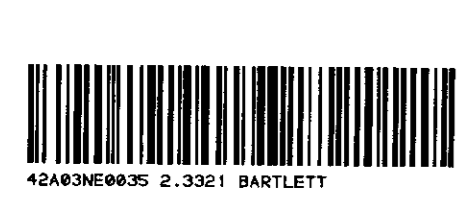
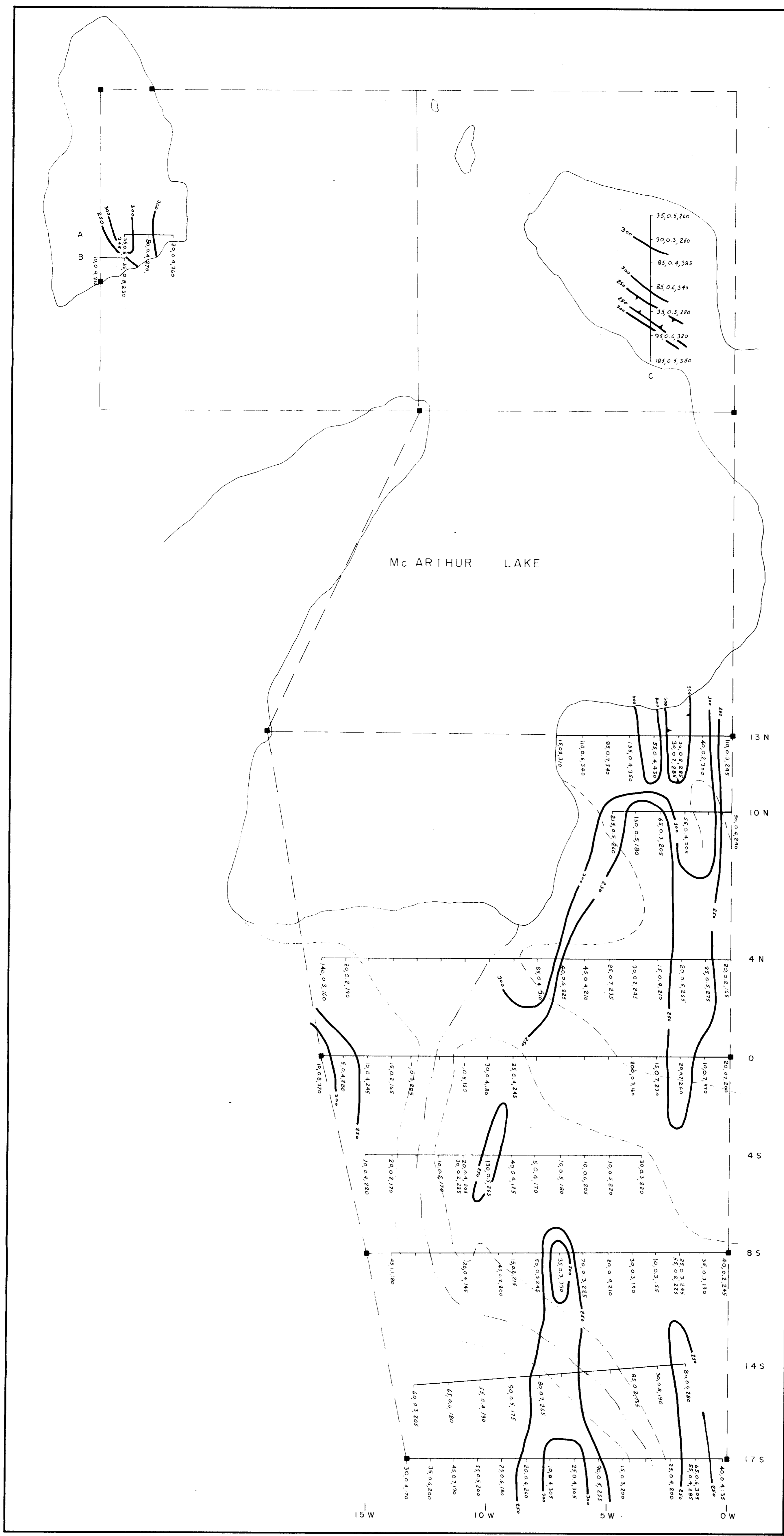


INDEX MAP

SCALE 1:2640



BARTLETT TWP.



BAGDAD EXPLORATION ASSOCIATES INC.

McARTHUR PROPERTY

SOIL GEOCHEMISTRY—HUMUS






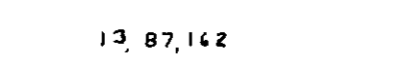
COPPER

BONDAR-CLEGG & CO. LTD.

OCTOBER 1979




MAP NUMBER 5

LEGEND

-  CLAIM LINE (approx)
-  SAMPLE LINE (flagged)
-  STREAM
-  SWAMP
-  CLAIM POST
-  13,87,162  
Cu,Pb,Zn VALUES IN ppm.

FEET  
0 200  
SCALE

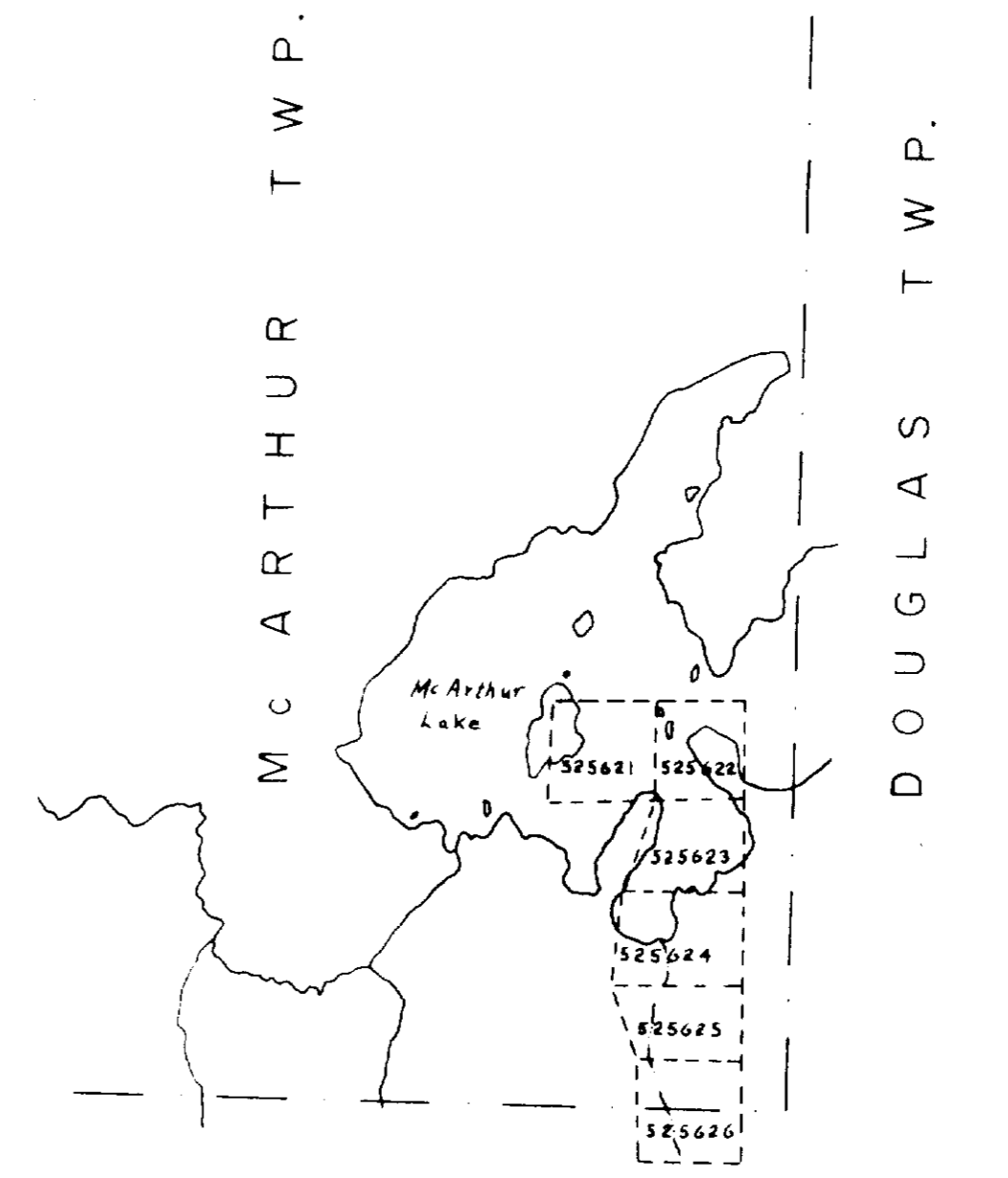
CONTOUR INTERVALS

- 20 ppm 
- 25 ppm 
- 30 ppm 

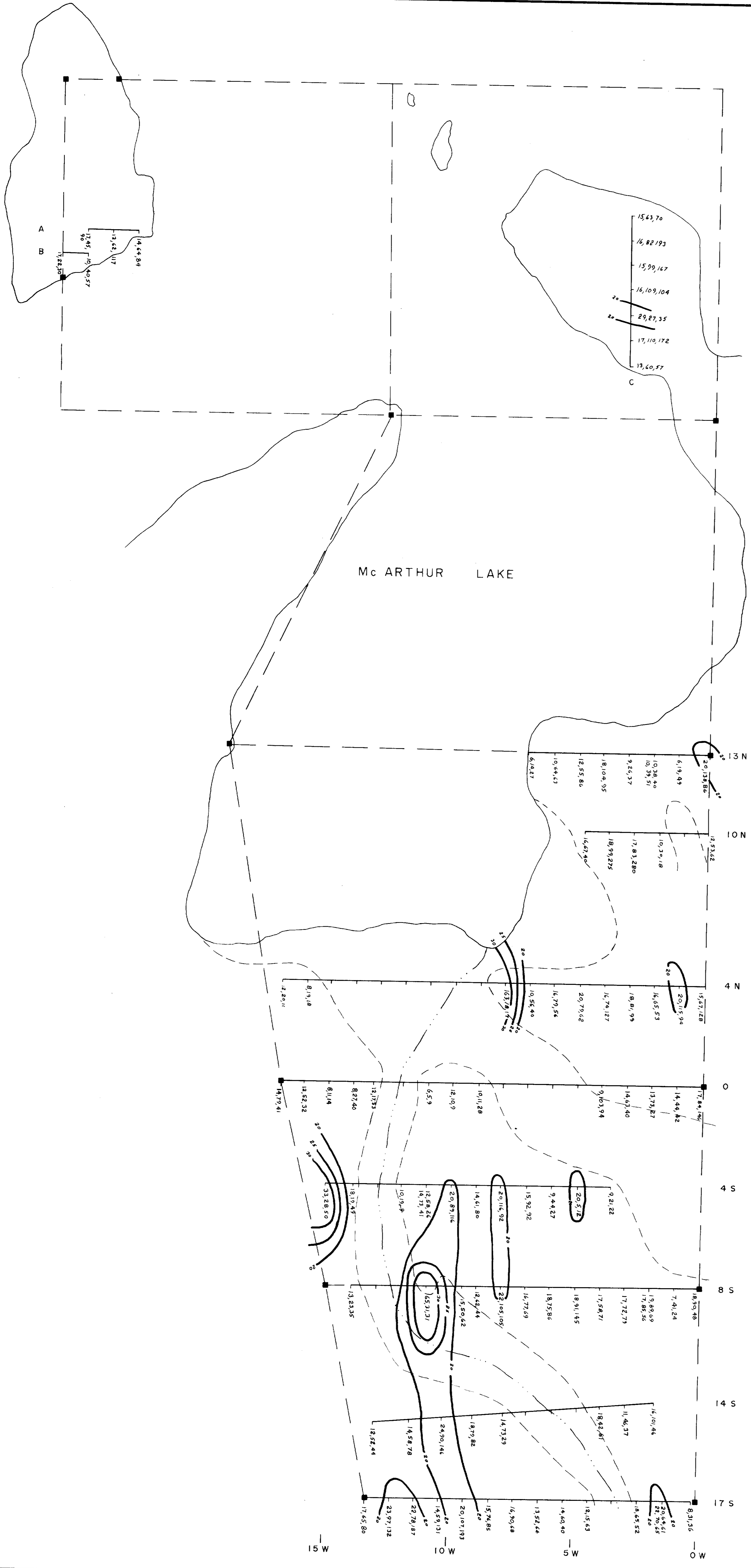


INDEX MAP

SCALE 1:2640'



BARTLETT TWP.





BAGDAD EXPLORATION ASSOCIATES INC.  
 Mc ARTHUR PROPERTY  
 SOIL GEOCHEMISTRY—HUMUS  
 LEAD  
 BONDAR-CLEGG & CO. LTD.  
 OCTOBER 1979 MAP NUMBER 6

LEGEND

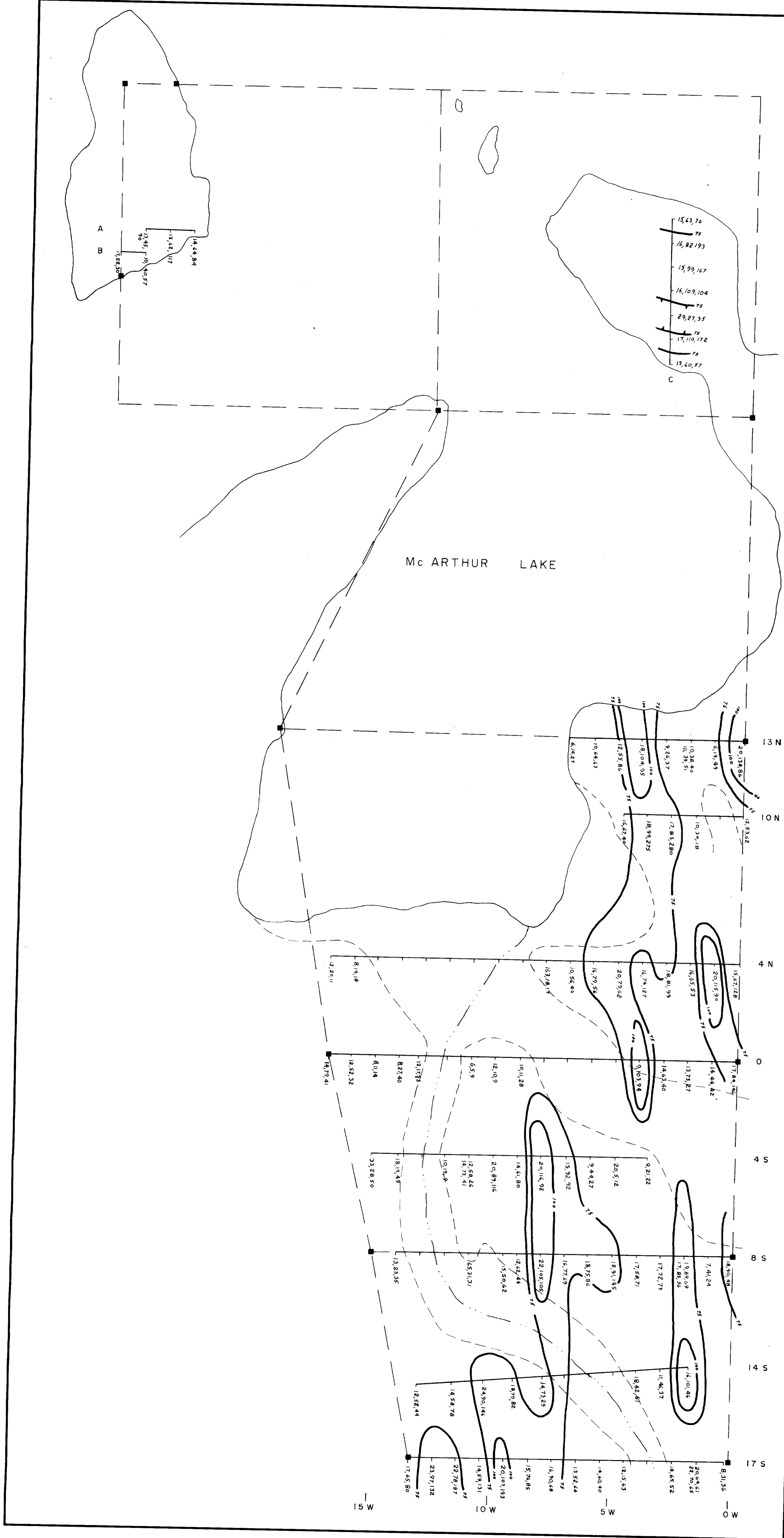
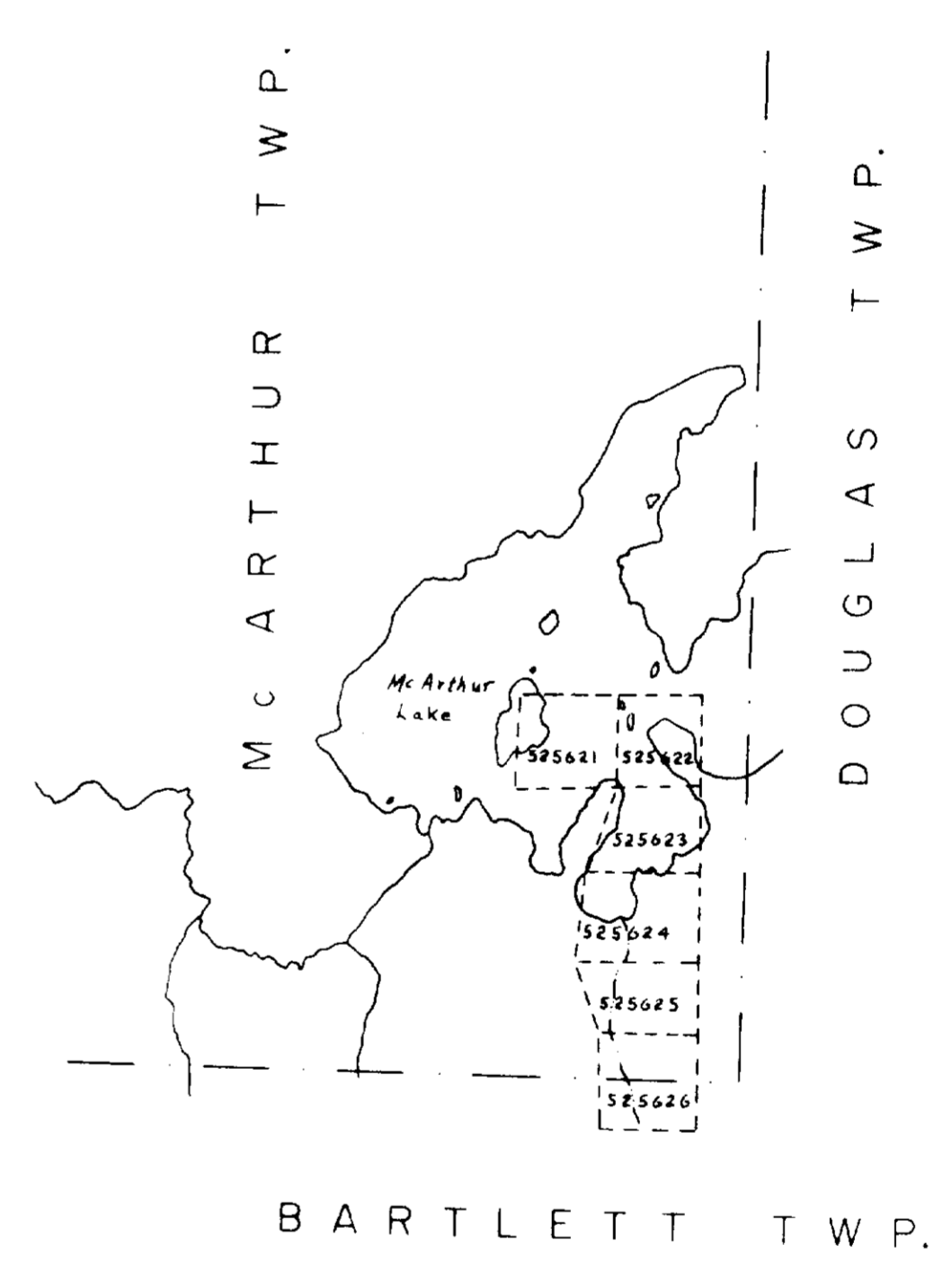
- CLAIM LINE (approx)
- SAMPLE LINE (flagged)
- STREAM
- SWAMP
- CLAIM POST
- 13, 87, 142 Cu, Pb, Zn VALUES IN ppm.

0 200  
 FEET  
 SCALE

CONTOUR INTERVALS  
 75 ppm □  
 100 ppm □



INDEX MAP  
 SCALE 1:2640'



BAGDAD EXPLORATION ASSOCIATES INC.

Mc ARTHUR PROPERTY

SOIL GEOCHEMISTRY - HUMUS

SILVER

BONDAR-CLEGG & CO. LTD.

OCTOBER 1979

MAP NUMBER 3

LEGEND

- CLAIM LINE (approx)
- SAMPLE LINE (flagged)
- STREAM
- SWAMP
- CLAIM POST
- 20.0.3.225
- Au (ppb), Ag (ppm), Hg (ppb)



SCALE

CONTOUR INTERVALS

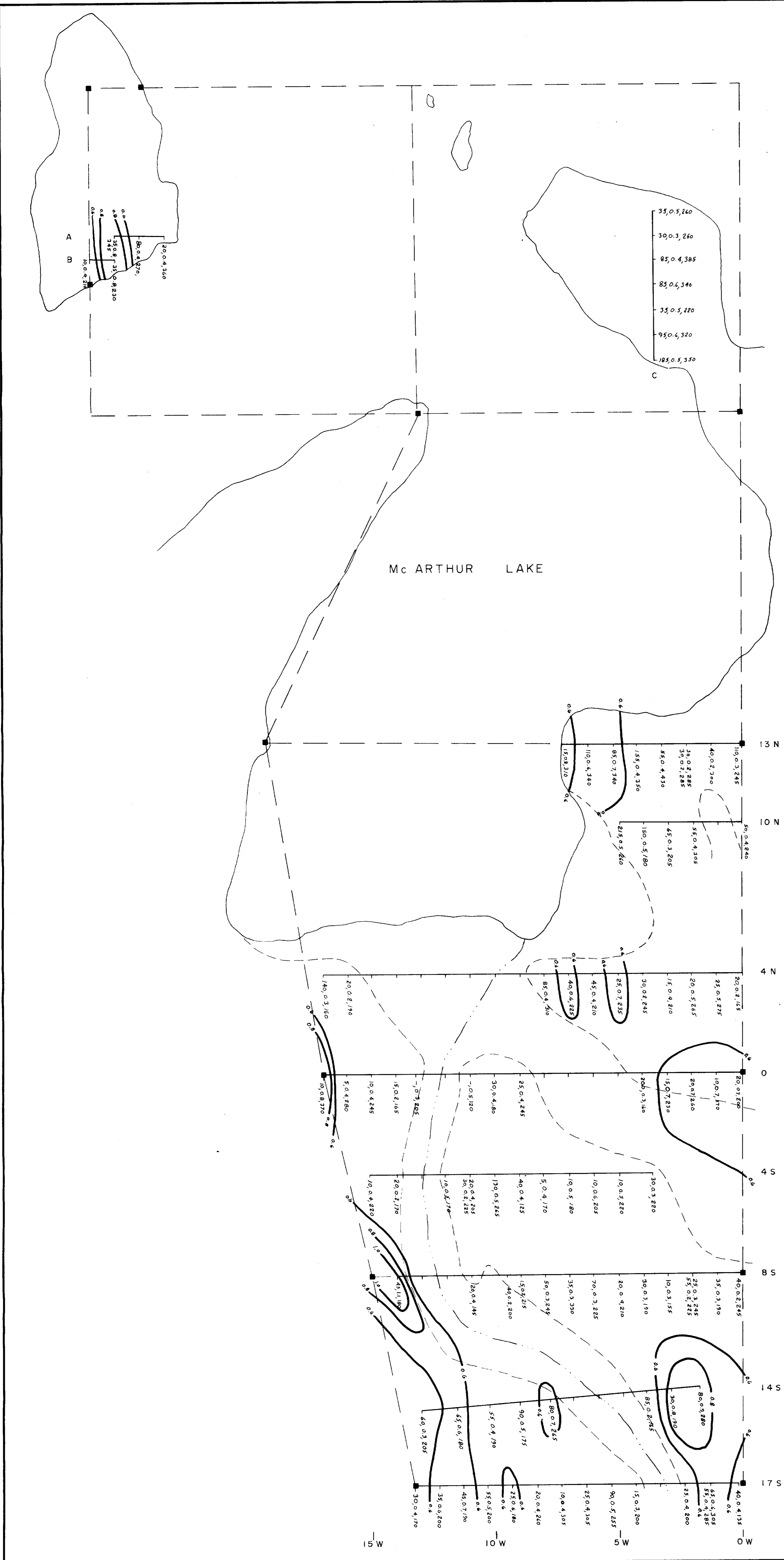
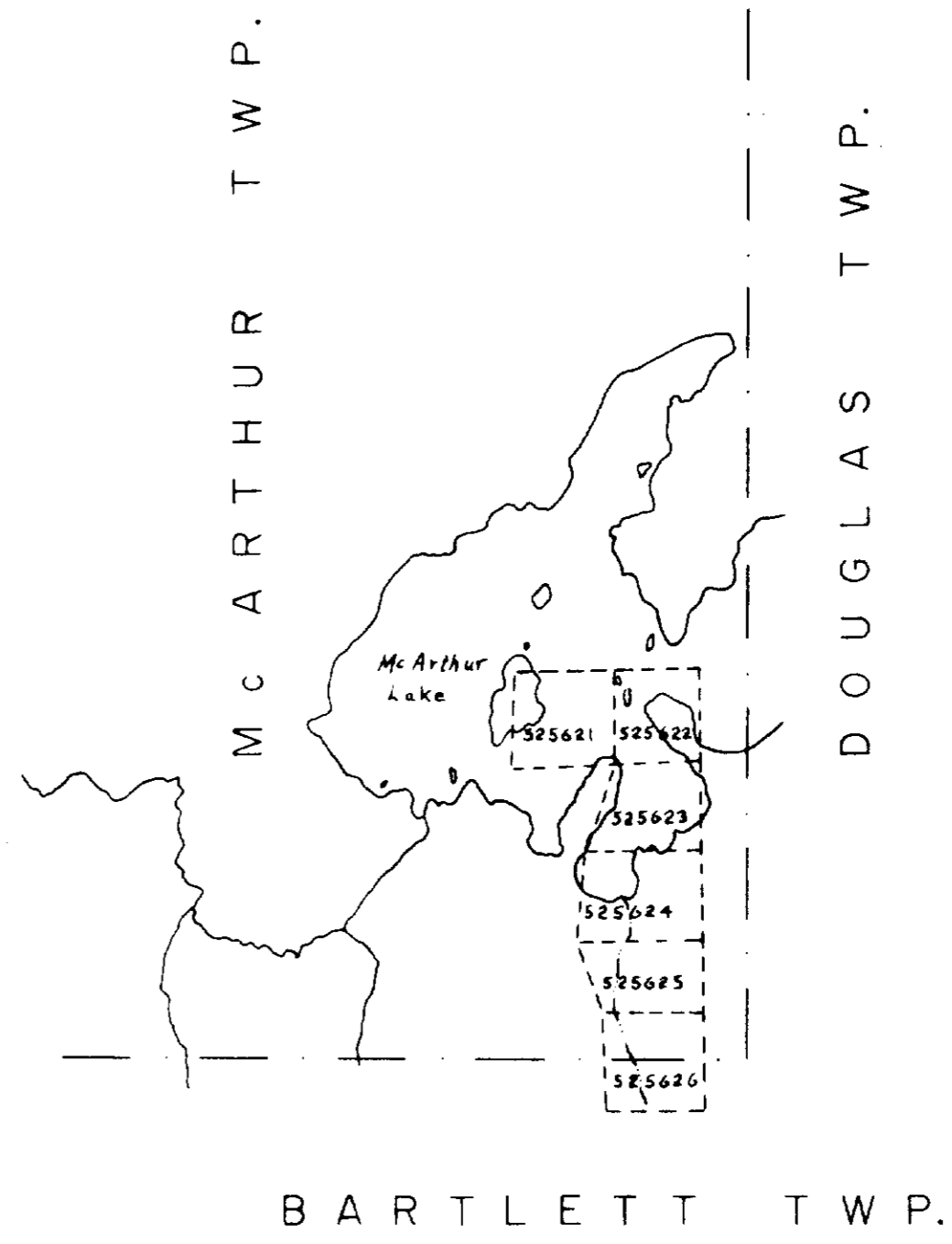
- 0.6 ppm
- 0.8 ppm
- 1.0 ppm

N



INDEX MAP

SCALE 1:2640'



BAGDAD EXPLORATION ASSOCIATES INC.

McARTHUR PROPERTY

SOIL GEOCHEMISTRY—HUMUS

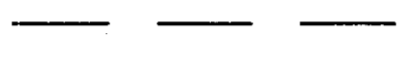
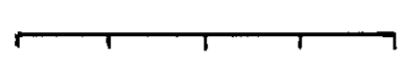
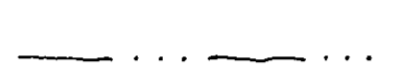
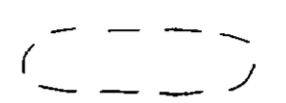


ZINC

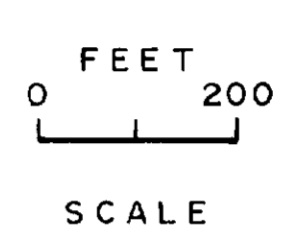
BONDAR-CLEGG & CO. LTD.



OCTOBER 1979

MAP NUMBER 7

LEGEND

-  CLAIM LINE (approx)
-  SAMPLE LINE (flagged)
-  STREAM
-  SWAMP
-  CLAIM POST.
-  Cu, Pb, Zn VALUES IN p.p.m.



- CONTOUR INTERVALS
- 150 ppm 
  - 200 ppm 



INDEX MAP

SCALE 1:2640'

