

THE ENVIRONMENTAL  
APPLICATIONS GROUP  
LIMITED

114 AVENUE ROAD  
TORONTO, ONTARIO M5R 2H4  
PHONE: (416) 968-3684



41010NE0031 2.5444 CUNNINGHAM

010

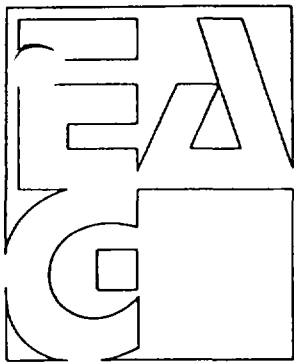
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MAR 22 1983

**MINING LANDS SECTION**

GEOCHEMICAL ANALYSIS  
OF SEDIMENT AND WATER  
SAMPLES  
CUNNINGHAM PROJECT

#255



THE ENVIRONMENTAL  
APPLICATIONS GROUP  
LIMITED

114 AVENUE ROAD  
TORONTO, ONTARIO M5R2H4  
PHONE: (416) 968-3684

November 24, 1982

MW Resources Limited  
44 Victoria Street  
Suite 1815  
Toronto, Ontario  
M5C 1Y2

Attention: Mr. Carter  
President

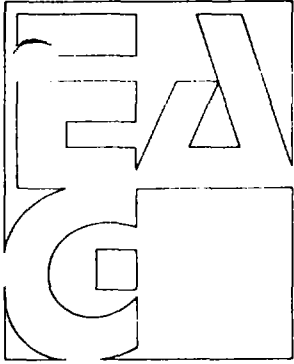
Dear Mr. Carter:

We are pleased to submit an interim draft report presenting the results of samples from the Cunningham Project Site. The site is generally characterized by extremely high metal levels. Data are presented in table form and on maps of the sampling area. On the latter, higher concentrations are shown in bold type.

With regard to lead and zinc levels highest concentrations are recorded between Tower and Beavertail Lakes with high levels extending westward. High copper concentrations occur more generally in the area around Tower Beavertail and Site 4 lakes. Of some interest are the sites downstream of Edwards Lake at Site 7 where very high copper levels were reported.

Water samples collected during the field programme did not reflect the high sediment metal levels. All metallic cations were below detection levels used for these samples and represent no concerns for use as potable or plant water sources.

...../2



Mr. Carter  
Page Two

November 24, 1982

Our previous intention was to continue the water sampling programme on a seasonal basis. Would you kindly confirm that you wish us to collect winter (January) samples. In view of the high copper levels downstream of Edwards (Site 7) we could at this time take a series of samples within the lake chain.

Yours very truly,

THE ENVIRONMENTAL APPLICATIONS GROUP LIMITED

John H. Sparling, B.Sc., Ph.D.  
President

JHS:gc  
Encl.



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## GEOCHEMICAL ANALYSIS OF LAKE SEDIMENTS

A programme of geochemical analysis of lake sediments in the vicinity of Tower and Mink Lakes was initiated in September 1982. The objectives of the sampling programme were to determine the distribution of metal within lake and littoral sediments from the project site and to detect locations of high metal levels in sediments that could be related to outcrops or bedrock geology.

Analytical procedures were by perchloric-HF digestion and atomic absorption spectroscopy. Results are presented in  $\mu\text{g.g.}^{-1}$ . Discussion of each element.

Cadmium. Typical values for Northern Ontario are generally less than  $1 \mu\text{g.g.}^{-1}$  (Table 1). Two series averaged  $0.596 \pm 0.294$  and  $0.22 \pm 0.32$  for adjacent areas. For the 14 sampled determined, the mean value was  $2.96 \pm 0.520$ . These data indicate enrichment of the sediments within the project area since the range was from 2.4 to  $3.9 \mu\text{g.g.}^{-1}$  (Table 2). The low standard deviation indicates consistency in the Cd level within the sediment material. Levels in excess of  $10 \mu\text{g.g.}^{-1}$  normally have an effect on water cadmium levels. Since levels at all sites are less than  $0.002 \text{ mg.l}^{-2}$ , it appears that no minor release of cadmium from sediments to surface water is occurring.

All sites possess significantly higher ( $P=0.05$ ) cadmium levels than are normally encountered in Northern Ontario (Table 1); however, no sites within the present collections were significantly higher than the mean level indicating generally high bedrock Cd levels.

Copper. Typical levels for copper in sediments found in Northern Ontario range between  $3.20 \pm 1.67$  and  $14.83 \pm 8.46$ . Such regional studies show significant variation in concentration with coefficients of variation of more than 50 percent. The Cunningham Township data

TABLE 1  
 CHARACTERISTICS OF SEDIMENTS IN CUNNINGHAM TOWNSHIP LAKES

Elements	Mean concentration $\mu\text{g.g}^{-1}$ $\pm$ standard deviation	5 percent percentile	Sites within percentile	Northern Ontario Typical Levels	Sites with Levels Greater than Northern Ontario mean
Cadmium	2.96 $\pm$ 0.52	4.00	None	0.41	All sites
Copper	24.79 $\pm$ 8.82	42.43	7B	9.02	5A 7B
Lead	23.93 $\pm$ 30.46	84.85	4B, 5A	9.98	4B 5A
Zinc	125.28 $\pm$ 92.41	310.10	5A	34.36	All except S2 and S8
Silver	<2	>2	-	<2	-

TABLE 2

CHEMICAL CONDITIONS OF LAKE SEDIMENTS - CUNNINGHAM TOWNSHIP

Site Location	2		3		4		4		5		7		8	
	A	B	A	B	A	B	C	D	A	B	A	B	A	B
<u>Physical</u>														
pH	6.1	6.4	6.1	6.1	N.D.	5.8	N.D.	5.9	N.D.	5.6	N.D.	6.0	N.D.	6.
Moisture Content (105°C)	37.6	33.2	17.3	57.3	N.D.	36.1	N.D.	23.6	N.D.	33.5	N.D.	39.0	N.D.	31.
Organic Content (550°C)	5.1	3.3	3.0	17.5	N.D.	6.1	N.D.	2.3	N.D.	4.9	N.D.	6.9	N.D.	3.
Ash Content (550°C)	94.9	96.7	97.0	82.5	N.D.	93.9	N.D.	97.7	N.D.	95.1	N.D.	93.1	N.D.	96.
<u>Total Cations</u>														
Cadmium	2.5	2.4	2.8	2.5	3.8	3.7	2.6	2.8	3.4	3.9	2.8	3.0	2.8	2.
Copper	17.0	14.3	26.3	28.3	31.3	19.5	26.3	28.5	33.3	18.8	31.3	43.3	10.5	18.
Lead	<25	<25	<25	<25	<25	88	<25	<25	103	<25	<25	<25	<25	<25
Zinc	48.0	52.5	153	154	110	131	120	103	388	238	71.3	81.3	54.0	50.
Silver	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

appears somewhat more uniform with overall higher concentrations of  $24.79 \pm 8.82$  (Table 1). Only one of these samples located at 7B appears to be significantly higher ( $P=0.05$ ) than the rest. Collections from site 5A and 7B are significantly higher than typical values for Northern Ontario.

Lead. Significantly higher lead content occurs in samples 4B and 5A compared with both area sediments and those typical of Northern Ontario. The mean level of  $23.98 \pm 30.46$  compares with  $9.98 \pm 3.31$  for Northern Ontario sediments. Two sites 4B and 5A showed levels of 103 and  $88 \mu\text{g.g}^{-1}$  respectively (Table 2). Levels above  $60 \mu\text{g.g}^{-1}$  are generally regarded as anomalous and related to outcropping or bedrock occurrences.

Zinc. Levels of zinc in sampled sediments were all elevated over mean Northern Ontario figures ( $34.36 \pm 19.06 \mu\text{g.g}^{-1}$ ). Data obtained ranged between 48.0 and  $388 \mu\text{g.g}^{-1}$  (Table 2) with both data sets from site 5 being anomalously high (above  $200 \mu\text{g.g}^{-1}$ ); in addition these data are significantly higher than other area samples (Table 1).

Silver. All silver values obtained were below a cut-off reporting value of  $2 \mu\text{g.g}^{-1}$  (equivalent to less than 0.07 per ton).

Salient features of each lake are given below and present in Figure 3 and 4.

Mink Lake (Site 2) while generally elevated metal levels were observed, no enhanced levels over area background has been indicated.

Beavertail Lake (Site 3). Sediments from the south shore of this lake showed high levels of copper and zinc.

Site 4 Lake. Sediments showed enhanced levels of copper and to a lesser degree for cadmium. One sample close to the western shoreline also showed elevated lead and zinc levels.



ower Lake (Site 5). Sediments from this site indicated enhanced levels of cadmium, copper, lead and zinc.

Site 7. Sediments from this site showed the highest levels of copper for the area. One sample indicated high cadmium levels.

Edwards Lake (Site 8) metal levels from this lake were all lower than the area means; although still elevated over typical values expected regionally.

## WATER QUALITY

This account summarizes the results of water quality analyses collected during September 1982. Figure 2 shows the location of the stream and lake sampling sites adjacent to the property. Since few data are available the proposed sampling programme would provide seasonal water quality data in the vicinity of the site. Such data is important in interpreting aquatic ecology and fisheries characteristics of local waters but is also required for approval and process requirements for the project.

Such information identifies suitable water quality for evaluating receiving waters for potential tailings sites, water supplies for plant and camp and preferred receiving waters for sewage and other effluents. Sites sampled were in the Isaiah Creek and the Edwards Creek watersheds. Surface waters in the project vicinity appear to be largely influenced by overburden conditions. pH and alkalinity are typical for the region with near neutral to slightly alkaline conditions existing. Small headwater lakes and Isaiah Creek which drain from wetland or boggy areas have slightly acid conditions (pH 6.26 and 6.72 respectively) but are still moderately buffered. Alkalinity levels average  $44.2 \pm 13.6 \text{ mg.l.}^{-1}$  which indicate a good capacity to buffer changes in pH.

Conductivity and dissolved solids were closely correlated. Both these parameters changed in response to wetland contributions with lower levels in Isaiah Creek and upland lakes.

Suspended solids were low in all sites (1-5 mg.l.); examination has shown that most material is organic in nature.

TABLE 3

WATER QUALITY CONDITIONS  
PHYSICAL AND GENERAL

<u>Location</u>	<u>WS1</u>	<u>WS2</u>	<u>WS3</u>	<u>WS4</u>	<u>WS7</u>	<u>WS8</u>
pH	6.26	6.85	7.32	6.72	7.15	7.29
Conductivity 25°C	75	99	116	87	123	123
Suspended Solids (105°C)	2	2	4	5	1	1
Dissolved Solids (105°C)	87	91	85	70	87	90
Chemical Oxygen Demand	55.3	28.4	31.6	14.2	23.7	23.7
Total Hardness	38.3	49.3	58.8	42.6	61.3	66.6
Total Alkalinity	25.1	43.9	47.8	32.0	57.7	58.7
Bicarbonate (HCO <sub>3</sub> <sup>-</sup> )	25.1	43.9	47.8	32.0	57.7	58.7

Units

µmhos/cm  
mg/L  
mg/L  
mg/L  
mg/L CaCO<sub>3</sub>  
mg/L CaCO<sub>3</sub>  
mg/L CaCO<sub>3</sub>

TABLE 4

WATER QUALITY CONDITIONS  
NUTRIENTS AND MAJOR IONS

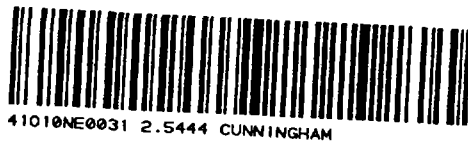
<u>Locations</u>	<u>WS1</u>	<u>WS2</u>	<u>WS3</u>	<u>WS4</u>	<u>WS7</u>	<u>WS8</u>
Total Phosphorus	0.011	0.009	0.013	0.009	0.009	0.011
Ammonium-Nitrogen	<0.02	0.026	0.029	0.026	0.029	0.021
Calcium	12.0	18.3	22.2	15.4	21.2	24.8
Magnesium	2.02	0.88	0.83	1.02	2.02	1.14

Units

mg/L  
mg/L  
mg/L  
mg/L

TABLE 5  
WATER QUALITY CONDITIONS  
METALLIC CATIONS

<u>Locations</u>	<u>WS1</u>	<u>WS2</u>	<u>WS3</u>	<u>WS4</u>	<u>WS7</u>	<u>WS8</u>
	<u>Units</u>					
Arsenic	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cobalt	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Copper	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Total Iron	0.241	0.024	0.028	0.032	0.050	0.035
Lead	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Manganese	0.041	0.022	0.014	0.082	0.012	0.015
Nickel	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Silver	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Zinc	0.017	0.014	0.009	0.009	0.021	0.014



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File \_\_\_\_\_

900

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 Cunningham

Claim Holder(s) M.W. Resources Ltd.  
67 Richmond St. W. Ste. 500, Toronto

Survey Company Environmental Applications Group Ltd.

Author of Report J.H. Sparling, B.Sc., Ph.D. (President)

Address of Author 114 Avenue Road, Toronto, Ontario M5R 2H4

Covering Dates of Survey n/a  
(linecutting to office)

Total Miles of Line Cut \_\_\_\_\_

**MINING CLAIMS TRAVERSED**  
List numerically

(prefix)	(number)
P469707	
P469708	
P469709	
P469710	
P469711	
P469712	
P469713	
P469714	
P469715	
P469716	
P469717	

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MAR 22 1983

MINING LANDS SECTION

TOTAL CLAIMS 11

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	DAYS per claim
-Electromagnetic _____	
-Magnetometer _____	
-Radiometric _____	
-Other _____	
Geological _____	
Geochemical <u>20.11</u>	

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

Magnetometer \_\_\_\_\_ Electromagnetic \_\_\_\_\_ Radiometric \_\_\_\_\_  
(enter days per claim)

DATE: March 8 1983 SIGNATURE: [Signature]  
Author of Report or Agent

Res. Geol. \_\_\_\_\_ Qualifications \_\_\_\_\_

**Previous Surveys**

File No.	Type	Date	Claim Holder

OFFICE USE ONLY

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken P469707-P469717

Total Number of Samples 14

Type of Sample lake and stream sediments  
(Nature of Material)

Average Sample Weight 500 g

Method of Collection grab or corer

Soil Horizon Sampled surface to 0.5 m

Horizon Development nil

Sample Depth surface to 0.5 m

Terrain aquatic

Drainage Development n/a

Estimated Range of Overburden Thickness n/a

SAMPLE PREPARATION

(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis less than 50  
mess

General over dried prior to digestion

ANALYTICAL METHODS

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

(Cu), (Pb), (Zn), Ni, Co, (Ag), Mo, As, -(circle)

Others Cadmium

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

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

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

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

Field Laboratory Analysis

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

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

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

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

Commercial Laboratory (\_\_\_\_\_ tests)

Name of Laboratory EAG

Extraction Method total prechloric-HF

Analytical Method AA

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

General \_\_\_\_\_

## GEOCHEMICAL TECHNICAL DATA

Location \_\_\_\_\_

Date October 21 / 82

Job No. 255

Sample Description \_\_\_\_\_

Method - ICAP          GFAA          AA          OTHER  
 Treatment - DRY        SCREEN        ASH        WET

COPPER (Cu)

Sample No.	Reading	Concentration ( $\mu\text{g/g}$ )
255-2/1	0.058	17.0
255-2/2	0.049	14.3
255-3/1	0.090	26.3
255-3/2	0.097	28.3
255-4/1	0.090	26.3
255-4/2	0.098	28.5
255-5/1	0.118	33.3
255-5/2	0.064	18.8
255-6/1	0.110	31.3
255-6/2	0.067	19.5
255-7/1	0.110	31.3
255-7/2	0.160	43.3
255-8/1	0.036	10.5
255-8/2	0.062	18.3



Authorized By *[Signature]*



# GEOCHEMICAL TECHNICAL DATA

Location \_\_\_\_\_

Date October 21/82

Job No. 255

Sample Description \_\_\_\_\_

Method - ICAP                  GFAA          AA                  OTHER  
Treatment - DRY                  SCREEN        ASH                  WET

Cadmium (Cd)

Sample No.	Reading	Concentration ( $\mu\text{g/g}$ )
255- 2/1	0.020	2.5
255 - 2/2	0.019	2.4
255 - 3/1	0.022	2.8
255 - 3/2	0.020	2.5
255 - 4/1	0.021	2.6
255 - 4/2	0.022	2.8
255 - 5/1	0.027	3.4
255 - 5/2	0.031	3.9
255 - 6/1	0.030	3.8
255 - 6/2	0.029	3.7
255 - 7/1	0.022	2.8
255 - 7/2	0.024	3.0
255 - 8/1	0.022	2.8
255 - 8/2	0.020	2.5



Authorized By [Signature]

# GEOCHEMICAL TECHNICAL DATA

Location \_\_\_\_\_

Date October 21/82

Job No. 255

Sample Description \_\_\_\_\_

Method - ICAP GFAA AA OTHER

Treatment - DRY SCREEN ASH WET

Lead (Pb)

Sample No.	Reading	Concentration ( $\mu\text{g/g}$ )
255 - 2/1	<0.02	<25
255 - 2/2	<0.02	<25
255 - 3/1	<0.02	<25
255 - 3/2	<0.02	<25
255 - 4/1	<0.02	<25
255 - 4/2	<0.02	<25
255 - 5/1	0.084	102.5
255 - 5/2	<0.02	<25
255 - 6/1	<0.02	<25
255 - 6/2	0.072	88.0
255 - 7/1	<0.02	<25
255 - 7/2	<0.02	<25
255 - 8/1	<0.02	<25
255 - 8/2	<0.02	<25



Authorized By [Signature]

# GEOCHEMICAL TECHNICAL DATA

Location \_\_\_\_\_

Date October 21/87  
Job No. 255

Sample Description \_\_\_\_\_

Method - ICAP      GFAA      **AA**      OTHER  
Treatment - **DRY**      SCREEN      ASH      WET

Silver (Ag)

Sample No.	Reading	Concentration ( $\mu\text{g/g}$ )
255-2/1	< 0.01	< 2
255-2/2	< 0.01	< 2
255-3/1	< 0.01	< 2
255-3/2	< 0.01	< 2
255-4/1	< 0.01	< 2
255-4/2	< 0.01	< 2
255-5/1	< 0.01	< 2
255-5/2	< 0.01	< 2
255-6/1	< 0.01	< 2
255-6/2	< 0.01	< 2
255-7/1	< 0.01	< 2
255-7/2	< 0.01	< 2
255-8/1	< 0.01	< 2
255-8/2	< 0.01	< 2



Authorized By

# GEOCHEMICAL TECHNICAL DATA

Location \_\_\_\_\_

Date October 21/82

Job No. 255

Sample Description \_\_\_\_\_

Method - ICAP            GFAA    **AA**            OTHER  
 Treatment - **DRY**       SCREEN    ASH            WET

Zinc (Zn)

Sample No.	Reading	Concentration ( $\mu\text{g/g}$ )
255-2/1	0.106	48.0
255-2/2	0.116	52.5
255-3/1	0.400	152.5
255-3/2	0.406	154.3
255-4/1	0.305	120.0
255-4/2	0.256	103.0
255-5/1	0.470 (Set 2)	387.5
255-5/2	0.275 (Set 2)	237.5
255-6/1	0.288	110.0
255-6/2	0.176 (Set 2)	131.0
255-7/1	0.164	71.3
255-7/2	0.192	81.3
255-8/1	0.118	54.0
255-8/2	0.110	50.0



Authorized By [Signature]

2.5444

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File: 2.5444  
7561.1V2

Mr. Bruce W. Hanley  
Mining Recorder  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

M.W. Resources recorded 20.11 days Geochemical assessment work credits on each of Mining Claims P 469707 to 717 inclusive on March 24, 1983.

Additional information has been requested from the claim holder and not submitted.

You are hereby authorized to delete the work credits recorded on March 24, 1983 from each of the claim record sheets. Please inform the recorded holder accordingly. ~~\_\_\_\_\_~~

Yours sincerely,

*There is no simple  
direction.*

S.E. Yundt  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416) 965-4888

S. Hurst:mc

cc: M.W. Resources Ltd  
Suite 500  
67 Richmond Street West  
Toronto, Ontario  
M5H 1Z5

1984 07 16

7561.1V2  
File: 2.5444

Resident Geologist  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 3W2

Dear Sir:

RE: Geochemical Survey submitted on Mining Claims  
P 469707 et al in Cunningham Township

---

Further to my letter of March 31, 1983 which acknowledged receipt of the above-mentioned survey, the enclosed file has not been assessed as all necessary information was not submitted.

Yours sincerely,

S.E. Yundt  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416) 965-4888

S. Hurst:mc

cc: Mining Recorder  
Timmins, Ontario

Encl.

REGISTERED

June 5, 1984

File: 2.5444

M.W. Resources Ltd  
Suite 500  
67 Richmond Street West  
Toronto, Ontario  
M5H 1Z5

Dear Sirs:

RE: Geochemical Survey submitted on Mining Claims  
P 469707 et al in the Township of Cunningham

---

Enclosed is a copy of our letter dated November 4, 1983,  
requesting additional information for the above-described  
survey.

Unless you can provide the required data by June 20, 1984,  
the mining recorder will be directed to cancel the work  
credits recorded on March 24, 1983.

For further information, please contact Mr. Ray Pichette  
at (416)965-4888.

Yours sincerely,

S.E. Yundt  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416)965-4888

S. Hurst:mc

cc: Mining Recorder  
Timmins, Ontario

Encl.

1983 11 04

2.5444

M.W. Resources Ltd  
Suite 500  
67 Richmond Street West  
Toronto, Ontario  
M5H 1Z5

Dear Sir:

RE: Geochemical Survey submitted on mining claims  
P 469707 to 17 inclusive in the Township of  
Cunningham

---

Enclosed are the plans and the final page of the report,  
in duplicate, for the above-mentioned survey. Please  
provide the following:

1. Geochemical plans where the scale is not more than  
500 feet and not less than 100 feet to the inch.
2. Claim lines and claim numbers to be plotted on the plans.
3. Plans and final page of the report must be signed  
by the author.
4. Brief resume of the qualifications of the author of  
the report - guidelines enclosed.

In addition, according to your man-days breakdown, you are  
claiming credits for the costs of your geochemical analysis.  
Credits cannot be allowed for assaying costs when submitted  
under Geochemical Survey. However, credits will be allowed  
under Section 77(19) of the Mining Act RSO 1980, at a rate  
of one day for each \$55.00 spent. You will be required to  
file a new report of work under Section 77(19) to the mining  
recorder in order to receive credit for the analytical costs.

When returning the above information, please quote file 2.5444.

For further information, please contact Mr. F.W. Matthews at  
(416)965-1480.

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6643  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: (416)965-1380  
R. Pichette:mc  
Encl.

cc: Mining Recorder  
Timmins, Ontario





25444

May 24th

Ministry of Natural Resources  
0 Wilson Avenue,  
Timmins, Ontario,  
April 12, 1983.

Notification of recording  
of assessment work credits

RECEIVED

APR 14 1983

MINING LANDS SECTION

Lands Administration Branch  
Mining Lands Section  
Ministry of Natural Resources  
Room 1617, Whitney Block  
Queen's Park, Toronto  
M7A 1W3

Date of recording of work: March 24, 1983.  
Recorded holder: M. W. RESOURCES LIMITED,  
Address: Suite 500, 67 Richmond Street West, Toronto,  
M5H 1Z5  
Township or Area: Cunningham Township

Type of survey and number of Assessment days credit per claim	Mining claims
Geophysical	P-469707-717 incl.
Electromagnetic _____ days	
Magnetometer _____ days	
Radiometric _____ days	
Induced polarization _____ days	
Section <del>20</del> <sup>19</sup> (19) _____ days	
Geological _____ days	
Geochemical <u>20.11</u> days	
Man days <input checked="" type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input type="checkbox"/> Ground <input type="checkbox"/>	

Notice to recorded holder:

- Survey reports and maps in duplicate be submitted to the Lands Administration Branch, Toronto within 60 days from the date of recording of this work.
- Reports and maps are being forwarded to the Lands Administration Branch with this letter.

Mining recorder  
c.c. M.W. Resources Limited,

1983 03 31

2.5444

Mining Recorder  
Ministry of Natural Resources  
60 Wilson Avenue  
Timmins, Ontario  
P4N 2S7

Dear Sir:

We have received reports and maps for a Geochemical Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims P 469707 et al in the Township of Cunningham.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with you prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours very truly,

E.F. Anderson  
Director  
Land Management Branch

Whitney Block, Room 6450  
Queen's Park  
Toronto, Ontario  
M7A 1W3  
Phone: 416/965-1380

A. Barr:sc

cc: M.W. Resources Limited  
Toronto, Ontario  
Attn: Mr. J.H. Sparling.

M W RESOURCES LIMITED \*

Suite 500  
67 Richmond Street West  
Toronto, Ontario  
Canada M5H 1Z5

Telephone: (416) 361-0737.

March 21st, 1983

Ministry of Natural Resources  
Room 6450 - Whitney Block  
99 Wellesley Street, West  
Toronto, Ontario  
M7A 1W3

**RECEIVED**

MAR 22 1983

Attention: Land Management Branch

**MINING LANDS SECTION**

Dear Sirs:

Re: 11 Mining Claims  
P469707 to P469717 inclusive  
Cunningham Township

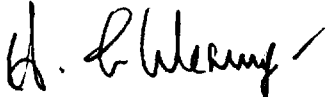
Enclosed please find a copy of Report of Work which was filed today with the Mining Recorder, Porcupine Mining Division, Timmins, Ontario.

We now enclose the following in support of the work reported:

- (1) 2 copies of The Environmental Applications Group Limited's ("EAGL") report dated November 24, 1982;
- (2) 2 copies of letter dated March 16, 1983, setting out the documentation of man hours;
- (3) 2 copies of letter report dated March 16, 1983;
- (4) 2 copies of Geochemical Technical Data Statement;
- (5) copies of invoices of EAGL; and,
- (6) 2 copies of Geophysical-Geological-Geochemical-Technical Data Statement.

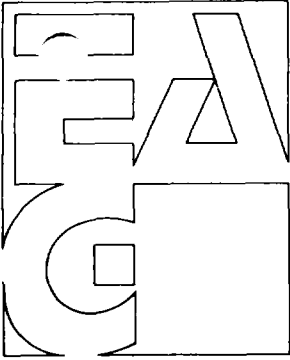
We trust that all the foregoing is the information you require.

Very truly yours,  
MW RESOURCES LIMITED



Per: Harry Shlesinger, C.A.

HS/el  
Enclosures



MAR 16 1983

March 16, 1983

THE ENVIRONMENTAL  
APPLICATIONS GROUP  
LIMITED

114 AVENUE ROAD  
TORONTO, ONTARIO M5R 2H4  
PHONE: (416) 968-3684

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MAR 22 1983

MINING LANDS SECTION

Mr. Shlesinger  
M.W. Resources Ltd.  
Suite 500  
67 Richmond Street West  
Toronto, Ontario  
M5H 12J

Dear Mr. Shlesinger:

Further to your inquiry the following documentation of man hours and laboratory expenditures is given.

		Total days claimed
Field work (3 days)	26 hrs	22.8
Office work, examination of data and compilation of report, meetings	30½ hrs	26.7
Typing	15 hrs	13.1
Graphics	16 hrs	14
Cost of analysis	\$ 2,094.00	139.6
Expenses (disbursements)	75.15	<u>5.0</u>

TOTAL MAN DAYS CLAIMED 221.21

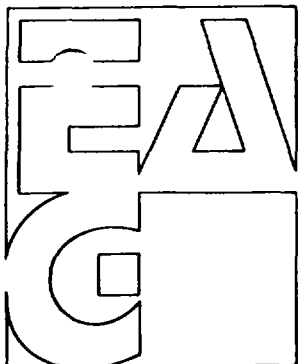
Please note that the travel costs, helicopter charter, etc. were borne by MW Resources directly.

Yours very truly,

THE ENVIRONMENTAL APPLICATIONS GROUP LIMITED

*John H. Sparling*  
John H. Sparling B.Sc., Ph.D.  
President

JHS:gc



THE ENVIRONMENTAL APPLICATIONS GROUP LIMITED

114 AVENUE ROAD TORONTO, ONTARIO M5R 2H4 PHONE: (416) 968-3684

*A/K*

September 30, 1982

MW Resources Ltd. 44 Victoria Street Suite 1815 Toronto, Ontario M5C 1Y2

RECEIVED

NOV 12 1982

SCS (1975) U

Attention: Mr. Michael Carter President

EAG JOB NO. 255

INVOICE 1

PROJECT: GEOCHEMICAL EVALUATION - CUNNINGHAM DEPOSIT

FOR SERVICES PERFORMED IN PERIOD 9 August 30 to October 1, 1982

Labour:

a) Professional

J.H. Sparling 26 hrs. x 57.56 = 1,496.56

\$ 1,496.56

b) Other

Typing 1 1/2 hrs. x 15.61 = 23.42

23.42

Laboratory Services:

Geochemical Analysis

Water samples 6 at \$167.00 = 1,002.00

Sediment samples 14 at \$78.00 = 1,092.00

2,094.00

Disbursements:

Copying

24.60

24.60

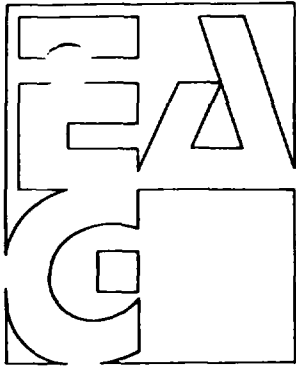
THIS AMOUNT NOW DUE

\$ 3,638.58

*Please pay  
E. Sparling  
Cunningham*

*APPJ6  
9/30/82*

*50113*



THE ENVIRONMENTAL  
APPLICATIONS GROUP  
LIMITED

114 AVENUE ROAD  
TORONTO, ONTARIO M5R 2H4  
PHONE: (416) 968-3684

*A/Pay*

October 30, 1982.

MW Resources Limited,  
44 Victoria St., Suite 1815,  
Toronto, Ontario.  
M5C 1Y2

Att: Mr. Michael Carter,  
President

RECEIVED

NOV 12 1982

SCS (1975) U

EAG JOB NO. 255

INVOICE 2

PROJECT: Geochemical Evaluation - Cunningham Deposit

FOR SERVICES PERFORMED IN PERIOD 10 October 2 to October 30, 1982.

Labour:

a) Professional

J. H. Sparling 23½ hrs. x 57.56 = 1,352.66 \$ 1,352.66

b) Other

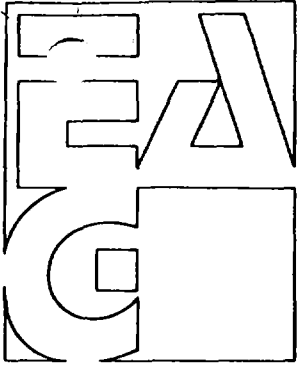
Graphics 6 hrs. x 18.43 = 110.58  
Typing 5 hrs. x 15.61 = 78.05 188.63

Disbursements:

Copying 2.40 2.40

THIS AMOUNT NOW DUE \$ 1,543.69

*Please Pay  
U/G  
25rd November a/c*



THE ENVIRONMENTAL  
APPLICATIONS GROUP  
LIMITED

114 AVENUE ROAD  
TORONTO, ONTARIO M5R 2H4  
PHONE: (416) 968-3684

November 30, 1982

MW Resources Limited  
44 Victoria Street  
Suite 1815  
Toronto, Ontario  
M5C 1Y2

Attention: Mr. Carter  
President

EAG JOB NO. 255

INVOICE 3

PROJECT: GEOCHEMICAL EVALUATION - CUNNINGHAM DEPOSIT

FOR SERVICES PERFORMED IN PERIOD 11 November 11 to November 28, 1982

Labour:

a) Professional

J.H. Sparling            7 hrs. x 57.56 = 402.92

\$ 402.92

b) Other

Graphics            10 hrs. x 18.43 = 184.30  
Typing              8½ hrs. x 15.61 = 132.69

316.99

Disbursements:

Copying            22.80  
Printing            25.75

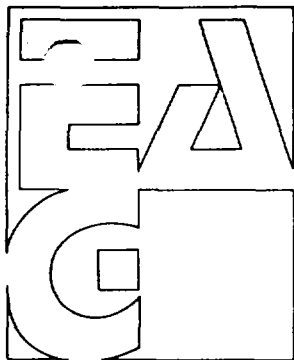
48.55

THIS AMOUNT NOW DUE

\$ 768.46

*Please Pay*  
*[Signature]*

*W. J. [Signature]*  
*Exploration A/c*



**THE ENVIRONMENTAL  
APPLICATIONS GROUP  
LIMITED**

114 AVENUE ROAD  
TORONTO, ONTARIO M5R 2H4  
PHONE: (416) 968-3684

March 16, 1983

**RECEIVED**

**MAR 22 1983**

**MINING LANDS SECTION**

MW Resources Ltd.  
Suite 1815  
44 Victoria Street  
Toronto, Ontario  
M5C 1Y2

Attention: Mr. M.F.K. Carter  
President

Dear Mr. Carter:

This report pertains to analysis of geochemical samples collected within claim P469707-P469717 in Cunningham-Township in Northern Ontario.

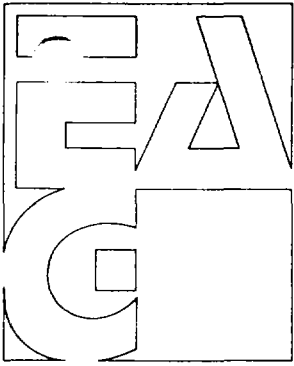
The objectives of the programme were to determine the distribution of metals within lake and littoral sediments from the claim area and to detect any sites of high metal levels.

Standard analytical procedures were adopted using perchloric-HF digestion and atomic absorption spectroscopy. Results are presented in  $\mu\text{g.g}^{-1}$ .

Cadmium - For the 14 samples determined, the mean value was  $2.96 \pm 0.520$ . These data indicate enrichment of the sediments within the project area. The range was from 2.4 to  $3.9 \mu\text{g.g}^{-1}$ . The low standard deviation indicates consistency in the Cd level within sampled material.

All sites possess significantly higher cadmium levels than are normal and may be linked with other e.g. zinc mineralization.





Mr. Carter  
Page Two

March 16, 1983

Copper - The Cunningham Township samples appear to have overall higher concentrations of  $24.79 \pm 8.82$ . Two of these samples located at stations 5 and 7 have significantly higher than others and should be examined further.

Lead - High lead content occurs in samples from sites 4 and 5 compared with other area sediments. The mean level was  $23.98 \pm 30.46$ . Two sites 4 and 5 showed levels of 103 and  $88 \mu\text{g.g}^{-1}$  respectively and are within the range generally regarded as anomalous possibly related to outcropping or bedrock occurrences.

Zinc - Levels of zinc in sampled sediments were all highly elevated. Data obtained ranged between 48.0 and  $388 \mu\text{g.g}^{-1}$  with analysis from site 5 being very high; zinc data are high in all samples.

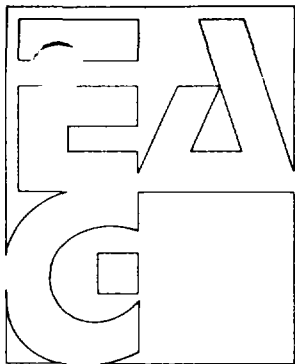
Silver - All silver values obtained were below a cut-off reporting value of  $2 \mu\text{g.g}^{-1}$  (equivalent to less than 0.07 per ton).

The summary salient features of each lake are given below.

Mink Lake (Site 2) while generally elevated metal levels were observed, no enhanced levels over area background has been indicated.

Beavertail Lake (Site 3). Sediments from the south shore of this lake showed high levels of copper and zinc. Further work recommended.

Site 4 Lake. Sediments showed enhanced levels of copper and to a lesser degree for cadmium. One sample close to the western shoreline also showed elevated lead and zinc levels. Further recommended.



Mr. Carter  
Page Three

March 16, 1983

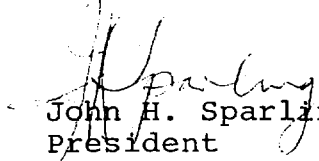
Tower Lake (Site 5). Sediments from this site indicated enhanced levels of cadmium, copper, lead and zinc. Site of present activity.

Site 7. Sediments from this site showed the highest levels of copper for the area. One sample indicated high cadmium levels. Site should be examined further.

Edwards Lake (Site 8) metal levels from this lake were lower than the area means although still elevated.

Yours very truly,

THE ENVIRONMENTAL APPLICATIONS GROUP LIMITED

  
John H. Sparling, B.Sc., Ph.D.  
President

JHS:gc  
Encl.