

**BOVILLE RESOURCES LTD.**

**PRELIMINARY REPORT**  
**ON THE EVALUATION OF OLD TAILINGS**  
**AT MONTAUBAN, QUÉBEC**

Ministère de L'énergie et des Ressources  
Gouvernement du Québec  
Services du Potentiel minéral  
DATE: May 4, 1982  
No G.M.: 38388

**BY: Jean Depatie, B.A., M.Sc.**  
**Senior Economic**  
**Geologist**

**FEBRUARY 1982**

## **TABLE OF CONTENTS**

	<b><u>PAGE</u></b>
1.0 SUMMARY AND INTRODUCTION	4
2.0 THE PROPERTY, LOCATION AND ACCESS	5
3.0 HISTORY	7
4.0 OBJECT OF THE SAMPLING PROGRAM	10
5.0 FIELD PROCEDURES	11
6.0 LABORATORY PROCEDURES	14
7.0 RESULTS OF THE SURVEY	15
8.0 CONCLUSIONS AND RECOMMENDATIONS	17

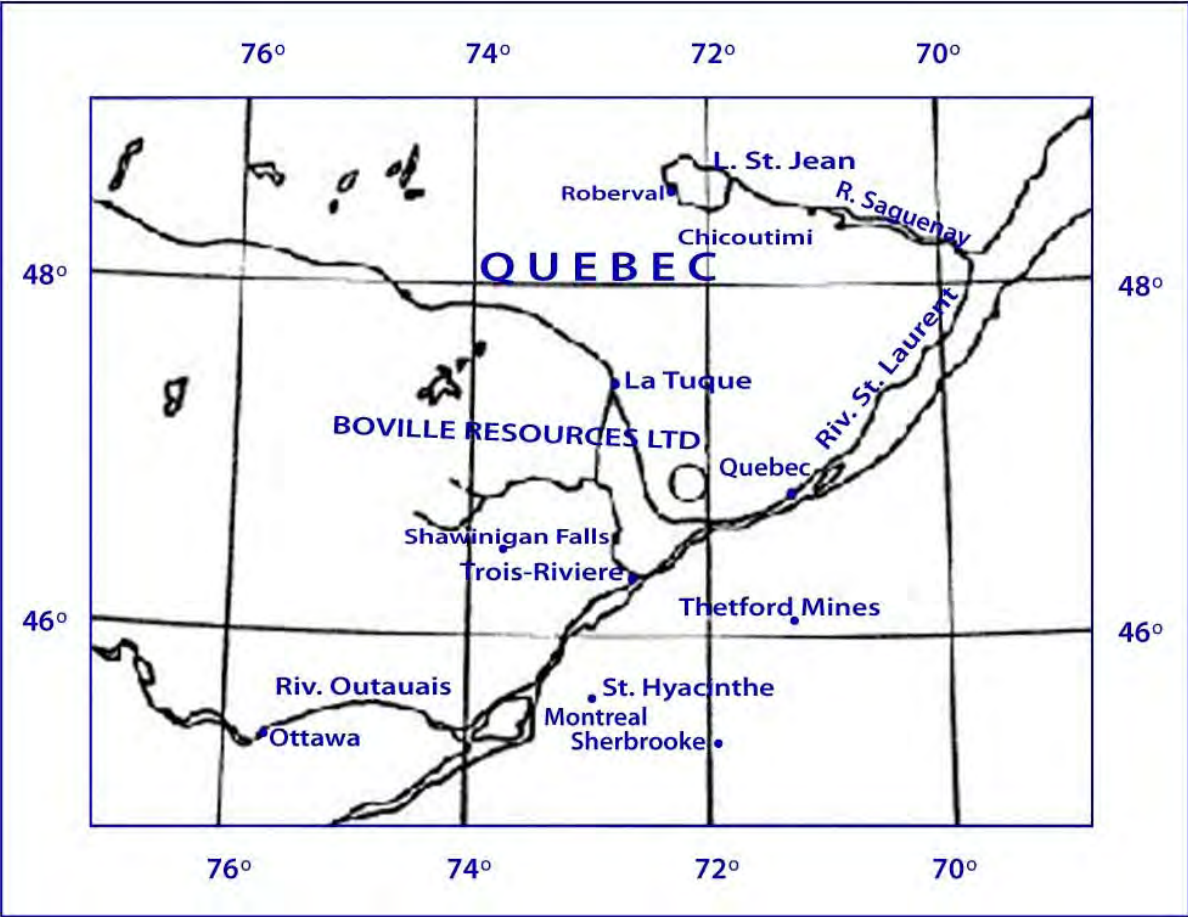
FIGURE: Sampling Method at Montauban

MAPS:

Location Map  
Claim Map  
General Geology  
(in Project) Map of Results

ANNEXES

Assay Results - Technitrol  
Assay Results - Bourlamaque Assay Office



**PRELIMINARY REPORT**  
**ON THE EVALUATION OF OLD TAILINGS**  
**AT MONTAUBAN, QUÉBEC**

**1.0 SUMMARY AND INTRODUCTION**

In August and September 1981, we conducted a systematic drilling program to evaluate the quantity and quality of mine tailings at Montauban les Mines, Québec. Those tailings come from the first period of mining, between 1914 and 1944, of the Montauban lead-zinc-silver deposit.

The collected samples were sent to be analyzed for their gold-silver-zinc-lead and copper content. The results of analysis give an arithmetical gold and silver average of 0.0416 oz/ton and 2.42 oz/ton respectively. Composite samples for zinc ranges from 0.36% to 2.64% with an average of less than 1%. Lead and copper values are very low. The total estimated tonnage of tailings sampled is about 400,000 humid short tons. Metallurgical tests are recommended to determine the maximum recovery of the gold, silver and zinc content of the tailings. Costs of those tests should not exceed \$40,000.

## 2.0 THE PROPERTY, LOCATION AND ACCESS

### 2.1 The Property

The mining property on which the survey was made is protected by the following claims:

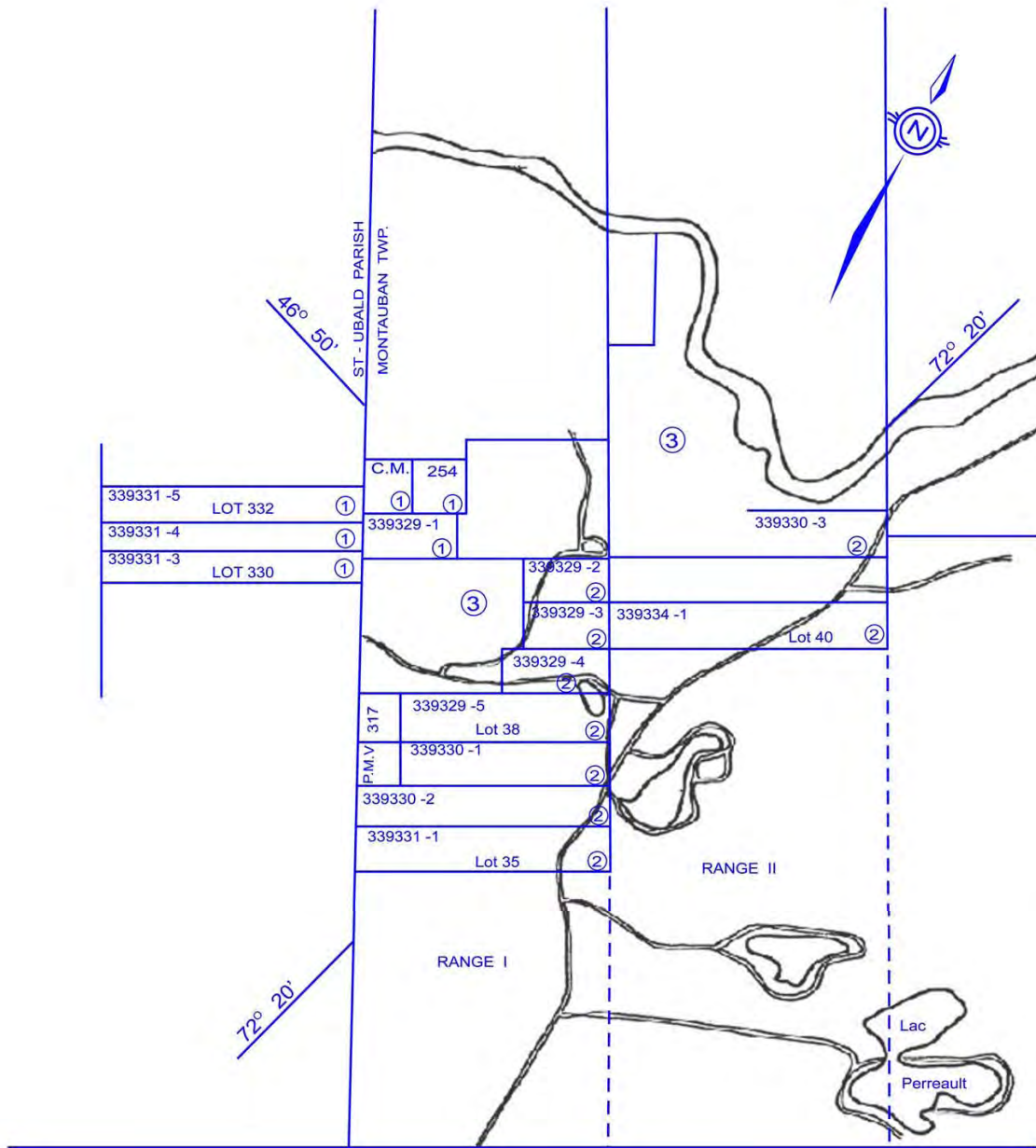
<u>Permit No</u>	<u>No of Claims</u>	<u>Lots</u>	<u>Range</u>	<u>Township</u>	<u>Acreage*</u>	<u>Expiry Date</u>
D. V . 317	1	37 & 38 S-W Parts	01	Montauban	30.00	10.04.83
339329	4	38, 39, 40, 41 N-E Parts	01	Montauban	132.75	20.10.82
339330	2	36 & N-E Part of 37	01	Montauban	157.50	20.10.82
339331	1	35	01	Montauban	87.73	20.10.82
339334	<u>1</u>	40	02	Montauban	<u>100.00</u>	20.10.82
TOTALS	9				507.98	

\*Acreage: approximate figures ( + or - 10%)

This property is now owned by Boville Resources Ltd. and is called the S-E Property.

### 2.2 Location and Access

The property is located within walking distance from the small village of Montauban les Mines, at about 75 miles west of Québec City. Montauban les Mines is easily accessible by a paved road from the village of St-Ubalde near-by and is only 6 miles away by road to a railway linking Québec City with the mining towns of northwestern Québec (Val d'Or, Noranda). Water and electric power are easily available close to the property.



**BOVILLE RESOURCES LTD.  
CLAIM MAP**

- ① NORTH-WEST PROPERTY
- ② SOUTH-EAST PROPERTY
- ③ MUSCOCHO

### 3.0 HISTORY

A discovery of zinc and lead mineralization by Elzear Gauthier in 1910 was at the origin of the mining activities in Montauban. In 1911, Pierre Tetrault acquired the mining rights of the land containing the deposit and started mining. From that date mining and milling operations were carried out intermittently till 1965 by various interests or companies. Following is a list of those operators.

The Weedon Mining Company	(1914-1915)
The Zinc Company	(1915-1921)
Tetrault Estate	(1923-1924)
British Metal Corporation	(1924-1929)
Tetrault Estate	(1935-1937)
Siscoe Metals Limited (Wartime Metals Corp.)	(1942-1945)
Anacon Lead Mines Ltd.	(1948-1955)
Ghislau Mining Corporation	(1958-1965)

The last one, Ghislau Mining Corporation limited its activities to bulk sampling of the tailings ponds resulting from the 1914-1944 operations, diamond drilling and rehabilitation of the old mill to recycle the tailings for recovery of their zinc, silver and gold content. The death in 1961 of the president of the company, Mr. Reeves, prevented Ghislau to go ahead with the project.

The bulk sample taken by Ghislau in 1960 consisted of 24,000 pounds of tailings which were processed at the Québec Dept. of Mines' pilot plant in Québec City and which gave these results :

### 3.0 HISTORY (cont'd)

	<u>ZN</u>	<u>PB</u>	<u>Au (oz/ton)</u>	<u>Ag (oz/ton)</u>
Heads	1.51%	1.12 %	0.095	2.53
Recovery	1.19%	0.93 %	0.081	1.596
Rec %	79.3 %	83.5 %	85.7 %	70.72 %

The production from 1914 to 1944 amounted to 1,289,217 tons of ore milled from which there were shipped :

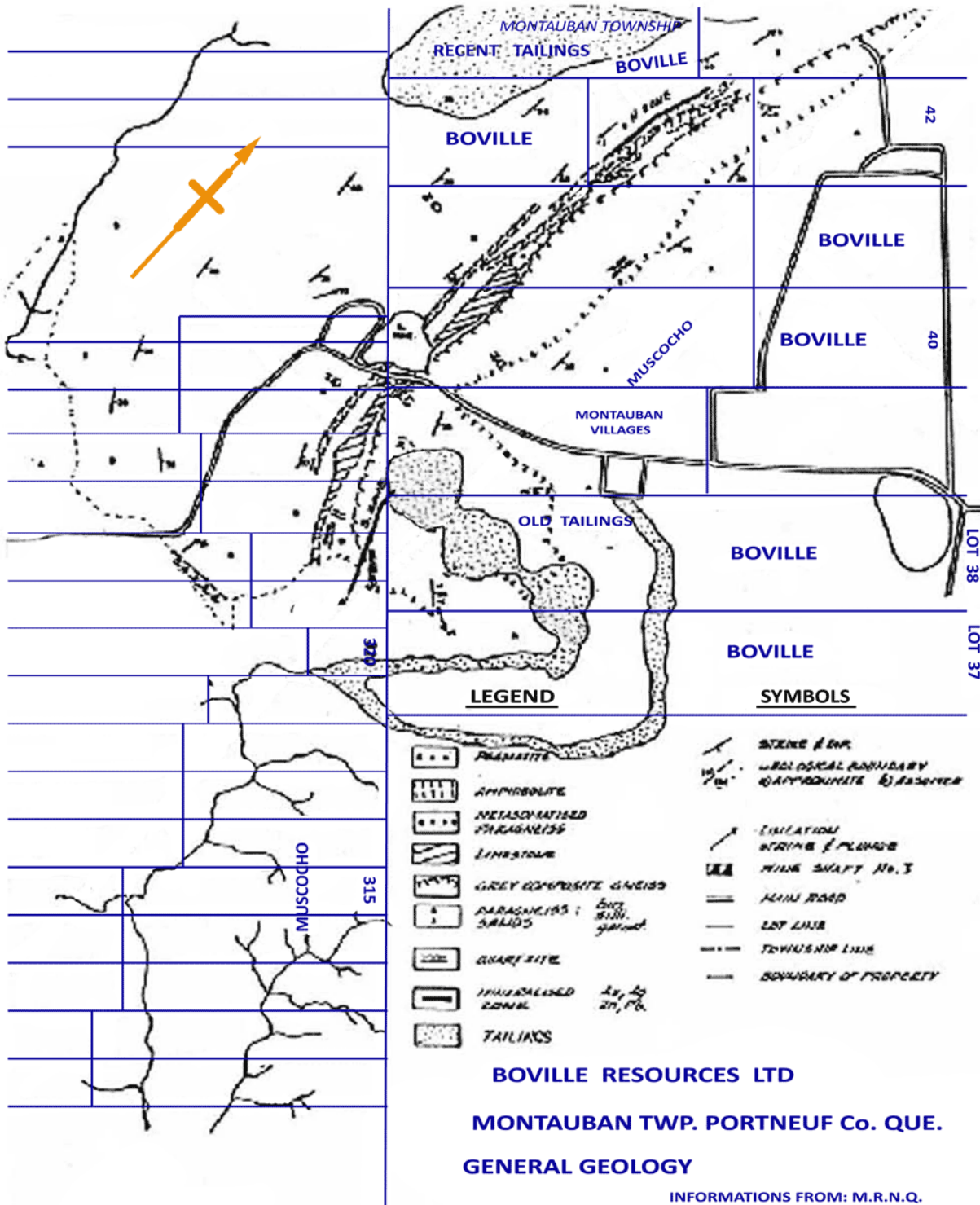
Zinc	153,602,650 pounds
Lead	47,416,800 pounds
Gold	40,000 ounces
Silver	4,002,300 ounces

From 1948 to 1955, approximately 1,375,371 tons were milled, producing :

Zinc	87,160,636 pound\$
Lead	34,389,389 pounds
Gold	16,876 ounces
Silver	2,647,517 ounces

For the first period, the recovery of the minerals was not so good on account of poor milling procedures and it was believed that a good part of the metals is still in the tailings. A large portion of these tailings were stored on the property, object of this report, and which was acquired in 1981 by Boville Ressources Ltd. of Vancouver, B.C.





#### 4.0 **OBJECT OF THE SAMPLING RROGRAM**

Better values of zinc, silver and gold prices have led to the conclusion that the old tailings (1914-1944 period) at Montauban could be economically recycled provided that no major metallurgical problem is encountered.

As a first approach to the project, it was decided to investigate the value of the tailings by doing systematic sampling on a 50 foot grid. The results of this sampling is to give an exact idea on;

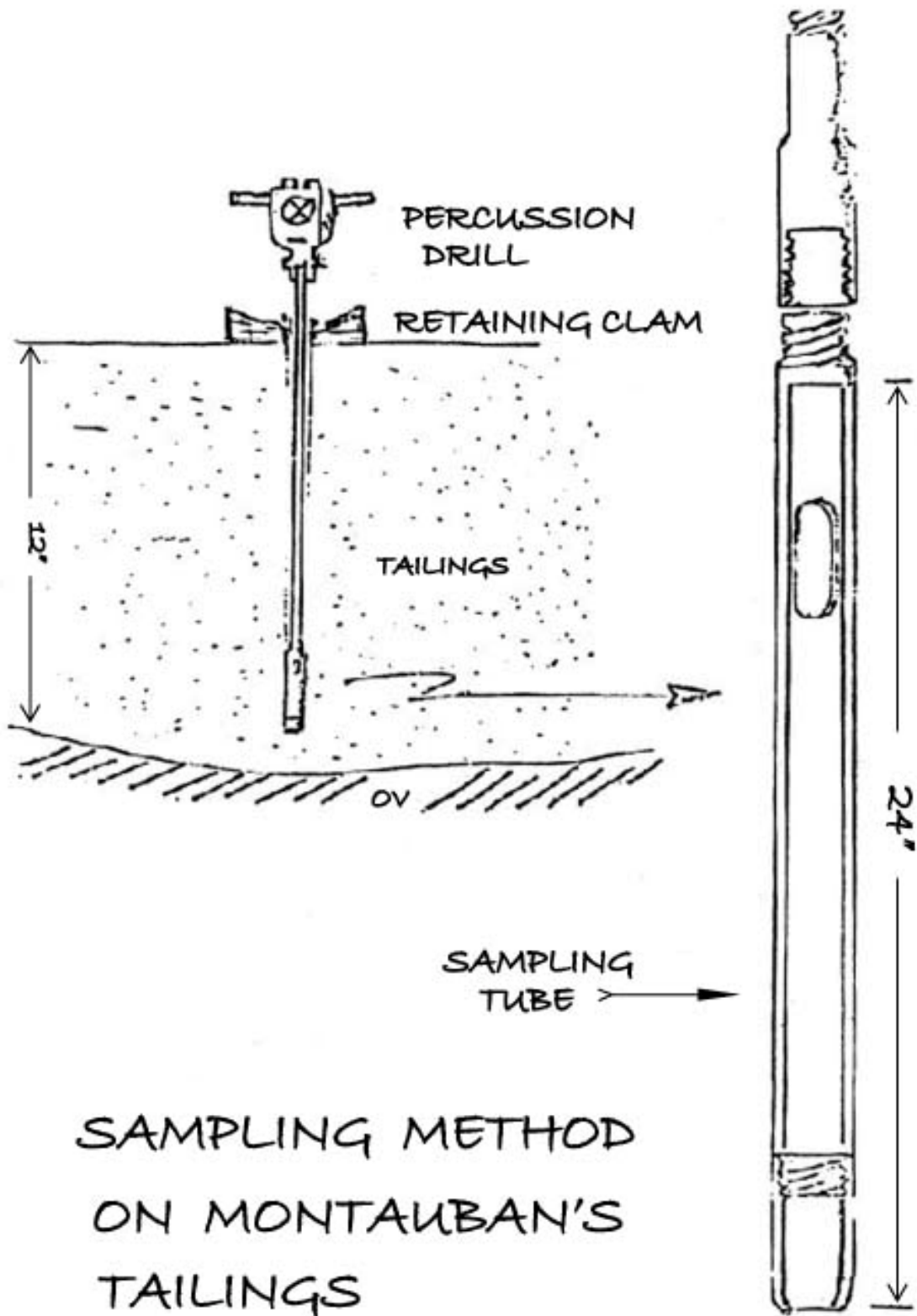
- The volume of the tailings available.
- The average content of those tailings in gold, silver, zinc, lead and copper values.

## 5.0 FIELD PROCEDURES

On the property, the tailings can be found at two locations: in three (3) ponds linked together in the western part of the property and along the side of two (2) creeks flowing in a southern direction. One of the creeks is connected with the three (3) tailing ponds while the other one originates in the village of Montauban (see annexed map). With time the retaining dams on the ponds and along the creeks gave way and a good amount of material was washed away. From the survey, it was calculated that more than 4 million cubic feet of tailings are still on place.

To evaluate the quality and the quantity of those tailings a 50 foot grid of parallel lines going in a N-10°-E direction were established over two (2) of the tailing ponds. Another similar grid of lines going in a N-30°-E direction was also put down to cover the third pond to the south. On those lines and at intervals ranging from 50 to 100 feet, the tailings were sampled from surface to bottom with the use of a 24" long by 1 3/4" sampler driven down by a percussion drill of the cobra type.

The same procedure was used to sample the creeks at regular intervals of 50 feet. More samples were taken on the wider parts of the creeks.



## 5.0 **FIELD PROCEDURES** (cont'd)

For each hole, the samples were collected in five (5) foot sections or less and properly labeled.

Fifty two (52) holes were put down on the tailings ponds and one hundred seventeen (117) along the creeks for a total of 1,244.5 linear feet of sampling.

The study of the samples taken from each hole indicates that, as an average, the first three to five feet of tailings are oxidized and yellowish in colour. Below that, they are fresh and silver grey in colour. In general, the tailings are laminated with the laminae varying from fractions of an inch to 3 inches in thickness. The laminae are caused by a difference in grain size and in the physical characteristics of the material (ex: mica rich horizons).

## 6.0 LABORATORY PROCEDURES

All the samples were sent to Technitrol Limited, an assay laboratory located in Dorval, Québec, to be analyzed according to the following instructions:

- each sample grinded to -200 mesh;
- each 5 foot section to be analyzed for gold and silver content;
- a composite sample of some holes to be analyzed for Zn, Pb and Cu content.

For Au and Ag content:

- 114 samples came from the three (3) ponds.
- 177 samples came from the creeks areas.

During transportation or storage time at the laboratory, samples from two holes; L- 14 + 50 and L- 19 + 50, were lost and could not be retraced.

All the samples were analyzed by atomic absorption, using the Noranda method. Fourteen (14) samples were sent to Bourlamaque assay office in Val d'Or, Québec and were checked by fire assay method.

## 7.0 RESULTS OF THE SURVEY

The arithmetical average of the assay results indicate that the overall economic mineral contents of the tailings is:

a) Tailing ponds area: (about 200,000 humid short tons)

Au: 0.0421 oz/ton

Ag: 2.196 oz/ton

Zn: 0.57 %

Pb: 0.148 %

Cu: 0.025 %

b) Creeks area: (about 200,000 humid short tons)

Au: 0.041 oz/ton

Ag: 2.71 oz/ton

Zn: 1.23 %

Pb: 0.209 %

Cu: not assayed

On 12 holes only (spaced 300 to 400 feet apart)

TOTAL AVERAGE IS:

Au: 0.0416 oz/ton

Ag: 2.42 oz/ton

Zn: 0.9 %

Pb: 0.178 %

Cu: ? estimated very low

The weighted average has not been done yet but we do not expect it to change drastically from the results obtained so far.

Some of the individual silver assays were extremely high, (up to 100 ounces of silver per ton over 5 feet) and have been cut down to 5 oz per ton. No high peaks were registered in the gold assays.

## 7.0 RESULTS OF THE SURVEY (cont)

From the fire assay results of the fourteen (14) samples sent to Bourlamaque Assay Office in Val d'Or we have:

Lab:	Au oz/ton	Ag oz/ton	Zn %	Pb %	Cu %
Technitrol	0.038	1.92	0.60	0.16	0.030
Bourlamaque	0.040	1.25	0.50	0.14	0.025

By reducing down the high silver values in Technitrol's results, we obtain essentially the same values from both laboratories.

It is to be noted that the tailings studied are residues of a flotation process only and were never submitted to cyanidation.



## 8.0 CONCLUSIONS AND RECOMMENDATIONS

The systematic evaluation of the tailings located on Boville Resources S-E Property at Montauban gave about 400,000 hundred short tons of material containing an additive average of :

Au:	0.0416 oz/ton
Ag:	2.42 oz/ton
Pb:	0.9%
Pb:	0.178%
Cu:	less than 0.03%

Even at actual prevailing low prices for gold and silver, the perspective of recycling the tailings for their gold and silver content at a profit is still very attractive and the company should, in the months to come, devote its efforts towards that goal. The eventual construction, at Montauban of a 300 ton per day cyanidation mill by Muscocho Explorations would eliminate costly transportation problems and also heavy investment costs to build a similar mill.

It is therefore recommended that the company undertake, as soon as possible, metallurgical tests to determine the degree of viability of its project. Overall costs of those tests should not exceed \$40,000.

Respectfully submitted,

Jean Depatie, B.A.. M.Sc.  
Senior Economic Geologist  
February 9, 1982



# TECHNITROL CANADA LTEE/LTD.

TESTING LABORATORIES – LABORATOIRE D'ANALYSES

2245 CHEMIN ST.FRANCOIS ROAD, DORVAL, QUEBEC H9P1K3 – TEL (514) 684-5084

CLIENT  
CUSTOMER Jean Depatie et Associes

DATE Octobre le 26, 1981

245 Victoria, Suite 100

NO. DE LABORATOIRE L-6065  
LABORATORY NO.

Montreal, Quebec H3X 2M6

NO DE COMMANDE Tailing Ponds  
CUSTOMER ORDER NO.

Att: M. J. Depatie

## RAPPORT D'ESSAI TEST REPORT

No. de Laboratoire: L-6065

<u>Composite</u>		<u>%, Cuivre</u>	<u>%, Zinc</u>	<u>%, Plomb</u>
<u>Boite</u>	1	0.035	0.64	0.18
	2	0.026	0.57	0.15
	3	0.026	0.62	0.16
	4	0.025	0.51	0.17
	5	0.024	0.48	0.15
	6	0.028	0.73	0.17
	7	0.019	0.40	0.10
	8	0.024	0.58	0.19
	9	0.024	0.50	0.17
	10	0.020	0.45	0.18
	11	0.021	0.55	0.12
	12	0.030	0.67	0.20
	13	0.030	0.69	0.20
	14	0.025	0.54	0.18
	15	0.027	0.63	0.21

Jean Depatie et Associes  
(con't)Octobre le 26, 1981  
L-6065

<b><u>Boite #1</u></b>	<b><u>No. De Serie</u></b>			<b><u>Or, oz/T.</u></b>	<b><u>Argent, Oz/T.</u></b>
-1	L 1+00	0+00	0-5	0.026	1.22
-2			0-4	0.087;0.073	1.42
-3			5-10	0.041 ;0.052	1.58;1.83
-4			0-5	0.038	1.41
-5			5-9	0.022	7.78
<b><u>Boite #2</u></b>					
-1	L 1+50	0+00	10-14	0.044	2.02
-2		0+505	5-10	0.036	1.20
-3		1+005	0-5	0.049	2.50
-4		0+505	0-3	0.038	1.71
-5		0+00	0-5	0.042	1.53
-6		0+50N	5-7.5	0.041	1.20
-7		0+00	5-10	0.022	1.59
-8		0+505	10.12	0.020;0.022	1.14;1.12
-9		0-50N	0-5	0.030	1.82
<b><u>Boite #3</u></b>					
-1	L 5+00	0+00	0-5	0.14 ;0.15	1.85
-2	L 2+00	0+50N	0-5	0.030	3.01
-3		0+505	0-5	0.112	6.50
-4		0+505	10-13	0.135	1.41
-5		0+00	10-13.5	0.035;0.029	1.52 ;11.50
-6		1+005	5.95	0.040	1.85
-7		0+00	5-10	0.122	2.03
-8		0+505	5-10	0.053	1.73
-9		1.005	0-5	0.056	1.86
-10		0.50N	5-10	0.065	1.88

Jean Depatie et Associes  
(con't)Octobre le 26, 1981  
L-6065

<b><u>Boite #4</u></b>	<b><u>No. De Serie</u></b>			<b><u>Or, oz/T.</u></b>	<b><u>Argent, Oz/T.</u></b>
-1	L 2+50	0+50N	0-5	0.032	1.41
-2		0+00	0-5	0.068	1.86
-3		0+50N	5-10	0.041	1.65
-4		0+50N	10-12	0.036;0.035	2.13
-5		0+505	0-5	0.056	1.60
-6		1+005	5-10	0.055;0.045	1.65
-7		1+005	10-11	0.084	1.76
-8		0+00	5-10	0.093;10.119	1.45;2.81
-9		0+00	10-14	0.068	1.68
-10					
-11		1+005	0-5	0.060	2.05
<b><u>Boite #5</u></b>					
1	L 3+00	0+00	10-11	0.058	2.26
-2		0+00	5-10	0.068	1.67
-3		0+00	0-5	0.078	1.66
-4		0+505	0-3	0.051;0.052	7.81;8.87
<b><u>Boite #6</u></b>					
-1	L 4+50	0+000	0-5	0.051	1.59;1.47
-2		0+00	5-9	0.061	3.37
-3		0+00	0-3	0.042	3.41
-4		0+00(OHS)	0-5	0.051	1.76
<b><u>Boite #7</u></b>					
-1	L 5+50	1+005	0-5	0.029	0.91
-2	5+00	0+505	5-6	0.046	0.95
-3	5+00	0+00	5-9.5	0.135	1.68
-4	5+00	1+005	5-9	0.022	9.95
-5		0+00	0-5	0.049	1.51
-6		0+505	0-5	0.019;0.028	1.20;1.11
-7		1+00	0-3	0.019	1.05

Jean Depatie et Associes  
(con't)Octobre le 26, 1981  
L-6065

<b><u>Boite #8</u></b>	<b><u>No. De Serie</u></b>			<b><u>Or, oz/T.</u></b>	<b><u>Argent, Oz/T.</u></b>
-1	L 6	0+505	0-5	0.017	1.94
-2	L 6+00	1+505	10-13	0.036	6.82
-3	L 6+00	1+505	5-10	0.098	3.91
-4	L 6+00	2+005	5-10	0.029	4.09
-5	L 6+00	1+005	0-5	0.024	66.10;64.80
-6	L 6+50	0+505	5-10	0.028	2.79
-7	L 6+00	2+005	0-3	0.017	1.00
-8	L 6+00	0+00	0-6	0.021	1.42
-9	L 6+00	1+505	0-5	0.019	0.90
-10	L 6+00	1+005	10-11	0.031	1.54
-11	L 6+00	1+005	5-10	0.028;0.026	1.47;1.60
<b><u>Boite #9</u></b>					
-1	L 6+50	1+00	10-15.5	0.023	1.23
-2		1+505	5-10	0.034,0.028	1.30;1.21
-3		1+505	0-5	0.04	1.83
-4		1+505	5-16	0.025;0.022	1.26
-5		0+505	10-13	0.018	0.80
-6		1+005	0-5	0.026	1.17
-7		0+505	0-5	0.032 ;0.028	1.01
-8		1+505	10-13	0.013	1.11
-9		0+505	5-10	0.022	1.10
<b><u>Boite #10</u></b>					
-1	L 7+00	0+505	10-15	0.037	1.84
-2		0+505	10-95	0.038	1.08
-3		1+005	0-5	0.042	2.02
-4		0+505	0-5	0.022	1.11
-5		1+005	5-10	0.059	1.25
-6		0+505	5-10	0.032	100.32
-7		1+005	10-15	0.023;0.019	1.15;0.99

Jean Depatie et Associes  
(con't)Octobre le 26, 1981  
L-6065

<b><u>Boite #11</u></b>	<b><u>No. De Serie</u></b>			<b><u>Or, oz/T.</u></b>	<b><u>Argent, Oz/T.</u></b>
-1	L 7+50	0+505	5-10	0.032	1.45
-2		0+505	0-5	0.037	1.38
-3		0+505	10-15	0.043	1.03
-4		0+505	15-18	0.029;0.021	0.93;1.01
<b><u>Boite #12</u></b>					
-1	L 2+50E	1+00N	0-5	0.074	1.53
-2	2+00E	1+50N	0-2	0.027	9.72
-3	2+00E	0+50N	0-3	0.061	1.24
-4	2+50E	0+00	0-5	0.036	1.56
-5	L 1+50E	1+00N	5-8	0.034	1.46
-6	L 2+50E	1+00N	5-6.5	0.063 ;0.040	1.61
-7	L 1+50E	1+00N	0-5	0.024	1.64
-8	L 2+00E	0.505	0-3	0.027	1.50
-9	L 2+50E	0+00	5-10	0.045;0.050	2.32;2.18
<b><u>Boite #13</u></b>					
-1	L 3+00E	1+50N	5-6	0.035	1.85
-2	L 34.00E	1+00N	0-5	0.082	1.54
-3	L 4+00E	0.505	0-3	0.052	3.54
-4	L 3+00E	0+505	0-4	0.041	1.55
-5	L 4+00E	0.50N	0-5	0.036	1.35
-6	L 4+00E	1+50N	0-3.5	0.042	1.56
-7	L 3+00E	1+00N	5-7.5	0.045	1.89
-8	L 3+00E	1+00N	0-5	0.037;0.033	1.61;1.58
<b><u>Boite #14</u></b>					
-1	L 3+00E	0+50N	5-10	0.011	1.77
-2	L 3+00E	1+50N	0-5	0.031	1.55
-3	L 3+00E	0+50N	20-25	0.053	1.90
-4	L 3+00E	1+00N	6-9	0.044	1.56
-5	L 3+00E	0+50N	10-15	0.060	1.67
-6	L 3+00E	0+50N	15-20	0.053	2.56
-7	L 3+00E	0+50N	0-5	0.13;0.14	1.48;1.96

Jean Depatie et Associes  
(con't)Octobre le 26, 1981  
L-6065

<u>Boite #15</u>	<u>No. De Serie</u>			<u>Or, oz/T.</u>	<u>Argent, Oz/T.</u>
-1	L 5+00E	0+505	10-11.5	0.080	2.57
-2	L 4+50E	1+00N	10-15	0.031	1.50
-3	L 4+50E	1+00N	5-10	0.038	1.78
-4	L 5+00E	0+505	0-5	0.032;0.039	1.80
-5	L 4+50E	1+00N	15-17	0.041	1.84
-6	L 5+00E	0+505	5-10	0.051	2.07
-7	L 4+50E	1+00N	0-5	0.037	1.29
-8	L 4+50E	0+00	5-10	0.033	1.80
-9	L 4+50E	0+00	0-5	0.032;0.026	1.62;1.85



LABORATOIRE D'ANALYSE BOURAMAQUE LTEE  
BOURAMAQUE ASSAY LABORATORIES LTD

Jean Depatie et Associes

CERTIFICAT D'ANALYSES  
CERTIFICAT OF ANALYSIS

No 35145

October 16 19 81

ECHANTILLONS Tailings Ponds  
SAMPLES

VAL D,OR QUE.,

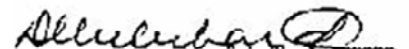
RECU DE Delivered  
RECEIVED FROM

ANALYSES  
ASSAYS

14 Au. 14 Ag.

7 Cu. 7 Zn. 7 PB

<u>Sample:</u>	<u>Au oz/ton</u>	<u>Ag oz/ton</u>	<u>Cu %</u>	<u>Zn %</u>	<u>Pb %</u>
Line 1+00 Hole 0+00					
5 - 5	0.062	0.910 )			
5 - 10	0.050	1.546 )	0.032	0.590	0.137
H010 0+50s					
0 - 5	0.064	1.510 )			
5 - 7.5	0.030	1.340 )	0.032	0.670	0.189
Hole 1+00s					
0 - 4	0.024	0.992	0.027	0,503	0.142
Line 1+50 Hole 0+50N					
0 - 5	0.032	0.004			
5 - 7.5	0.020	1.296 )	0.022	0.445	0.114
Hole 0+00					
0 - 5	0.040	1.616 )			
5 - 10	0.032	1.332 )	0.024	0.525	0.120
10 - 14	0.062	1.234 )			
Hole 0+50S					
0 - 5	0.046	1.540 )			
5 - 10	0.036	0.740 )	0.019	0.415	0,139
10 - 12	0.030	1.146 )			
Hole 1+00s					
0 - 5	0.032	1.260	0.024	0.400	0.008

  
ANALYSTE / ESSAYER