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ASSESSMENT REPORT
FOR THE
1989 LIMESTONE TESTING PROGRAM
ON THE
CART MINERAL CLAIM

OMINECA MINING DIVISION

NTS 93 L/16.

LATITUDE 54 54' N

LONGITUDE 126 18' W

OWNED BY: EQUITY SILVER MINES LIMITED

WORK BY: EQUITY SILVER MINES LIMITED

REPORT BY: M. L. AZIZ

FEBRUARY 1990

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

19.711

TABLE OF CONTENTS

	PAGE
TABLE OF CONTENTS	i
LIST OF FIGURES AND TABLES.	ii
LIST OF APPENDICES	ii
INTRODUCTION	
i) Location, Physiography and Access	1
ii) Claim Ownership and Status	3
iii) Purpose	3
iv) Summary	3
REGIONAL GEOLOGY.	5
LOCAL GEOLOGY	5
SAMPLING PROGRAM.	6
DISCUSSION OF RESULTS	7
CONCLUSIONS AND RECOMMENDATIONS	8
AUTHOR'S QUALIFICATIONS	10

FIGURES AND TABLES

PAGE

LIST OF FIGURES

Figure 1 - Property Location Map	2
Figure 2 - Cart Claim Map	4
Figure 3 - Sample Location Map	(in pocket)

LIST OF TABLES

Table 1 - Cart Limestone Analysis Equity Minesite Laboratory	7
Table 2 - Cart Composite Sample Analysis Kennedy Van Saun Laboratory	7
Table 3 - Statement of Expenditures	9

LIST OF APPENDICES

APPENDIX I - Kennedy Van Saun Products Ltd. Limestone Evaluation Results	
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INTRODUCTION

1) LOCATION, PHYSIOGRAPHY and ACCESS

The Cart mineral claim is located on the southwest side of Babine Lake approximately 6 km west of the town of Granisle, B.C. The claim is approximately 600 km north-northeast of Vancouver (see Figure 1).

The most prominent geographic feature on the property is a 2500 metre long, 120 metre high, northwesterly trending ridge with a rock bluff along its southwestern side. With the exception of this bluff, outcrop is rare in the area of the claim. The area is forested with mature spruce, pine, and fir. Clear-cut logging has already started in the southwest corner of the claim.

Access to the property is by helicopter from Houston or Smithers or via recently upgraded logging roads to the southwest corner of the claim block from Topley Landing. Topley Landing is 43 km north of Topley which is situated on Highway 16, 262 km west of Prince George and 119 km east of Smithers. Daily jet air service from Vancouver is available to both Prince George and Smithers.



Figure 1. Property Location Map

ii) CLAIM OWNERSHIP and STATUS

The Cart mineral claim is owned wholly by Equity Silver Mines Ltd. of Houston B.C. The claim, consisting of twenty units, was staked on November 25, 1988. The record number is 10,006. No previous work has been recorded in this area.

Equity operates a 10,000 tonne/day open pit silver-copper-gold mine approximately 80 km south of the Cart property.

iii) PURPOSE

The current work program was designed to evaluate the potential of the Cart limestone as a source of lime for use in an acid mine drainage neutralization plant.

iv) SUMMARY

In June 1989 Equity Silver Mines Ltd. collected eight chip samples from the south end of the limestone ridge on the Cart mineral claim. The samples were individually analyzed at the Equity Mineste Laboratory for calcium, magnesium, iron, and insolubles. Tests were also conducted on the acid neutralization ability of the material. A composite sample was sent to Kennedy Van Saun Products Ltd. to test the suitability of the limestone for calcining.

The results of these preliminary tests indicate the Cart limestone could be successfully calcined to produce lime for use in the Equity acid mine drainage treatment plant.

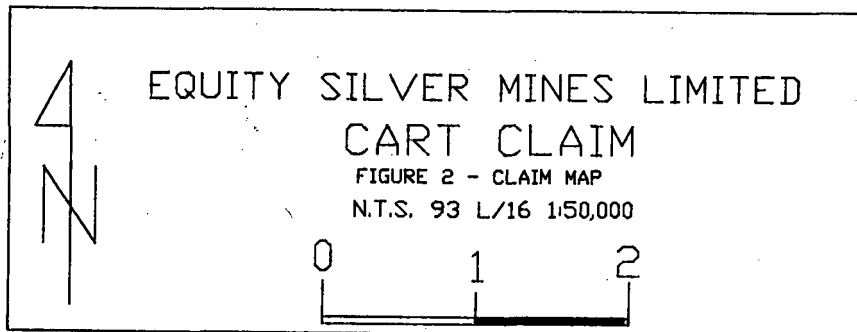
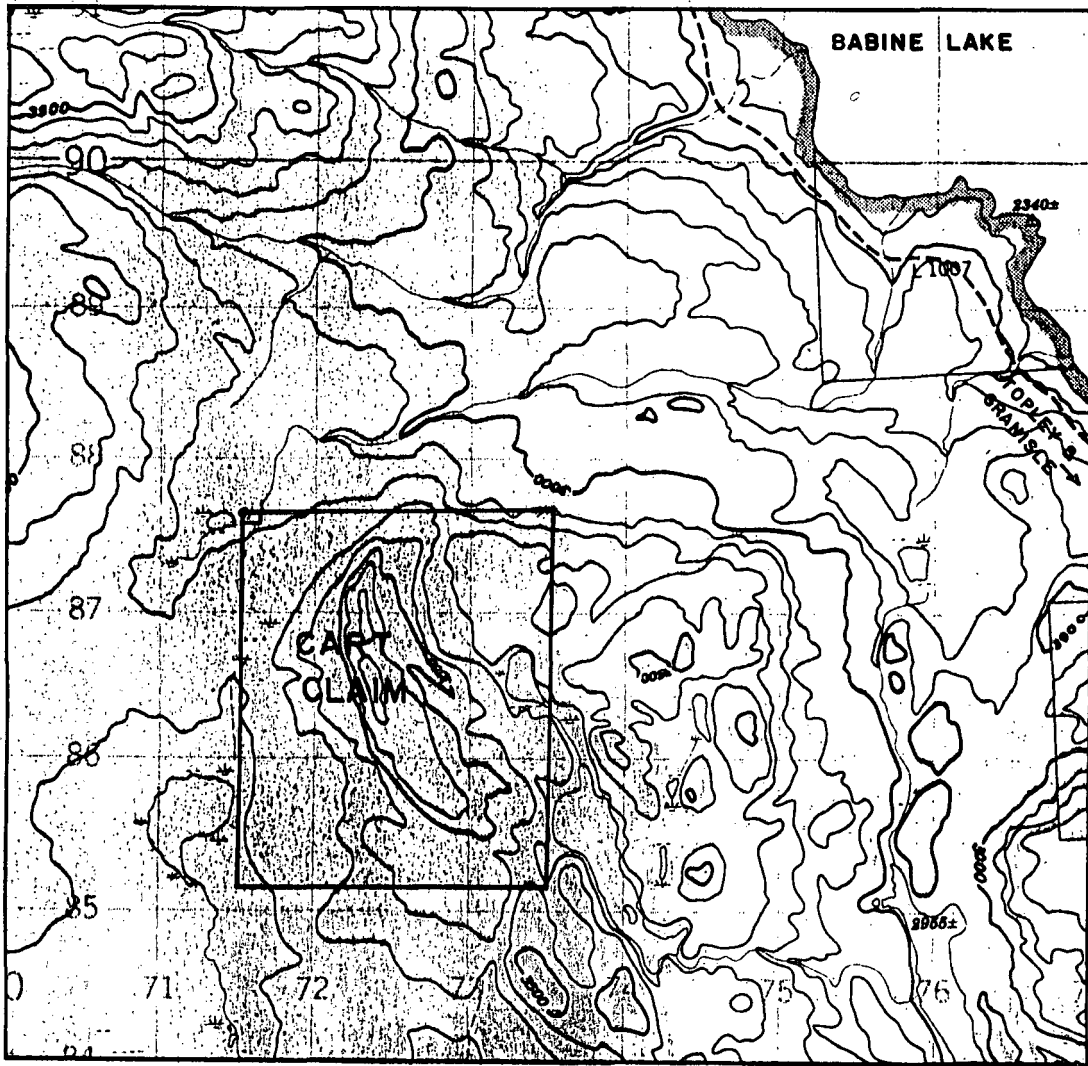


Figure 2 - Cart Claim Map

REGIONAL GEOLOGY

The Cart claim is situated on the northwest side of the Skeena arch within the Intermontane tectonic belt of west-central British Columbia. Structurally, this region is dominated by extensive block faulting. According to Tipper & Richards (GSC : open file 351, 1976) the area of the claim is underlain by Upper Permian limestone in fault contact with volcanic and sedimentary rocks of the Upper Triassic Takla formation.

LOCAL GEOLOGY

As exposed on the rock bluff, the main ridge on the claim is underlain by light grey to black, massively bedded limestone that has been intruded by a few medium green, aphanitic andesite dykes. The limestone is weakly fractured with minor iron staining along fractures near surface. No fossils have been reported.

The bedding in the limestone strikes at 170 degrees and dips approximately 40 degrees to the east.

SAMPLING PROGRAM

In June 1989, Equity personnel collected eight chip samples along the base of the limestone cliff. Two samples weighing approximately 10 kilograms each were obtained from each of four sites located about two hundred metres apart. Each sample was representative of a 5.0 to 7.5 metre length. See Figure 3 for the location of the samples.

A random grab sample from each of the eight samples was submitted to the Equity Minesite Laboratory for acid neutralization tests and for determination of calcium, magnesium, iron, and insoluble content.

A composite sample was made from the best five samples (4219, 4261, 4302, 4304, & 4305), based on acid neutralization test results. The composite was crushed and screened to produce approximately 50 pounds of 3/8 - 1 inch material which was subsequently sent to Kennedy Van Saun Products Ltd. of Danville, Pennsylvania for calcining tests.

DISCUSSION OF RESULTS

The results of the Equity testwork on the eight samples is summarized in Table 2. Acid neutralization is defined as the volume in millilitres of 1 N HCl required to neutralize 1 g of limestone.

**TABLE 1
CART LIMESTONE ANALYSIS
EQUITY MINESITE LABORATORY**

SAMPLE	LENGTH (m)	ACID NEUT. (meq/g)	%Ca	ppm Mg	ppm Fe	CaCO ₃ (calc.)	%Insol
4218	7.5	17.07	33.5	1500	1600	85.4	13.14
4219	7.0	19.44	38.5	1500	700	97.3	2.49
4220	5.0	18.35	35.7	1700	1300	91.8	6.35
4261	7.5	19.31	38.0	1600	800	96.6	1.83
4302	7.5	19.48	37.1	1500	600	97.5	1.10
4303	7.0	18.20	35.9	1300	900	91.1	7.07
4304	7.0	19.33	39.0	1600	1000	97.7	2.12
4305	7.5	19.57	38.2	1600	700	97.9	1.69
AVG.		18.84	37.0	1540	950	94.4	4.47

These results compare extremely favorably with commercially available limestone.

The chemical analysis of the composite sample as determined by the Kennedy Van Saun Laboratory is presented in Table 3.

**TABLE 2
CART COMPOSITE SAMPLE ANALYSIS
KENNEDY VAN SAUN LABORATORY**

CaO ₂	54.50%
MgO	0.32%
Si	1.16%
Fe ₂ O ₃	0.17%
Al ₂ O ₃	0.27%
S	<0.01%
L.O.I.	42.95% (lost on ignition)
CO ₂	43.49%

The results of the Kennedy Van Saun calcining tests are included in Appendix I.

CONCLUSIONS AND RECOMMENDATIONS

Based upon the limited testwork, Kennedy Van Saun concluded the following about the suitability of Cart limestone for calcining:

- 1) Rock purity is good
- 2) Calcines slowly producing fairly unreactive lime
- 3) Produces hard lime (good feature)
- 4) Negligible breakdown in heating limestone to calcining temperature
- 5) Moderate breakdown during calcining
- 6) Will produce 250 lbs. dust/ ton feed

Overall these tests indicated that the Cart claim limestone, in the area sampled, would be suitable for calcining.

More extensive sampling using trenches and pits along the top of the ridge and limited diamond drilling are proposed to further evaluate the Cart limestone.

TABLE 3
STATEMENT OF EXPENDITURES

1. Sampling	
D.J. Hanson - geologist, supervisor June 20 1989 1 day @ \$200/ day	200.00
G.K. Gagnier - geologist June 20 1989 1 day @ \$150/ day	150.00
2. Transportation	
Northern Mountain Helicopter 1.7 hrs @ \$550/ hr	935.00
3. Test Work	
Kennedy Van Saun Products Ltd calcining test \$1500 U.S.	1,764.00
4. Lab Analysis	
Equity Silver Mines Ltd 8 samples @ \$15/ sample	120.00
5. Report Preparation	500.00
	<hr/>
TOTAL	\$ 3669.00

AUTHOR'S QUALIFICATIONS

I, Michael L. Aziz, do hereby certify that:

1. I am a geologist residing at Crest Manor Apts. #302, Butler Ave., Houston, British Columbia, V0J 1Z0
2. I am a 1987 graduate of the University of Western Ontario, London, Ontario with an Honours B.Sc. degree in geology.
3. I have been employed steadily in the geology field since May, 1987.
4. Since May 1989, I have been employed as an exploration geologist with Equity Silver Mines Ltd.
5. I did personally prepare this report.

Respectfully submitted,
Equity Silver Mines Ltd.

Michael Aziz

Michael L. Aziz, B.Sc.
Exploration Geologist

APPENDIX I

KENNEDY VAN SAUN PRODUCTS LTD.

LIMESTONE EVALUATION TEST RESULTS

LIMESTONE EVALUATION TEST

CUSTOMER: Equity Silver Mines

DATE: 8 Aug 89

SOURCE: N Westminster, B.C.

TEST NO. 62537-1

SAMPLE IDENTIFICATION:
=====

Classification: High Calcium

(A) Visual Observation:

Received In: Five gal. pail.

Free Dust: Nil.

Adherent Dust: Nil.

Grain Size: Medium to coarse.

Color: Light gray.

Uniformity: Yes.

(B) Size Analysis as Received Stone:

U.S. Sieve Size	Cumulative % Passing
1"	100.0
0.75"	56.9
0.5"	12.7
0.375"	6.2
0.25"	0.6
50 mesh	0.2

(C) Unit Weight of 1" X 3/8" Size: 77.5 LB/FT³

(D) Abrasion of Stone:

1st 500 rev.: 2.56 % minus 1/4"

2nd 500 rev.: 1.97 % minus 1/4"

Stone Abrasion Index: 4.53

LIMESTONE EVALUATION TEST

CUSTOMER: Equity Silver Mines

DATE: 8 Aug 89

SOURCE: N Westminster, B.C.

TEST NO. 62559-1

SAMPLE IDENTIFICATION:
=====

(E) Potential Decrepitation of Stone:

Stone Shock Heated @ °F

500	No Effect.
700	" "
900	" "
1100	" "
1300	" "
1500	" "
1700	" "
1900	" "
2100	Some breakdown.

(F) Apparent Density of Stone: 2.56 gms/cm³

(G) Loss on Ignition of Stone: 43.80 %

(H) Apparent Density of Lime: 1.50 gms/cm³

(I) Volume Change During Calcination: 4.29 % shrinkage

(J) Breakdown During Calcination in Muffle Furnace:

@ 2100 °F	15.30 % minus 3/8"
	3.01 % minus 1/4"

LIMESTONE EVALUATION TEST

CUSTOMER: Equity Silver Mines

DATE: 8 Aug 89

SOURCE: N Westminster, B.C.

TEST NO. 62559-1

SAMPLE IDENTIFICATION:
=====

(K) Abrasion of Lime:

1st 500 rev.: 15.21 % minus 1/4"

2nd 500 rev: 9.78 % minus 1/4"

Lime Abrasion Index: 24.99

Rotary Kiln Index: 23.50

(L) Size Analysis of minus 1/4" Lime:

U.S. Sieve Size	Cumulative % Passing
1/4"	100.0
6	86.9
8	82.2
16	71.6
30	62.2
50	53.6
100	44.2

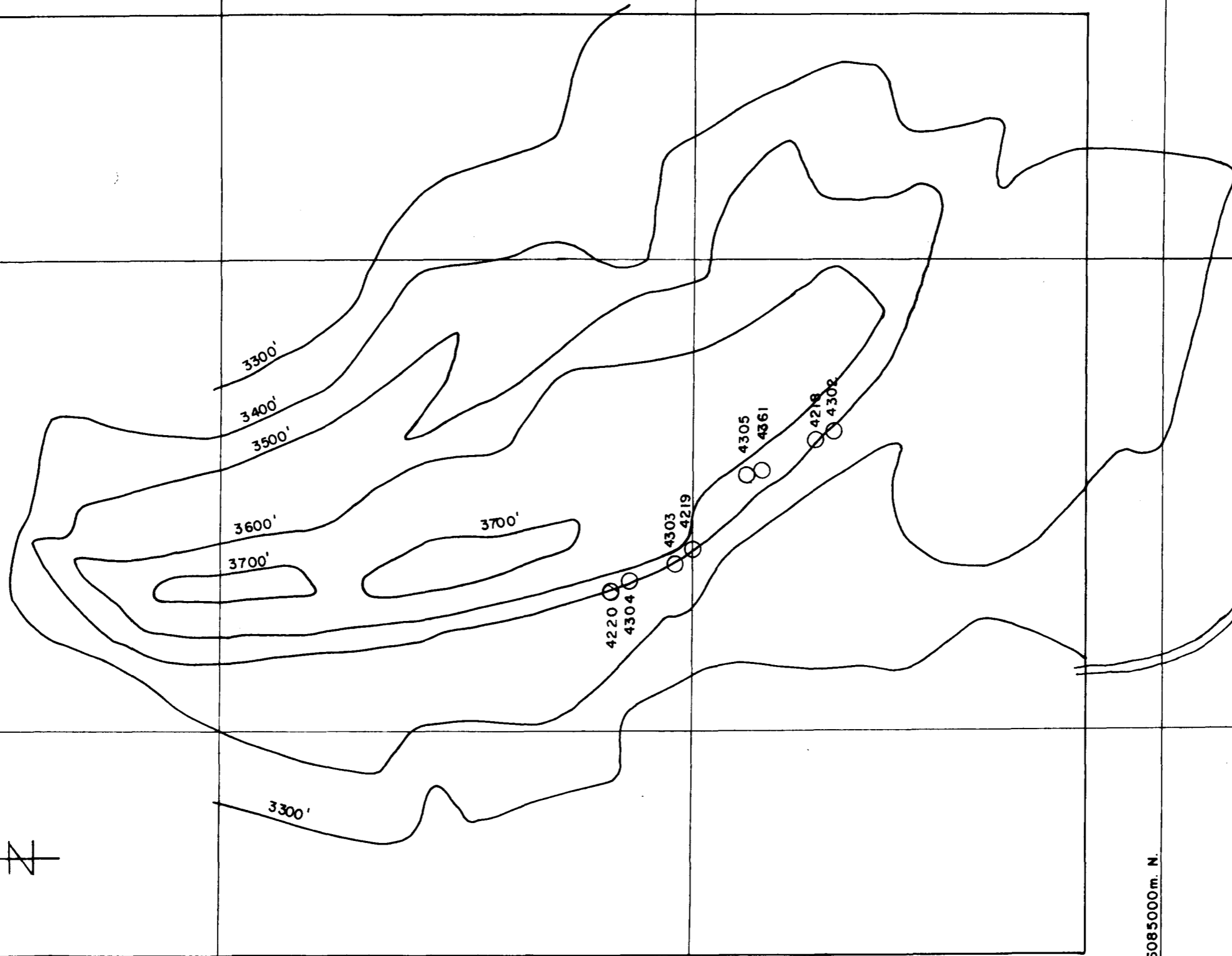
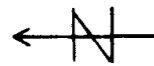
(M) Loss on Ignition of plus 3/8" Lime: 4.11 %

(N) Reactivity of Lime:

Temperature Rise @ 30 seconds:	5.0°C
Temperature Rise @ 3. minutes:	16.0°C
Temperature Rise Total:	50.0°C
Time for 40 Deg C rise:	10.0 Min.
Total Active Time:	17.0 Min.
Average Temperature Rise:	2.94°C/Min.

CLAIM BOUNDARY

LCP



672000 m. E.

6085000 m. N.

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ASSESSMENT REPORT

19,711

DRAWN	SCALE 1 10,000	EQUITY SILVER MINES LTD. CART CLAIM
TRACED	DATE 15 FEB '90	
APPROVED	REVISED MLA	

FIGURE 3 - SAMPLE LOCATIONS
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