

180 #304-# 9076



REIMCHEN SURFICIAL GEOLOGY LIMIT

8076

REPORT ON DRILLING AND GEOLOGICAL EVALUATION
OF
MINERAL PROPERTY AT LUSSIER RIVER, B.C.

Claim Blocks: New Luss 1, New Luss 2
Luss 3, Luss 4
Luss 5, Luss 6

LOCATED IN: FORT STEELE MINING DIVISION,
NTS Maps 82G13 and G14 and
82J3 and J4.
Latitude $50^{\circ} 0'$, longitude $115^{\circ} 30'$

OWNER: Mr. Boris Korun

OPERATOR: Truroc Gypsum Products Ltd.

CONSULTANT: Reimchen Surficial Geology Limited

AUTHOR: T. Reimchen and K. Williams

SUBMISSION DATE: June 20, 1980

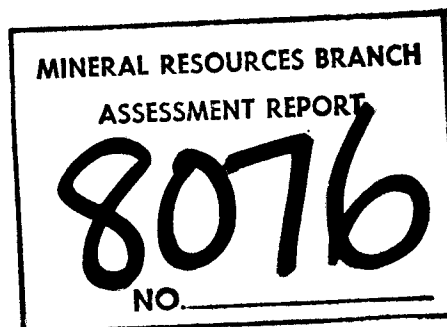


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INTRODUCTION

The Lussier River property is located in the valley of the Upper Lussier River in the southern part of the main range of the Rocky Mountains.

The claims extend along both sides of the Lussier River and part way up the glaciated valley walls, at elevations from 1,380m to about 1,650m. Access from Cranbrook is provided by Provincial Highway 93 and by the all-weather gravel road to Whiteswan and Top of the World Provincial Parks. Abandoned subsidiary logging roads permit trucks to be driven onto all of the claim blocks.

The Lussier River property comprises 6 claim blocks: New Luss 1 and 2, Luss 3, 4, 5 and 6. Luss 1 to 4 were staked in May, 1979 and recorded on May 26. In October, 1979 Luss 1 and 2 were abandoned and the same ground re-staked as New Luss 1 and 2 on October 18, 1979. On October 30, 1979 Luss 5 and 6 were staked and recorded. Ownership of part of the ground covered by New Luss 1 and 2 may be in question because of the existence of prior claims Jean 4 and Mid 1, the locations of which are uncertain.

Mr. Boris Korun, of Edmonton, is the current owner of New Luss 1 and 2 and Luss 3, 4, 5 and 6. The operator is Truroc Gypsum Products Ltd. of Edmonton.

Gypsum is found outcropping over an extensive area on the east side of the Lussier River. In addition, the presence of numerous active and inactive karst sink-holes on both sides of the property indicate a gypsum horizon relatively near the surface. On the east side of the Lussier River, the areal extent of gypsum under shallow overburden could be large - as much as 570,000m. The recent drilling program revealed the vertical thickness of the gypsum deposit to range from 20 meters near the northern

limit to 33 meters in the presumed centre of the gypsum zone. The gypsum cliff along the Lussier River, near the northern limit of the zone, also reveals a thickness of 30 meters. A minimum of 40 million tonnes of gypsum are indicated. Previous assays show gypsum from these outcrops to be at least 80% pure.

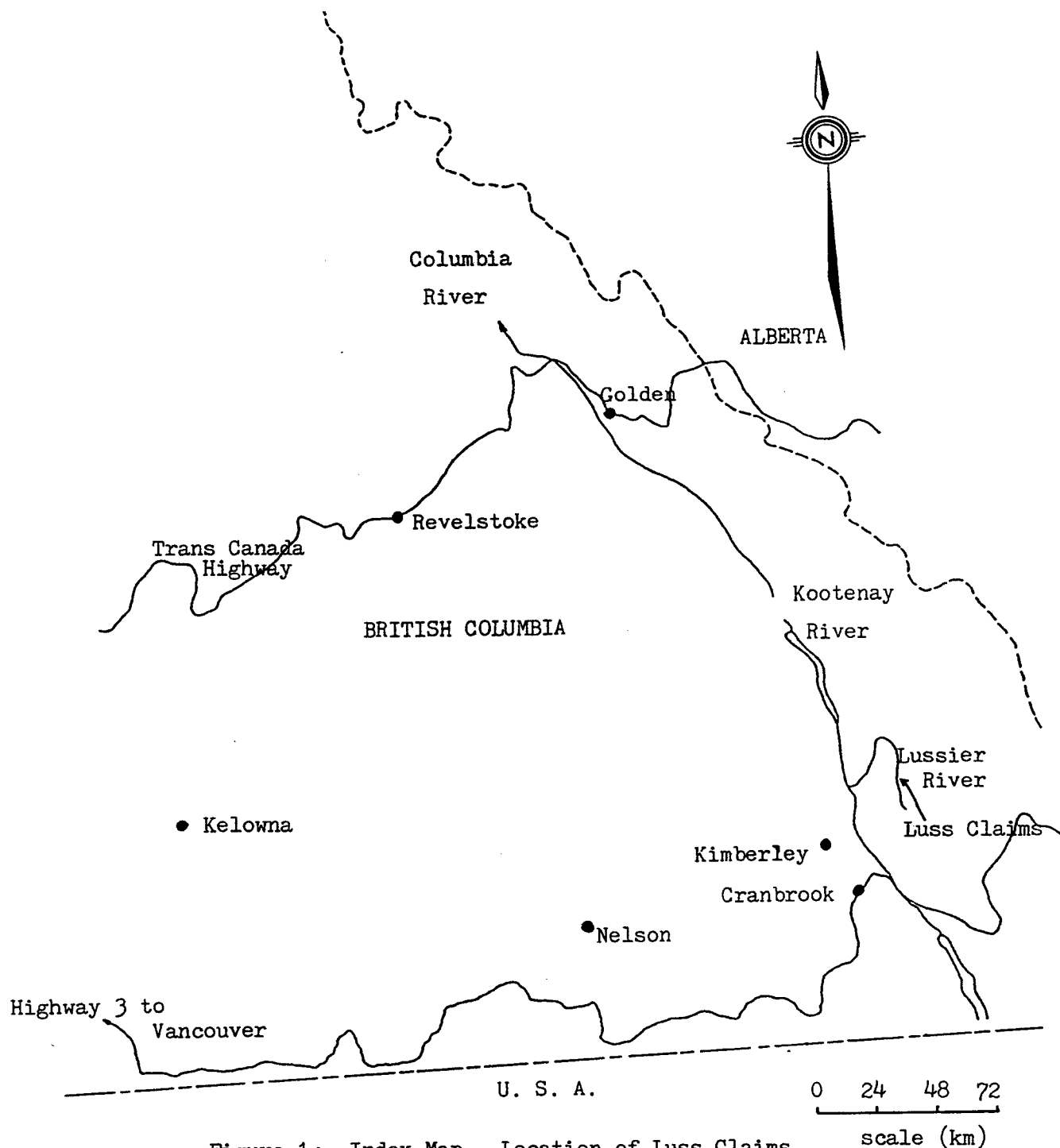


Figure 1: Index Map. Location of Luss Claims in Southeastern British Columbia.

SUMMARY OF WORK DONE

Drilling

A drilling program was carried out by Mobile Augers of Edmonton between May 26 and June 6, 1980. Eleven holes were drilled, five of which encountered good quality gypsum. At six drill locations it was not possible to penetrate the base of the overlying glacial and fluvial gravel and the holes were abandoned. Diamond coring (51mm core) was attempted on all five holes in which gypsum was encountered.

A total of 99m was drilled in gypsum and 39m of gypsum core was obtained. 125m of 150mm and 200mm auger holes was completed. Total drilling amounted to 263m.

Geological Summary

Six days of geological work (plus two days spent locating claim posts and claim boundaries) were spent on property examination, searching for and mapping outcrops and investigating karst subsidence features.

Mapping was performed using B. C. Government (1:31,000) air photographs. A geological base map on a scale of 1:13,480 was prepared covering an area of approximately 575 hectares (map 2).

LIST OF CLAIMS

WORK PERFORMED

<u>Claims</u>			<u>Drill Hole No.</u>
New Luss 1 (2 claims) - Geological Mapping +			GYP 1
New Luss 2 (2 claims) -	"	"	GYP 6
Luss 3 (3 claims)	"	"	GYP 4, GYP 5
Luss 4 (3 claims)	"	"	GYP 1a, GYP 2, GYP 3
Luss 5 (4 claims)	"	"	GYP 7, GYP 10, GYP 11
Luss 6 (9 claims)	"	"	GYP 8, GYP 9

DETAILED TECHNICAL DATA AND INTERPRETATION

a) Drilling Program

A drilling program together with a geological investigation was mobilized in May, 1980. Reimchen Surficial Geology (RSG) acted as the geological consultants and provided supervision for the combined program. Mobile Augers and Research of Edmonton were contracted to drill the holes using a B-61 auger drill with wet rotary coring capability.

The auger drill enables a hollow-stem auger to be emplaced through overburden material into bedrock. Diamond coring can proceed inside the hollow stem auger, using the auger as casing.

Difficulties occurred in augering through the glacial till overburden, especially where there were large boulders or thick gravels. In some holes it was difficult to align the auger holes due to large boulders. Problems of auger hole alignment exacerbated alignment of the core hole below forcing abandonment of two holes. Refinement of drilling procedures eventually eliminated problems of coring of gypsum.

Following the recovery of two nearly complete gypsum core intersections, it was decided to accelerate the program by sampling the gypsum using solid auger cuttings, and saving the gypsum powder in bags.

GYP 1 encountered no gypsum. Difficulty with overburden gravel and hole alignment forced abandonment after two augering attempts. GYP 1 a was later drilled close to the same location and gypsum was encountered from 4.8m to 22.m. This core hole was abandoned while still in gypsum due to hole misalignment. Bag samples only were retained.

GYP 2 encountered gypsum from 4.2m to 9.7m. Gypsum core was taken from 5.8m to base. The increasing difficulty in drilling due to hole misalignment forced abandonment of the hole while still in gypsum. Gypsum was estimated to be greater than 80% pure.

GYP 3 encountered gypsum from 0.6m to 33m. Gypsum cores were taken from 3.m to the base of the hole. Below 28m an increasing content of shale fragments occurred in a gypsum breccia. From 32m to 33m brecciated dolomite was encountered. The hole was abandoned without ascertaining the existence of deeper-lying gypsum.

GYP 4 encountered gypsum from 1.2m to 30 m. Auger cutting samples of gypsum were taken every 1.5m (or more often) to a depth of 21m. Gypsum core was taken from 23m to base. The upper part of the hole is considered to be good quality gypsum, becoming more silicious from 28m to the base.

GYP 5 encountered serious difficulty in hard boulder-rich till. The hole was abandoned at 13m.

GYP 6 encountered gypsum from 3.9m to 21m. Cuttings were taken from 3.9m to 17.6m. The hole was abandoned after drilling 1.6m into limestone.

Drill holes GYP 7 through 11 did not encounter gypsum. It was not possible to auger through the gravel and glacial till overburden despite repeated attempts in four of these locations. GYP 9 was augered 8.5m into argillaceous limestone. GYP 9 was abandoned at 8.5m.

Proposed drill locations on the southern portion of claim blocks Luss 3 and 4 on the east side of the Lussier River became inaccessible

due to continual rains and poor roads.

b) Geological Investigation

A geological survey involved searching and mapping outcrops and examining karst subsidence features (sink-holes) which are suspected to be developed over gypsum.

Unconsolidated surficial deposits include river deposited gravel and sand terraces in the bottom of the Lussier Valley and glacial till which blankets the mountain slopes on both sides of the valley. Bedrock is exposed sporadically, mainly on the steeper eastern valley wall. At one location river gravels are cemented by Recent tuffa into a boulder conglomerate.

In this area active sink holes are developed in gypsum. As karst dissolution of gypsum is many times more rapid than that of limestone, it is fairly certain that gypsum lies below all of the widely scattered sink holes. West of the river 7.2m of siliceous limestone and dolomitic shale was found in a large sink hole. It is probable that most of the western area is underlain by gypsum having a relatively thick covering of limestone and glacial debris.

East of the river near the bridge crossing the Lussier River is a large gypsum cliff 30m high, formed of highly contorted gypsum. Several other gypsum outcrops suggest a pod shaped body of gypsum in the northern part of the property, possibly formed along a fault zone.

The structure of the limestone and shale strata encircling the gypsum is unclear. An east-west fault appears to occur in limestone and shale to the north of the gypsum pod. (Figure 3).

Limestone, shale and silty limestone outcrop east of the gypsum area and at a higher elevation. The structure is variable and unclear but these outcrops define a clear boundary along the mountainside, delimiting the eastern boundary of gypsum recoverable by surface mining.

The western limit of the gypsum pod is drawn along the base of the gypsum cliff and the Lussier River and southward following the base of the steep slope of the mountain (Figure 2). An extensive outcrop of tuffa occurs in a terrace on the east-bank of the Lussier River in the middle of Luss 4 claim block. This and other minor tuffa outcrops are believed to be recently deposited on surface and also within river gravels above bedrock. It was not possible to drill near this location to ascertain the existence of gypsum.

Near the southern end of the gypsum pod, and extending southwards, a line of sink holes. It is possible that gypsum subcrops along this line as a southern extension of the gypsum pods either along a fault or an easterly dipping stratum, conformable with limestone above and below (Figure 3).

The drill results reveal thicknesses of gypsum to be greater than 30m near its mid point. Tonnage of indicated gypsum is in the order of 40 million tonnes (1620m x 350m x 30m).

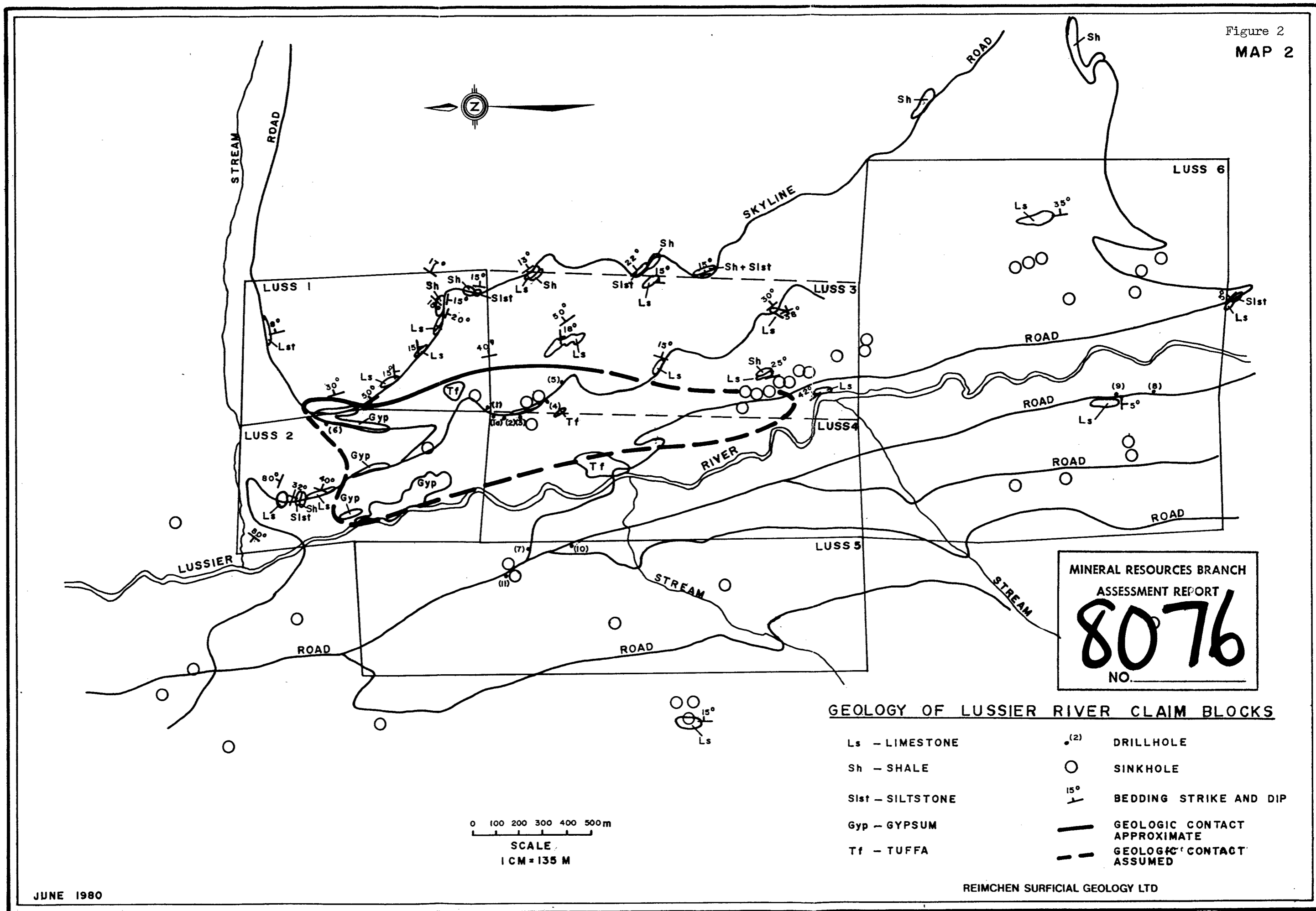
Kevin A Williams

Kevin A. Williams,
B.Sc., M.Sc.

Reimchen

Ted H. F. Reimchen,
P. Geol.

Figure 2
MAP 2



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8076
NO. _____

GEOLOGY OF LUSSIER RIVER CLAIM BLOCKS

- Ls - LIMESTONE
- Sh - SHALE
- Slst - SILTSTONE
- Gyp - GYPSUM
- Tf - TUFFA
- (2) DRILLHOLE
- SINKHOLE
- 15° BEDDING STRIKE AND DIP
- GEOLOGIC CONTACT APPROXIMATE
- - - GEOLOGIC CONTACT ASSUMED

JUNE 1980

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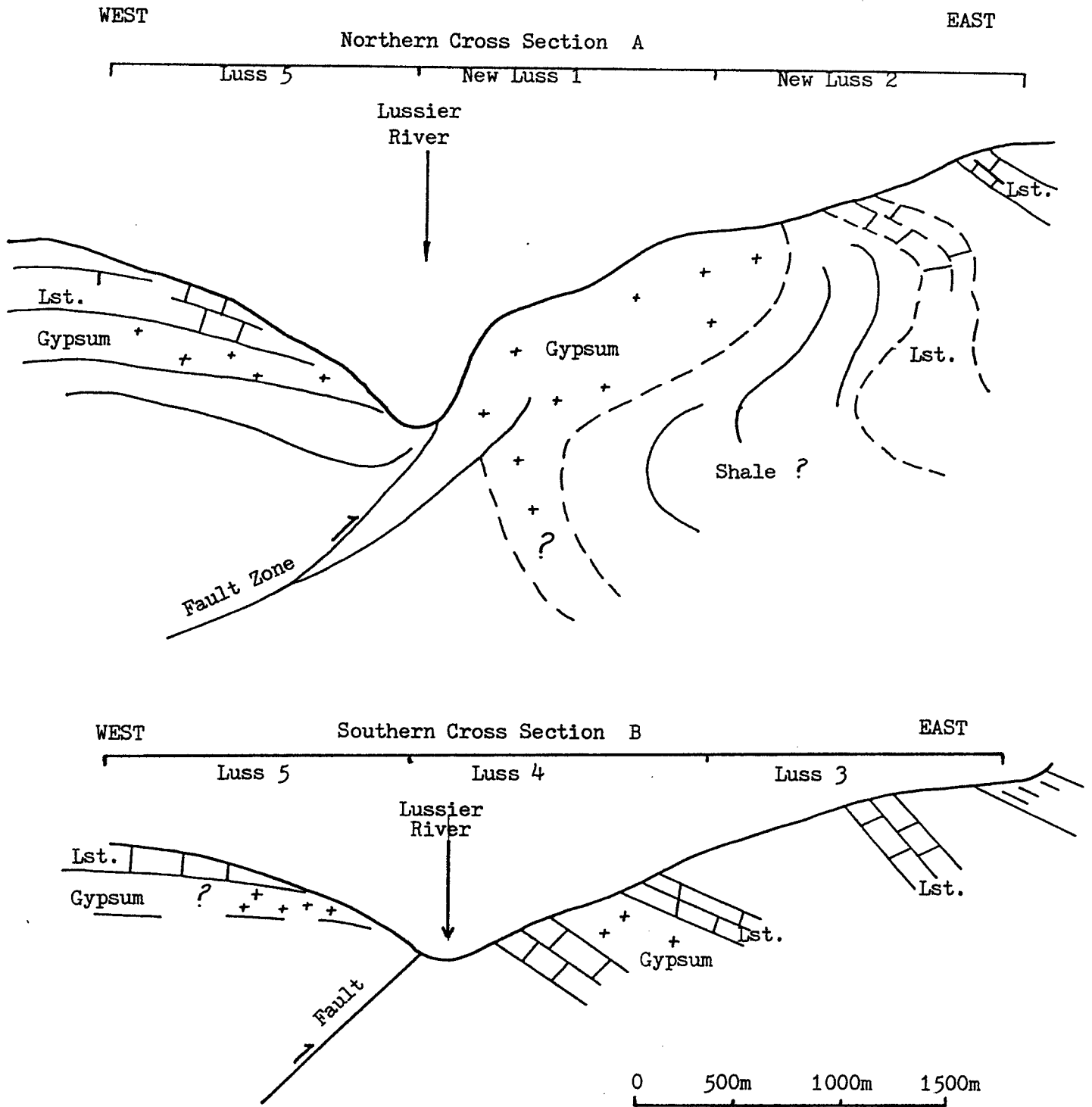


Figure 3: Geology Cross Sections.
Possible Schematic Sections Through:
A) Northern Claims B) Southern Claims

ITEMIZED COST STATEMENT

Drilling Costs

101.5 hours of drilling and rig travel @ \$110/hour	\$11,165.00
29.5 hours of crew travel and standby @ \$60/hour	1,770.00
17 bags bentonite plus 1 bag lime	155.00
2 solid augers plus 2 solid auger bits	680.00
50% wear on shale bit	160.00
75% wear on diamond core bit	860.00
Repairs to 3 drill rod thread ends	125.00
2 core baskets	60.00
2 tungsten drill bit teeth	20.00
30 core boxes	<u>200.00</u>
Sub Total.....	\$15,195.00
Accommodation for drill crew (2 men, 12 days)	<u>540.00</u>
Total Drilling Costs....	<u><u>\$15,735.00</u></u>

Reimchen Surficial Geology Costs

Supervision, drilling supervision - Senior Geologist, 3 days @ \$300/day	\$ 900.00
Geologist, 10 days @ \$200/day	2,000.00
Geology Field Work - Geologist, 2 days @ \$200/day	400.00
- Junior, 11 days @ \$100/day	1,100.00
Travel Expense - Senior Geologist, 2 days @ \$300/day	600.00
- Geologist, 2 days @ \$200/day	400.00
- Junior, 2 days @ \$100/day	200.00
- Plane & transport - \$150 x 3 persons	450.00
Accommodation - Senior Geologist, 3 days)	
- Geologist, 14 days)	700.00
- Junior, 13 days)	
Truck rental: 1 pick-up, 1 4-wheel drive	2,060.00
Report Preparation	<u>650.00</u>
Total....	<u><u>\$9,460.00</u></u>

Total Drilling Costs	\$15,735.00
Total Reimchen Surf. Geol Costs	<u>9,460.00</u>
Total.....	<u><u>\$25,190.00</u></u>

BORING GYP 1

ELEVATION METRES

COORDINATES N
E

REVISIONS BY DATE

FILE BY DATE CHECKED BY

SAMPLES

DEPTH (M)

SYMBOLS

1	ML	Glacial till, silty clay at surface; boulders underneath result in skidding hole 2m. south.
2		
3		
4		
5	GM	Core attempted - till, with fragments of 1st boulder approx. 4.5 m depth.
6		1st. and 1st mixed with grn argilite (?) from 5-6 m depth.
7		
8		Glacial till - boulder dolomitic quartzite with calcite joint approx. 45 degrees (at approx. 7.5 m)
9		Base of hole 8.5 m auger refused by boulder. - not possible to reach bedrock.
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		

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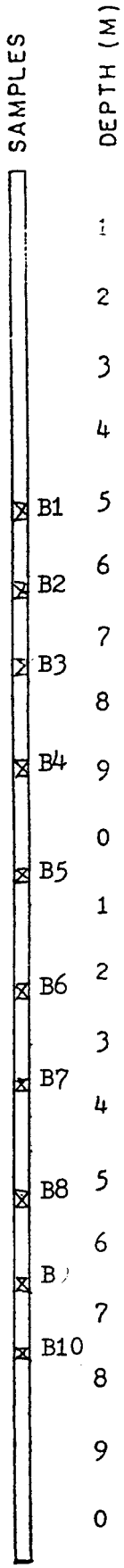
ELEVATION METRES

COORDINATES N
E

REVISIONS BY DATE

FILE

BY DATE
CHECKED BY



SYMBOLS		
1	GM	Hard surface till to 2.1m. Gravel with clay.
2		Soft clayey - gravel from 2.1m to 5m depth.
3	GC	
4		
5	GYP	Top of gypsum at 5.0m. Begin taking auger cuttings samples. Whitish-grey gypsum powder samples. Bags #1 - 4 consistent.
6		
7		7.5m gypsum
8		
9		9.0m gypsum
0		
1		10.75m gypsum very hard-chip/powder sample.
2		12.25m Bags #6 - 10 consistent with Bag #1 - 4.
3		13.75m gypsum
4		
5		15.25m gypsum
6		
7		16.75m gypsum
8		17.75m - limit of solid core augers. Began drilling with wing bit. No samples to base.
9		
0		

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ELEVATION METRES
COORDINATES N
E

REVISIONS
BY _____ DATE _____

FILE _____

CHECKED BY _____ DATE _____

SAMPLES

DEPTH (M)

SYMBOLS

21

2

3

4

5

6

7

8

9

0

1

2

3

4

5

6

7

8

9

0

Base of hole 22.25m. Still drilling gypsum.

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BORING GYP 2

ELEVATION METRES

COORDINATES N
E

REVISIONS BY DATE

FILE

BY DATE
CHECKED BY

SAMPLES

DEPTH (M)

SYMBOLS

				1		Silty, clayey till with 1st cobbles.
				2	GM	
				3		
				4		Top of gypsum 4.25 m depth
				5	GYP	Began to core at 5.75 m depth
	R1			6		Run 1 (1) - 5.75 m to 6.75 m lt. grey and dark banded gypsum soft. Strong sulfur smell.
	R2			7		R2 - 6.75 m to 8.25 m gypsum lt. grey with white crystalline wavy bands. 100% recovery.
	R3			8		R3 - 8.25 m to 9.5 m wavy bands of white crystalline gypsum. At 8.75 m to 9.0 m hard gypsum breccia.
				9		
				10		9.75 m base of hole, gypsum continues.
				1		
				2		
				3		
				4		
				5		
				6		
				7		
				8		
				9		
				0		

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ELEVATION METRES

COORDINATES N
E

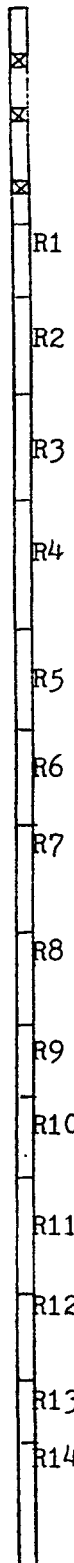
REVISIONS BY DATE

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BY DATE
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SAMPLES

DEPTH (M)



SYMBOLS

GM		
		Clayey gravel till overburden to 0.20m depth. Auger to 3m.
GYP		Gypsum top powdered gypsum samples taken at 0.75m , 1.5m, and 2.5m depth.
		Began core at 3m depth
	R1	Run 1 2m to 4m 0% recovery - due to ease of drilling, believed to be gypsum
	R2	4.0m to 5.25m 80% recovery.
	R3	5.25m to 6.5m 10% recovery. Same grey gypsum with black wavy bands (very soft).
	R4	6.5m to 8.2m almost full recovery - brecciated gypsum, slightly harder.
	R5	8.2m to 9.5m recovery only 50%. Similar brecciated gypsum. Very strong sulfur smell.
	R6	9.5m to 10.75m 100% recovery. Dark grey banded gypsum.
	R7	10.75 to 12.25m 10% recovery. Strong sulfur smell.
	R8	12.25m to 13.5m 100% recovery. Brecciated gypsum
	R9	13.75m to 14.25m no recovery
	R10	14.25m to 15.5m recovered 35%. Upper .25m gypsum breccia. last .25m grey with horizontal black laminations.
	R11	15.5m to 17.0m 75% recovery. Soft black gypsum with some sulfur smell. White gypsum bands at approx. 45 degree dip. Not brecciated.
	R12	17.0m to 18.25m 0% recovery.
	R13	18.25m to 19.0m recovered 60%. Harder gypsum breccia.
	R14	19.0m to 20.5m

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BORING

GYP 4 (page 1 of 2)

ELEVATION

METRES

COORDINATES N
E

REVISIONS BY _____ DATE _____

FILE _____

BY _____ DATE _____
CHECKED BY _____

SAMPLES

DEPTH (M)

SYMBOLS

	CL		
	GC		
B1			
B2			
B3			
B4			
B5			
B6			
B7			
B8			
B9			
B10			
B11			
B12			
B13			
B14			
B15			
B16			

1 First 4 attempts stopped on boulders at 1.25m, hole skidded.

2 Fifth attempt gypsum at 1.5m. Auger to 21m. Powder samples taken every 1.5m (5').

3 2.5 auger cuttings change colour from lt. grey to darker blue-grey.

4 3.75m black, slightly harder gypsum cuttings. Colour again lt. grey.

5 Bag 4 (5.5m) darker gypsum cuttings with small pebbles of grey weathered gypsum, also several pebbles brown, calcareous tuffa (?).

6 6m grey gypsum, normal hardness.

7

8 8.5m rounded pebbles of black gypsum.

9

10 10m darker grey gypsum cuttings.

11

12 12m lt. grey gypsum.

13

14 Bags #11 - 16 consistent, lt. grey gypsum cuttings.

15

16

20

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LOG OF TEST BORINGS

BORING

GYP 4 (page 2 of 2)

ELEVATION

METRES

COORDINATES

N
E

REVISIONS BY DATE

FILE

BY DATE CHECKED BY

SAMPLES	DEPTH (M)	SYMBOLS
	21	
	2	
	3	
R1	4	
	5	
R2	6	
	7	
R3	8	
	9	
R4	10	
	11	
R5	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	

Bag #17 consistent with previous samples of gypsum.

23.5m - start of coring.

R1 - 23.5m to 24.75m sheared/laminated to brecciated gypsum.

R2 - 24.75m to 26.0m - recovery 100%. Whitish grey laminated gypsum. Areas partly brecciated.

R3 - 26.0m to 27.5m - recovery 100%. Top .50m is hard (calcareous?) lower portion of core brecciated.

R4 - 27.5m to 28.75m - recovery 100%. Upper majority of core is gypsum - whitish crystalline with sulfur smell. Lower portion silicious(?) gypsum.

R5 - 28.75m to 30m. Extremely slow drilling. 100% recovery of silicious banded gypsum, with silicious gypsum breccia at base.

30.0m base of hole.

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LOG OF TEST BORINGS

BORING GYP 5

ELEVATION METRES

COORDINATES N
E

REVISIONS
BY _____ DATE _____

FILE _____

CHECKED BY _____ DATE _____

SAMPLES

DEPTH (M)

SYMBOLS

1		
2	GM	
3		
4		
5		
6		
7		
8		
9		
10		
1		
2		
13		
4		
5		
6		
7		
8		
9		
0		

Coarse gravel till to 13m.
Abandon hole due to loss of auger bit and two auger sections (unretrieved) in hard till.

Base of hole 13.0m

REIMCHEN SURFICIAL
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ELEVATION METRES

COORDINATES N
E

REVISIONS
BY _____ DATE _____

FILE _____
BY _____ DATE _____
CHECKED BY _____

SAMPLES	DEPTH (M)	SYMBOLS			
	1				Gravel till to 4.0m
	2	GM			
	3				
	4				Top of gypsum 4.0m
	5	GYP			5.5m gypsum powder sample. Cuttings consistent with other holes.
X B1	6				
X B2	7				7.5m gypsum
	8				
X B3	9				9.25m gypsum
	10				
X B4	1				10.75m gypsum
	2				
X B5	3				12.25m gypsum
	4				
X B6	5				13.75m gypsum
	6				
X B7	7				15.25 gypsum
	8				
X B8	9				17.75m Base of solid auger hole. Began drilling with tricone bit.
	0				

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LOG OF TEST BORINGS

BORING

GYP 6 (page 2 of 2)

ELEVATION

METRES

COORDINATES

N
E

REVISIONS
BY _____ DATE _____

FILE _____

CHECKED BY _____ DATE _____

SAMPLES

DEPTH (M)

SYMBOLS



21

2

3

4

5

6

7

8

9

0

1

2

3

4

5

6

7

8

9

0

Limestone at 20.75m - very difficult drilling. Contact determined by drilling resistance.

21.75m begin to core very slow.

R1 - 21.75m to 22.5m 1st very slow coring.

22.5m - base of hole.

REIMCHEN SURFICIAL
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BORING GYP 7

ELEVATION METRES

COORDINATES N

E

REVISIONS BY DATE

FILE

CHECKED BY DATE

SAMPLES

DEPTH (M)

SYMBOLS

1			
2	GM		
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Silty gravel till to 15m, no gypsum found. Hole abandoned due to drilling difficulty and lack of gypsum.

Base of hole 15m.

REIMCHEN SURFICIAL GEOLOGY LTD.

BORING GYP 8
ELEVATION METRES
COORDINATES N
E

REVISIONS
BY _____ DATE _____

BY _____ DATE _____
CHECKED BY _____ FILE _____

SAMPLES

DEPTH (M)

SYMBOLS

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 0

GM		

Could not penetrate more than 4.25m (3 attempts) due to boulders. Coarse gravel till. No gypsum found.

Base of hole 4.25m.

REIMCHEN SURFICIAL
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BORING

GYP 9

ELEVATION

METRES

COORDINATES

N
E

REVISIONS
BY _____ DATE _____

BY _____ DATE _____
CHECKED BY _____ FILE _____

SAMPLES

DEPTH (M)

SYMBOLS

1				Solid auger to 3m through weak and weathered shale.
2				
3				3m. 1st/shale contact. Limestone to 8.5m.
4	LST			
5				
6				
7				
8				Base of hole 8.5m.
9				
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
0				

REIMCHEN SURFICIAL
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BORING GYP 10
 ELEVATION METRES
 COORDINATES N
 E

REVISIONS
 BY _____ DATE _____

BY _____ DATE _____
 CHECKED BY _____ FILE _____

SAMPLES

DEPTH (M)

SYMBOLS

1	GM	Silty gravel till. Boulders throughout prevent penetration deeper than 6.75m. (3 attempts).
2		
3		
4		
5		
6	GC	Contact gravel till/dark (blue) grey clayey till.
7		Base of hole 6.75m.
8		
9		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		

REIMCHEN SURFICIAL
 GEOLOGY LTD.

BORING GYP 11

ELEVATION METRES

COORDINATES N
E

REVISIONS
BY _____ DATE _____

FILE _____

BY _____ DATE _____
CHECKED BY _____

SAMPLES

Vertical bar for recording sample numbers.

DEPTH (M)

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 0

SYMBOLS

Solid auger to 3.75m through gravelly till and boulders prevent penetration (1 attempt).

Base of hole 3.75m.

REIMCHEN SURFICIAL
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Curriculum Vitae

TED H. F. REIMCHEN 1941-

Telephone: (604) 929-7872

Title Senior Geologist

Expertise Remote Sensing, Surficial Geology, Applied Geology

Experience
With Firm

- Comprehensive geological and geotechnical evaluations of overburden for tar sands, Syncrude Canada Ltd. and Alsands Project Group with emphasis on slope stability, geological stratigraphy and geotechnical indices, materials handling for strip mining and trafficability for large-scale construction equipment.
- Remote sensing using Landsat and conventional imagery for mineral exploration, in conjunction with field mapping for gypsum in southern British Columbia, & water supplies in the Hashemite Kingdom of Jordan.
- Remote sensing and geological evaluation for location of town sites, transportation and utility corridors, granular resources, mine-site planning, tailings ponds, airports, potential erosion areas in forested regions and industrial minerals in Canada, United States, Mexico, and Spain, nuclear power plant in Iran and groundwater evaluation between the Sea of Tiberias, Dead Sea and the Red Sea.
- Terrain classification and land-use planning for national parks using Landsat and conventional imagery.
- Remote sensing using Landsat, Skylab, and airborne imagery for diamonds in the Orinoco River, Venezuela; archaeological sites in Yukon, Alberta, Saskatchewan and Peru; placer minerals in dense jungles in Colombia, S.A.; evaluation of forest harvesting practices in Alberta and Saskatchewan; potential rock slides in the Canadian Rocky Mountains; hydroelectric reservoir studies in British Columbia for slope stability; potential ground water for irrigation of deserts in Peru and Iran; and pipeline routing for Westcoast Transmission, Alberta Natural Gas, Mackenzie and Polar Gas Pipelines and Grizzly Lines.

- Surficial geology and remote sensing for uranium, molybdenum, gypsum, gold, magnesite and copper for Uranerz, Norcen, Asamera, Genstar, Amoco and smaller independents in North and South America, Middle East and Oceania.
- Quaternary history, surficial geology, terrain analyses and potential erosion of over 120,000 km square in the Arctic, Canada, Trinidad, Peru, N.W. United States, Spain, Iran, Jordan and Saudi Arabia.

Academic
Background

B.Sc. in Geology and Zoology, University of Alberta, Canada.
M.Sc. in Surficial Geology and Geology, University of Alberta, Canada.
Two years graduate work towards Ph.D. in remote sensing and economic geology; completed and published thesis at Western University in London, Ontario.

Professional
Affiliations

Association of Professional Engineers, Geologists and Geophysicists of Alberta; Canadian Institute of Mining and Metallurgy; American Association of Quaternary Geologists, Archaeological Society of Alberta and Ontario; Canadian Remote Sensing Association.

Registration

Professional Geologist, Alberta.

Publications

Authored and co-authored more than 22 publications of economic and academic interest ranging in topics from remote sensing of minerals and surficial geology to early man archaeology and mammalian paleontology.

" Surficial Geology, Erosion Potential and Slope Analyses of the Foothills and Mountains of Alberta", 240 maps at 1:50,000 scale.

"Surficial Geology, Granular Resources of Canadian Arctic Gas Pipeline along the MacKenzie River".

"A Geological Approach to Archeological Problems by Remote Sensing in the Lamboyeque Valley, Peru, S. A."

"Multispectral Analyses for Groundwater in the Rift Valley of Jordan".

"Location of Gypsum utilizing digital computer tapes in S. E. British Columbia for Genstar".

Curriculum Vitae

KEVIN WILLIAMS 1949-

Telephone: (604) 929-7872

Title	Geological Engineer.
Expertise	Mineral Exploration, Geological Engineering.
Experience	<ul style="list-style-type: none">• Geology Field Assistant. Surficial geology, petroleum and coal exploration, British Columbia and Yukon, 1968 - 1970.• Field Geologist. Evaluation and exploration of mineral properties in sedimentary, volcanic and volcanic/intrusive terrains in British Columbia and Yukon, 1971 - 1973.• Geological and geotechnical evaluation of materials lying above and below the Athabasca Oil Sands, Alberta, 1977 - 1980.
Academic Background	B.Sc. in Geology, University of Alberta, Canada. M.Sc. in Mining Engineering, University of Alberta, Canada.
Affiliation	Canadian Institute of Mining and Metallurgy. American Institute of Mining and Metallurgical Engineers.
Publications	In preparation: "Geotechnical Properties of the Waterways Formation Limestone, Alberta".