MAR 19960004: CHAIN LAKES

Received date: Feb 13, 1996

Public release date: Feb 14, 1997

ASSESSMENT WORK REPORT

19960004

G. R. G. J. PONOKA

For the Period November 17, 1993 to November 17, 1995

Table of Contents

Summary

Beginning in June, 1993, satellite imaging was utilized to locate possible precious metal and precious gem deposits in Alberta. The results of this Land-Sat work up were used to determine the land locations on which metallic and industrial mineral permits were obtained from the Province of Alberta in November, 1993.

On May 4, 1994, 22 kilogram samples were taken at five sites on the permit lands just east of Ponoka, Alberta and sent to Airmont Labs in Lewistown, Montana for assaying. Results showed significant amounts of platinum group metals in the samples taken.

An extensive drilling program was undertaken in June of 1994, concentrating on six square miles of the permit lands which had been transferred to G. R. G. J. Exploration Corp. from the original permit holders. Geo Metal, Arnold Takemoto, of 2734 East Mountain Sky Avenue in Phoenix, Arizona 85048-8991 ((602) 706-0388) was engaged as the egineering consulting firm to oversee the program. Unfortunately, insufficient funds were available for Mr. Takemoto to complete his assay work and engineering report. Presently funds are being raised to complete the report and carry on with another drilling and sampling program in the summer of 1996.

Results obtained so far are promising. Significant amounts of precious metals have been determined. Indicators of the presence of quality gemstones were found.

Introduction

The scope of this assessment work was to determine the amounts of precious metals (particularly gold and platinum group) and precious gems (particulary diamonds, rubies and sapphires) found at various locations on six square miles of permit lands. Placer mining would be the means of recovering these values, so sampling would be done from the surface to the depth of the water table, beyond where sampling is difficult with this method of drilling.

GRGJ Exploration Corp.

Box 70
Marsden, Saskatchewan S0M 1P0
Tel: (306) 826-5679, Fax: (306) 826-5490

February 17, 1996

Manager, Mineral Agreements
Mineral Resources Branch
Alberta Department of Energy
Petroleum Plaza, North Tower
9945 - 108 Street
Edmonton, AB
T5K 2G8

FEB 29 11 55 AM '96
ENERGY/ENVT. PROT. MAIL 4

Dear Brian Hudson:

This covering letter for the Assessment Work Report submitted by our company is to advise you that the expenses stated in the report ($265,811.00) are to be applied to the following Permit Numbers:

Permit No. 9393110009 (including Permit No. 939311A009)	9043.952 hectares
Permit No. 9393110010	9152 hectares
Permit No. 9393110011	9209.24 hectares
Permit No. 9394020017	9192.22 hectares
Permit No. 9394020018	9159.042 hectares
Total Area	45,756.454 hectares

Thank you for your attention to this matter.

Sincerely,

[redacted]

Roy A. Biensch
President

Location and Access

Ponoka is located aproximately 100 kilometres south of Edmonton, Alberta. The lands contained in the three permits run in a south-south-west to north-north-west diagonal starting just north of Red Deer and passing approximately 6 to 10 kilometres east of Ponoka.

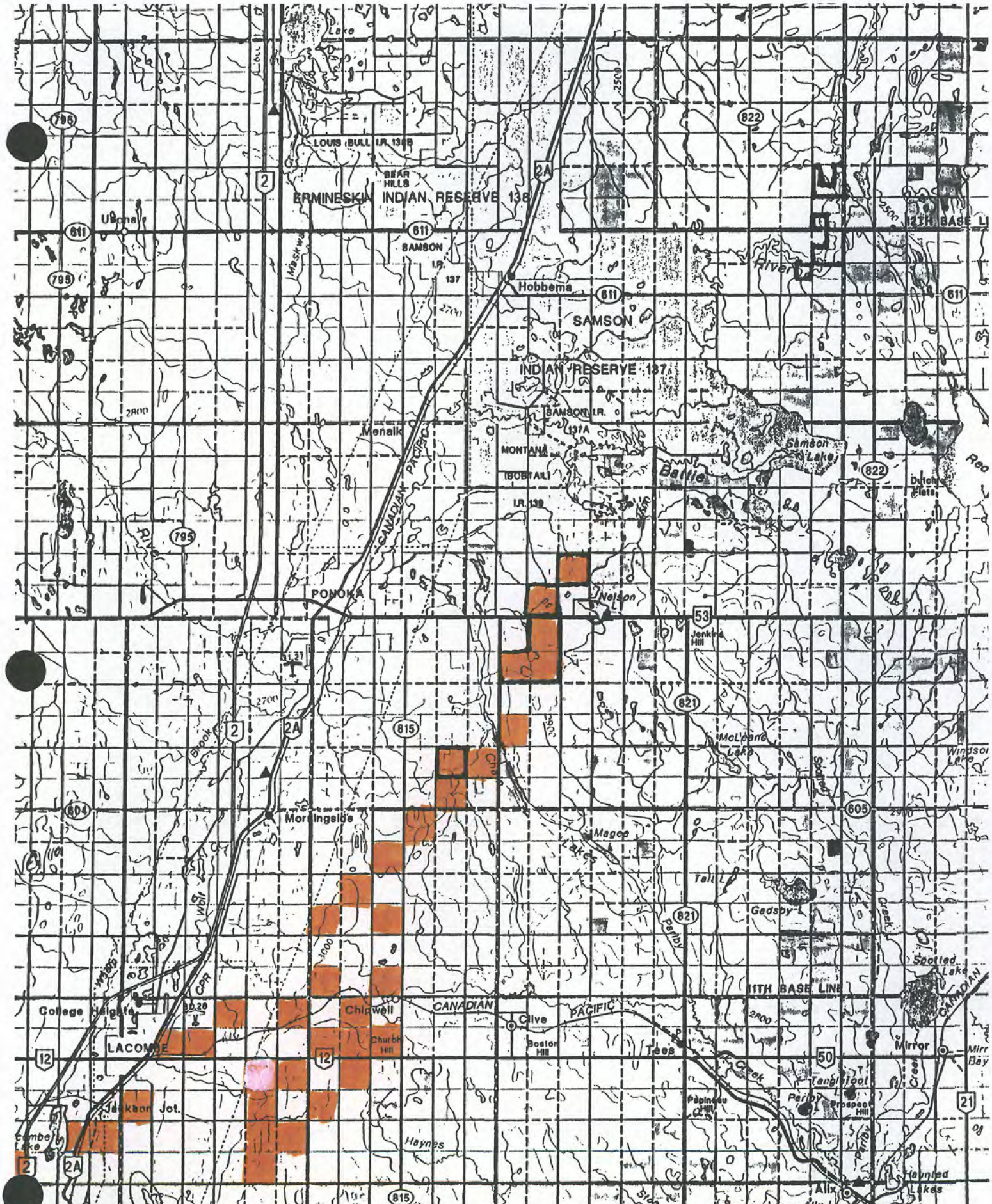
The five small samples taken on May 4, 1994 were taken from the following locations:

1) GRGJ 104-3 North side of Section 10, Township 43, Range 24, West of 4th Meridian
2) GRGJ 105-3 South side of Section 30, Township 42, Range 24, West of 4th Meridian
3) GRGJ 106-3 North side of Section 32, Township 42, Range 24, West of 4th Meridian
4) GRGJ 107-3 East side of Section 4, Township 43, Range 24, West of 4th Meridian
5) GRGJ 108-3 South side of Section 4, Township 43, Range 24, West of 4th Meridian

The sixteen large holes drilled from June 13 to 21, 1994 were taken from the following locations and are shown on the map (NTS Topographical 1:50,000 map - 83A/11, Chain Lakes) which is Figure 1:

1) GRGJ 138 South East of Section 10, Township 43, Range 24, West of 4th Meridian
1) GRGJ 138 South East of Section 10, Township 43, Range 24, West of 4th Meridian
1) GRGJ 141 North East of Section 10, Township 43, Range 24, West of 4th Meridian
1) GRGJ 142 North West of Section 10, Township 43, Range 24, West of 4th Meridian
1) GRGJ 147 North East of Section 4, Township 43, Range 24, West of 4th Meridian
1) GRGJ 151 South East of Section 4, Township 43, Range 24, West of 4th Meridian
1) GRGJ 152 North East of Section 32, Township 42, Range 24, West of 4th Meridian
1) GRGJ 153 North East of Section 32, Township 42, Range 24, West of 4th Meridian
1) GRGJ 154 North West of Section 32, Township 42, Range 24, West of 4th Meridian
1) GRGJ 155 North West of Section 32, Township 42, Range 24, West of 4th Meridian
1) GRGJ 159 North West of Section 29, Township 42, Range 24, West of 4th Meridian
1) GRGJ 160 North East of Section 29, Township 42, Range 24, West of 4th Meridian
1) GRGJ 161 South East of Section 30, Township 42, Range 24, West of 4th Meridian
1) GRGJ 162 South East of Section 30, Township 42, Range 24, West of 4th Meridian
1) GRGJ 163 South East of Section 30, Township 42, Range 24, West of 4th Meridian
1) GRGJ 164 South East of Section 30, Township 42, Range 24, West of 4th Meridian
1) GRGJ 165 North East of Section 11, Township 42, Range 25, West of 4th Meridian

Access to the sites was obtained by the use of existing county roadways and by obtaining permission from the private landowners to cross their land and dig the test holes.

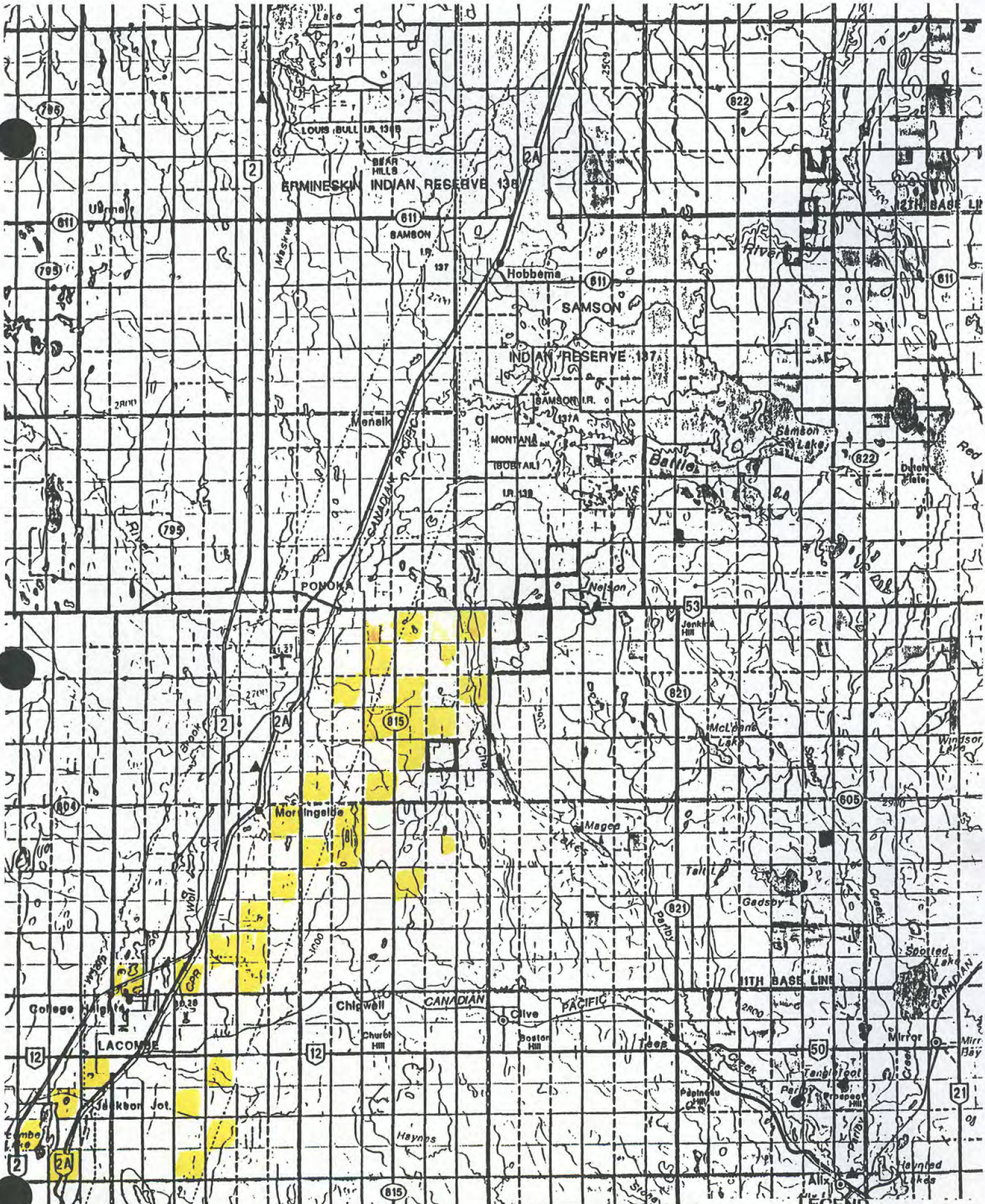


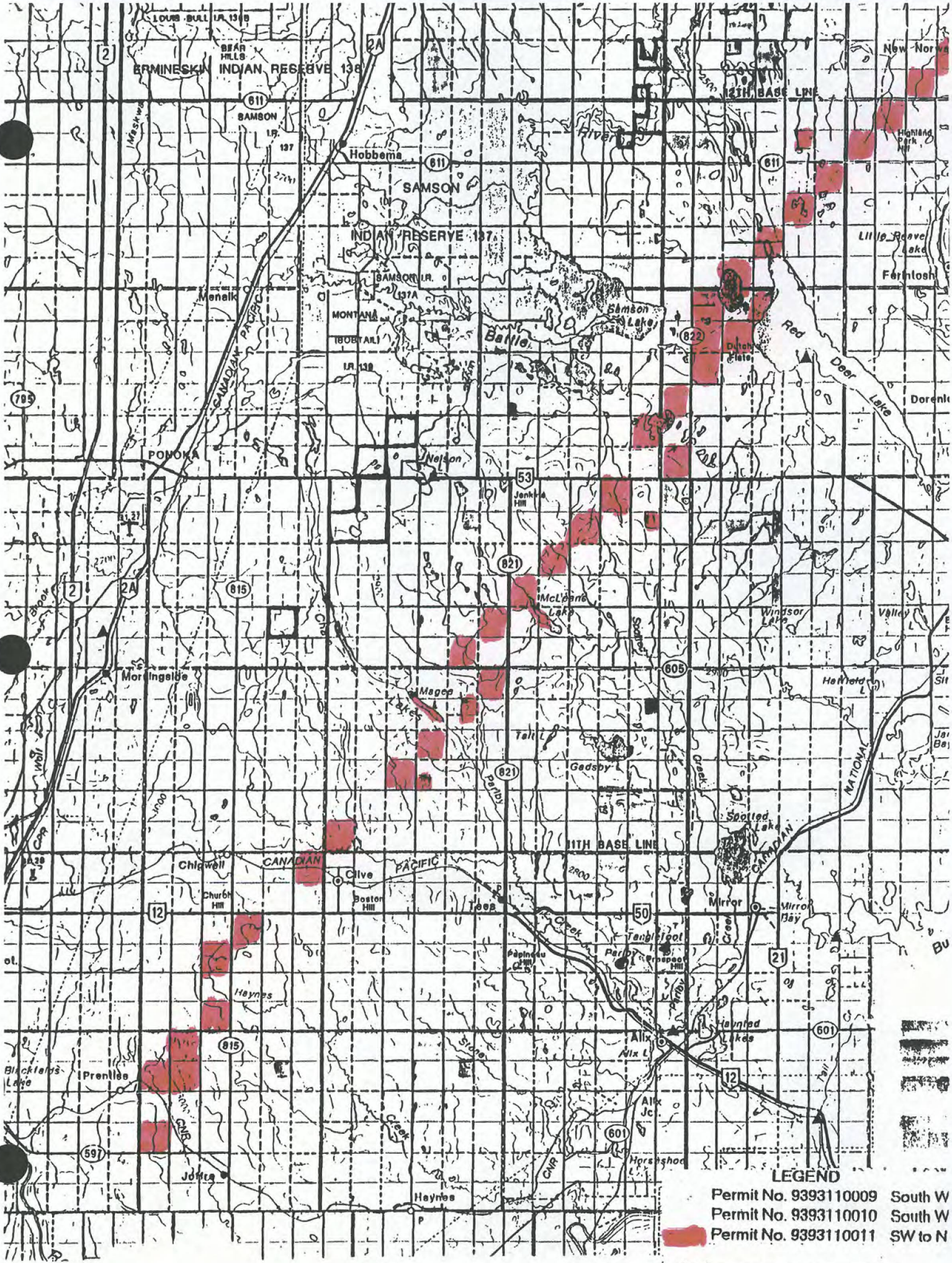
LEGEND

Permit No. 9393110009 South W
Permit No. 9393110010 South W
Permit No. 9393110011 SW to NI

939311A0009

GRGJ Exploration Corp.


LOUIS BULL I.R. 138B
BEAR HILLS
ERMINESKIN INDIAN RESERVE 138
SAMSON I.R. 137
Hobbema
SAMSON
INDIAN RESERVE 137
SAMSON I.R. 137A
MONTANA (BOBTAIL)
I.R. 139
Samson Lake
Battle
Menaik
CANADIAN PACIFIC
POMONA
Nelson
Jenkins Hill
McLeans Lake
Windsor Lake
Morningside
Magee
Tail L.
Gadsby
Parsby
Spotted Lake
11TH BASE LINE
College Heights
Chigwell
CANADIAN PACIFIC
Olive
Church Hill
Boston Hill
Tees
Mirror
LACOMBE
Jackson Jct.
Haynes
Alix
Hayland Lakes
BLACKFALDS
Blackfalds Lake
Prentiss
Red Deer Lake
Iggo
Idore
LEGEND
Permit No. 9393110009 South W
Permit No. 9393110010 South W
Permit No. 9393110011 SW to NI
GRGJ Exploration Corp.



LEGEND

Permit No. 9393110009 South W

Permit No. 9393110010 South W

Permit No. 9393110011 SW to N

GRGJ Exploration Corp.

This page ammends page 6 of the original report.

Permit Tabulation

This report covers the lands contained in five metallic and industrial permits issued by the Government of Alberta (see Figure 2).

1) Permit No. 9393110009 comprising of 9,043.952 hectares was issued on November 17, 1993 and the term commencement date was November 17, 1993. The permit holders are as follows:

Roy Alfred Biensch 25%
George William Biensch 25%
Kenneth George Portas 25%
Gordon Alexander Walters 25%.

Subsequently, in April, 1994, six square miles (1536 hectares) of Permit No. 9393110009 was transferred to G. R. G. J. Exploration Corp. and this portion became Permit No. 939311A009.

2) Permit No. 9393110010 comprising of 9,152 hectares was issued on November 17, 1993 and the term commencement date was November 17, 1993. The permit holders are as follows:

Roy Alfred Biensch 33.33%
George William Biensch 33.34%
Gordon Alexander Walters 33.33%.

3) Permit No. 9393110011 comprising of 9,209.24 hectares was issued on November 17, 1993 and the term commencement date was November 17, 1993. The permit holders are as follows:

Roy Alfred Biensch 33.33%
George William Biensch 33.34%
Gordon Alexander Walters 33.33%.

4) Permit No. 9394020017 comprising of 9,192.22 hectares was issued on February 23, 1994 and the term commencement date was February 23, 1994. The permit holders are as follows:

Roy Alfred Biensch 33.33%
George William Biensch 33.34%
Gordon Alexander Walters 33.33%.

5) Permit No. 9394020018 comprising of 9,159.042 hectares was issued on February 23, 1994 and the term commencement date was February 23, 1994. The permit holders are as follows:

Roy Alfred Biensch 33.33%
George William Biensch 33.34%
Gordon Alexander Walters 33.33%.

This report was prepared by Randy Biensch a shareholder and officier of G. R. G. J. Exploration Corp. The name of the person submitting this report is Roy Alfred Biensch of Marsden, Saskatchewan, shareholder and president of G. R. G. J. Exploration Corp.

Work Performed

In June, 1993, satellite imaging was utilized by Gordon Walters of Roswell, New Mexico, to locate possible precious metal and precious gem deposits in Alberta. He plotted his findings on 1:50,000 NTS topographical maps. The results of this Land-Sat work up were used by Roy and George Biensch to determine the land locations on which metallic and industrial mineral permits were obtained from the Province of Alberta in November, 1993.

In the summer and fall of 1993, Roy and George Biensch travelled to the permit lands and took various small hand samples from the surface to a depth of one metre. These samples were panned and examined by themselves for the presence of values and indicators.

On May 4, 1994, 22 kilogram samples were taken at five sites on the permit lands just east of Ponoka, Alberta and sent to Airmont Labs in Lewistown, Montana for assaying. Holes were dug with a hand auger to a depth of one metre and the material stored and numbered in plastic bags. Quantitative samples were sent to Airmont Labs for assaying. Results of these assays are shown in Figure 3.

An extensive drilling program was undertaken in June of 1994, concentrating on six square miles of the permit lands which had been transferred to G. R. G. J. Exploration Corp. from the original permit holders. Geo Metal, Arnold Takemoto, of 2734 East Mountain Sky Avenue in Phoenix, Arizona 85048-8991 ((602) 706-0388) was engaged as the egineering consulting firm to oversee the program. Unfortunately, insufficient funds were available for Mr. Takemoto to complete his assay work and engineering report. Presently funds are being raised to complete the report and carry on with another drilling and sampling program in the summer of 1996.

Sixteen holes were drilled measuring two feet in diameter and ranging from thirty-two to ninety-six feet in depth. The holes were drilled by a water-well drilling rig. For each five feet in depth drilled, all of the material was recovered and then quantitatively sampled by coning and quartering. Approximately 15 kilograms of material was sampled from each five foot level and stored and marked in plastic sacks. The samples were then split quantitatively in three, with one set of samples sent to Airmont Labs, one set of samples sent with Geo Metal, and the final set of samples stored with Roy Biensch of Marsden, Saskatchewan.

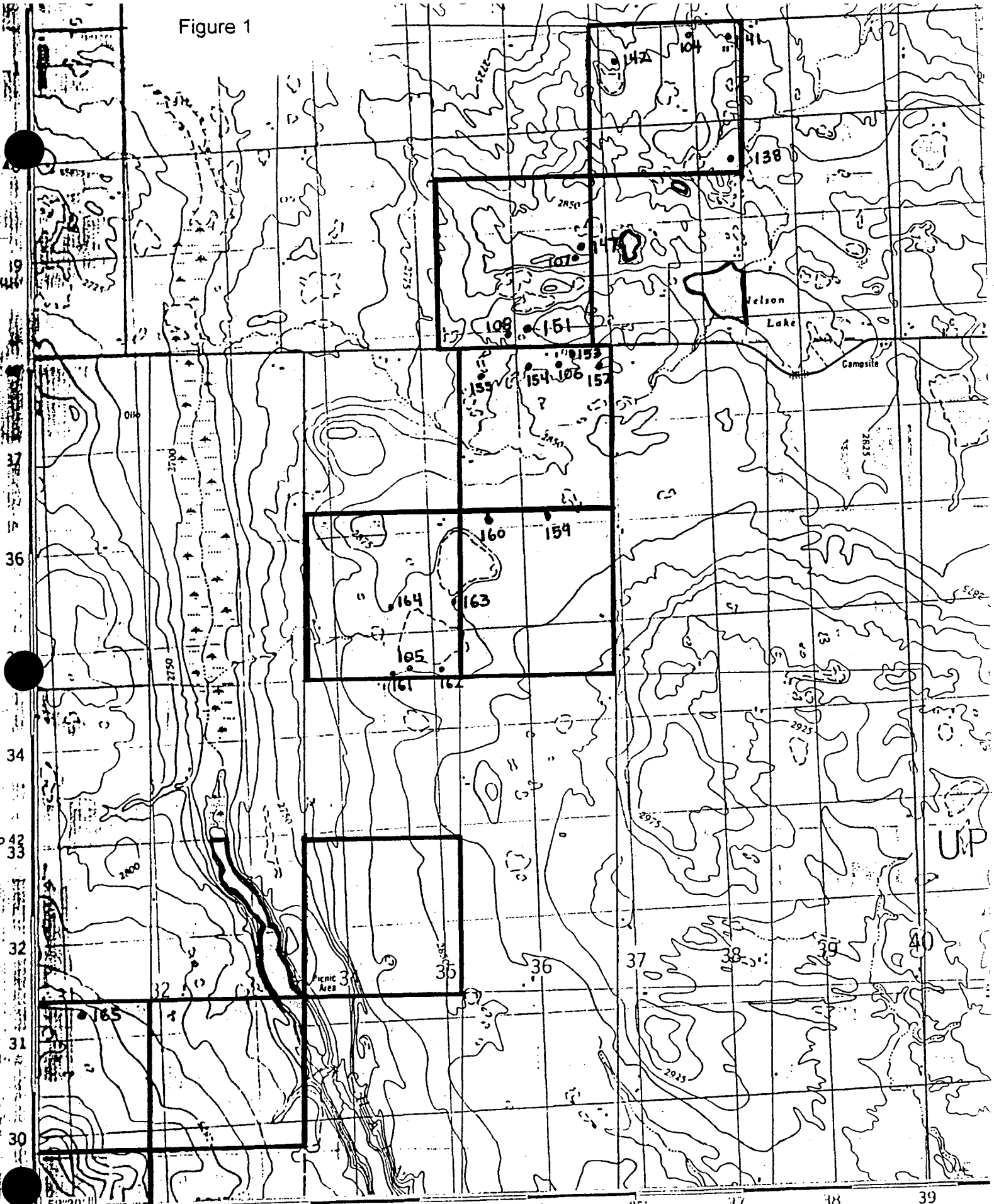
Results from these labs has not been finalized due to a lack of funds. However, it is our intention to have these assays and reports completed this year.

A small sample was sent from Hole No. GRGJ 154 to Robert Todd of South American Gems, Exploration Inc. in Sarasota, Florida which specializes in gemstone testing. The results of his testing are shown in Figure 4.

Expenses

Satellite Imaging		
Cascade Exploration		$187,211
Drilling		
H. & D. L. Dagg Well Drilling		$ 7,100
[redacted]		$ 510
Assaying		
Airmont Labs ([redacted])		$ 8,000
Airmont Labs ([redacted])		$ 2,484
South American Gems, Exploration Inc.		$ 573
Engineering		
Geo Metal		$ 14,510
Mapping		
Maps Alberta		$ 378
Equipment Fuel and Repairs		$ 430
Sampling Materials		$ 326
Small Tools		$ 168
Landowner Fees		$ 1,400
[redacted]	$100.00	
	$100.00	
	$100.00	
	$400.00	
	$100.00	
	$200.00	
	$200.00	
	$100.00	
	$100.00	
Travel (Motels and Meals for Labourers)		$ 9,395
Vehicle Mileage		$ 5,272
Labour		$ 28,054
Total		$265,811

Figure 1



CHAIN LAKES
83 A/11
EDITION 2

Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES. Updated from aerial photographs taken in 1970. Culture check 1971. Printed 1974.

Roads / Routes
hard surface, all weather ..... / payée toute saison .....

Arimont Labs
224 Quartzite Rd.
Lewistown, Montana 59457
PHONE: 406-538-9586

GORDON WALTERS
BOX 2587
ROSWELL, NEW MEXICO 88201

Page Number : ONE
Total Pages : ONE
Certificate Date : 5-23-94
Invoice No.
P.O. Number

Project: PONOKO
Comments:

CERTIFICATE OF ANALYSIS

SAMPLE	PREP CODE	
ONE 104-3		ONE TON ASSAY PLATINUM GROUP--SPLIT SAMPLE 7.256 Oz. per ton PANNED 10.387 Oz. per ton
TWO 105-3		" " " " " SPLIT SAMPLE 9.44 " " " PANNED 12.28 " " "
THREE 106-3		" " " " " SPLIT SAMPLE 0 Oz. per ton TOP SOIL PANNED 0 " " "
FOUR 107-3		" " " " " SPLIT SAMPLE 10.8 " " " PANNED 14.21 " " "
FIVE 108-3		" " " " " SPLIT SAMPLE 8.818 " " " PANNED 12.947 " " "

SAMPLES 1,2,4 & 5 reflect a good deal of quartz, corundum, rubys and diamonds. Some "pipe" material is in evidence along with breccia or recemented materials. The platinum group is basically a placer material although some is found in the rock.

SAMPLE 3 is basically nothing more than top soil.

CERTIFICATION: [redacted]

Figure 3

11

Figure 4

C757 DATE: 8/17/94

SOUTH AMERICAN GEMS, EXPLORATION INC.
GEMSTONE LABORATORY
MICROSCOPIC EXAMINATION

SAMPLE WEIGHT : LB X 9, S-154, 155

IDENTIFICATION : GARNET
: TOPAZ
: CORUNDUM
: SPINEL
: PERIDOT
: TOURMALINE
: KUNZITE

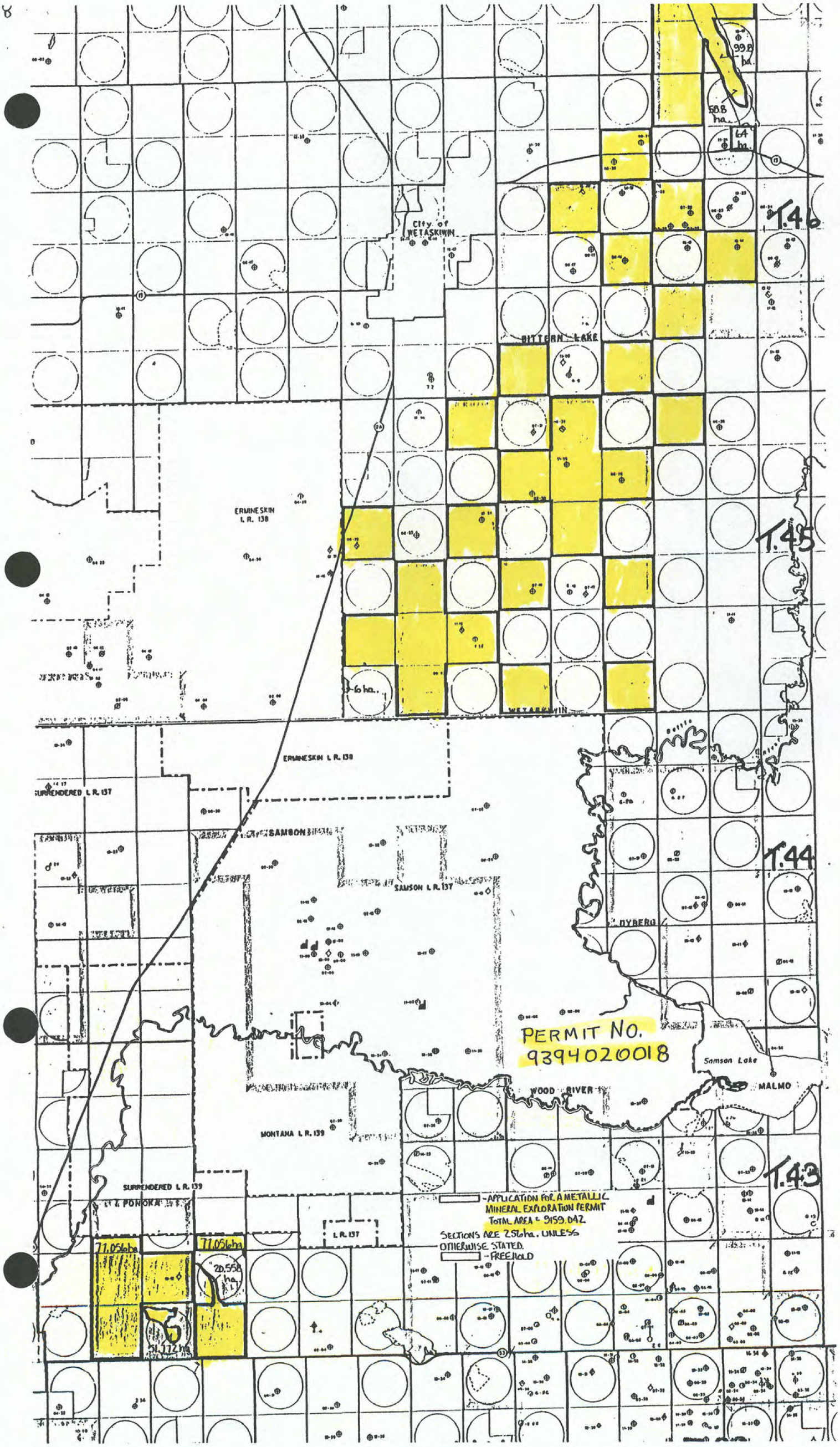
ORIGIN: CANADA-154, 156

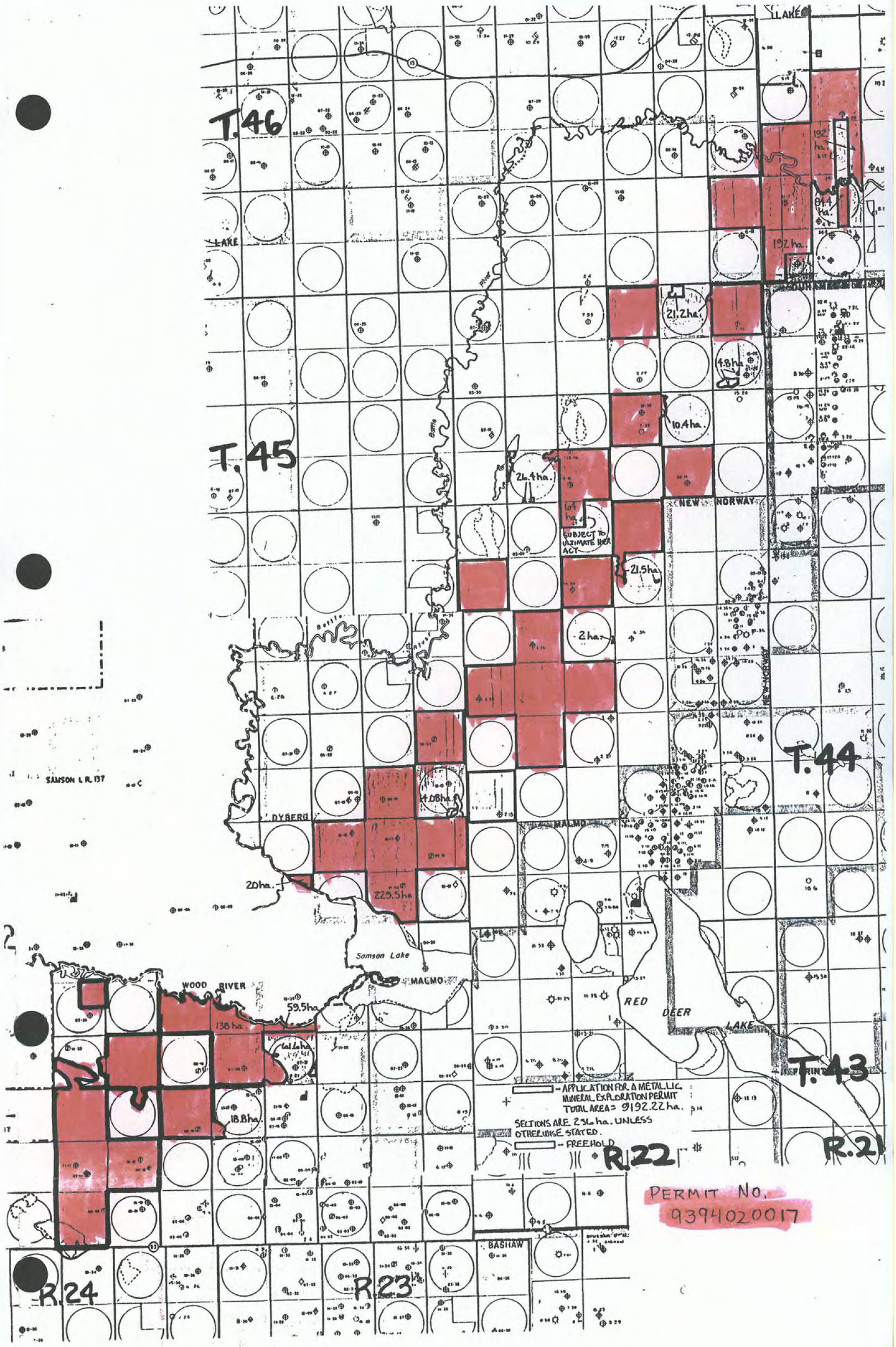
COMMENT
: PERIDOTITE ASSOCIATED ELEMENTS.

: POSSIBLE, DECOMPOSED LAYER OF KIMBERLITE PIPE.

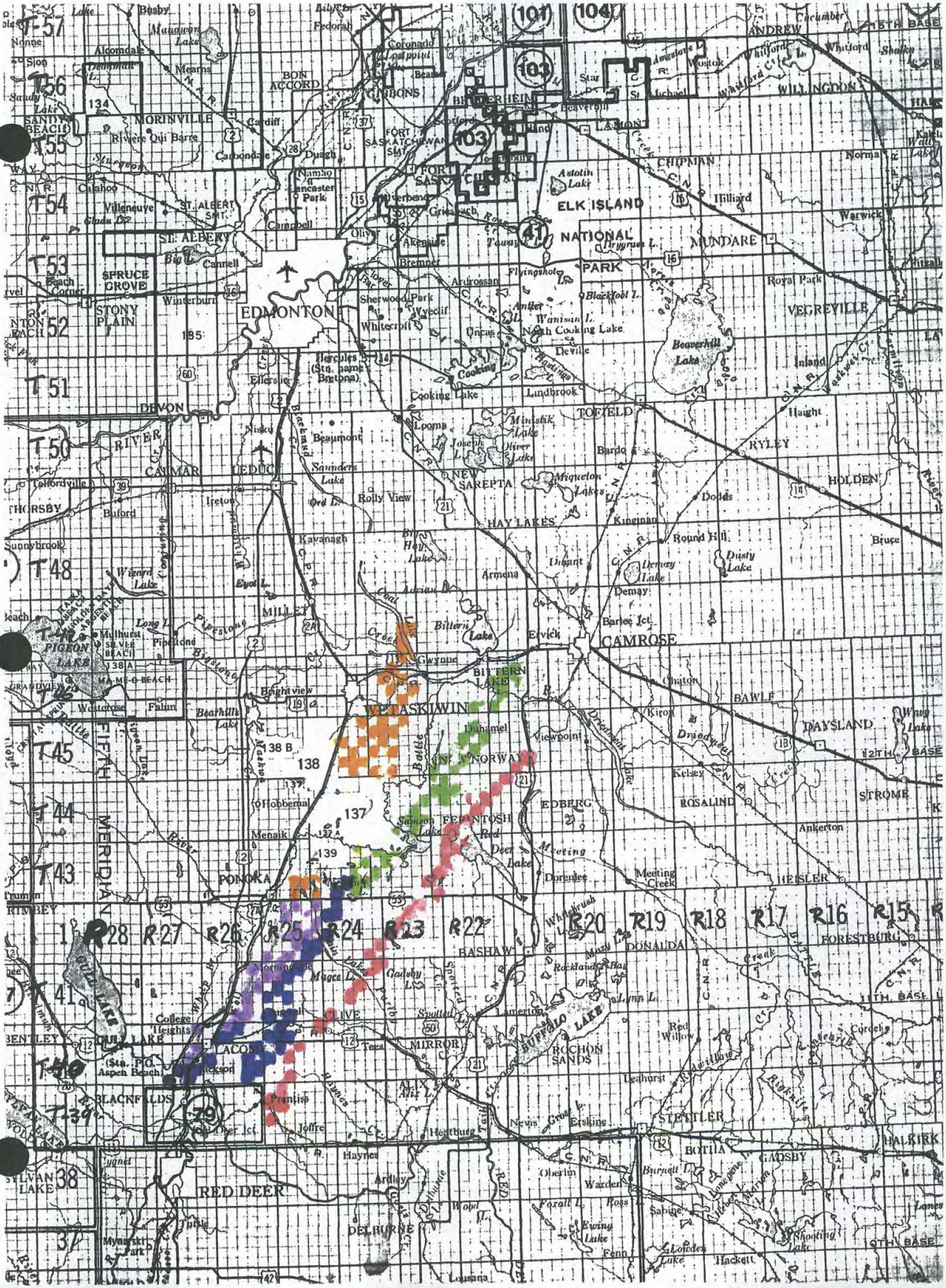
GEOLOGIST\GEMOLOGIST
ROBERT TODD
[redacted]
1-813-923-6505

S.A.G.E. INC. P.O. BOX 20456 SARASOTA FL. 34276


99.8 ha.
50.8 ha.
64 ha.
T.46
City of WETASKIWIN
PITTORN LAKE
ERMINESKIN I. R. 138
T.45
6 ha.
WETASKIWIN
ERMINESKIN I. R. 138
SURRENDERED I. R. 137
SAMSON I. R. 137
T.44
NYBERG
PERMIT NO. 9394020018
Samson Lake
MALMO
WOOD RIVER
MONTANA I. R. 139
SURRENDERED I. R. 139
PONOKA
I. R. 137
T.43
- APPLICATION FOR A METALLIC MINERAL EXPLORATION PERMIT
TOTAL AREA = 9159.042
SECTIONS ARE 2.56ha. UNLESS OTHERWISE STATED.
- FREEHOLD
77.056ha
77.056ha
20.558 ha
51.772 ha



PERMIT NO.
9394020017


EDMONTON
ST. ALBERT
SPRUCE GROVE
STONY PLAIN
MORINVILLE
DEVON
CALMAR
LEDUC
BEAUMONT
NEW SAREPTA
HAY LAKES
DRAYTON VALLEY
WETASKIWIN
CAMROSE
BITTERN LAKE
MILLET
PIGEON LAKE
BUFORD
ELK ISLAND NATIONAL PARK
FORT SASKATCHEWAN
LAMONT
CHIPMAN
MUNDARE
VEGREVILLE
ANDREW
WILLINGDON
TOFIELD
RYLEY
HOLDEN
DAYSLAND
BAWLF
STROME
ROSALIND
EDBERG
HEISLER
FORESTBURG
DONALDA
BASHAW
ROCHON SANDS
MIRROR
LACOMBE
BLACKFALDS
RED DEER
DELBURNE
PENHOLD
INNISFAIL
BOTHA
STETTLER
GADSBY
HALKIRK
PONOKA
NORWAY
FENTOSH
Wizard Lake
Buck Lake
Gull Lake
Sylvan Lake
Battle River
Red Deer River
Blindman River
Pipestone Creek
Meridian 5
T57
T56
T55
T54
T53
T52
T51
T50
T49
T48
T47
T46
T45
T44
T43
T42
T41
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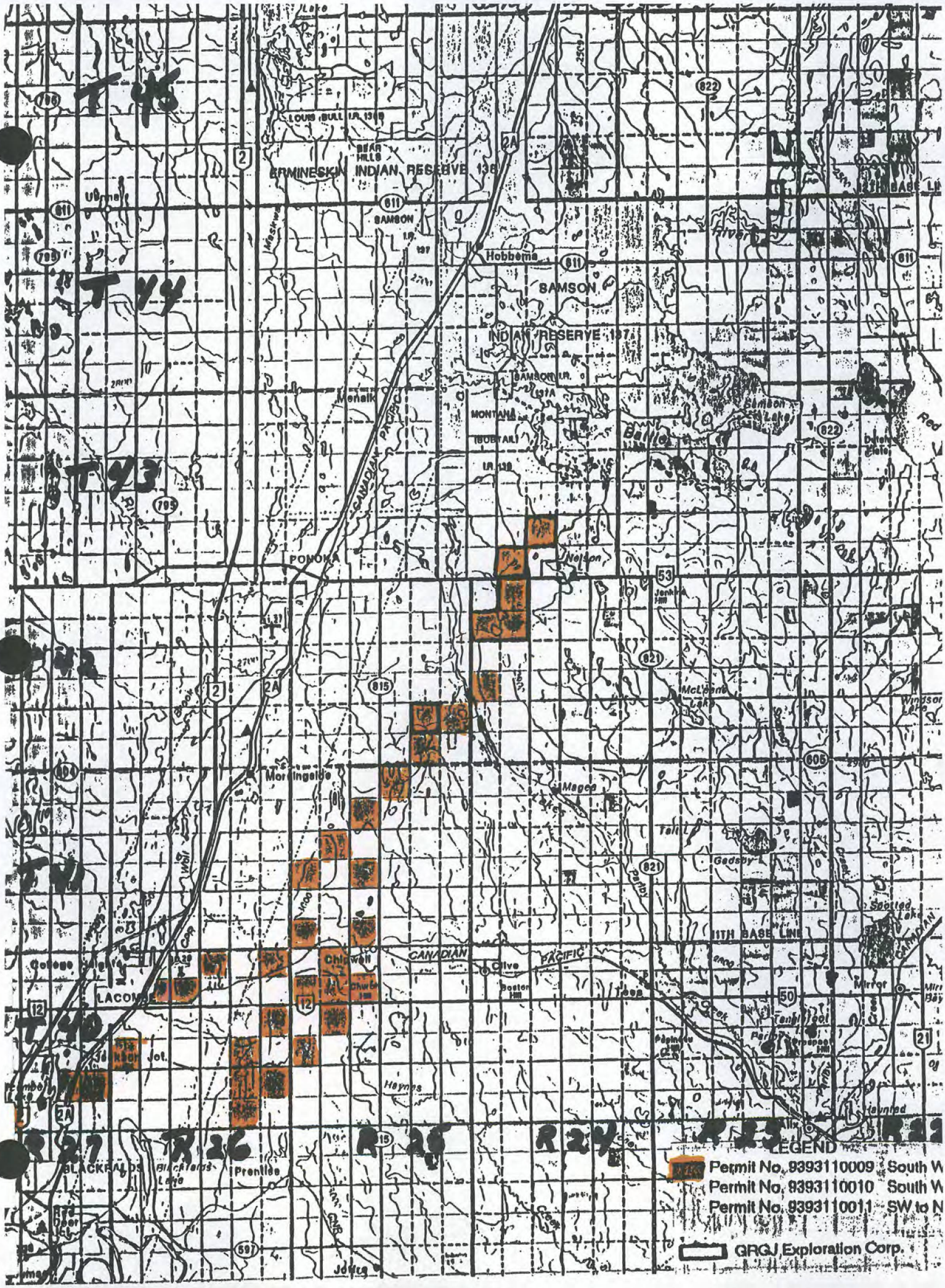
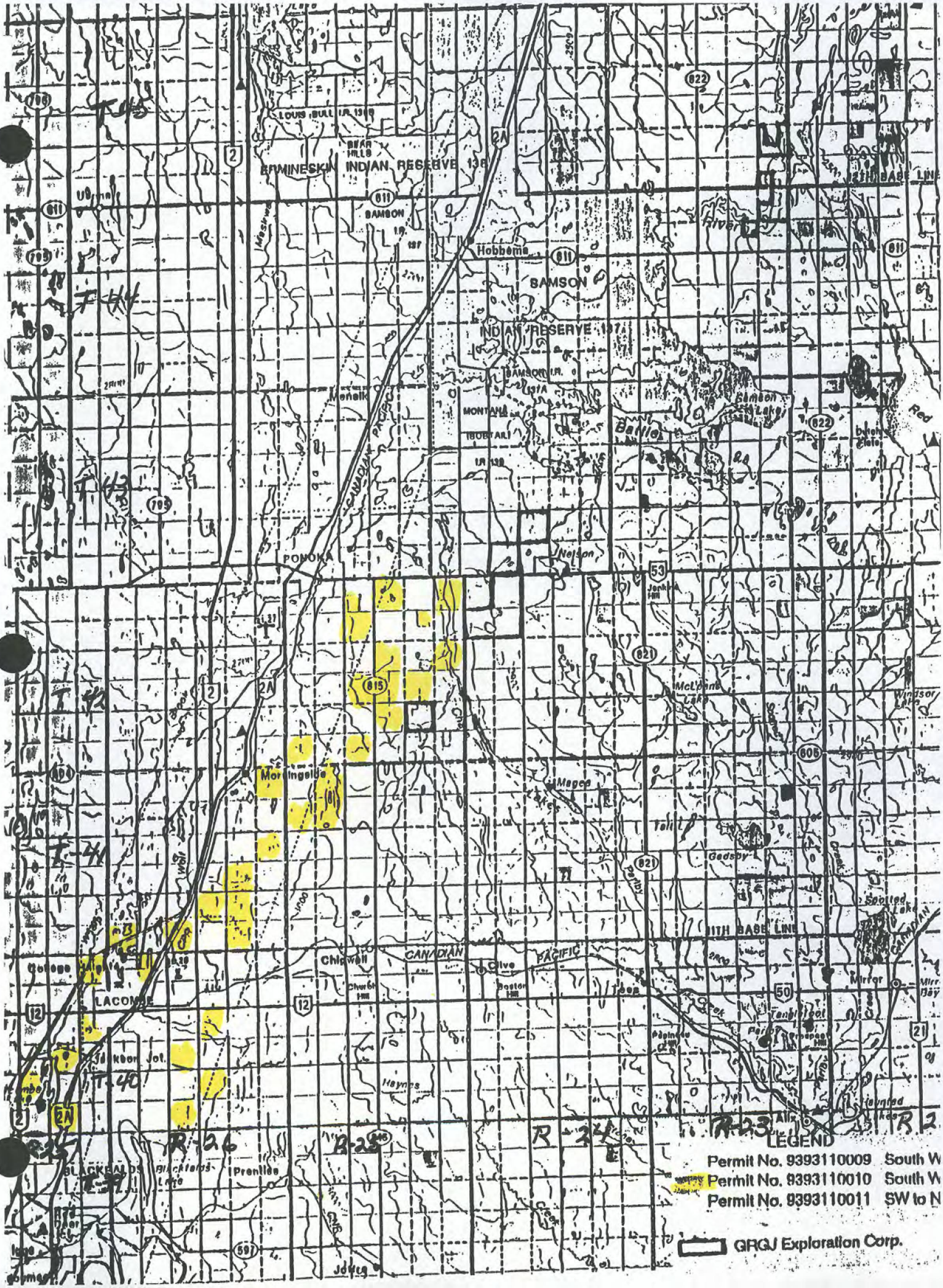
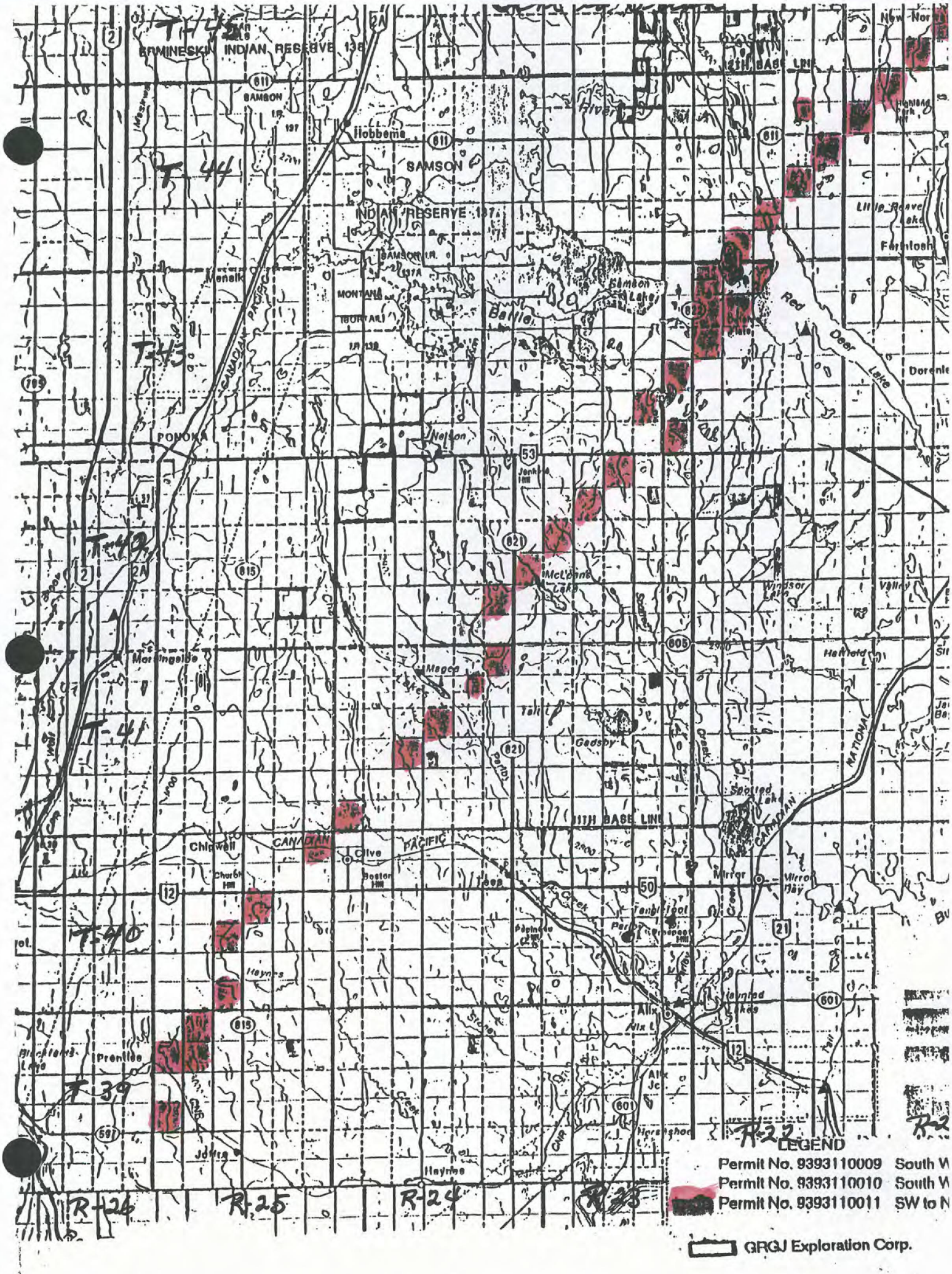
R15


T 45
T 44
T 43
T 42
T 41
R 27
R 26
R 25
R 24
R 23
R 22
ERMINESKIN INDIAN RESERVE 136
SAMSON INDIAN RESERVE 137
LOUIS BULL I.R. 138
SAMSON I.R. 137
SAMSON I.R. 137A
MONTANA I.R. 139
Hobbema
Ponoka
Morningside
Maspo
Olive
Chipwell
LACOMBE
Haynes
Prentiss
Joffre
Nelson
Mirror
Alix
CANADIAN PACIFIC
11TH BASE LINE
LEGEND
Permit No. 9393110009 South W
Permit No. 9393110010 South W
Permit No. 9393110011 SW to N
GRGJ Exploration Corp.


ERMINESKIN INDIAN RESERVE 138
SAMSON INDIAN RESERVE 137
Hobbema
SAMSON
POMOKA
Nelson
Morningside
Chigwell
CANADIAN PACIFIC
Olive
LACOMBE
Prentiss
Haynes
Gadsby
Mirror
Meeting Lake
Samson Lake
Battle
Red Deer
Windsor Lake
McLeod Lake
Scotford Lake
11TH BASE LINE
R-24
R-23
R-25
LEGEND
Permit No. 9393110009 South W
Permit No. 9393110010 South W
Permit No. 9393110011 SW to N
GRGJ Exploration Corp.


T-45
T-44
T-43
T-42
T-41
T-40
T-39
R-24
R-25
R-24
R-23
R-22
SAMSON INDIAN RESERVE 137
SAMSON
INDIAN RESERVE 137
POMONA
Nelson
Battle
Red Deer Lake
Samson Lake
Windsor Lake
McLaine Lake
Gadsby
Spotted Lake
Mirror
Alix
Chipwell
Clive
Prentiss
Haynes
Joffre
Hobbema
Ponoka
Morningside
Hatfield
Dorenlee
Forestdale
Little Beaver Lake
CANADIAN PACIFIC
11TH BASE LINE
LEGEND
Permit No. 9393110009 South W
Permit No. 9393110010 South W
Permit No. 9393110011 SW to N
GRGJ Exploration Corp.

99.999

2302 South Main Street
Roswell, New Mexico 88201

Cascade Exploration

Mining, Smelting, Refining

~~Office: (505) 623-4331~~
~~FAX: (505) 624-9512~~
505 347 4328

October 5, 1993

RED DEER
ALBERTA, CANADA

SATELITE REMOTE SENSING LAND SAT IMAGERY BANDS, STRUCTURAL MAPS, LITHOLOGICAL MAPS AND GEOBOTANICAL SURVEYS. THE SEVEN IMAGE MAPS COST $3800.00 each, and are not released to the public under corporation by-laws.

Cascade Exploration Incorporation has completed a mineral work up project on Range 21 to 27, Township 39 to 47 in the Red Deer to Edmonton, Alberta, Canada area, For determination of mineralized zones. We have worked over Three Hundred (300) hours on the break down of Satelite data.

As a reconnaissance exploration tool, remote sensing was used along with, Structural maps for the analysis of lineaments, drainage patterns, domes, anticlines and other geologic features.

Lithological maps showing general alteration zones. Geobotanical surveys highlighting the anomalous vegetation patterns showing a high mineral content. The landsat false color imagery with the above data indicated a strong mineralized aluvial bench and fault structures that have a Northeast to Southwest geological dip. All drilling and assaying was completed in strict accordance to the actual satelite image structures marked on plat maps for the acurate location of Minerals and Gem Stones that were located. Cascade Exploration Incorporation personal were on location to supervise field exploration.

[redacted]

Gordon Walters - President
Cascade Exploration Incorporation

2302 South Main Street
Roswell, New Mexico 88201

Cascade Exploration

Mining, Smelting, Refining

Office: (505) 623-4331
FAX: (505) 624-9512

Customer Data Request:

GRGJ Exploration Corporation
Box 130
Marsden, Saskatchewan
Canada SOMIPO

Description	Qty.	Price	Amount
Land-Sat (workup)	9044 Hectares	@ $15.00	$135,660.00
Land-Sat (workup)	1536 Hectares	@ $15.00	$ 23,040.00
Gravel Deposits Under ground on Township 44 to 47 Range 24 to 27	App. 1400 Hectares		$ 21,351.00
Travel expenses, air fare and lodging			$ 7,160.00
		Total Amount Due	$187,211.00

1-19-97

GRGJ Exploration
Box 70
Marsden, Saskatchewan S0M 1P0

Attn: Roy Biensch, President

Re: Assay report and work performed in Alberta, Canada for the GRGJ Corp.

Dear Roy,

This narrative is a recap of the work performed for the GRGJ Corp.

ARIMONT LABS responsibilities included visiting the claim sites, gathering samples returning to our lab in Montana and assay the samples for precious metals.

The three primary metals being silver, gold and platinum.

Our procedure in the lab is to dry and split the samples, crush and pulverize the samples to 400 mesh. We than used the normal accepted practice of fire assaying (at least for gold and silver). Fire assaying for the platinum group is considerably more complicated and a tremendous amount of of research and experimentation was required before we were able to fire assay compentently.

Our next procedure involved using the Atomic Absorbtion.

We then sent duplicate samples to two independent labs to verify our results. We were within 1% of each other.

Our results are attacned to this report.

We were able to identify the platinum group, however, our research is not yet to the point where we can break down all of the members of the group. An exception to this is can identify platinum and palladium. I have recently sent samples to a lab at a producing platinum mine to see if they can identify any other members of the group. As you know not all members have to be present.

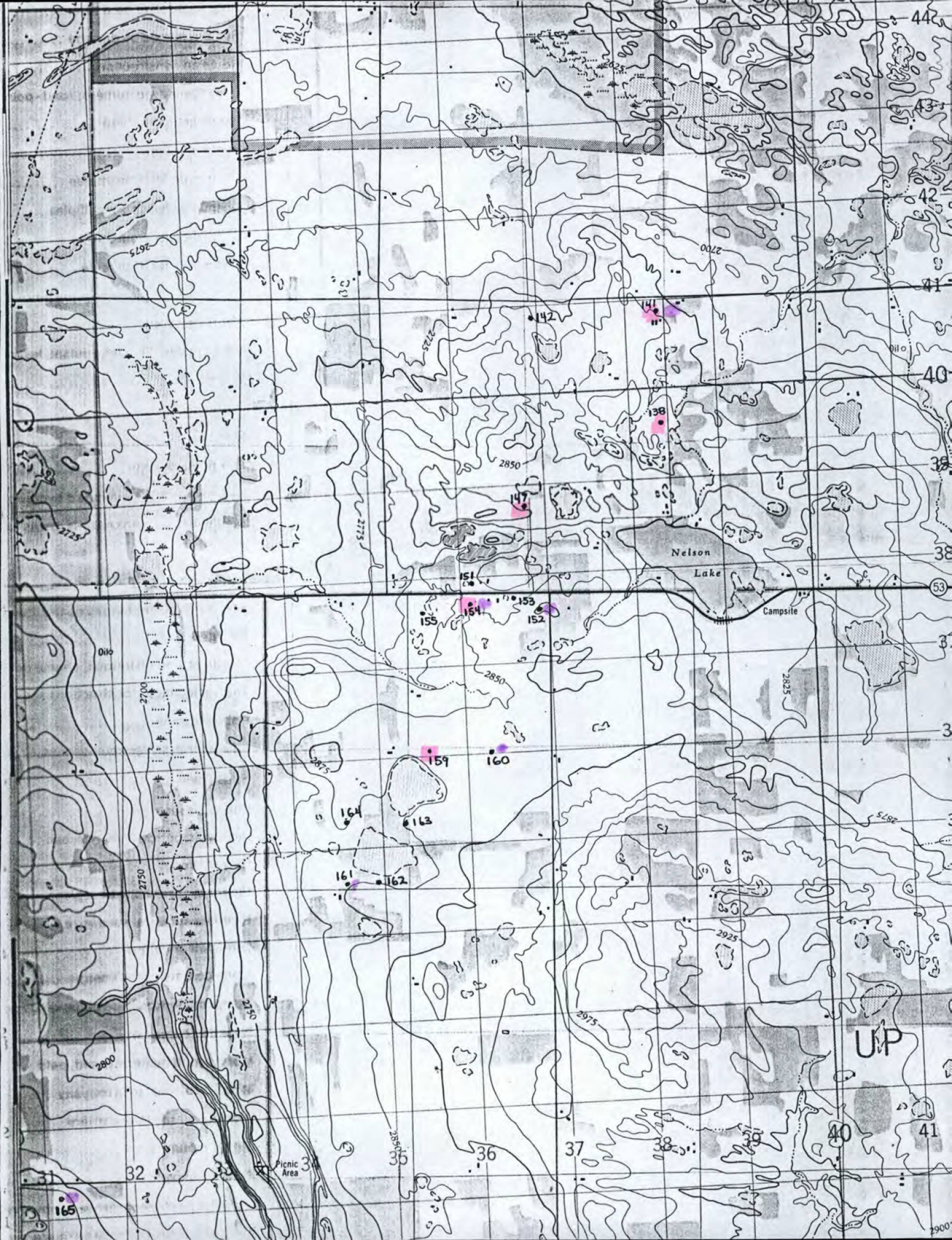
Our total expense to date has been $10,484.00 which we have been paid.

We are very excited about your project and look forward working with you in the future.

Best regards,

[redacted]

Robert (Bob) H. Flinders, Pres.
204 Quartzite Rd.
Lewistown, Montana 59457
(406) [redacted]


Nelson
Lake
Campsite
Picnic
Area
UP
141
142
138
147
151
153
155
154
152
159
160
164
163
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2800
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2775
2675
2900
53

19960004

GEO METAL

Exploration Report

on the

GRGJ Mining Properties

October 30, 1996

8356 E. San Ramon Dr. Scottsdale, Arizona 85258-1828 (602) 922-9235

October 30, 1996

To Whom it may concern:

The following report reflects a summary of assayed drill sample data, pilot plant data, and feasibility of the GRGJ mineral properties located in Wetaskiwin County, Alberta, Canada.

I find the information and analysis of the project to be accurately represented.

The results were obtained in an independent manner by generally accepted mining and analytical procedures and methods. I hired the independent services of the Jacobs Assay Office of Tucson, Arizona and South American Gems, Exploration Inc. of Sarasota, Florida.

Sincerely,

[redacted]

Arnold Takemoto
Metallurgical Chemist

Table of Contents

Geo Metal Exploration Report on the GRGJ Properties

I. Introduction

The following report is an account of exploration work done on properties owned by GRGJ Exploration Corporation (address - PO Box 70, Marsden, Saskatchewan, SOM IPO). This work was done on the GRGJ properties located in Wetaskiwin County of Alberta, Canada. This account will include a description of sample acquisition, drilling procedures, sample preparation, analysis of samples, and analysis of assay data. This report will also include a summary of pilot mill studies done at the Rosebrier gravel pit near Battle River in Wetaskiwin County.

II. Description of Property

The GRGJ property is located on terrain consisting of rolling meadows and modest hills. The soils and till materials appear to be glacial in origin.

III. Description of Drilling Procedures and Sample Acquisition

A. Drilling

Drilling services were contracted with Daggs Water Well Drilling Company of Brook, Saskatchewan – an independently owned and operated company. They operated the truck mounted churn drill used to obtain the drill samples.

Drilling operations commenced on June 13, 1994. Drilling operations, sampling, and field analysis were conducted under the supervision of Arnold Takemoto of Geo Metal Company.

Rocks and boulders were occasionally encountered, which necessitated relocation of the drill rig at some locations. Discrete drilling samples were obtained on five foot intervals, providing a series of samples at each drill hole location. Due to the size of the churn drill, the five foot samples typically weighed 500 - 600 pounds. These large samples were then coned and quartered on a plywood board in order to reduce the sample size while maintaining representative samples. The samples were then shipped to Phoenix, Arizona where they were logged and then shipped to Jacobs Assay Office, a registered, certified assayer in Tucson, Arizona for fire assay precious metals analysis.

B. Pilot Mill Testing

Pilot mill testing was undertaken at the Rosebrier gravel pit near Battle River, Alberta. The pilot testing was conducted using a portable trommel screen, with a vibrating and rocking sluice box. Values escaping the primary recovery system were scavenged from a secondary sluice box which was three feet in length. These pilot plant procedures are industry accepted procedures which can be duplicated in full scale mining operations.

A total of 68 five gallon buckets of bank run gravel were run through the pilot plant. These samples (labeled S4) were obtained from the south end of the Rosebrier gravel pit. The samples run through the pilot plant produced a substantial volume of black sand concentrates. The concentrates were then dried and sent to South American Gems Exploration, Inc., of Sarasota, Florida. This company is owned by Robert Todd, an independent Geologist/Gemologist.

IV. Findings

A. Drilling Program

Samples were taken from seventeen drill sites. Of these, the assay results from several sites indicated significant mineralization. Both gold and silver mineralization, as well as significant gemstone locations were identified. Note: Every positive precious metal fire assay result is significant, and warrants further investigation and analysis. (See the assay result tables for the complete assay results) The summary of the drill locations showing significant mineralization or the presence of gemstones are as follows:

1. Drill hole #138 -- Location: SE 10-43-24-W4

This location indicated significant gold results at the 15-20 level. In addition, small sapphires were panned from the 0-5 foot level.

2. Drill hole #141 -- Location: NE 10-43-24-W4

This location produced sapphires, both colored and clear, as well as spinels at the 5-10 foot level.

2a. Drill hole #141-2 -- Location: NE 10-43-24-W4

This location indicated significant silver results at the 5-10 and 10-15 foot levels.

3. Drill hole #147 -- Location: NE 4-43-24-W4

This location indicated significant precious metals mineralization at the 10-15 foot level, the 30-35 foot level, and the 35-40 foot level. In addition, colored stones were panned from the 0-5 foot and 5-10 foot levels.

4. Drill hole #151 -- Location: SE 4-43-24-W4

This location indicated significant gold results at the 0-5 foot level and the 20-25 foot level. The 0-5 foot test results are very significant.

5. Drill hole #152 -- Location: NE 32-42-24-W4

This location indicated significant gold results at the 0-5 foot and 25-30 foot levels. Additionally, significant silver results were obtained at the 5-10 foot, 10-15 foot, and 25-30 foot levels.

6. Drill hole #154 -- Location: NW 32-42-24-W4

This location indicated significant silver results at the 5-10 foot level. In addition, hand panning yielded sapphires at the 0-5 and 5-10 foot level, including a ½ carat clear sapphire from the 5-10 foot level. All of the sapphires were obtained by hand panning drill sample materials.

7. Drill hole #159 -- Location: NW 29-42-24-W4

This location indicated significant gemstone promise, with panned samples showing both clear and colored sapphires at the 0-5 foot, 5-10 foot, and 10-15 foot levels.

8. Drill hole #160 -- Location: NE 29-42-24-W4

This location indicated significant silver mineralization, particularly at the 15-20 foot and the 20-25 foot levels.

9. Drill hole #161 -- Location: SE 30-42-24-W4

This location indicated significant silver mineralization at the 30-35 foot and the 35-40 foot levels.

10. Drill hole #162 -- Location: SE 30-42-24-W4

This location indicated significant gold readings at the 20-25 foot level and the 55-60 foot level.

11. Drill hole #163 -- Location: SE 30-42-24-W4

This location indicated high gold readings at the 10-15 foot level, the 15-20 foot level, and the 20-25 foot level. Silver readings were also noted in this drill hole.

12. Drill hole #164 -- Location: SE 30-42-24-W4

This location indicated significant gold readings at the 0-5 foot and 5-10 foot levels.

13. Drill hole #165 -- Location: NE 11-42-25-W4

This location indicated significant silver mineralization at the 0-5 foot level, the 5-10 foot level, and the 15-20 foot level.

B. Pilot Plant Program

Robert Todd, of South American Gems, Exploration, Inc., reported that the analysis of the pilot plant concentrates were very significant. He reported that the Rosebrier pit concentrates yielded appreciable amounts of garnet, tourmaline, pentlandite, ulexite, lepidolite, topaz, kunzite, and spinel. Additionally, he noted that there was a "commercial quantity" of gold in those same pilot plant concentrates. (See attached report)

V. Summary of Findings

A. Precious Metals

It is important to note that the precious metals assay results are more significant than they at first appear to be. Alluvial gold exists as fine particles which are randomly distributed. It takes a substantial number of those particles in a cubic yard to yield fire assay results. The fire assay test is based on 15-30 grams of sample material representing the 2000 pounds of an assay ton. Thus, a fire assay figure of $2 - $3 per cubic yard is actually quite noteworthy and represents a significant mineral anomaly which warrants further exploration and testing.

In addition to the assay of drilled samples, the Rosebrier pit

concentrates yielded gold values of "commercial quantity". That analysis definitely warrants further examination and testing at that location.

B. Gemstones

The findings at drill holes #138, #141, #147, #154, and #159 indicate the presence of gemstones on the GRGJ properties. Small sapphires were found at drill hole #138, sapphires and spinels were panned at the #141 drill hole site, clear and colored sapphires and garnet at drill hole site #147, and clear and colored sapphires at drill hole site #159. Finally, the panning of a sample from the drill hole #154 location yielded a ½ carat clear sapphire. These drill sample locations indicate the presence of gemstones, and the clear possibility of many larger gemstones, such as the one panned from a sample at drill hole site #154. All the above drill hole locations warrant further sampling and exploration.

VI. Conclusion

The examination of the GRGJ mineral properties has verified the substantial presence of precious metals and gemstones. The analysis of the drilling and pilot plant samples indicates that further examination and exploration of the properties are warranted. This further evaluation would lead to a more exact determination of the commercial viability of mining operations. What is known at this time is that commercial quality gemstones are present, that significant gold and silver values exist at several drill site locations, and that the placer concentrates from the pilot plant operations contained a "commercial quantity" of gold.

Sample I. D.		AU Oz / ton	AG Oz / ton	Comment
138 drill hole location: SE 10-43-24-W4				
138-S1	0-5	<0.001	<0.05	Brown sand, no rock; panned small sapphires
138-S2	5-10	<0.001	0.15	Panned sand, no colored stones
138-S3	10-15	<0.001	<0.05	15 feet- clay mixed with sand
138-S4	15-20	0.002	0.20	Panned sample, no colored stones
138-S5	20-25	<0.001	<0.05	
138-S6	25-30	<0.001	<0.05	Sand and clay mix
138-S7	30-35	<0.001	<0.05	
141 drill hole location: NE 10-43-24-W4				
141-S1	0-5	<0.001	<0.05	At 3 feet hit gray-brown dry clay
141-S2	5-10	<0.001	<0.05	Gravel; panned gravel- a few sapphires, colored and colorless, spinels
141-S3	10-15	<0.001	<0.05	White clods of clay
141-S4	15-20	<0.001	0.05	Black, clay clumps
141-S5	20-25	<0.001	<0.05	At 22 feet- yellow sandy layer
141-S6	25-28	<0.001	<0.05	At 25 feet hit wet gravel and clay

Sample I. D.		AU Oz / ton	AG Oz / ton	Comment:
141-2 drill hole location: NE 10-43-24-W4				
141-2 S1	0-5	<0.001	0.05	See 141 above
141-2 S2	5-10	0.001	0.55	
141-2 S3	10-15	<0.001	0.20	
141-2 S4	15-20	<0.001	0.05	
141-2 S5	20-25	<0.001	<0.05	
142 drill hole location: NW 10-43-24-W4				
142-S1	0-5	<0.001	<0.05	Brown, semi-dry earth
142-S2	5-10	<0.001	<0.05	Brown, wet clay-like earth
142-S3	10-15	<0.001	<0.05	At 12 feet, dry tan colored earth
142-S4	15-20	<0.001	<0.05	
142-S5	20-25	<0.001	<0.05	At 23 feet, hit hard pan
142-S6	25-28	<0.001	<0.05	

Sample I. D.		AU Oz / ton	AG Oz / ton	Comment:
147 drill hole location: NE 4-43-24-W4				
147-S1	0-5	<0.001	<0.05	Panned materials- a few colored stones, no gold
147-S2	5-10	<0.001	<0.05	Gravel; showing a few colored stones
147-S3	10-15	0.004	<0.05	
147-S4	15-20	<0.001	<0.05	
147-S5	20-25	<0.001	<0.05	
147-S6	25-30	<0.001	0.05	
147-S7	30-35	0.003	0.10	
147-S8	35-40	0.002	<0.05	
151 drill hole location: SE 4-43-24-W4				
151-S1	0-5	0.004	<0.05	4.5 feet- transition to yellow-rust colored material
151-S2	5-10	<0.001	<0.05	6.5 feet- gray caliche clay
151-S3	10-15	<0.001	<0.05	11 feet- sand
151-S4	15-20	<0.001	<0.05	16-17 feet decomposed rock and clay mix; brown-black color
151-S5	20-25	0.001	<0.05	Dense black clay

Sample I. D.		AU Oz / ton	AG Oz / ton	Comment:
151-S6	25-30	<0.001	0.05	Dense black clay
151-S8	35-40	<0.001	<0.05	Brown sand
151-S9	40-43	<0.001	<0.05	40-41- still brown decomposed sandstone; at 43 feet some rounded conglomerate

152 drill hole location: NE 32-42-24-W4

152-S1	0-5	0.002	<0.05	Light brown sandy soil
152-S2	5-10	<0.001	0.15	Bit changed to rock bit
152-S3	10-15	<0.001	0.15	Still using rock bit
152-S4	15-20	<0.001	0.05	Installed sand bit; bit showing compressed sandstone/shale
152-S5	20-25	<0.001	<0.05	Gray shale
152-S6	25-30	0.002	0.30	Gray shale, broken
152-S7	30-35	<0.001	<0.05	Dry gray shale
152-S8	35-40	<0.001	<0.05	Water

Sample I. D.		AU Oz / ton	AG Oz / ton	Comment
153 drill hole location: NE 32-42-24-W4				
153-S1	0-5	<0.001	<0.05	Brown clay soil with rounded rocks
153-S2	5-10	<0.001	<0.05	Brown, sandy material
153-S3	10-15	<0.001	<0.05	At 13 feet encountered wet angular gravel; would wash well
153-S4	15-20	<0.001	<0.05	Gray, damp material
153-S5	20-25	<0.001	<0.05	
153-S6	25-27	<0.001	<0.05	
154 drill hole location: NW 32-42-24-W4				
154-S1	0-5	<0.001	<0.05	Brown dirt with gray clay
154-S2	5-10	<0.001	0.25	Rounded gravel- panned sample, found ½ carat clear sapphire
154-S3	10-15	<0.001	<0.05	
154-S4	15-20	<0.001	<0.05	Brown material with stones
154-S5	20-25	<0.001	<0.05	Change at 21 feet
154-S6	25-30	<0.001	0.05	Brown sand with angular rocks
154-S7	30-35	<0.001	<0.05	Sand with water, changing from gray color to golden brown

Sample I. D.		AU Oz / ton	AG Oz / ton	Comment
155 drill hole location: NW 32-42-24-W4				
155-S1	0-5	<0.001	<0.05	Sandy clay
155-S2	5-10	<0.001	<0.05	Clay
155-S3	10-15	<0.001	0.15	Clay
155-S4	15-20	<0.001	<0.05	Sand and water
159 drill hole location: NW 29-42-24-W4				
159-S1	0-5	<0.001	<0.05	Dry, brown dirt, some angular rocks; panning produced sapphires
159-S2	5-10	<0.001	0.05	Dry brown dirt; panning produced sapphires
159-S3	10-15	<0.001	0.10	At 13 feet, gray iron sandstone encountered; panning produced sapphires
159-S4	15-20	<0.001	<0.05	Same
159-S5	20-21	<0.001	<0.05	At 23 feet, strata change to sand; at 24 feet angular rocks; hole shut down at 29 feet

Sample	Au oz/ton	Comment:
160 drill hole		
160-S1	0.15	Brown soil
160-S2	0.05	
160-S3	0.10	Transition to iron stained gray shale at 15 feet
160-S4	0.25	
160-S5	0.25	Hit hard shale at 25 feet
161 drill hole		
161-S1	0.05	Sandy
161-S2	0.05	Sandy clay
161-S3	0.05	Clay
161-S4	0.05	Clay
161-S5	0.10	Clay
161-S6	0.05	Clay; gray sand at 29 feet
161-S7	0.25	Clay

Sample I. D.	AU Oz / ton	AG Oz / ton	Comment:
161-S8 35-40	<0.001	0.25	Clay
161-S9 40-45	<0.001	<0.05	
161-S10 45-50	<0.001	<0.05	
161-S11 50-55	<0.001	<0.05	
161-S12 55-60	<0.001	<0.05	
161-S13 60-65	<0.001	0.05	
161-S14 65-70	<0.001	0.05	
161-S15 70-75	<0.001	<0.05	

Sample I. D		AU Oz / ton	AG Oz / ton	Comment:
162 drill hole location SE 30-42-24-W4				
162-S1	0-5	<0.001	<0.05	Rock
162-S2	5-10	<0.001	<0.05	Black-brown material
162-S3	10-15	<0.001	<0.05	Same
162-S4	15-20	<0.001	<0.05	Same
162-S5	20-25	0.002	<0.05	Same
162-S6	25-30	<0.001	<0.05	Same
162-S7	30-35	<0.001	<0.05	Same
162-S8	35-40	<0.001	0.15	Same
162-S9	45-50	<0.001	<0.05	Gray material with green clay clods
162-S10	50-55	<0.001	0.10	
162-S11	55-60	0.001	0.10	Soft black coal with water coming in
162-S12	60-65	<0.001	<0.05	
162-S13	65-75	<0.001	0.05	
162-S14	75-80	<0.001	<0.05	
162-S15	80-85	<0.001	<0.05	
162-S16	85-90	<0.001	<0.05	Encountered rock

Sample I. D.		AU Oz / ton	AG Oz / ton	Comment
163 drill hole location: SE 30-42-24-W4				
163-S1	0-5	<0.001	<0.05	Brown dirt
163-S2	5-10	<0.001	<0.05	Panned- no colored stones
163-S3	10-15	0.004	<0.05	Gray-black clay at 13 feet
163-S4	15-20	0.003	0.05	
163-S5	20-25	0.003	0.05	
163-S6	25-30	<0.001	0.15	
163-S7	30-35	<0.001	0.05	
163-S8	35-40	<0.001	<0.05	
164 drill hole location: SE 30-42-24-W4				
164-S1	0-5	0.002	<0.05	Brown soil with gravel
164-S2	5-10	0.004	<0.05	Panned material, no colored stones
164-S3	10-15	<0.001	<0.05	
164-S4	15-20	<0.001	0.10	Sand; panned material- no colored stones

Sample I. D.	AU Oz / ton	AG Oz / ton	Comment:
165 drill hole location: NE 11-42-25-W4			
165-S1 0-5	<0.001	0.10	Dry clay chunks
165-S2 5-10	<0.001	0.05	Seven feet of dry clay/ green clay
165-S3 10-15	<0.001	<0.05	Gray, dry clay clumps
165-S4 15-20	<0.001	0.15	Same
165-S5 20-25	<0.001	0.35	Same
165-S6 25-30	<0.001	<0.05	Same gray dry clay, then hit sandstone layer at 30 feet
165 drill hole location: NE 11-42-25-W4			
165-2 S1 0-5	<0.001	0.15	Dry clay chunks
165-2 S2 5-10	<0.001	0.15	At 7 feet, dry gray-green clay
165-2 S3 10-15	<0.001	<0.05	Dry Gray colored clumping clay
165-2 S4 15-20	<0.001	0.20	Same
165-2 S5 20-25	<0.001	0.05	Same
165-2 S6 25-30	<0.001	<0.05	Same, hit sandstone at 30 feet

1435 S. 10th Ave.

Jacobs Assay Office
Registered Assayers

Phone (520) 622-0813
FAX (520) 622-3845

Page No. 1

CERTIFICATE OF ASSAY

Tucson, Arizona 85713
Date: 10/08/96

Client: ARNOLD TAKEMOTO - #001

Sample I. D.	Au oz/t	Ag oz/t
164-S1 0-5	0.002	<0.05
164-S2 5-10	0.004	<0.05
164-S3 10-15	<0.001	<0.05
164-S4 15-20	<0.001	0.10
138-S1 0-5	<0.001	<0.05
138-S2 2-10	<0.001	0.15
138-S3 10-15	<0.001	<0.05
138-S4 15-20	0.002	0.20
138-S5 20-25	<0.001	<0.05
138-S6 25-30	<0.001	<0.05
138-S7 30-35	<0.001	<0.05
147-S1 0-5	<0.001	<0.05
147-S2 5-10	<0.001	<0.05
147-S3 10-15	0.004	<0.05
147-S4 15-20	<0.001	<0.05
147-S5 20-25	<0.001	<0.05
147-S6 25-30	<0.001	0.05
147-S7 30-35	0.003	0.10
147-S8 35-40	0.002	<0.05
162-S1 0-5	<0.001	<0.05
162-S2 5-10	<0.001	<0.05
162-S3 10-15	<0.001	<0.05
162-S4 15-20	<0.001	<0.05
162-S5 20-25	0.002	<0.05
162-S6 25-30	<0.001	<0.05
162-S7 30-35	<0.001	<0.05
162-S8 35-40	<0.001	0.15
162-S9 45-50	<0.001	<0.05
162-S10 50-55	<0.001	0.10
162-S11 55-60	0.001	0.10
162-S12 60-65	<0.001	<0.05
162-S13 65-75	<0.001	0.05
162-S14 75-80	<0.001	<0.05
162-S15 80-85	<0.001	<0.05
162-S16 85-90	<0.001	<0.05
163-S1 0-5	<0.001	<0.05
163-S2 5-10	<0.001	<0.05
163-S3 10-15	0.004	<0.05
163-S4 15-20	0.003	0.05
163-S5 20-25	0.003	0.05
163-S6 25-30	<0.001	0.15
163-S7 30-35	<0.001	0.05
163-S8 35-40	<0.001	<0.05
151-S1 0-5	0.004	<0.05
151-S2 5-10	<0.001	<0.05
151-S3 10-15	<0.001	<0.05
151-S4 15-20	<0.001	<0.05
151-S5 20-25	0.001	<0.05
151-S6 25-30	<0.001	0.05
151-S8 35-40	<0.001	<0.05
151-S9 40-43	<0.001	<0.05
152-S1 0-5	0.002	<0.05
152-S2 5-10	<0.001	0.15
152-S3 10-15	<0.001	0.15
152-S4 15-20	<0.001	0.05
152-S5 20-25	<0.001	<0.05
152-S6 25-30	0.002	0.30
152-S7 30-35	<0.001	<0.05
152-S8 35-40	<0.001	<0.05
153-S1 0-5	<0.001	<0.05

CFN: TAKAMO
AJFN: TAKA001

Very respectfully,

REGISTERED ASSAYER
CERTIFICATE NO
11650
MICHAEL G.
JACOBS
Date signed 10/11/96
Arizona U.S.A.

1435 S. 10th Ave. Jacobs Assay Office Phone (520) 622-0813
Registered Assayers FAX (520) 622-3845
Tucson, Arizona 85713

CERTIFICATE OF ASSAY

Date: 10/08/96

Client: ARNOLD TAKEMOTO - #001

Sample I. D.	Au oz/t	Ag oz/t
153-S2 5-10	<0.001	<0.05
153-S3 10-15	<0.001	<0.05
153-S5 20-25	<0.001	<0.05
153-S6 25-27	<0.001	<0.05
153-S4 15-20	<0.001	<0.05
154-S1 0-520	<0.001	<0.05
154-S2 5-10	<0.001	0.25
154-S3 10-15	<0.001	<0.05
154-S4 15-20	<0.001	<0.05
154-S5 20-25	<0.001	<0.05
154-S6 25-30	<0.001	0.05
154-S7 30-35	<0.001	<0.05
155-S1 0-5	<0.001	<0.05
155-S2 5-10	<0.001	<0.05
155-S3 10-15	<0.001	0.15
155-S4 15-20	<0.001	<0.05
161-S1 0-5	<0.001	<0.05
161-S2 5-10	<0.001	<0.05
161-S3 10-15	<0.001	0.05
161-S4 15-20	<0.001	<0.05
161-S5 20-25	<0.001	0.10
161-S6 25-30	<0.001	<0.05
161-S7 30-35	<0.001	0.25
161-S8 35-40	<0.001	0.25
161-S9 40-45	<0.001	<0.05
161-S10 45-50	<0.001	<0.05
161-S11 50-55	<0.001	<0.05
161-S12 55-60	<0.001	<0.05
161-S13 60-65	<0.001	0.05
161-S14 65-70	<0.001	0.05
161-S15 70-75	<0.001	<0.05
141-S1 0-5	<0.001	<0.05
141-S2 5-10	<0.001	<0.05
141-S3 10-15	<0.001	<0.05
141-S4 15-20	<0.001	0.05
141-S5 20-25	<0.001	<0.05
141-S6 25-28	<0.001	<0.05
165-S1 0-5	<0.001	0.10
165-S2 5-10	<0.001	0.05
165-S3 10-15	<0.001	<0.05
165-S4 15-20	<0.001	0.15
165-S5 20-28	<0.001	0.35
165-S6 25-30	<0.001	<0.05
141-2 S1 0-5	<0.001	0.05
141-2 S2 5-10	0.001	0.55
141-2 S3 10-15	<0.001	0.20
141-2 S4 15-20	<0.001	0.05
141-2 S5 20-25	<0.001	<0.05
142 S1 0-5	<0.001	<0.05
142 S2 5-10	<0.001	<0.05
142 S3 10-15	<0.001	<0.05
142 S4 15-20	<0.001	<0.05
142 S5 20-25	<0.001	<0.05
146 S6 25-28	<0.001	<0.05
159 S1 0-5	<0.001	<0.05
159 S2 5-10	<0.001	0.05
159 S3 10-15	<0.001	0.10
159 S4 15-20	<0.001	<0.05
159 S5 20-21	<0.001	<0.05
160 S1 0-5	<0.001	0.15

Very respectfully,

REGISTERED ASSAYER CERTIFICATE NO 11650 MICHAEL G. JACOBS Date Signed 10/11/96 Arizona U.S.A.

CFN: TAKAMO
AJFN: TAKA001

1435 S. 10th Ave. Jacobs Assay Office Phone (520) 622-0813
Registered Assayers FAX (520) 622-3845
Tucson, Arizona 85713

Page No. 3 CERTIFICATE OF ASSAY Date: 10/08/96

Client: ARNOLD TAKEMOTO – #001

Sample I. D.	Au oz/t	Ag oz/t	Sample I. D.	Au oz/t	Ag oz/t
160 S2 5-10	<0.001	0.05			
160 S3 10-15	<0.001	0.10			
160 S4 15-20	<0.001	0.25			
160 S5 20-25	<0.001	0.25			
165-2 S1 0-5	<0.001	0.15			
165-2 S2 5-10	<0.001	0.15			
165-2 S3 10-15	<0.001	<0.05			
165-2 S4 15-20	<0.001	0.20			
165-2 S5 20-25	<0.001	0.05			
165-2 S6 25-30	<0.001	<0.05			

CFN: TAKAMO
AJFN: TAKA001

Charges $ $1625.00 - PAID

Very respectfully,

REGISTERED ASSAYER CERTIFICATE NO 11650 MICHAEL G. JACOBS Date Signed 10/11/96 Arizona U.S.A.

: C-600 DATE: 6/30/94

SOUTH AMERICAN GEMS, EXPLORATION INC.
GEMSTONE LABORATORY
MICROSCOPIC EXAMINATION

SAMPLE WEIGHT : LT\LB X4-RDKGP

IDENTIFICATION : GARNET
: TOURMALINE
: PENTLANDITE
: ULEXITE
: LEPIDOLITE
: TOPAZ
: KUNZITE
: SPINEL
:
: GOLD
:
:
:

ORIGIN: CANADA S-4

COMMENT
: ELEMENT SEPARATION TEST
:
:
:
: GOLD-COMMERCIAL QUANTITY

GEOLOGIST\GEMOLOGIST
ROBERT TODD
[redacted]
1-813-923-6505

S.A.G.E.INC. P.O.BOX 20456 SARASOTA FL.34276

ARNOLD C. TAKEMOTO

BRIEF RESUME

EDUCATION:

Denver University Graduate School, Denver, Colorado
Metallurgical and Analytical Chemistry

Bsc. Chemistry, Clarkson College of Technology, Potsdam, New York

PERSONAL:

[redacted]

EXPERIENCE AND ACCOMPLISHMENTS

MINING AND EXTRACTIVE METALLURGY

1. Consultant to an Australian mining company with a major gold deposit (20 + square miles) in Utah. This complex ore had resisted previous efforts in development of an effective recovery procedure. Through research and creative metallurgical engineering, a large scale production process was developed yielding 430% increase in recovered gold. This transformed the mine into a financially viable project.

2. Engineered and designed state of the art EPA approved methods to extract gold, silver, and platinum group metals from a complex Arizona ore. A flow sheet was designed from laboratory studies and was confirmed by bulk pilot plant testing. The subsequent large scale pilot test yielded economic quantities of precious metals, which were smelted into a dore' bar.

3. Chief consultant on a large scale placer gold operation in northern British Columbia near the Yukon Territory. Designed and supervised construction of a fine gold gravity upgrade system which produced a gold concentrate without using mercury or chemicals. Overall recovery was improved by over 200% resulting in a dramatic increase in project profitability.

4. Designed and supervised metallurgical extraction studies for a gold and silver open pit mining operation in Arizona. The extraction and leach amenability testing included cyanide, thiourea, and ammonium thiosulfate. Originated necessary reports for the acquisition of a cyanide and thiourea leaching permit. A flow sheet was designed for the operation encompassing mining, ore crushing, leach pad construction, ion exchange resin collection of the precious metal values, and final smelting of gold and silver values into dore' bars.

5. Engineered and supervised large scale milling and leach tests of ore from a mining property in Arizona. This involved overseeing comprehensive testing from raw ore to pouring of gold and silver. Necessary information was obtained which led to the flow sheet development and design of a 1,000 ton per day mill and processing facility. Exceptional recovery resulted from utilization of state of the art methods of extraction.

6. Discovered and negotiated purchase of a large open pit precious metals mining project in Montana. Supervised exploration and arranged financing for the mining project. Obtained necessary permits for development. Engineered and supervised large scale pilot and feasibility testing. Designed the extraction process and engineered the extraction mill.

7. Designed and engineered various portable and static processing mills for complex gold and silver ores, utilizing new chemical and gravity methods. These mills include state of the art crushing circuits with innovative concentration and upgrade capability. The mills produced ore concentrates suitable for direct smelting to gold and silver dore'.

8. Engineered and designed total placer mining operations. Consultant on various large placer operations in Arizona, Colorado, and Montana. Primary consultant on a 250 yard per hour placer operation in Arizona. This project required designing of flowsheets and system engineering from raw bank run to final clean-up of concentrates yielding fine gold and nuggets.

9. Supervised acquisition of permits on a large placer mine in Montana. Designed and engineered complete metallurgical recovery methods including the primary recovery and secondary upgrading of concentrates to a high-grade smeltable concentrate.

10. Primary consultant on a low-grade, high tonnage sand/gravel and gold operation (4,000 yards per day) in Colorado. Instrumental in the construction of new gravity concentration techniques and equipment for fine gold recovery.

11. Designed, engineered and constructed a gold and silver refinery in Colorado. Developed and perfected new electrochemical procedures and equipment for refining gold and silver to 9999 purity bullion.

12. Designed, engineered and supervised construction of various gold and silver smelters. These smelters process ore concentrates and produce gold and silver dore' bars.

13. Qualified and experienced with various gold, silver and platinum group assay procedures. These include fire assay as well as advanced instrumental methods such as Atomic Absorption, Induced Coupled Plasma(ICP) Neutron Activation Analysis, X-Ray Fluorescent Spectroscopy, Nuclear Magnetic Resonance(NMR) and various chemical and colormetric analysis.

14. Initiated Geo Metal Company. This company provides qualified metallurgical and high technology geophysical engineering on a consulting basis.

GEOPHYSICAL EXPLORATION AND GEMOLOGICAL EVALUATION

1. Geophysical exploration utilizing state of the art VLFEM (very low frequency electromagnetic) techniques to map a high grade open pit gold deposit suitable for heap leaching.

2. Utilized VLFEM geophysical techniques near Kingman, Arizona to establish the presence and continuity of an outcropped high grade silver vein. Geophysical results were confirmed by core drilling and assay results.

3. Supervised total geophysical and geological exploration of a large Montana placer property.

4. Developed interpretation and application of high technology geophysical methods for discovery and evaluation of ore bodies, with an emphasis on VLFEM and MIP(magnetic induced polarization).

5. Geo Metal Company specializes in high technology geophysical exploration and evaluation. A new ore body and gold bearing veins were discovered by Geo Metal Company near Homestake's Lead, South Dakota mine.

6. Supervised exploration, drilling program and separation of precious gems on 2 large new alluvial deposits in Alberta and Saskatchewan Canada. Discovered a major deposit of precious gems and diamonds. Delineated high grade zones and Kimberlite pipes.

ENVIRONMENTAL TECHNOLOGIES

1. Participated in the development of an advanced environmental technology designed to treat organic toxic waste. This technology effectively and efficiently destroys such hazardous environmental toxins as PCB'S and TCE, as well as many others.

2. Involved in the development of technology designed to desulfurize crude petroleum(oil). This technology has the potential to significantly reduce sulfur dioxide emissions and the acid rain it produces.

3. Investigated and facilitated research on new processes for recycling of plastics and tires. This process produces high yields of monomers(plastic and tire manufacturing feedstock). With this process, effective reconversion of tires and mixed plastics is a reality.

4. Developed metallurgical processes and procedures designed to minimize the environmental impact of large scale mining. These technical approaches are highly effective in recovering metal values and are also environmentally sound. These techniques also minimize permitting time because they are non-hazardous and non-polluting.

5. Obtained permitting for both cyanide and thiourea leach recovery systems. These permits were among the first obtained under newer, more stringent Department of Environmental Quality standards in the State of Arizona.

6. Obtained permitting for the first large scale (5,000 tons per day) bromide leach recovery system allowed in the State of California.

ADVANCED ANALYTICAL CHEMISTRY

1. Employed at University of Colorado Medical Center and School of Medicine

   - Guest speaker in the School of Medicine, with lectures on new advances in instrumentation for clinical medical analysis.

   - Chief consultant for the Central Laboratory, culminating in the development of a fully automated, computerized clinical laboratory system for patient analysis. This resulted in one of the first installations of an on-line, fully automated clinical laboratory in the world.

2. Full 4 year N.A.S.A. Research Fellowship Grant on the design and construction of diverse instrumental methods and instrumentation to measure high-speed analytical and metallurgical changes of various metals during laser combustion. Resultant publication: research paper and seminar delivered at the 9th International Congress of High-speed Photography.

3. Research Director of Biomedical Engineering at the University of Vermont Medical Center. Duties included the designing and supervision of construction of various instruments to determine enzyme activity during growth progression of pneumococus bacilli.

EARLY SCIENTIFIC ACHIEVEMENTS

1. Semi-Finalist in the Grumman Aircraft Full Scholarship national competition.

2. At 10 years of age constructed a 1 MEV (million electron volt) linear accelerator (atom smasher). This project won 2nd place in the National Science Foundation Competition.