REPORT ON THE
PLATINUM GROUP METAL POTENTIAL
OF THE
FLAT TOP CLAIMS

DAWSON MINING DIVISION
YUKON TERRITORY
NTS 115P/3

for

Wellington Financial Corporation
4519 Woodgreen Drive
West Vancouver, B.C.
V7S 2T8

Fred W. Gittings
B.Sc. (Hons.), F.G.A.C.

Saskatoon, Sask.
October, 1987

This re..ort has been examined by
the Geo'o..cal Evaluation Unit
under Se.. o.. 53 (4) Yukon Quartz
Mining .. .. is allowed as
represe.. ..ork in the amount
of $ 9200.00 for 2 reports

APLeBarge

for Regio.. .. Exploration and
Geo.o.. .. for Commissioner
of Yuko.. ....y.

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PLAN (in back pocket)

SUMMARY

The Flat Top Claims cover an area of 24 square kilometers over an ultramafic intrusion located 38 km southwest of Stewart Crossing in Yukon Territory.

Rock specimens collected from the main body of the intrusion were disappointingly low in platinum group metals (PGM). The unexposed margins of the intrusion, however, may contain massive sulfide accumulations and possibly economic grade copper-nickel-PGM mineralization. Placer testing of the creeks draining the claim group has proven the existence of platinum in the area and the marginal zone of the intrusion is the most logical source of this placer platinum.

Recommendations include a first stage of geophysical, stream geochemical and talus mapping surveys to be followed by a second stage of drill testing of the favourable sulfide zones.

1.0 INTRODUCTION

This report presents the results of an evaluation of the Platinum Group Metal (PGM) potential of the FLAT TOP Claims located in central Yukon Territory. The examination was undertaken and the report prepared at the request of Kenneth A. Cabianca of Wellington Financial Corporation, Vancouver, B.C.

The report is based on information obtained during the author's property visit in September, 1987, and a literature search of available government information in Whitehorse, Yukon, and Ottawa, Ontario.

1.1 LOCATION AND ACCESS

The claims are centered on latitude 63 12'N and longitude 137 20'W in central Yukon (NTS 115P/3). Access to the property is by helicopter. Trans North maintains a Bell 206 helicopter, which is available for casual charter, at Mayo, 90 km northeast of the property.

The village of Mayo is 407 km by all-weather road north of the territorial capital of Whitehorse. Whitehorse is served by daily jet service from Vancouver, B.C., and Edmonton, Alberta.

The Alaska Highway pases within 38 km of the property near Stewart Crossing (see Figure 1).

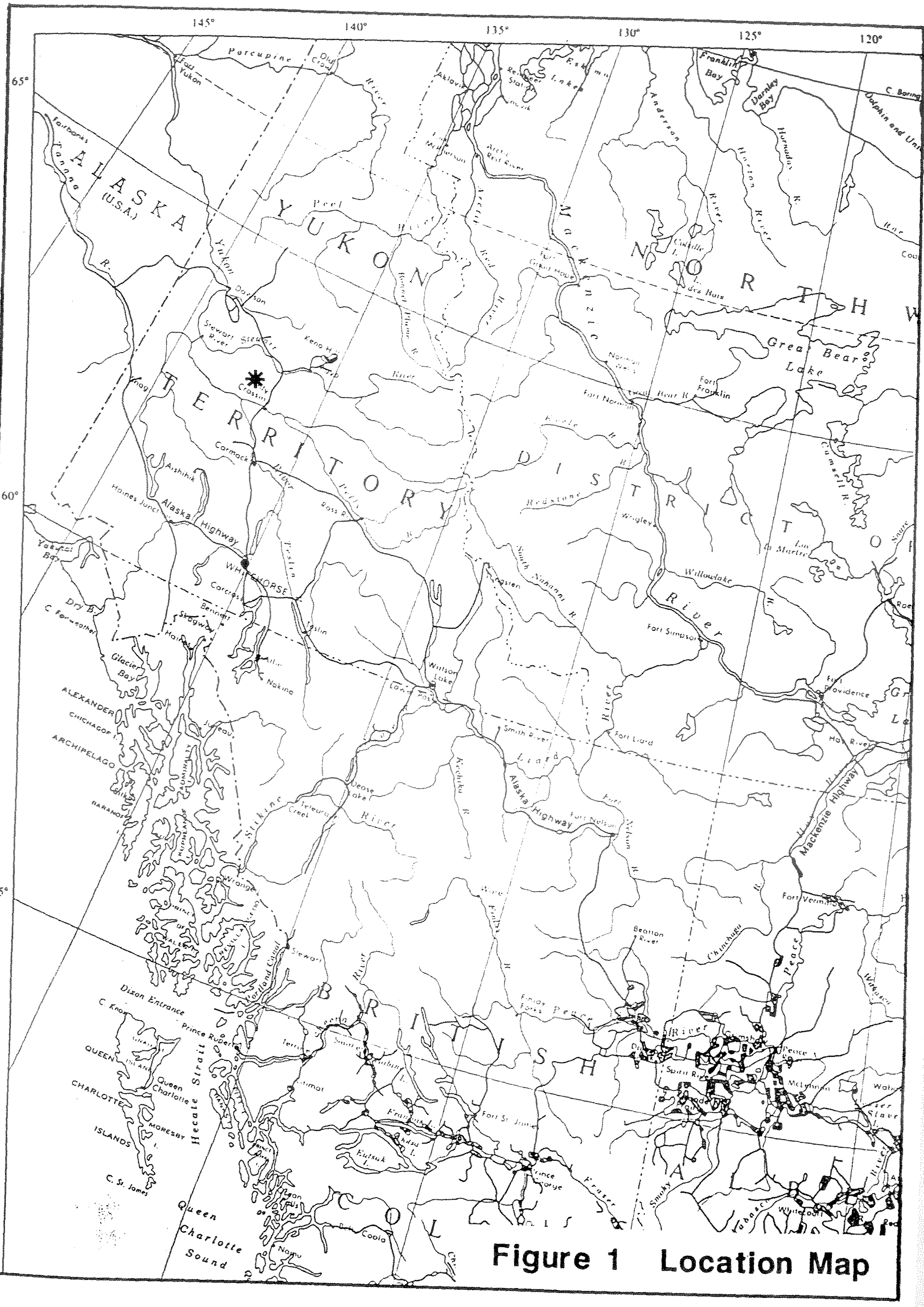

Figure 1 Location Map

1.2 PREVIOUS WORK

H.S. Bostock mapped the McQuesten map sheet (NTS 115P) during the period 1946 to 1949. His results were presented in GSC Paper 48-25 which is now out-of-print. GSC Map 1143A is a reprint of the original map and contains many of the descriptive notes present in the original paper.

The most recent mapping in the area was done in 1980 at a scale of 1:50,000 by P. Erdmer. Erdmer spent one month mapping the White Mountain area as part of a larger study of rocks of the Yukon Cataclastic Terrane.

An examination of the assessment files in Whitehorse revealed that no previous assessment work has ben filed on the area covered by the FLAT TOP Claims.

1.3 CLAIM STATUS

The FLAT TOP Claims consist of 117 individual claims covering an area in the White Mountains region of Yukon. The property is located in the Dawson City Mining Division. The claims were staked during late August, 1987. They were recorded on September 2, 1987. Claim boundaries are outlined on Plan 1.

The claims are registered under Wellington Financial Corporation.

2.0 GEOLOGY

2.1 REGIONAL GEOLOGY

The FLAT TOP Claims lie within the Yukon Cataclastic Terrane as proposed by Tempelman-Kluit (1981). The Tintina Fault, a dextrial strike-slip fault with a 450 km displacement, separates the cataclastic rocks from the relatively undeformed and unmetamorphosed rocks of the Selwyn Basin to the northeast. It is believed that the Yukon Cataclastic Terrane was accreted onto the ancient North American continent during Mesozoic times.

According to Tempelman-Kluit (1981),

> "The Yukon Cataclastic Complex contains three assemblages of highly sheared and metamorphosed rocks that are not a stratigraphic sequence, but a structural stack. Shearing was penetrative enough that the units lack stratigraphic integrity. The rocks range from ultramylonite and blastomylonite, products of ductile deformation, to less strained equivalents so that the parent rocks are locally preserved. Lithologic units within the stack lack lateral continuity and can not be traced into either adjoining tectonic subdivision. Moreover, extensive sheets of the sheared rocks are thrust over the less deformed ancient North American strata of the Nasina Shelf and Cassiar Platform. The internal stratigraphy, depositional relations and age of the three units are unknown.
>
> The three assemblages occur in consistent stacking order except wehre disrupted by younger faults. At the base are quartz muscovite schist and interleaved chlorite schist derived from sedimentary and volcanic rocks. This is the Klondike Schist or Nisutlin Allochthonous Assemblage. Structurally above it, Anvile Allochthonous Assemblage, includes amphibolite and serpentinite, a sheared ophiolite. Highest structurally is a slice of biotite granodiorite schist, a ductile deformed plutonic suite called Simpson Allochthonous Assemblage.
>
> Metamorphism in Yukon Cataclastic Complex occurred with ductile deformation in the Late Triassic and Early Jurassic. The rocks locally contain eclogite and blueschist minerals which indicate extreme pressure but low or moderate temperatures of metamorphism."

The most recent regional mapping of the area was done by Bostock during the period 1943 to 1949. He believed the schists and paragneisses of the Yukon and Klondike Groups to be Precambrian or unknown age. Bostock (1948) states that the ultramafic bodies within the schists are younger intrusions of Mesozoic-aged suggesting they were not part of an ophiolite complex as proposed by Tempelman-Kluit.

Large bodies of felsic plutonic rocks which range in composition from granodiorite to quartz monzonite occur throughout the region. These rocks are believed t be part of the Klotassin Suite intruded during the Upper Traissic and Middle Jruassic periods.

Much of the area is covered by Pliocene-aged stream deposits. These Cenozoic deposits have been preserved in part because this portion of Yukon, which includes Dawson City, was not eroded by glacial action during the last ice age.

2.2 GEOLOGY OF THE FLAT TOP CLAIMS

The FLAT TOP Claims are underlain by a relatively large ultramafic plug which has intruded into a metamorphosed supercrustal sequence.

The ultramafic intrusion ranges from dunite to peridotitie in composition. All rock types are moderately to very strongly serpentinized and sheared. Original compositional variations are believed to be due to gradational changes in the olivine content of the rocks rather than a distinct zonation or cryptic differentiation.

The ultramafic rocks underlying the FLAT TOP Claims do not have any textures that would suggest these rocks represent an ophiolite remnant rather than an intrusion. Podiform chromite typical of an ophiolite sequence is quite refractory and should have been preserved during serpentinization and tectonism if it had been present. No examples of podiform chromite, however, have been discovered in the White Mountain intrusions. Other features typical of ophiolites such as compositional differentiation from dunite to gabbro are also absent from this intrusion.

Unfortunately the margin of the FLAT TOP Intrusion is not exposed. The base or sole of the allochonous ophiolite slices in central B.C. are typically brecciated reflecting their transported origin. In contrast, the presence of calc silicate minerals immediately northwest of the Rough Top Intrusion seems to suggest that the magma was intruded into a sedimentary sequence of rocks (which included marble units) and the entire package was then thrust faulted into the present position.

In the Flat Top area, mapping indicates that the ultramafic rocks are in contact with both Units 1 and 2 (see Plan 1). Unit 1 is a light rusty weathering; white to pale green muscovite, quartz schist. Bostock (1948) suggests a Precambrian age for this unit, while Tempelman-Kluit and Erdmer (1981) consider the Klondike Schist to be part of the Nisutlin Allochthonous Assemblage of unknown age. Unit 2 is a banded, medium- to coarse-grained garnet amphibole and hornblende gneiss. It is grouped by Erdmer (1981) with the ultramafic rocks into the Anvil Allochtonous Assemblage and they are suggested to be a Carboniferous and Permian (possibly older) age.

North of Flat Top units 1, 2, and 3 are in fault contact with younger rocks of the Simpson Allochtonous Assemblage (unit 4) (see Plan 7). Unit 4 is a Devonian to Triassic orthogneiss probably, according to Erdmer (1981, p.64) derived from a protolith of the Klondike Schist.

Throughout the Flat Top area the cataclastic foliation is generally in a northwesterly direction. One example of possible igneous layering was located southeast of the Flat top ridge. At this locale serpenitinized peridotite has vague layers of coarse-grained pseudomorphs of what could have been pyroxene within a totally serpentinized, moderately magnetic rock indicating an olivine-rich precursor.

In order to accurately locate the margins of the intrusion a ground magnetometer survey should be undertaken. Since the ultramafic rocks are much more magnetic than the surrounding country rock (due to secondary magnetite) a magnetometer survey would be a relatively inexpensive method of outlining the favourable marginal zones of the intrusion.

3.0 ECONOMIC GEOLOGY

In the Flat Top area the margins of the intrusion are not exposed. Samples collected of the central dunites and periodites of the intrusion are consistently high in nickel but low in copper and platinum and paladium. Geochemical nickel concentrations of 1200-2500 ppm are typical of ultramafic rocks and do not indicate pentladite mineralization. The very low copper and PGM values also indicate a lack of sulfides within the main body of the intrusion. This lack of sulfides throughout the body of the intrusion may be due to a lowering of the overall sulfide content of the magma as a result of the sulfides precipitating along the chilled margins of the intrusion. A lack of even trace amounts of sulfides in the interior of the intrusion, therefore, suggests the possiblity of mineralization along the margins. Examples of nickel-copper-PGM mineralization along the margins of ultramafic intrusions are not unknown (Sudbury, Ontario; the Donaldson deposit in Ungava; the Muskox Intrusion in the Coppermine area; and the original Wellgreen deposit in the Yukon).

One indirect indication of PGM mineralization in the White Mountains area is the presence of platinum-bearing nuggests won from the creeks draining the area. Larry Bratvold has stated (pers. comm., 1987) that during a reconnaissance program aimed at testing the placer potential of the White Mountains area he tested Rosebud Creek as well as other creeks draining the Flat Top Claims. He obtained nuggets that contained 25% Pt. It is believed that the source of this platinum is the Flat Top and Rough Top ultramafics. It is also believed that the most probable source of this placer platinum is the marginal zone of the intrusion which is not exposed.

CONCLUSIONS

The Flat Top ultramafic body is a sheared and serpentinized dunite to peridotite intrusion. It is believed that the body was intruded into a metasedimentary sequence and subsequently thrust faulted into its present position and it is not an ophiolite remnant.

Original compositional variations are believed to be due to gradational changes in the olivine content of the rocks rather than a distinct zonation or cryptic differentiation.

Rocks collected from the exposed main body of the intrusion are consistently low in platinum, palladium and copper. A lack of sulfides in the body of the intrusion is due to the under saturation of sulfides in the magma that formed the intrusion. This could have been caused by the removal of the magmatic sulfide along the chilled margin of the intrusion.

The unexposed margin of the intrusion is the best PGM exploration target. It is believed that the platinum found in the nuggets from the creeks draining the Flat Top area were derived from this source.

RECOMMENDATIONS

FIRST STAGE:

1. The subsurface margin of the intrusion should be located utilizing the magnetic difference between the magnetite-bearing ultramafics and the surrounding gneissic rocks. The magnetometer survey should have a tight site spacing of 10 m with a line spacing of 100 m.

2. Heavy mineral stream sediment samples should be collected from the streams which cross the contact of the intrusion. The sampling interval should be tight across the contact (every 100 m) and continue at a wider spacing (every 500 m) downstream off the property. During the summer and fall these streams are dry and the collection would have to be done shortly after spring breakup begins.

3. Further prospecting and mapping should be concentrated on the margin areas outlined by magnetometer survey. Talus slopes should be examined for fine-grained sulfide-bearing rocks of the margin of the intrusion.

SECOND STAGE:

4. Pending the favourable outcome of the first stage of exploration, areas of high potnetial should be drill tested to determine the grade and uniformity of mineralization.

REFERENCES

Bostock, H.S.
1964: McQuesten, Yukon Territory; Geol. Survey of Canada, Map 1143A.

Erdmer, P.
1981: Comparative Studies of Cataclastic Allochthonous Rocks in McQuesten, Laberge and Finlayson Map Areas; in Yukon Geology and Exploration 1979-1980, Dept. of Indian and Northern Affairs, p.60-64.

Templeman-Kluit, D.
1981: Geology and Mineral Deposits of the Southern Yukon; in Yukon Geology and Exploration, 1979-1980, Dept. of Indian and Northern Affairs, p.7-17.

STATEMENT OF QUALIFICATIONS

I, Fred W. Gittings, of Grandora, Saskatchewan, herein do state that:

1. I graduated in 1975 from Brock University, St. Catharines, Ontario, with an Honours B.Sc. degree in Geological Sciences;
2. I have practised my profession on a full-time basis since graduation;
3. Since 1981 I have been involved in platinum exploration in British Columbia, N.W.T., Saskatchewan, Manitoba, Ontario, Quebec, and Yukon;
4. I personally carried out the geological mapping of the FLAT TOP claims;
5. I am a member of the Canadian Institute of Mining and Metallurgy, Prospectors and Developers Association, and a Fellow of the Geological Association of Canada.

Dated this 27th of October, 1987
at Grandora, Saskatchewan.

Fred W. Gittings, B.Sc. (Hons.)
F.G.A.C.

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BONDAR-CLEGG

Geochemical
Lab Report

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Geochemical Lab Report

REPORT: 127-7316

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Ni PPM	Au PPB	Pt PPB	Pd PPB	Cr PPM
R2 RT 001		28	2000	<5	<15	10	3773
R2 RT 002		19	1700	5	25	10	3319
R2 RT 003		10	1450	10	25	15	3098
R2 RT 004		13	1550	<5	20	4	3001
R2 RT 005		12	1450	<5	30	10	3727
R2 RT 007		3	50	<5	15	10	386
R2 RT 008		3	24	<5	<15	4	144
R2 RT 009		4	6	<5	50	4	42
R2 RT 010		2	4	<5	<15	4	134
R2 RT 011		1	230	10	15	15	3089
R2 RT 012		8	1350	<5	20	10	2816
R2 RT 013		4	1300	<5	<15	4	3406
R2 RT 014		6	1450	<5	15	15	2860
R2 RT 015		10	1650	<5	<15	10	3348
R2 RT 016		12	2500	<5	15	8	3798
R2 RT 017		13	1400	10	40	4	3148
R2 RT 018		10	1400	15	<15	15	3403
R2 RT 019		10	1750	<5	<15	15	3267
R2 RT 020		8	1250	<5	15	15	>20000
R2 RT 021		27	1200	<5	<15	8	3765
R2 RT 022		16	1400	<5	20	15	3905
R2 RT 023		16	1700	<5	<15	4	3236
R2 RT 024		6	2000	<5	<15	4	2456
R2 RT 025		6	2300	<5	<15	10	3388
R2 RT 026		2	1200	<5	15	10	5487
R2 RT 027		6	1500	<5	15	15	3976
R2 RT 028		10	1850	10	<15	8	3489
R2 RT 029		20	1950	<5	15	4	2488
R2 RT 030		8	1700	<5	<15	10	2734
R2 RT 031		4	1650	<5	15	6	3628
R2 RT 032		6	2000	<5	<15	4	11247
R2 RT 033		2	1600	<5	20	15	3349
R2 RT 034		8	1800	<5	15	10	3281
R2 RT 035		4	1750	<5	<15	15	3770
R2 RT 037		7	1550	<5	<15	10	3179
R2 RT 038		3	900	<5	<15	8	2333
R2 RT 039		8	1500	<5	<15	15	3357
R2 RT 040		4	1500	<5	<15	10	3207
R2 RT 041		4	1700	<5	<15	10	2482
R2 RT 042		2	1400	<5	40	15	4261

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Geochemical Lab Report

REPORT: 127-7316

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Ni PPM	Au PPB	Pt PPB	Pd PPB	Cr PPM
R2 RT 043		21	1200	<5	<15	4	3528
R2 RT 044		12	1800	<5	<15	10	3583
R2 RT 045		12	1900	<5	<15	10	3550
R2 RT 046		12	1200	<5	<15	10	3213

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Geochemical Lab Report

REPORT: 127-7316 (COMPLETE)

REFERENCE INFO:

CLIENT: WELLINGTON FINANCIAL
PROJECT: NONE GIVEN

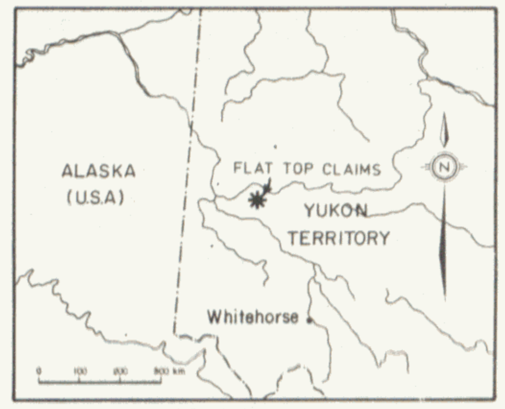
SUBMITTED BY: F.W. GITTINGS
DATE PRINTED: 9-NOV-87

ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Cu	Copper	44	1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption
2	Ni	Nickel	44	2 PPM	HNO3-HCL HOT EXTR	Atomic Absorption
3	Au	Gold - Fire Assay	44	5 PPB	FIRE-ASSAY	Fire Assay AA
4	Pt	Platinum	44	15 PPB	FIRE-ASSAY	
5	Pd	Palladium	44	2 PPB	FIRE-ASSAY	
6	Cr	Chromium	44	2 PPM		X-RAY Fluorescence

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK OR BED ROCK	44	2 -150	44	CRUSH,PULVERIZE -150	44

REPORT COPIES TO: KENNETH A. CABIANCA
FRED W. GITTINNGS

INVOICE TO: KENNETH A. CABIANCA



LOCATION MAP

LEGEND

Pleistocene

6 — Selkirk Series Volcanics; Basalt, black dark brown or grey olivine and augite bearing basalt.

Triassic

5 — Granite and Granodiorite; Massive grey weathering medium grained biotite and hornblende.

SIMPSON ALLOCHTHONOUS ASSEMBLAGE

Devonian to Triassic

4 — (a) Orthogneiss; light green weathering, resistant.

(b) Orthogneiss; light rusty weathering; probably derived from a protolith related to (1).

ANVIL ALLOCHTHONOUS ASSEMBLAGE

Carboniferous and Permian

3 — Dunite and Peridotite; resistant dun brown, grey and orange weathering; altered to black to light green serpentinite, commonly magnetite/chromite bearing.

2 — Garnet, amphibole and hornblende gneiss, medium to coarse grained banded orthogneiss.

NISUTLIN ALLOCHTHONOUS ASSEMBLAGE

Precambrian ?

1 — Klondike Schist; light rusty weathering; white to pale green muscovite, quartz schist; dark graphitic phyllite and slate; minor interbeds of white to grey weathering marble.

Symbols

- Geological Contact; defined, approximate, assumed
- Catoclastic Foliation (inclined, horizontal)
- Fault
- Sample location (outcrop, frost heaved, float)

0 500 1000 1500 2000m

Scale 1:20,000

WELLINGTON FINANCIAL CORP.			
FLAT TOP CLAIMS NTS 115 P/3			
GEOLOGY AND SAMPLE LOCATION MAP			
GEOLOGIST: F.W. GITTINGS	DRAFTED BY: C.D. DURBIN	DATE: SEPT. 87	PLAN 1

Government of Canada | Gouvernement du Canada

ROUND TRIP MEMORANDUM | **NOTE ALLER RETOUR**

FROM / DE: Trevor Bremner, Geology

File No. (originator) — Dossier n° (source)

TO / À: R. Whittingham
Dawson Mining Recorder

File No. (addressee) — Dossier n° (destinataire)

Subject - Objet

FLAT TOP and ROUGH TOP CLAIMS 115 P 3

In order to approve this report I need the following items:

(1) a list of the claims and grant numbers
(2) a map showing individual claims and surrounding claim groups
(3) a brief description of sampling and assay methods

Signature T. J. Bremner Date 21 Sept 88 Telephone 667-3203

Reply - Réponse

Signature Date Telephone

7540-21-029-0717

GC 59a

3 **ORIGINATOR SOURCE** **Remove this copy and its carbon for follow-up — Send copies 1 and 2 intact.**
Détacher cette copie et le carbone qui le précède pour rappel — Envoyer les copies 1 et 2 avec carbone.

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

092693

CERTIFIED MAIL

Your file Votre référence

6 March 1989

Our file Notre référence

~~QUARTZ RENEWALS PENDING~~

Wellington Financial corporation
4519 Woodgreen Drive
WEST VANCOUVER, B.C.
V7S 2T8

Attention: Mr. Cabianca

Dear Sirs:

RE: Application for Renewal of TOP Quartz Claims

Further to our letter of September 26th, 1988 and subsequent telephone conversations with your office and Mr. Fred Gittings, the geologist who submitted your Report, we have still not received the additional information requested.

Our last conversation was with Mr. Gittings directly on January 30th, 1989. He indicated that the type of assay methods and description of sampling procedures would be sent directly to Geology in Whitehorse. He has not, to date, provided them with this information.

It has now been over six months since your application was filed. We are unable to issue the Certificates until the report is approved and it will not be until Mr. Gittings completes the requirements.

Unless we receive the information within thirty days of the date of htis letter, we will have no alternative but to consider the renewal incomplete.

We anticipate your prompt response to this letter.

Yours truly,

ORIGINAL SIGNED BY
R. H. WHITTINGHAM

R.H. WHITTINGHAM
Mining Recorder
Post Office Box 249
DAWSON CITY, Yukon Territory
YOB 1GO (403) 993-5343

:med

Canada

cc: Geology Department


FLAT TOP CLAIMS
NORTH BLACK TOP
SOUTH BLACK TOP

092693

SAMPLING TECHNIQUE:

A representative suite of rocks was collected across the property. The purpose of the suite was to ascertain the cryptic chemical variation within the rocks. Samples were obtained by striking the outcrop with a sharp blow from a 2 1/2 lb. sledge hammer. After the selected specimen was detached from the outcrop, winter weight flagging tape was encloded and fastened securely onto the nearest shrubbery to enable sample site relocation. Two hand specimen sized, representative samples were separately enclosed in numerically designated plastic envelopes. One specimen was retained for possible further study and the other was shipped to Bondar Clegg in Vancouver for chemical analyses.

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Procedure for Platinum and Palladium Analysis

A prepared sample of 15 grams is transferred to a fire assay fusion crucible and mixed with a flux composed mostly of lead oxide. The proportions of the flux components are adjusted depending on the nature of the sample. (For example, extra borax and silica are added for samples with chromite.) Gold and silver are also added to help collect the platinum and palladium. The samples are fused at 1100 C for about 40 minutes until a clear melt is obtained. The lead button which also contains the precious metals is then separated from the slag. The noble metals are then separated from the lead by heating the buttons on cupels in the cupellation furnace. The precious metal beads that are obtained are then transferred to test tubes and aqua-regia is used to dissolve them. This is diluted with a buffer solution and mixed. The solution is analyzed by atomic absorption or by Plasma Emission Spectroscopy by comparing the readings from these solutions with readings from standard solutions that are prepared with the same matrix.

Contamination Prevention

The test tubes and cupels are used only once so that there is no possibility of cross contamination. The fusion crucibles are cleared before reuse and if high samples were previously run the crucibles are discarded. During the analysis a blank solution is run between each sample to ensure that there is no carry-over.

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Procedure for Geochemical Gold Analysis:

A prepared sample of 10 to 30 grams is mixed with a flux which is composed mainly of lead oxide. The proportions of the flux components are adjusted depending on the nature of the sample. Silver is added to help collect the gold. The samples are fused at 1950 F until a clear melt is obtained. The lead button which also contains the precious metals is then separated from the slag. Heating in the cupellation furnace separates the lead from the noble metals. The precious metal beads that remain are transferred to test tubes and dissolved with aqua-regia. The solution is analyzed using Atomic Absorption or a Plasma Emission Spectrograph by comparing the readings of these solutions with readings of standard solutions.

Contamination Prevention

The test tubes and cupels are used only once so that there is no possibility of cross contamination. The fusion crucibles are cleared before re-use by discarding any which had high samples in them. During the analysis a blank solution is run between each sample to ensure that there is no carry-over.

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Analysis by Wavelength Dispersive XRF

Elements Determined:
Se, Th, U, V, Ga, In, Ta, Cr, Br

Prepared samples are pressed into pellets using a 5 ton press. These samples are then put into trays and loaded into the wavelength dispersive X-ray unit. The samples are bombarded by electrons from a radioactive source for a period of up to five minutes and the intensities of the X-rays that are emitted are determined. The amount of each element is determined by comparison with the X-rays of standard materials. Corrections are made for inter-element interferences.

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Determination of Elements by Atomic Absorption Analysis

The samples of 0.5 grams in weight are digested in test tubes with concentrated nitric and hydrochloric acids. These tubes are heated in hot water baths for two and one-half hours. The sample is then diluted and mixed. This solution is analyzed by atomic absorption using the appropriate lamp and wavelength for each element. The absorbance is recorded and compared to a standard series to determine the amount of the element that is present. This procedure is used for the analysis of silver, copper, lead, zinc, molybdenum, bismuth, cadmium, chromium, cobalt, iron, manganese, nickel, and vanadium. Some elements such as silver and lead have background correction applied to overcome matrix problems.

Contamination Prevention

The test tubes are used for atomic absorption analysis only. The test tubes are cleaned between uses with soap and deionized water rinses. If the sample results are high, the test tubes are discarded.

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Sample Preparation Procedures:

General Organization

Upon arrival the samples are assigned a unique lot number. They are then sorted and catalogued in alphanumeric order. This order is kept throughout the preparation, analytical and reporting process. Any discrepancies between the submittal form and the samples received are noted at this time.

Rock Crushing

The entire dried sample is put through a primary jaw crusher. This reduces the sample to 1/4" or finer. All of this material is then transferred to a cone crusher which reduces the sample to 10 mesh. The entire crushed sample is passed through a Jones riffle splitter repeatedly until a representative split of about 250 grams is obtained.

Pulverizing

A ring and puck grinder is used to reduce the sample to 150 mesh. Because this equipment breaks the sample down by impact rather than by shearing, there is less of a contamination problem than with a plate pulverizer and it is also easier to get a finer grind. These grinding heads are a hardened steel alloy with a high chrome content. Because this grinding head may cause some contamination (about .01% Cr and .05%Fe), we also have a ceramic grinding head which can be used in place of the chrome steel head to eliminate this source of contamination.

Contamination Prevention

Each crushing unit is cleaned out between samples using brushes and compressed air. In addition, a gravel with a low metal content is crushed using both the jaw and cone crushers to clean out these units between different lots. If high samples are indicated then gravel is run through the equipment between samples. Similarily, the grinding heads are cleaned between samples by brushing and blowing with compressed air. A cleaning sand (ie low metal content) is pulverized in each grinding head between different lots or between any high samples which are indicated. This eliminates the possibility of cross contamination between lots. However, there is still a possibility of a contamination train if high grade samples are not indicated and are submitted in the same batch as trace level samples.

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Determination of Elements by Atomic Absorption Analysis

The samples of 0.5 grams in weight are digested in test tubes with concentrated nitric and hydrochloric acids. These tubes are heated in hot water baths for two and one-half hours. The sample is then diluted and mixed. This solution is analyzed by atomic absorption using the appropriate lamp and wavelength for each element. The absorbance is recorded and compared to a standard series to determine the amount of the element that is present. This procedure is used for the analysis of silver, copper, lead, zinc, molybdenum, bismuth, cadmium, chromium, cobalt, iron, manganese, nickel, and vanadium. Some elements such as silver and lead have background correction applied to overcome matrix problems.

Contamination Prevention

The test tubes are used for atomic absorption analysis only. The test tubes are cleaned between uses with soap and deionized water rinses. If the sample results are high, the test tubes are discarded.

REPORT ON THE PLATINUM GROUP METAL POTENTIAL OF THE ROUGH TOP CLAIMS

DAWSON MINING DIVISION
YUKON TERRITORY
NTS 115P/3

for

Wellington Financial Corporation
4519 Woodgreen Drive
West Vancouver, B.C.
V7S 2T8

Fred W. Gittings
B.Sc. (Hons.), F.G.A.C.

Saskatoon, Sask.
October, 1987

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 9200.00 for 2 reports

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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FIGURES

APPENDICES

PLAN (in back pocket)

SUMMARY

The Rough Top Claims cover an area of 24 square kilometers over an ultramafic intrusion located 38 km southwest of Stewart Crossing in Yukon Territory.

Rock specimens collected from the main body of the intrusion were disappointingly low in platinum group metals (PGM). The unexposed margins of the intrusion, however, may contain massive sulfide accumulations and possibly economic grade copper-nickel-PGM mineralization. Placer testing of the creeks draining the claim group has proven the existence of platinum in the area and the marginal zone of the intrusion is the most logical source of this placer platinum.

Recommendations include a first stage of geophysical, stream geochemical and talus mapping surveys to be followed by a second stage of drill testing of the favourable sulfide zones.

1.0 INTRODUCTION

This report presents the results of an evaluation of the Platinum Group Metal (PGM) potential of the ROUGH TOP Claims located in central Yukon Territory. The examination was undertaken and the report prepared at the request of Kenneth A. Cabianca of Wellington Financial Corporation, Vancouver, B.C.

The report is based on information obtained during the author's property visit in September, 1987, and a literature search of available government information in Whitehorse, Yukon, and Ottawa, Ontario.

1.1 LOCATION AND ACCESS

The claims are centered on latitude 63 12'N and longitude 137 20'W in central Yukon (NTS 115P/3). Access to the property is by helicopter. Trans North maintains a Bell 206 helicopter, which is available for casual charter, at Mayo, 90 km northeast of the property.

The village of Mayo is 407 km by all-weather road north of the territorial capital of Whitehorse. Whitehorse is served by daily jet service from Vancouver, B.C., and Edmonton, Alberta.

The Alaska Highway pases within 38 km of the property near Stewart Crossing (see Figure 1).

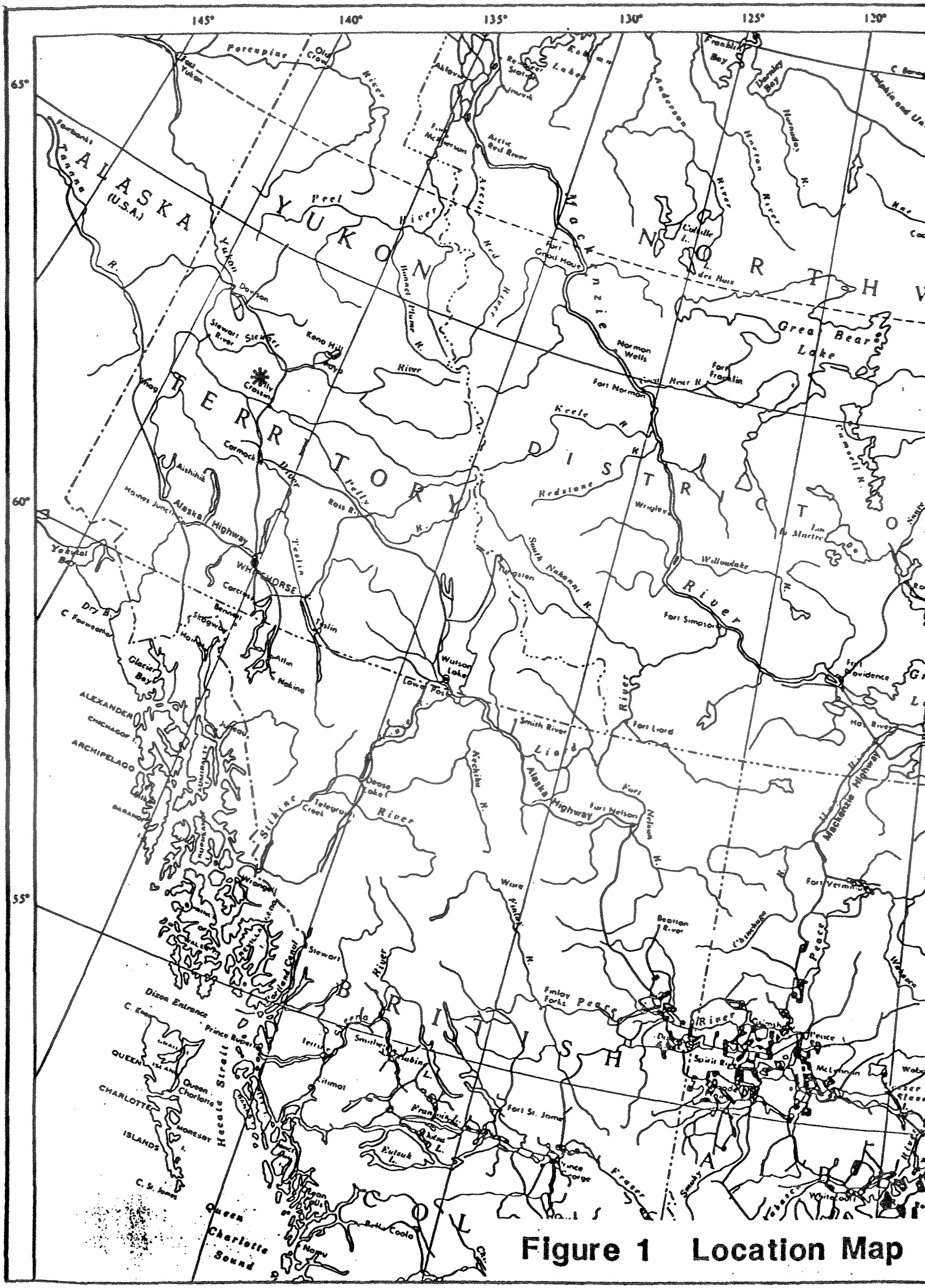

Figure 1 Location Map

1.2 PREVIOUS WORK

H.S. Bostock mapped the McQuesten map sheet (NTS 115P) during the period 1946 to 1949. His results were presented in GSC Paper 48-25 which is now out-of-print. GSC Map 1143A is a reprint of the original map and contains many of the descriptive notes present in the original paper.

The most recent mapping in the area was done in 1980 at a scale of 1:50,000 by P. Erdmer. Erdmer spent one month mapping the White Mountain area as part of a larger study of rocks of the Yukon Cataclastic Terrane.

An examination of the assessment files in Whitehorse revealed that no previous assessment work has ben filed on the area covered by the ROUGH TOP Claims.

1.3 CLAIM STATUS

The ROUGH TOP Claims consist of 117 individual claims covering an area in the White Mountains region of Yukon. The property is located in the Dawson City Mining Division. The claims were staked during late August, 1987. They were recorded on September 2, 1987. Claim boundaries are outlined on Plan 1.

The claims are registered under Wellington Financial Corporation.

2.0 GEOLOGY

2.1 REGIONAL GEOLOGY

The ROUGH TOP Claims lie within the Yukon Cataclastic Terrane as proposed by Tempelman-Kluit (1981). The Tintina Fault, a dextrial strike-slip fault with a 450 km displacement, separates the cataclastic rocks from the relatively undeformed and unmetamorphosed rocks of the Selwyn Basin to the northeast. It is believed that the Yukon Cataclastic Terrane was accreted onto the ancient North American continent during Mesozoic times.

According to Tempelman-Kluit (1981),

> "The Yukon Cataclastic Complex contains three assemblages of highly sheared and metamorphosed rocks that are not a stratigraphic sequence, but a structural stack. Shearing was penetrative enough that the units lack stratigraphic integrity. The rocks range from ultramylonite and blastomylonite, products of ductile deformation, to less strained equivalents so that the parent rocks are locally preserved. Lithologic units within the stack lack lateral continuity and can not be traced into either adjoining tectonic subdivision. Moreover, extensive sheets of the sheared rocks are thrust over the less deformed ancient North American strata of the Nasina Shelf and Cassiar Platform. The internal stratigraphy, depositional relations and age of the three units are unknown.
>
> The three assemblages occur in consistent stacking order except wehre disrupted by younger faults. At the base are quartz muscovite schist and interleaved chlorite schist derived from sedimentary and volcanic rocks. This is the Klondike Schist or Nisutlin Allochthonous Assemblage. Structurally above it, Anvile Allochthonous Assemblage, includes amphibolite and serpentinite, a sheared ophiolite. Highest structurally is a slice of biotite granodiorite schist, a ductile deformed plutonic suite called Simpson Allochthonous Assemblage.
>
> Metamorphism in Yukon Cataclastic Complex occurred with ductile deformation in the Late Triassic and Early Jurassic. The rocks locally contain eclogite and blueschist minerals which indicate extreme pressure but low or moderate temperatures of metamorphism."

The most recent regional mapping of the area was done by Bostock during the period 1943 to 1949. He believed the schists and paragneisses of the Yukon and Klondike Groups to be Precambrian or unknown age. Bostock (1948) states that the ultramafic bodies within the schists are younger intrusions of Mesozoic-aged suggesting they were not part of an ophiolite complex as proposed by Tempelman-Kluit.

Large bodies of felsic plutonic rocks which range in composition from granodiorite to quartz monzonite occur throughout the region. These rocks are believed t be part of the Klotassin Suite intruded during the Upper Traissic and Middle Jruassic periods.

Much of the area is covered by Pliocene-aged stream deposits. These Cenozoic deposits have been preserved in part because this portion of Yukon, which includes Dawson City, was not eroded by glacial action during the last ice age.

2.2 GEOLOGY OF THE ROUGH TOP CLAIMS

The ROUGH TOP Claims are underlain by a relatively large ultramafic plug which has intruded into a metamorphosed supercrustal sequence.

The ultramafic intrusion ranges from dunite to peridotitie in composition. All rock types are moderately to very strongly serpentinized and sheared. Original compositional variations are believed to be due to gradational changes in the olivine content of the rocks rather than a distinct zonation or cryptic differentiation.

The ultramafic rocks underlying the ROUGH TOP Claims do not have any textures that would suggest these rocks represent an ophiolite remnant rather than an intrusion. Podiform chromite typical of an ophiolite sequence is quite refractory and should have been preserved during serpentinization and tectonism if it had been present. No examples of podiform chromite, however, have been discovered in the White Mountain intrusions. Other features typical of ophiolites such as compositional differentiation from dunite to gabbro are also absent from this intrusion.

Unfortunately the margin of the ROUGH TOP Intrusion is not exposed. The base or sole of the allochonous ophiolite slices in central B.C. are typically brecciated reflecting their transported origin. In contrast, the presence of calc silicate minerals immediately northwest of the Rough Top Intrusion seems to suggest that the magma was intruded into a sedimentary sequence of rocks (which included marble units) and the entire package was then thrust faulted into the present position.

In the Rough Top area, mapping indicates that the ultramafic rocks are in contact with both Units 1 and 2 (see Plan 1). Unit 1 is a light rusty weathering; white to pale green muscovite, quartz schist. Bostock (1948) suggests a Precambrian age for this unit, while Tempelman-Kluit and Erdmer (1981) consider the Klondike Schist to be part of the Nisutlin Allochthonous Assemblage of unknown age. Unit 2 is a banded, medium- to coarse-grained garnet amphibole and hornblende gneiss. It is grouped by Erdmer (1981) with the ultramafic rocks into the Anvil Allochtonous Assemblage and they are suggested to be a Carboniferous and Permian (possibly older) age.

North of Rough Top units 1, 2, and 3 are in fault contact with younger rocks of the Simpson Allochtonous Assemblage (unit 4) (see Plan 7). Unit 4 is a Devonian to Triassic orthogneiss probably, according to Erdmer (1981, p.64) derived from a protolith of the Klondike Schist.

Throughout the Rough Top area the cataclastic foliation is generally in a northwesterly direction. One example of possible igneous layering was located southeast of the Rough top ridge. At this locale serpenitinized peridotite has vague layers of coarse-grained pseudomorphs of what could have been pyroxene within a totally serpentinized, moderately magnetic rock indicating an olivine-rich precursor.

In order to accurately locate the margins of the intrusion a ground magnetometer survey should be undertaken. Since the ultramafic rocks are much more magnetic than the surrounding country rock (due to secondary magnetite) a magnetometer survey would be a relatively inexpensive method of outlining the favourable marginal zones of the intrusion.

3.0 ECONOMIC GEOLOGY

In the Rough Top area the margins of the intrusion are not exposed. Samples collected of the central dunites and periodites of the intrusion are consistently high in nickel but low in copper and platinum and paladium. Geochemical nickel concentrations of 1200-2500 ppm are typical of ultramafic rocks and do not indicate pentladite mineralization. The very low copper and PGM values also indicate a lack of sulfides within the main body of the intrusion. This lack of sulfides throughout the body of the intrusion may be due to a lowering of the overall sulfide content of the magma as a result of the sulfides precipitating along the chilled margins of the intrusion. A lack of even trace amounts of sulfides in the interior of the intrusion, therefore, suggests the possiblity of mineralization along the margins. Examples of nickel-copper-PGM mineralization along the margins of ultramafic intrusions are not unknown (Sudbury, Ontario; the Donaldson deposit in Ungava; the Muskox Intrusion in the Coppermine area; and the original Wellgreen deposit in the Yukon).

One indirect indication of PGM mineralization in the White Mountains area is the presence of platinum-bearing nuggests won from the creeks draining the area. Larry Bratvold has stated (pers. comm., 1987) that during a reconnaissance program aimed at testing the placer potential of the White Mountains area he tested Rosebud Creek as well as other creeks draining the Rough Top Claims. He obtained nuggets that contained 25% Pt. It is believed that the source of this platinum is the Rough Top and Rough Top ultramafics. It is also believed that the most probable source of this placer platinum is the marginal zone of the intrusion which is not exposed.

CONCLUSIONS

The Rough Top ultramafic body is a sheared and serpentinized dunite to peridotite intrusion. It is believed that the body was intruded into a metasedimentary sequence and subsequently thrust faulted into its present position and it is not an ophiolite remnant.

Original compositional variations are believed to be due to gradational changes in the olivine content of the rocks rather than a distinct zonation or cryptic differentiation.

Rocks collected from the exposed main body of the intrusion are consistently low in platinum, palladium and copper. A lack of sulfides in the body of the intrusion is due to the under saturation of sulfides in the magma that formed the intrusion. This could have been caused by the removal of the magmatic sulfide along the chilled margin of the intrusion.

The unexposed margin of the intrusion is the best PGM exploration target. It is believed that the platinum found in the nuggets from the creeks draining the Rough Top area were derived from this source.

RECOMMENDATIONS

FIRST STAGE:

1. The subsurface margin of the intrusion should be located utilizing the magnetic difference between the magnetite-bearing ultramafics and the surrounding gneissic rocks. The magnetometer survey should have a tight site spacing of 10 m with a line spacing of 100 m.

2. Heavy mineral stream sediment samples should be collected from the streams which cross the contact of the intrusion. The sampling interval should be tight across the contact (every 100 m) and continue at a wider spacing (every 500 m) downstream off the property. During the summer and fall these streams are dry and the collection would have to be done shortly after spring breakup begins.

3. Further prospecting and mapping should be concentrated on the margin areas outlined by magnetometer survey. Talus slopes should be examined for fine-grained sulfide-bearing rocks of the margin of the intrusion.

SECOND STAGE:

4. Pending the favourable outcome of the first stage of exploration, areas of high potnetial should be drill tested to determine the grade and uniformity of mineralization.

REFERENCES

Bostock, H.S.
1964: McQuesten, Yukon Territory; Geol. Survey of Canada, Map 1143A.

Erdmer, P.
1981: Comparative Studies of Cataclastic Allochthonous Rocks in McQuesten, Laberge and Finlayson Map Areas; in Yukon Geology and Exploration 1979-1980, Dept. of Indian and Northern Affairs, p.60-64.

Templeman-Kluit, D.
1981: Geology and Mineral Deposits of the Southern Yukon; in Yukon Geology and Exploration, 1979-1980, Dept. of Indian and Northern Affairs, p.7-17.

STATEMENT OF QUALIFICATIONS

I, Fred W. Gittings, of Grandora, Saskatchewan, herein do state that:

1. I graduated in 1975 from Brock University, St. Catharines, Ontario, with an Honours B.Sc. degree in Geological Sciences;
2. I have practised my profession on a full-time basis since graduation;
3. Since 1981 I have been involved in platinum exploration in British Columbia, N.W.T., Saskatchewan, Manitoba, Ontario, Quebec, and Yukon;
4. I personally carried out the geological mapping of the ROUGH TOP claims;
5. I am a member of the Canadian Institute of Mining and Metallurgy, Prospectors and Developers Association, and a Fellow of the Geological Association of Canada.

Dated this 27th of October, 1987
at Grandora, Saskatchewan.

Fred W. Gittings, B.Sc. (Hons.)
F.G.A.C.

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BONDAR-CLEGG

Geochemical Lab Report

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Geochemical Lab Report

REPORT: 127-7316

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Ni PPM	Au PPB	Pt PPB	Pd PPB	Cr PPM
R2 RT 001		28	2000	<5	<15	10	3773
R2 RT 002		19	1700	5	25	10	3319
R2 RT 003		10	1450	10	25	15	3098
R2 RT 004		13	1550	<5	20	4	3001
R2 RT 005		12	1450	<5	30	10	3727
R2 RT 007		3	50	<5	15	10	386
R2 RT 008		3	24	<5	<15	4	144
R2 RT 009		4	6	<5	50	4	42
R2 RT 010		2	4	<5	<15	4	134
R2 RT 011		1	230	10	15	15	3089
R2 RT 012		8	1350	<5	20	10	2816
R2 RT 013		4	1300	<5	<15	4	3406
R2 RT 014		6	1450	<5	15	15	2860
R2 RT 015		10	1650	<5	<15	10	3348
R2 RT 016		12	2500	<5	15	8	3798
R2 RT 017		13	1400	10	40	4	3148
R2 RT 018		10	1400	15	<15	15	3403
R2 RT 019		10	1750	<5	<15	15	3267
R2 RT 020		8	1250	<5	15	15	>20000
R2 RT 021		27	1200	<5	<15	8	3765
R2 RT 022		16	1400	<5	20	15	3905
R2 RT 023		16	1700	<5	<15	4	3236
R2 RT 024		6	2000	<5	<15	4	2456
R2 RT 025		6	2300	<5	<15	10	3388
R2 RT 026		2	1200	<5	15	10	5487
R2 RT 027		6	1500	<5	15	15	3976
R2 RT 028		10	1850	10	<15	8	3489
R2 RT 029		20	1950	<5	15	4	2488
R2 RT 030		8	1700	<5	<15	10	2734
R2 RT 031		4	1650	<5	15	6	3628
R2 RT 032		6	2000	<5	<15	4	11247
R2 RT 033		2	1600	<5	20	15	3349
R2 RT 034		8	1800	<5	15	10	3281
R2 RT 035		4	1750	<5	<15	15	3770
R2 RT 037		7	1550	<5	<15	10	3179
R2 RT 038		3	900	<5	<15	8	2333
R2 RT 039		8	1500	<5	<15	15	3357
R2 RT 040		4	1500	<5	<15	10	3207
R2 RT 041		4	1700	<5	<15	10	2482
R2 RT 042		2	1400	<5	40	15	4261

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Geochemical Lab Report

REPORT: 127-7316

PROJECT: NONE GIVEN

SAMPLE NUMBER	ELEMENT UNITS	Cu PPM	Ni PPM	Au PPB	Pt PPB	Pd PPB	Cr PPM
R2 RT 043		21	1200	<5	<15	4	3528
R2 RT 044		12	1800	<5	<15	10	3583
R2 RT 045		12	1900	<5	<15	10	3550
R2 RT 046		12	1200	<5	<15	10	3213

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BONDAR-CLEGG

Geochemical Lab Report

REPORT: 127-7316 (COMPLETE)

REFERENCE INFO:

CLIENT: WELLINGTON FINANCIAL
PROJECT: NONE GIVEN

SUBMITTED BY: F.W. GITTINGS
DATE PRINTED: 9-NOV-87

ORDER		ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Cu	Copper	44	1 PPM	HNO3-HCL HOT EXTR	Atomic Absorption
2	Ni	Nickel	44	2 PPM	HNO3-HCL HOT EXTR	Atomic Absorption
3	Au	Gold - Fire Assay	44	5 PPB	FIRE-ASSAY	Fire Assay AA
4	Pt	Platinum	44	15 PPB	FIRE-ASSAY	
5	Pd	Palladium	44	2 PPB	FIRE-ASSAY	
6	Cr	Chromium	44	2 PPM		X-RAY Fluorescence

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
R ROCK OR BED ROCK	44	2 -150	44	CRUSH,PULVERIZE -150	44

REPORT COPIES TO: KENNETH A. CABIANCA
FRED W. GITTINNGS

INVOICE TO: KENNETH A. CABIANCA

Photo 3.

Strongly sheared ultramafic.

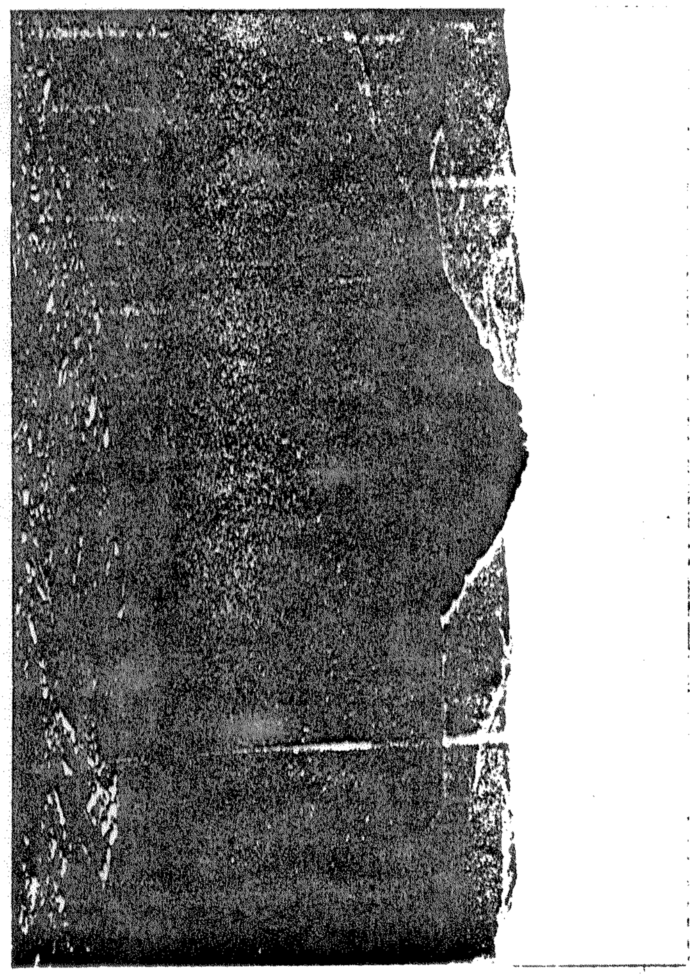


Photo 2.

Area of Sample 001 looking south.

Photo 1.

Serpentinized peridotite. Relatively undeformed.

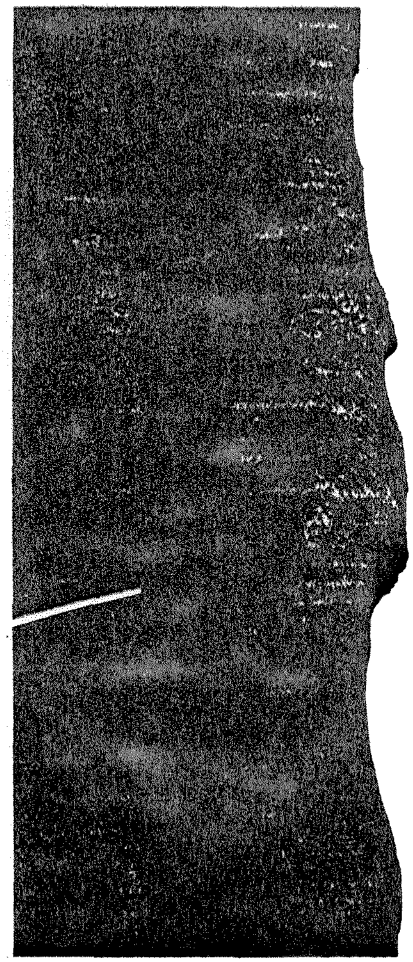


Photo 6.

Approaching Rough Top from the east.

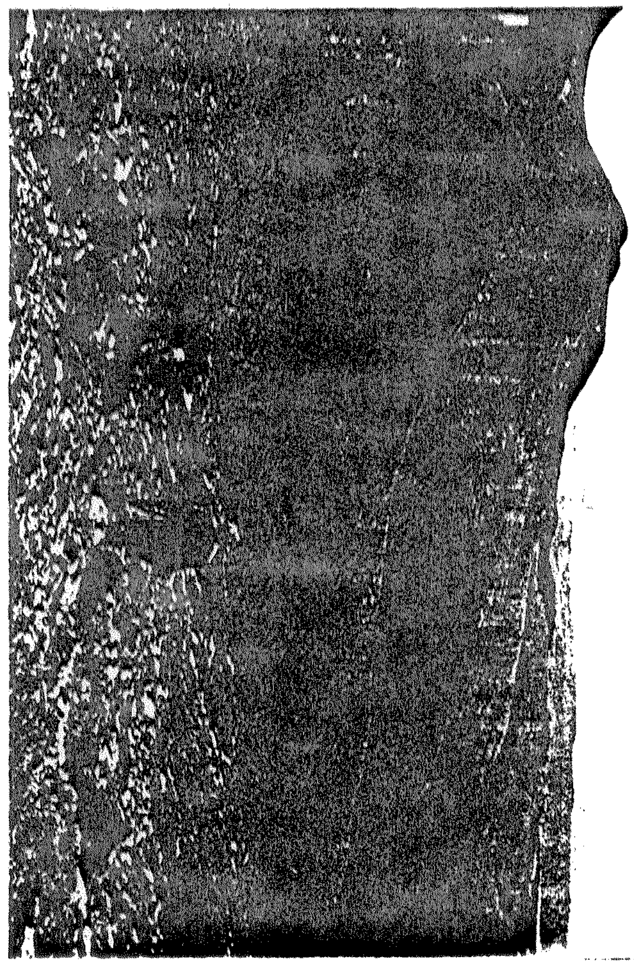
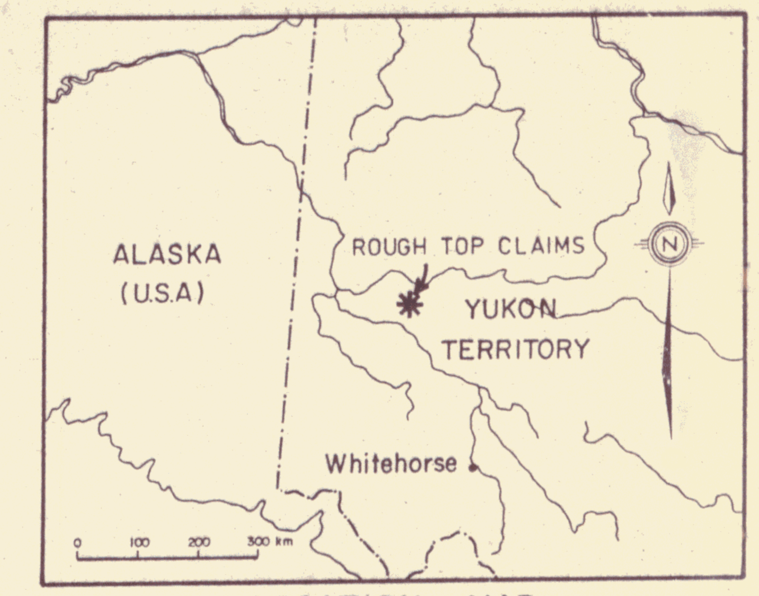


Photo 5.

Geological assistant, D. Macdonald, on south flank of Flat Top - looking southwest toward hornblende/garnet-bearing gneiss of Black Top.

Note extensive felsenmeer among flanks of ridges.

Photo 4. F. Gittings approaching an outcrop of serpentinized peridotite - southeast slope of Flat Top - looking towards Black Top and Rough Top.



LOCATION MAP

692

LEGEND

Pleistocene

6	Selkirk Series Volcanics; Basalt, black dark brown or grey olivine and augite bearing basalt.

Triassic

5	Granite and Granodiorite; Massive grey weathering medium grained biotite and hornblende.

SIMPSON ALLOCHTHONOUS ASSEMBLAGE

Devonion to Triassic

4	(a) Orthogneiss; light green weathering, resistant. (b) Orthogneiss; light rusty weathering; probably derived from a protolith related to (1).

ANVIL ALLOCHTHONOUS ASSEMBLAGE

Carboniferous and Permian

3	Dunite and Peridotite; resistant dun brown, grey and orange weathering; altered to black to light green serpentinite, commonly magnetite/chromite bearing.
2	Garnet, amphibole and hornblende gneiss, medium to coarse grained banded orthogneiss.

NISUTLIN ALLOCHTHONOUS ASSEMBLAGE

Precambrian ?

1	Klondike Schist; light rusty weathering; white to pale green muscovite, quartz schist; dark graphitic phyllite and slate; minor interbeds of white to grey weathering marble.

Symbols

Geological Contact; defined, approximate, assumed

Catoclastic Foliation (inclined, horizontal)

Fault

Sample location (outcrop, frost heaved, float)

0 500 1000 1500 2000m

Scale 1:20,000

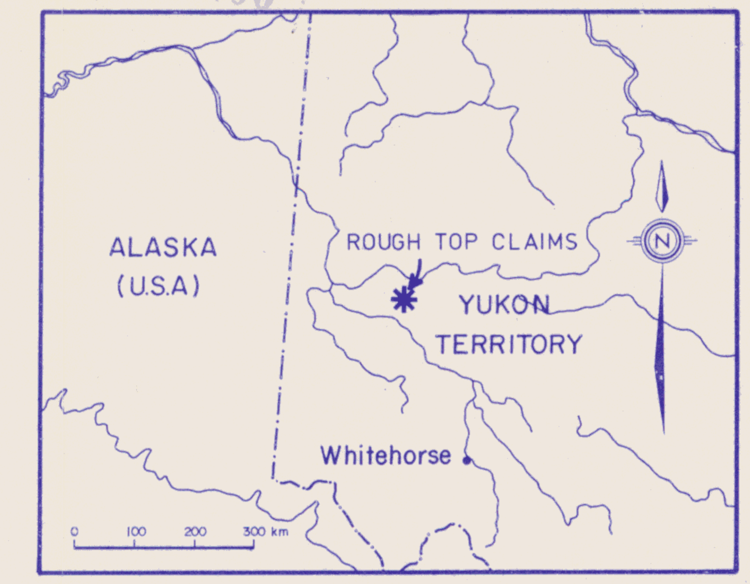
WELLINGTON FINANCIAL CORP.

ROUGH TOP CLAIMS
NTS 115 P/3

692

GEOLOGY AND SAMPLE LOCATION MAP

GEOLOGIST: F.W. GITTINGS	DRAFTED BY: C.D. DURBIN	DATE: SEPT. 87	PLAN 1



LOCATION MAP

LEGEND

Pleistocene

6 Selkirk Series Volcanics; Basalt, black dark brown or grey olivine and augite bearing basalt.

Triassic

5 Granite and Granodiorite; Massive grey weathering medium grained biotite and hornblende.

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Symbols

Geological Contact; defined, approximate, assumed

Catoclastic Foliation (inclined, horizontal)

Fault

Sample location (outcrop, frost heaved, float)

RECEIVED APR - 3 1989 MINING RECORDERS OFFICE DAWSON, Y.T.

0 500 1000 1500 2000m

Scale 1:20,000

WELLINGTON FINANCIAL CORP.

ROUGH TOP CLAIMS
NTS 115 P/3 691

GEOLOGY AND SAMPLE LOCATION MAP

GEOLOGIST:	DRAFTED BY:	DATE:	PLAN 1
F.W. GITTINGS	C.D. DURBIN	SEPT. 87	

SAMPLING TECHNIQUE:

A representative suite of rocks was collected across the property. The purpose of the suite was to ascertain the cryptic chemical variation within the rocks. Samples were obtained by striking the outcrop with a sharp blow from a 2 1/2 lb. sledge hammer. After the selected specimen was detached from the outcrop, winter weight flagging tape was encloded and fastened securely onto the nearest shrubbery to enable sample site relocation. Two hand specimen sized, representative samples were separately enclosed in numerically designated plastic envelopes. One specimen was retained for possible further study and the other was shipped to Bondar Clegg in Vancouver for chemical analyses.

092693

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BONDAR-CLEGG

Procedure for Platinum and Palladium Analysis

A prepared sample of 15 grams is transferred to a fire assay fusion crucible and mixed with a flux composed mostly of lead oxide. The proportions of the flux components are adjusted depending on the nature of the sample. (For example, extra borax and silica are added for samples with chromite.) Gold and silver are also added to help collect the platinum and palladium. The samples are fused at 1100 C for about 40 minutes until a clear melt is obtained. The lead button which also contains the precious metals is then separated from the slag. The noble metals are then separated from the lead by heating the buttons on cupels in the cupellation furnace. The precious metal beads that are obtained are then transferred to test tubes and aqua-regia is used to dissolve them. This is diluted with a buffer solution and mixed. The solution is analyzed by atomic absorption or by Plasma Emission Spectroscopy by comparing the readings from these solutions with readings from standard solutions that are prepared with the same matrix.

Contamination Prevention

The test tubes and cupels are used only once so that there is no possibility of cross contamination. The fusion crucibles are cleared before reuse and if high samples were previously run the crucibles are discarded. During the analysis a blank solution is run between each sample to ensure that there is no carry-over.

Bondar-Clegg & Company Ltd.
130 Pemberton Ave
North Vancouver, B.C.
Canada V7P 2R5
Phone (604) 985-0681
Telex: 04-352667

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Procedure for Geochemical Gold Analysis:

A prepared sample of 10 to 30 grams is mixed with a flux which is composed mainly of lead oxide. The proportions of the flux components are adjusted depending on the nature of the sample. Silver is added to help collect the gold. The samples are fused at 1950 F until a clear melt is obtained. The lead button which also contains the precious metals is then separated from the slag. Heating in the cupellation furnace separates the lead from the noble metals. The precious metal beads that remain are transferred to test tubes and dissolved with aqua-regia. The solution is analyzed using Atomic Absorption or a Plasma Emission Spectrograph by comparing the readings of these solutions with readings of standard solutions.

Contamination Prevention

The test tubes and cupels are used only once so that there is no possibility of cross contamination. The fusion crucibles are cleared before re-use by discarding any which had high samples in them. During the analysis a blank solution is run between each sample to ensure that there is no carry-over.

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Determination of Elements by Atomic Absorption Analysis

The samples of 0.5 grams in weight are digested in test tubes with concentrated nitric and hydrochloric acids. These tubes are heated in hot water baths for two and one-half hours. The sample is then diluted and mixed. This solution is analyzed by atomic absorption using the appropriate lamp and wavelength for each element. The absorbance is recorded and compared to a standard series to determine the amount of the element that is present. This procedure is used for the analysis of silver, copper, lead, zinc, molybdenum, bismuth, cadmium, chromium, cobalt, iron, manganese, nickel, and vanadium. Some elements such as silver and lead have background correction applied to overcome matrix problems.

Contamination Prevention

The test tubes are used for atomic absorption analysis only. The test tubes are cleaned between uses with soap and deionized water rinses. If the sample results are high, the test tubes are discarded.

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Sample Preparation Procedures:

General Organization

Upon arrival the samples are assigned a unique lot number. They are then sorted and catalogued in alphanumeric order. This order is kept throughout the preparation, analytical and reporting process. Any discrepancies between the submittal form and the samples received are noted at this time.

Rock Crushing

The entire dried sample is put through a primary jaw crusher. This reduces the sample to 1/4" or finer. All of this material is then transferred to a cone crusher which reduces the sample to 10 mesh. The entire crushed sample is passed through a Jones riffle splitter repeatedly until a representative split of about 250 grams is obtained.

Pulverizing

A ring and puck grinder is used to reduce the sample to 150 mesh. Because this equipment breaks the sample down by impact rather than by shearing, there is less of a contamination problem than with a plate pulverizer and it is also easier to get a finer grind. These grinding heads are a hardened steel alloy with a high chrome content. Because this grinding head may cause some contamination (about .01% Cr and .05%Fe), we also have a ceramic grinding head which can be used in place of the chrome steel head to eliminate this source of contamination.

Contamination Prevention

Each crushing unit is cleaned out between samples using brushes and compressed air. In addition, a gravel with a low metal content is crushed using both the jaw and cone crushers to clean out these units between different lots. If high samples are indicated then gravel is run through the equipment between samples. Similarily, the grinding heads are cleaned between samples by brushing and blowing with compressed air. A cleaning sand (ie low metal content) is pulverized in each grinding head between different lots or between any high samples which are indicated. This eliminates the possibility of cross contamination between lots. However, there is still a possibility of a contamination train if high grade samples are not indicated and are submitted in the same batch as trace level samples.

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Contamination Prevention

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092693

Fred W. Gittings

General Delivery Grandora, Sask. SOK 1VO Phone (306) 668-4598

I N V O I C E No. 87-017

TO: Wellington Financial Corporation
4519 Woodgreen Drive
West Vancouver, B.C.
V7S 2T8

DATE: September 14, 1987

RE: PROFESSIONAL GEOLOGICAL SERVICES

Geological Services: TOP claims, Yukon

Fred W. Gittings: 7 days @ $250/day	$ 1,750
Drew MacDonald: 4 days @ $125/day	500
TOTAL AMOUNT DUE THIS INVOICE:	$ 2,250

TERMS: Total amount due upon receipt.

EXPENSE REPORT

Name: FRED W GITTINGS   Period: Aug 28 - Sept 19 87

DATE	DESCRIPTION	AMOUNT	DISTRIBUTION
Aug 28	Topographic maps	12.84	1
	Geophysical map	4.28	2
	Airphoto	4.82	3
	white print	4.19	26
Aug 31	Airfare	$993.00	4
Sept 1	breakfast : (MacDonalds)	$3.45	5
	film	$9.99	6
	lunch	9.00	7
	food	$6.64	8
	supper	$23.15	9
	hotel	$58.00	10
	gas	$12.25	11
Sept 2	breakfast	$23.45	12
	lunch	$25.25	13
	supper	$21.75	14
Sept 3	breakfast + lunch	$42.50	15
	Supper	$20.25	16
	Hotel	$120	17
Sept 4	Breakfast	$16.50	18
	lunch	$12.35	19
	Supper	$18.40	20
	Car Rental	333.66	21
	gas	$18.00	22
	gas	$17.00	23
	excess baggage	20.00	24
	film development	18.34	25
	Total Expenses	$ 1849.00	
	Less Company Advance	$ 2000.00	
	Balance Due	$ ($151)	

Signature: ____________________   Approval: ____________________

CUSTOMER NO.	DATE
WELLFIN	SEP30/87

STATEMENT
OF YOUR ACCOUNT WITH

PAGE: 1

TO:

WELLINGTON FINANCIAL CORP
4519 WOODGREEN DRIVE
WEST VANCOUVER, BC

V7S 2T8

TRANS NORTH AIR
TRANS NORTH TURBO AIR LTD.
BOX 4338 • WHITEHORSE • YUKON TERRITORY • Y1A 3T6
TELEPHONE: (403) 668-2177 TELEX: 036-8-290

OPENING BALANCE

DATE	REF. NO.	DESCRIPTON	A/C	DEBIT	CREDIT	BALANCE
SEP02/87	75968	INVOICE	GTNH	1,281.00		1,281.00
SEP03/87	75971	INVOICE	GTNH	1,159.00		1,159.00

Pd Oct 12.

KEYSTONE BUSINESS FORMS

CURRENT	30–60	60–90	OVER 90	TOTAL DUE
2,440.00	0.00	0.00	0.00	$2,440.00

TERMS: TWO PERCENT INTEREST PER MONTH (24% PER ANNUM) WILL BE CHARGED ON ALL INVOICES NOT PAID WITHIN 30 DAYS OF DATE ISSUED.

EXPENSE REPORT

Name: FRED GITTINGS Period: Aug 31 – Oct 9 19 87

DATE	DESCRIPTION	AMOUNT	DISTRIBUTION
Aug 31	base map reproduction for TOP Claim area	300.80	
Oct 20	phone bill for period Aug 21 – Sept 30/87 $15.80 + $44.63	60.43	
	Total Expenses	$ 361.23	
	Less Company Advance	$ 151	
	Balance Due	$ 210.23	

Fred W. Gittings
General Delivery Grandora, Sask. SOK 1VO Phone (306) 668-4598

I N V O I C E No. 87-019

TO: Wellington Financial Corporation
4519 Woodgreen Drive
West Vancouver, B.C.
V7S 2T8

DATE: October 27, 1987

RE: PROFESSIONAL GEOLOGICAL SERVICES

Report Preparation re budget proposal:	$1 250
TOTAL AMOUNT DUE THIS INVOICE	$1 250

Pd Jan 14/88

TERMS: Total amount due upon receipt.
2% per month on accounts over 30 days.

Bondar-Clegg & Company Ltd.
5420 Canotek Rd.,
Ottawa, Ontario,
Canada K1J 8X5
Phone: (613) 749-2220
Telex: 053-3233

BONDAR-CLEGG

WELLINGTON FINANCIAL
KENNETH A. CABIANCA
2470-609 GRANVILLE ST.
P.O. BOX 10326 P. CENTER
VANCOUVER, B.C. V7Y 1G5

Invoice : V041320, Page 1

Date : 09-NOV-87

Report No: 127-7316
Project : NONE GIVEN
Reference:

BCC WHSE #047-7316.

44 Analyses of "PLATINUM + 4" GROUP Copper Nickel Gold - Fire Assay Palladium Platinum	at $18.00	$ 792.00	$ 792.00
44 Analyses of Chromium	at $ 4.75	$ 209.00	
Subtotal		$ 209.00	$ 209.00
Sample Preparation			
44 Samples of CRUSH,PULVERIZE -150	at $ 3.25	$ 143.00	
Subtotal		$ 143.00	$ 143.00
Invoice Total:			$ 1144.00 Cdn

Pd
[signature]
Dec 21/87

THIS IS A PROFESSIONAL SERVICE
ACCOUNTS DUE WHEN RENDERED