NOVERAL TITLES BRANCH	
MAR 2 6 2001	
FILE VANCOUVER, B.C.	Geological Assessment Report

On the

Maple Leaf Property, Franklin Mining Camp

Maple Leaf Group: Dodge 99, Par 99, Buck #1 Mineral Claims

GREENWOOD MINING DIVISION

082E/059

49° 33′ 49″ N 118° 21′ 23″ W

Owner/Operator: J. W. Carson

Dates Fieldwork Performed: August 10 to September 21, 2000

Statement of Work Event Number: 3160552

Report By: William J. Wilkinson, P. Geo. 126 Nagle Place Penticton, B.C. V2A7B5

March 12, 2001

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORT

<u>Sausa</u> 10512Å SIF

Table of Contents

Table of Conclus
Introduction
Location
Access
Physiography
Climate
Vegetation
History - Franklin Camp
History - Maple Leaf Property
Claims and Ownership
Economic and General Assessment
Regional Geology (Franklin Camp)
Property Geology
Mineralization
Fieldwork
Objectives
Orientation Surveys
Geological Mapping
Rock Sampling
Analysis
Discussion of Results
Geology and Mineralization
Exploration Planning
Conclusions and Recommendations

Bibliography

Appendix: Laboratory Reports

Statement of Author's Qualifications

.

Statement of Costs

List of Illustrations and Tables	Following
	Page:
Figure 1: Location Map, Maple Leaf Property, Franklin Camp	3
Figure 2: Franklin Camp, Geology, 1:100,000	5
Figure 3: Maple Leaf Property, Claims, (082E059), 1:20,000	5
Figure 3a: Maple Leaf Property, Claims, (Partial Copy, M082E059), 1:20,000	5
Figure 4: Maple Leaf, Par 99, Dodge 99 Claims, Geology, 1:5,000	6
Figure 5: Geological Legend, Maple Leaf Property	6
Figure 6: Location Surveys, Par 99, Dodge 99, (Features), 1:2,500	6
Figure 6a: Location Surveys, Par 99, Dodge 99, (Compass Traverse), 1:2,500	6
Figure 7: Index Map, Detailed Drawings, 1:20,000	7
Figure 8: Maple Leaf, Outcrop and Adit Mapping, 1:200	(In Pocket)
Figure 9: Maple Leaf Section, Azimuth 315, Along DDH 86-13, 1:4000	7
Figure 9a: Maple Leaf Section – Detail, 1:500	7
Table : Maple Leaf Prospect and Adjoining Claims	5
Table : Rock Samples, Maple Leaf Prospect	7
-2-	

Introduction

This report describes geological fieldwork and mapping on the Maple Leaf Prospect, situated in Franklin Mining Camp, Greenwood Mining Division, in south central British Columbia. This work was done in an attempt to clarify the nature of the Maple Leaf mineralization, and to ascertain whether further exploration work would be justified in the area.

The Maple Leaf is one of the earliest mineralized prospects found in Franklin Camp (in 1902) and analysis of a small copper ore shipment from the Maple Leaf Claim provided the first indication (in 1917) of the presence of platinum in Franklin Camp.

Location

The Maple Leaf Property is located approximately 60 kilometres north of Grand Forks, in Franklin Mining Camp in southern British Columbia (Figure 1). The showing is situated on the eastern flank of Mount Franklin, at an elevation of 1130 metres, approximately 400 metres northwest of the Union Mine underground workings. The property is situated at 49° 33′49° north latitude, and 118° 21′23° west longitude (Minfile data).

Access

Access to the property is from West Grand Forks, north by paved road along the Granby River valley for 38 kilometres, then by good gravel road along Burrell Creek for about 24.5 kilometres.

The Gloucester-Union Mine Forest Service Road crosses Gloucester Creek at the Union Mine, and extends westerly around the southern flank of Mount Franklin. At about 1.5 km along this road, a steep exploration road branches off northwesterly, and provides direct access to the Property (about one km.) for four-wheel drive and all-terrain vehicles. This road then continues across the Dodge 99 and Par 99 claims (Figure 3).

Physiography

Franklin Camp consists of a grouping of three distinctive, lava-capped mountains of modest elevation (around 1,600 metres)-Mount McKinley, Mount Franklin, and Tenderloin Mountain. All are bounded on the east by Burrell Creek, and are separated by the well-developed drainages of Franklin and Gloucester Creeks. The Camp is situated 3 to 4 km east of the main northerly trend of the Monashee Mountains, and 10 km west of the Christina Range divide between Burrell Creek and Lower Arrow Lake. Elevations on the Property range from 900 metres to 1400 metres.

Drainage on the Property is to Gloucester Creek, and to Burrell Creek, near their point of confluence. Gloucester and Burrell Creeks both flow year-round, with minimum flow in the period from August through March.

The terrain is irregular, with moderate to steep slopes trending easterly into the Gloucester Creek valley. The Maple Leaf prospect is situated on a steeply sloping, rocky hillside, near the base of an irregular talus slope, which has formed beneath a prominent knoll.

Climate

The climate is relatively mild, but typical of conditions at higher elevations in south central B.C. Summers are warm, with moderate rainfall, often accompanied by thunderstorms. Winter snows generally last from November through May, and accumulations of 1 to 1.5 metres of snow are not uncommon. <u>Vegetation</u>

The Property is partially treed with Balsam fir, larch, pine, birch and poplar, interspersed with large areas of open, grassy slopes and rocky knolls.

History - Franklin Camp

Widespread mineralization has been known in Franklin Camp since the early 1900's. Most of the known mineral occurrences had been identified, and considerable development work had been done, when C.W. Drysdale mapped the area in 1911 (G.S.C. Memoir 56, "Geology of the Franklin Mining Camp, British Columbia, 1915).

Within or peripheral to the "Black Lead", (a pyroxenite phase of what is now called the Averill Complex of alkalic intrusive rocks), showings of copper-gold-silver mineralization included Maple Leaf, Averill, Columbia, Ottawa, Evening Star, Iron Hill, Buffalo, Blue Jay, Mountain Lion, and Lucky Jack. Contact metamorphic skarn mineralization was found where calcareous volcanic and sedimentary 'Franklin Group' (now Harper Ranch) rocks are in contact with intrusions. On Mt. McKinley, where



claims were first located in 1896, production from copper-magnetite skarn ore bodies was later achieved, both on surface and underground.

Vein-type precious and base metal occurrences were found throughout the Camp. The most important occurrence is the Union Mine vein, first staked in 1906. This was a strong, steep fissure vein in 'Franklin Group' rocks located on the east slope of Mount Franklin. Between 1913 and 1947, 122,500 tonnes of ore produced 43.3 million grams of silver, 1.7 million grams of gold, 298,664 kilograms of zinc, 168,257 kilograms of lead, and 12,665 kilograms of copper (Minfile Compilation by Jay W. Page). Surface and underground exploration of the Union Mine and vicinity continued into the 1980's.

In 1965, Franklin Mines Ltd. conducted an extensive exploration program, including road construction, bulldozer trenching, and drilling, covering much of Franklin Camp (Assessment Report 637).

In 1968, Newmont Mining Corp. of Canada Ltd. conducted extensive fieldwork, including geophysics, geological mapping and physical work, in the southern portion of Franklin Camp, including Mt. McKinley, and southern and eastern portions of Mt. Franklin.

In 1986, Longreach Resources conducted fieldwork, which included widespread diamond drilling, ranging from the Maple Leaf to the Averill and Buffalo prospects.

Placer Dome Inc. (PDI) optioned the Longreach holdings in mid-1987, and carried out an extensive program, which included soil sampling, ground magnetometer and electromagnetic surveys, geological mapping, and the diamond drilling of 1,209 metres in ten NQ holes.

History - Maple Leaf Property

The Maple Leaf claim was located in 1902. By 1913, the Property is described as having been developed by surface cuts, a 20 foot (6 metre) shaft and an unmineralized adit "lower down the hill" driven to 150 feet (45 metres). Mineralization is reported (Report of Minister of Mines for 1913) as "chalcopyrite ore...apparently developed in a limestone gangue at and near a contact with a quartz-porphyry". In 1917, a small copper ore shipment from the Maple Leaf was discovered to contain platinum. In 1918, the Munitions Resource Commission sent Wm. Thomlinson to Franklin Camp where he visited and sampled many of the Black Lead showings, and confirmed the presence of platinum. Maple Leaf open cut sampling yielded assays of 0.15 and 0.17 oz./ton Pt. A sample taken by Thomlinson and J.J. O'Neill, consisting of almost pure chalcopyrite in a gangue of pyroxenite, assayed 0.38 oz./ton Pt.

The 1921 and 1927 Reports of the Minister of Mines describe work done on a "lower tunnel" which was started on a surface showing of native copper and copper carbonates, but which passed into barren rock beyond a depth of 25 feet (7.5 metres). This tunnel was reported as having an aggregate length of workings of 340 feet (103 metres).

An attempt was made (circa 1931) to explore the Maple Leaf from the underground Union Mine workings. So far as can be ascertained, this work failed to reach the vicinity of the Maple Leaf showings, and exposed only barren metasediments (Franklin Group).

In 1964, Franklin Mines Ltd explored the Maple Leaf Prospect, with trenching, geological and geophysical surveys. (The original Maple Leaf claim had lapsed, and the showings were now on the Par claim, which adjoined the Union Fraction on the north.) The claim area was sampled and mapped at a scale of 1: 1200, two adits were sampled, and a ground magnetometer survey was completed. This work was followed in 1965 with two diamond drill holes, located near the original showing.

In 1966 an induced polarization survey was completed over the same area (Assessment Report No. 812). In 1986, the Longreach Resources fieldwork included 3000 feet (909 metres) of BX diamond drilling in 16 holes on the Maple Leaf Property (Assessment Report No. 15811).

The 1987, Placer Dome Inc. fieldwork covered the Maple Leaf area, and a "Maple Leaf Grid" area was mapped at 1:2500. Four NQ holes (463 metres) were diamond drilled by Placer Dome on and near the Maple Leaf showing (Assessment Report No. 17273).

In September 2000, the writer undertook a detailed mapping of the immediate area of the Maple Leaf showing, at a scale of 1: 200, with the objective of obtaining a better understanding of the nature of the mineralization and of possible ore control relationships through a more exact study.

Claims and Ownership

Description

The Maple Leaf showing is situated on the Dodge 99 Mineral Claim, which, together with the Par 99 and Buck #1 Mineral Claims, are currently held by John W. Carson of Grand Forks. These three contiguous claims, (see Figures 3, 3a) are grouped as the 'Maple Leaf Group', (Event Number 3160551. Claims and anniversary dates shown below are those current at time of writing of this Report.

Table: Maple Leaf Claims

				<u>Data</u>		
<u>Claim Name</u>	<u>Tenure No.</u>	<u>Type</u>	<u>No. of</u> <u>Units</u>	Anniversary Date	<u>Owner</u>	<u>Owner FMC No.</u>
Dodge 99	370046	2 Post	1	07/09/2001	J. W. Carson	104371
Par 99	370045	2 Post	1	07/09/2001	J. W. Carson	104371
Buck #1	374675	Metric Grid	12	02/26/2002	J. W. Carson	104371

Economic and General Assessment

No economic deposits are currently known to occur on the Property. Such deposits could include copper, silver, gold, platinum group elements (PGE's), and rare earth elements (REE's). Although considerable work has been done, the area is geologically complex, and the known mineralization may not have been adequately explained.

Union-style gold vein mineralization may exist on the Property.

Wildlife in the area includes mule and whitetail deer, beaver, coyote, wolf, cougar, and black and grizzly bear. The creeks contain small rainbow trout. Recreational use of the area, mainly for hunting, fishing and camping, has been ongoing since earliest times.

Domestic cattle are ranged throughout the area.

Granby Park is situated about 9 km to the northwest, extending north from Bluejoint Mountain in the drainage headwaters of the Granby River, west of the Monashee Mountains divide.

There are extensive logging operations now ongoing in the general area, but there is no logging activity on the Property. Recent Forestry Road construction has improved access, with new bridges constructed over Burrell and Gloucester Creeks.

Regional Geology (Franklin Camp)

Franklin Camp is a geologically complex area within the Canadian Cordillera (see Figure 2). The oldest rocks in the area are the sedimentary and volcanic rocks of the 'Franklin Group', more recently assigned to the Harper Ranch Group (Devonian to Triassic). These rocks occur as pendants and remnants within a variety of younger intrusive rocks, ranging from granodiorite to the syenite, monzonite and pyroxenite of the Averill Complex (Eocene).

Franklin Camp lies at the north end of the Republic Graben, which in the Camp received deposition of coarse sediments and volcanics of the Eocene Springbrook (Kettle River) Formation. Massive trachyte flows (Marron Group, Eocene) are widespread in the Camp, and form prominent caps on the mountains. An east-west vertical structure hosts the mineralized quartz vein at the Union Mine.

Major north-south faults underlie the principal valleys in the Camp.

Franklin Group rocks are host to many vein-quartz showings, which may contain copper, lead, zinc, silver and gold. Contact metasomatic mineralization occurs at many locations, most notably the McKinley Mine. From various accounts, the writer would infer that much of the Union Mine silver-gold ore was deposited in intensively silicified Franklin rocks, rather than in a simple vein-quartz gangue.

Known sulphide mineralization within the Averill Complex occurs in fine-grained disseminations, small calcareous lenses and veinlets, alkali feldspar veinlets, and in quartz-calcite veins in pyroxenite,

melanocratic syenite, and along contacts with syenite and the various dykes. The sulphides present are chalcopyrite, bornite, pyrite and pyrrhotite, with minor amounts of sphalerite, galena, and molybdenite also present in the calcite-quartz veins.







Platinum was first found in an ore shipment from the Maple Leaf claim. Subsequent investigation resulted in the identification of platinum in a number of showings within the Averill Complex. More recently, palladium was recognized to occur with the platinum. Modern ICP analyses also indicate the presence of Rare Earth Elements (REE's) in possibly significant quantities within the Averill Complex.

Sulphides associated with calcite-quartz veins occur in fault structures and along dyke contacts, and often vield impressive assay values in copper, silver and gold.

Property Geology (Figures 2 and 4: Legend, Figure 5)

On the Property, the oldest rocks are the strongly altered 'Franklin Group', here represented mainly by basaltic to andesitic, fine-grained tuffs and/or flows, and also by fine to coarse-grained argillite, chert, siltstone and sandstone.

The Averill Complex (Eccene age), a concentrically zoned pluton, is partially exposed over a length of more than six kilometers, extending from Burrell Creek northwest to upper Franklin Creek. It is exposed continuously from the western flank of Mt. Franklin toward the northwest for approximately four kilometres, and is thought to underlie the Eocene volcanic and sedimentary rocks capping Mount Franklin. Coarsely crystalline alkalic syenite, often with a distinctive, trachytoidal texture, is exposed as a window over about 27 hectares on the Maple Leaf Property, and is exposed again about 1.5 kilometres further east, between Burrell and Gloucester Creeks (Figure 2).

On the Property, the syenite is bounded on the south by 'Franklin Group' rocks, and towards the east, west and north by Marron volcanics and Kettle River sediments (Figure 4).

Small lensoid (?) occurrences of biotite pyroxenite occur within the syenite. Angular pyroxenite fragments, and indications of the hybridization of pyroxenite by the younger syenite, are present. A strong north-south fault (Maple Leaf Fault?) separates the Averill rocks from the Eocene rocks atop Mt. Franklin, A strong east-west fault, (designated 'Maple Leaf Crush Zone'-PDI, A.R. 17273) cuts across the Averill rocks, 500 metres north of the Maple Leaf showing. Both faults show a surface expression as prominent depressions. Less prominent faulting at various orientations is widespread.

Mineralization

The Maple Leaf prospect, Minfile No. 082E009, contains significant values in Au, Ag, Cu, Pt, and Pd, associated with the copper sulphides, chalcopyrite and bornite. Minor ore mineral occurrences are typical of those found throughout the Averill Complex-that is, patchy disseminations and small veins. However, the principle Maple Leaf showing differs in that a relatively large area of mineralization is exposed, with appreciable values for platinum and palladium being obtainable from hand specimens selected for copper content (in chalcopyrite and bornite). (See Table, following page.)

Drysdale (Memoir 56, p. 174) described this showing as follows: "The ore is in the altered Franklin tuff and greenstone at its immediate contact with the syenite and shonkinite-pyroxenite." However, this writer found mainly altered, mineralized syenite at the showing, with only a little angular float (from talus and an old dump) matching Drysdale's description (of well-mineralized Franklin rocks), and little evidence of pyroxenite. High-grading and surface exploration activities have evidently concealed significant attributes of the showing.

Fieldwork

Objectives

Fieldwork had the following objectives:

- 1. To increase knowledge of the Maple Leaf prospect by more detailed mapping and study. The vicinity of the principle showing was therefore mapped at a scale of 1:200, which proved suitable to show geological detail, the details of previous (surviving) workings, and the relative locations of the most recent diamond drilling, done in 1986 and 1987 (Figure 8).
- 2. To determine whether physical work might discover extensions to the mineralization, or would contribute to an understanding of the nature of mineralization on the Property.

Orientation Surveys

The Dodge 99 and Par 99 claims were examined briefly for orientation, and location was confirmed by a traverse run between the initial and final posts by compass and hip-chain. Longreach and Placer Dome access roads and drill sites were located and tied in, along with some of the older workings (Figures 6, 6a).



Maple Leaf, Franklin Camp 82E/059	
GEOLOGICAL LEGEND	
LAYERED ROCKS	
QAI Unconsolidated deposits: (Qal-Pleistocene and Recent)	
T MARRON FORMATION (T), Penticton Group (Eocene): massive trachyte flows	
KETTLE RIVER FORMATION: McKinley Rhyolite Member (Kr); Fanglomerate Member, Kr, Kf, Ka Arkose Member (Ka)	(Kf);
FRANKLIN GROUP (Harper Ranch Group, (Devonian/Triassic): Fl-limestone; Fc-fine F heterolithic conglomerate; Fa-argillite, siltstone and chert; Fs-volcanic and arkos Fp-crowded feldspar-hornblende porphyry; Fv-aphanitic volcanic flows and brecc	ic sandstone; as
INTRUSIVE ROCKS	
G4 North Plateau Pluton: Hb granodiorite {G4}	
Pu Pulaskite Porphyry: Pulaskite, mafic syenite (Pu)	
D Aldie Pluton: Subhedral diorite (D)	
G3 Bluejoint Mountain Pluton : Pink granite (G3); Contact aplite, sphene granite, gneis	s (G3a)
GP Grey Porphyry: Crowded pc-bi-qtz porphyry (GP)	
G2 West Fork Pluton: Hb granodiorite (G2); Subhedral granite (G2a); Aplite (G2b)	
CORYELL INTRUSIONS AVERILL COMPLEX (mEc-Eocene	<u>e)</u>
Syenite, quartz syenite (S) Coarse trachytic pyroxene syenite (Sct) Fine and medium-grained trachytic syenite (St)	
P Pyroxenite (P), 90% to 100% mafics	
Mg, Md Monzogabbro (Mg), 65% to 90% mafics; Monzodiorite (Md), 35% to 65% mafics	
M Monzonite (M), 15% to 35% matics	Correct
GLOUCESTER PLUTON	
G1 Hornblende granodiorite (G1); Fine facies granodiorite (G1a)	1 pm
SYMBOLS	S and
Fault Adit Attitude (inclined; vertical) 13 Contact Prospect Stream Trench Road Pit Old road or trail — — — — — — — — — — — — — — — — — — —) • + / × %
Topographic Contour (metres) W. J. WEXINSON, July, 2000 Figure	5

۰.





Geological Mapping

The Maple Leaf Prospect is exposed over a rather small area, in steep terrain, where discontinuous outcrops and workings are separated by talus and disturbed ground. The nature and extent of the mineralization is not clearly evident to a visual inspection. Since specimens rich in platinum and palladium are readily found here, (despite the fact that the best ore exposed was removed long ago), there is more than adequate justification to explore the area as one would a gold-quartz vein or a gold -bearing skarn-that is, by as much detailed work as is necessary to recognize, follow and define any possible ore. A detailed geological mapping of the Prospect was seen as a very desirable first step toward understanding and successfully developing the Prospect. It was also noted that the sites of previous diamond drilling, if successfully correlated to this detailed mapping, might provide invaluable insights into the geological picture.

Geological mapping of the immediate area of the Maple Leaf showings and a short adit was completed at a scale of 1: 200 (Figure 8; Geological Legend – Figure 5). Previous drill sites and exploration roads, mined rock cuts and waste dumps were also located and plotted.

Rock Sampling

Several well-mineralized rock samples collected from the Maple Leaf workings were analyzed by ICP. Significant copper and PGM (Platinum Group Metals) values are tabulated below, and are plotted on Figure 8. They again confirm the presence of significant grades of platinum and palladium, and support the frequent observation that platinum and palladium are usually associated with high copper values within the Averill Complex.

Sample P3961 was also analyzed for rhodium, rare earths elements (REE's), and several other elements not normally checked for (see Appendix). Rhodium was not detected in this sample. Rare earths were found; the aggregate (of REE's + Yttrium) totaled 57 ppm. Cerium and Lanthanum were predominant, at 21.4 ppm and 11.6 ppm, respectively. Rubidium at 176.6 ppm may be anomalous.

			Rock	Sampl	es, Ma	ple Leaf Prospect, Dodge 99 Claim
No.	Cu	Au	Ag	Pt	Pd	Description
	ppm	ppb	ppm	ppb	ppb	
P3961	26234	382		641	3444	Altered syenite, blebby chalcopyrite, bornite (Figure 8)
P3965	5083	470	8.8	61	132	Small calcite-quartz vein in Averill syenite (Figure 6)
P3971	22127	777	31.7	668	2417	Franklin sediment, chalcopyrite on bedding planes and fractures (Figure 8)
P3972	50855	241	139.1	17514	12052	Altered syenite, massive chalcopyrite on fractures (Figure 8)

<u>Analysis</u>

Analysis was conducted by Acme Analytical Laboratories Ltd., 852 E. Hastings St., Vancouver, B.C., V6A 1R6. A .5-gram sample was digested with 3 ml 2-2-2 HCl-HNO3-H2O at 95 Deg. C for one hour and was diluted to 10 ml with water. The samples were analyzed by I.C.P.-ES. AU, Pt, and Pd were obtained by fire assay with analysis by Ultra/ICP.

Sample P3961 was analyzed for Au, Pt, Pd, and Rh with a 30 gm sample fusion, with the dore dissolved in aqua regia for ICP finish. REE analysis was by LiBo2 fusion with ICP/MS finish.

Discussion of Results

Geology and Mineralization

The Maple leaf showing was seen to occur in the immediate vicinity of a complex contact zone between Averill Syenite and Franklin Group rocks.

Beyond about 30 metres from this contact, the syenite is coarsely crystalline, often exhibiting a distinctive trachytoidal texture outlined by large aligned, and 'crowded', euhedral feldspar crystals. Matrix is generally aphanitic to fine-grained, and is generally quite sparse. Sulphide mineralization is generally weak, and occurs mainly as chalcopyrite blebs in narrow quartz veins occupying minor faults. Closer to the contact, (within the area of mapping), the syenite is strongly altered, less coarse-grained to very fine-grained, with an equigranular texture. Feldspar crystals are anhedral to subhedral. Grains and patches of pyroxene and epidote are present, and sulphide mineralization, mainly chalcopyrite and bornite, occurs as







fine disseminated grains, coarse blebs, and as massive deposition in fractures. No pyroxenite was seen at the showing, except as altered inclusions in syenite. Compass deflections, typical of proximity to bodies of the magnetite-rich pyroxenite, were not observed.

Franklin Group rocks seen in outcrop in the vicinity are most commonly a fine-grained to aphanitic, massive, dark grey rock, most likely an andesite or basalt. In a few locations, fine-grained, thinly banded (siltstone?) was noted, dipping at about 25 degrees. However, diamond drilling (e. g. PDI DDH 87-40) indicates that sedimentary Franklin Group rocks (siltstone and sandstone) are predominant beneath the Showing.

Pyrite is present as abundant fine disseminated grains, and as fracture coatings. A few angular, pebble- to cobble-sized rocks were found in the syenitic talus located immediately west of (up hill from) the showing, which appear to be highly altered sedimentary rocks, with prominent sedimentary banding. These rocks are well mineralized with chalcopyrite on fractures and along bedding planes. No bedrock exposures of these copper-mineralized Franklin rocks were seen.

The Averill/Franklin contact zone appears to be very irregular, with much erratic injection of syenite into Franklin rocks along fault (and possibly bedding) planes. The contact appears to have a moderate (30 to 40 degree) northerly dip. This is also indicated by diamond drilling results (Longreach, 1986; Placer Dome, 1987), where northerly-directed inclined drilling near and under the showing nevertheless encountered the main syenite body conclusively in only two of five holes (Figures 8, 9, 9a).

A prominent fault was observed to run north northwesterly, passing from unmineralized Franklin rocks into and through the mineralized syenite. A steep shaft, now caved and partly blasted away, appears to have been sunk near the contact, using this fault structure as a hanging wall. The shaft is inclined southwest at about 60 to 70 degrees, and is located within the syenite, just north of the Franklin /syenite contact. It seems likely that rich ore was taken from this location, where fault-shattered rock may have favored sulphide deposition in the contact zone. Such a shaft is mentioned in one of the early descriptions of the Prospect (Report of the Minister of Mines, 1914, page K169).

The association of significant platinum and palladium values with high copper grades was confirmed through assays of several samples. The best PGM result, Sample P3972, was obtained from near-massive chalcopyrite occurring as fracture-filling in altered syenite: 50855 ppm Cu, 139.1 ppm Ag, 240 ppb Au, 17228 ppb Pt, 12067 ppb Pd). Another sample, P3961, of blebby chalcopyrite and bornite in altered syenite, contained 641 ppb Pt, 3444 ppb Pd and 176.6 ppm Rb. A mineralized, banded Franklin rock (float-P3971) in which chalcopyrite occurred along bedding planes and in fractures also contained good values: 777 ppb Au, 668 ppb Pt, and 2417 ppb Pd (see Table, page 7, and Appendix). Exploration Planning

Widespread occurrences of PGM's within the Averill complex may be due to a gravity settling process, which could have separated these heavy metals into the pyroxenites which solidified prior to the main syenitic body of the complex. Pyroxenites and melanocratic (hybridized?) syenites are relatively enriched in copper sulphides and PGM's, and these rocks could host copper-PGM ore. The premise that the Maple Leaf showing mineralization is a highly altered remnant of this type of mineralization merits investigation, by locating and testing the nearby pyroxenites and other melanocratic rocks.

The writer has observed that the better-mineralized showings throughout the Averill Complex are structurally controlled, or (as at Maple Leaf), also in close proximity to the contact between the Complex and the Franklin Group metasedimentary rocks. Hydrothermal alteration processes may have leached and transported the copper-PGM mineralization from deeper, gravity-concentrated sources. Faults, shears, and contact zones merit thorough investigation for such mineralization. Conditions favorable for extension of mineralizing processes into the Franklin Group rocks are indicated at the Maple Leaf showing, although most surface evidence of this seems to have been removed (apparently as ore).

The writer has noted that at least part of the gold ore in the Union Mine was deposited in silicified Franklin rocks (e.g. Drysdale, Memoir 56, p. 169, footnote: "The ore shoots are replacement shoots with commercial boundaries." Based on my experience with the exploration and subsequent open pit mining of a large skarn ore body (Nickel Plate Mine), this brief description is recognizable as that of a typical skarn ore.

Conclusions and Recommendations

The Maple Leaf showing occurs where Averill Complex syenite is in contact with older Franklin Group sedimentary rocks on and near an irregular faulted contact alteration zone, or skarn. Skarn alteration has been developed in both Franklin and Averill rocks. Deposition of PGM-bearing copper sulphides in this environment may be related to a contribution of sulphur from the Franklin rocks (often seen to be strongly pyritic), and to the generation of fractures and other voids, due to faulting, and perhaps to chemical changes during skarn formation.

Known PGM mineralization like the Maple Leaf Prospect could be indicative of the presence of more extensive PGM mineralization, possibly present at depth within the Averill Complex, perhaps as a gravity-differentiate related to the older pyroxenites.

Diamond drilling indicates that Franklin sedimentary rocks underlie the syenite, with their contact dipping northerly at about 30 to 40 degrees. Thus, a large area with untested potential for PGM bearing contact skarn mineralization may be hidden beneath the syenite.

The Franklin rocks visible in the showing's vicinity are mainly massive volcanics, but sedimentary horizons are present. The principle mineralization consists of chalcopyrite and bornite, with potentially economic grades of copper, silver, gold, platinum, and palladium. As exposed, the showing is confined to an area of about 750 square metres, from which high-grade copper ore was selectively mined, leaving a discontinuous exposure of variably mineralized bedrock. The showing appears to be a contact skarn, occurring where a strong fault structure intersects the Averill/Franklin contact. The most likely prospect for an extension of the showings could be along the syenite/Franklin contact, on the trace of this fault. Exploration for similar showings could be directed at other locations where strong faults intersecting this contact are known or suspected. The possibility of finding ore in Franklin Group rocks should also be investigated by searching for layered sedimentary horizons in these rocks, and by carefully examining those found. A study of Union Mine data could be most helpful, as would a comprehensive radiometric dating of the intrusive rocks throughout Franklin Camp.

Excavator stripping of the overburden and talus in a carefully supervised operation would be an effective and efficient means of exploring the Maple Leaf prospect. The steep and very rocky terrain is not well suited for bulldozer operation, and the results of bulldozer work are unlikely to be helpful unless accompanied by drilling and blasting.

The writer would recommend the diamond drilling of short holes spaced at not more than 10 metre intervals across the present showing. At each site, one hole would be vertical, and one would be directed west at an inclination of -50 degrees, to locate and explore the contact vicinity, and to test for ore along the projected trace of the intersection of fault and contact.

The entire perimeter of the syenite body should be explored carefully for indications of contact skarn alteration and/or mineralization, with special attention to any structures which might serve as channels or traps for ore deposition.

The proximity and similar geological settings of the Union Mine and the Maple Leaf showing suggest that they may be part of a single mineralizing system. I feel that the area encompassing them has excellent ore potential, and also merits careful investigation.

Res submitted. OSCIEN William J. Wilkinson, P. Geo.

March 12, 2001

Bibliography

- Clark, A. M. S. (1987): Assessment Report on Diamond Drilling on the Platinum Blonde Property, Assessment Report Number 15811.
- Drysdale, C. W. (1915): Geology of Franklin Mining Camp, British Columbia, Geological Survey of Canada, Memoir 56.
- Freeland, P. B. (1920): Franklin Camp, Minister of Mines, B.C., Annual Report, 1919, pages K206 K207.
- Holland, Stuart S. (1964): Landforms of British Columbia, A Physiographic Outline, British Columbia Department of Mines and Petroleum Resources, Bulletin No. 48.
- Keep, M. and Russell, J. K. (1988): Geology of the Averill Plutonic Complex, Franklin Mining Camp (82E/9), British Columbia Ministry of Energy, Mines and Petroleum Resources, Geological Fieldwork, 1987, Paper 1988-1.
- Lisle, T. E., and Chilcott, R. P. (1964): Report on Franklin Mining Camp, Situated around Franklin Mountain, Assessment Report Number 637.
- Little, H. W. (1957): Kettle River, East Half, B.C., Geological Survey of Canada, Map 6-1957.

McDougall, James J., (1999, 2000), Personal Communications.

- McDougall, James J., (1984): Geological Report on Burrell Mineral Claim Group.
- Mouritsen, S. A., (1966): Induced Polarization Survey on the Franklin Area Claims for J. A. McDougall, Assessment Report Number 812
- Page, J. W., (1997): Minfile Map 082ENE, Kettle River, Scale 1:100,000.
- Pike, James Albert (1935): The Union Mine, Thesis Presented to Association of Professional Engineers of British Columbia, October, 1935.
- Pinsent, R. H., and Cannon, R. W. (1988): Geological, Geochemical and Geophysical Assessment Report, Platinum Blonde Property, Assessment Report Number 17273.
- Rublee, J. V. (1986): Occurrence and Distribution of Platinum-Group Elements in British Columbia, Province of British Columbia, Ministry of Energy, Mines and Petroleum Resources, Open File 1986-7.
- Tempelman-Kluit, D. J. (1989): Geology, Penticton, British Columbia, Geological Survey of Canada, Map 1736A, scale 1:250,000.
- Thomlinson, W. V. (1920): Platinum Mineral Investigations, pages 161 166, in Munitions Resource Commission, Canada, Final Report.
- Wilkinson, William J. (2000): Prospecting, Geological and Geochemical Assessment Report on the Averill Property, Franklin Mining Camp, Assessment Report Number 26306.

Appendix: Laboratory Reports

.

CME ANALY: (ISO 9)	TICAI 002 7	LAI	BORAT	ORI d (IES 20.)	LT	D.		852	E.	HA	STI	NGS	5 S1	e. v	ANG		ER	BC	V6	A 1	R6		PH	ONE	(60	4)2	253	-31	58	FAX (604) 253	-171
A								<u>Ket</u>	<u>stle</u>	e R	ive	≤M⊥ <u>∋r</u>	CA <u>Ma</u> :	h A nac		ent	518 5] 81	CE 7il	e i	L₽⊥ ∦ A	CA: 003	Е 102	6											Å
SAMPLE#	Mo ppm	Cu ppm	Pb ppm p	Zn pm	Ag ppm j	Ni ppm	Co ppm p	Mn opm	Fe %	As ppm	U ppm	Au	Th ppm	Sr ppm	Cd ppm j	Sb ppm	Bi ppm p	V	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B B	Al %	Na %	K %	W ppm	Au** ppt	Pt**	* Pd*' o ppl	*
P 3964 P 3965 P 3966 P 3967 RE P 3967	1856 30 9 14 15	86573 5083 14021 453 447	33 6 10 3 4 <3	04 5 96 51 16 16	5.2 8.8 7.5 .4 .4	84 21 25 3 3	34 7 19 9 15 3 21 7 21 7	733 1 914 304 1 163 163	17.34 6.99 14.33 4.23 4.21	30 4 6 12 12	989 <8 <8 <8 <8 <8	4 <2 12 <2 <2	22 4 <2 <2 <2 <2	57 138 4 20 21	8.7 1.1 .6 <.2 <.2	<3 <3 <3 <3 <3 <3	9 1 3 2 4 1 <3 <3	69 2 81 2 51 56 55	.41 .20 .07 .55 .56	.339 .349 .016 .128 .128	4 34 1 6 6	12 73 34 7 7	.48 .79 .33 .32 .33	4 33 29 67 70	.01 .13 .01 .15 .15	<3 7 3 5 5	.60< .81 .80 .88 .90	.01 .16 .02 .07 .07	.01 .25 .01 .18 .19	<2 2 3 2 2 2 2	7607 470 14087 -	3 61 11	3 10 1 13; 1 4;	0 2 2 -
	GROU UPPE ASSA - SA Same	IP 10 R LIM Y RECO MPLE	- 0.50 ITS - DMMEND IYPE:	GM AG, J ED F ROCK	SAMPI AU, I OR RO R151 RE/	LE L HG, OCK 0 60	EACHE W = ' AND (Recur	ED WI 100 P CORE AU*	TH 3 PM; I SAMPI	ML 2 MO, C LES I ** PD PE/ a	2-2-2 20, 0 1F CU)** G	2 HCL D, S J PB ROUP	-HNC B, B ZN A 3B)3-H2 31, T \S > BY F	20 AT 14, U 1%, /	95 & B AG > ASSA	DEG. = 2, 30 F X & A	C FO 000 PM & NALY	OR ON PPM; AU SIS	E HOL CU, > 100 BY UI	JR, D PB, DO PF LTRA,	DILUT ZN, PB VICP.	ED T NI, (30	0 10 MN, gm)	ML, AS,	ANA V, L	LYSE A, C	D B1 R =	Y IC 10,1	P-ES. 000 F	PPM.			
ATE RECEI	VED:	AUG	16 20	00	DAT	CE I	REPO	DRT	MAI	LED	:	l W	1 Z ^a	<u>11</u>	n DÔ) s	SIGN	ED	BY.	4	Δ	an	l.o.	το	Έ, C	C.LEC	DNG,	J. 1	WANG	i; CE	RTIFII	ED 8.0	C. AS	SAYERS
											/ '	D	-	// "					/	/														

L_

ACHE AMALYZIG (ESO 9002 AA	2AD LABS 2 ACCIES	ORATORI dited (CES LT lo.)	D. <u>K</u> i	85 <u>ett1</u> 30x	2 E. GEOC <u>e Ri</u> 1977,	HAST HEM Ver Grand	INGS ICAI Nar Forks	ST. AN 1age BC VO	VANC ALYS <u>ment</u> M 100	NOLVES SIS (E Fi Subs	R BC ERT Le itted i	V6A IFIC H AO Sy: Jo	IR ATI 04 m ca	5 I IB3 rson	920	NE (6	04) 25	3-3	158 F	X (6)	94)2	53-1 4	716 A
SAMPLE#	Ho Cu ppan ppr	u Pib Zn nippenippen	Ag ppm p	Ni Co pm ppm	Min. geno	Fe گړ	As U xxm cxm	Au	Th S Dominicaci	r Cd N COR	Sto E	ើ្ឬV ៣០០០	Ca %	P	La Ci	Mg X	Ba com	Ti B % com	Al Z	Na I X		Au**	Pt**	Pd**
P 3968 P 3969 P 3970 P 3971 BANDED P 3972 SELECT CU	9 4 4 4 3 3819 170 22121 16 50855	1 8 23 8 4 35 9 11 155 7 66 128 5 401 15	<.3 <.3 3.3 31.7 139.1	13 9 27 9 11 53 18 21 15 15	734 503 1459 319 70	3.57 2.13 10.43 4.70 9.82 1	11 <8 <2 <8 6 <8 6 <8 16 <8	88888 8	2 4 Q 3 Q 25 2 3 Q 15	9 2 4 < 2 8 9 6 2 2 5 < 2	<3 <3 <3 <3 <10 <212	3 59 3 28 3 408 3 363 4 35	3.30. .72. 4.20. .34. .03.	057 006 394 109 021	8 3 3 2 11 1 16 13 5 1	1.08 - 14 91 91 91 91	55 104<.1 385 79 106	12 6 01 4 07 <3 03 5 01 <3	1.83 .29 .70 1.80 .47	.10 .18 <.01 .17 .10 .09 .11 .29	3 2 4 3 4	3 <2 6 777 241	2 2 3 668 17514	22 22 2417 12052
RE P 3972 STANDARD C3/FA-10R	15 5019 ⁴ 27 64	5 379 14 5 38 165	-139.4 5.5	15~15 38 13	68 757	9.64 1 3.37	15 <8 56 18	₹ <u>₹</u>	<2 15 23, 2	8 <.2 9 22.9	209 - 5 20 - 2	1 36 3 75	.03	015 092	5 t 19 16	.69	120 . 149 .	01 <3 08 25	.48 1.65	.0936 .04 .17	4	24 0 454	17228	12067
U A S DATE RECEIVED	PPER LINIT SSAY RECOU SAMPLE TY amples beg >: OCT 3	IS - AG, MENDED F IPE: ROCK Pinning /	AU, HG, OR ROCK R150 60 RE' are DATE I	W = 100 AND COP C P Reruns	PPM; E SAM U** G and ' T MA	NO, CO PLES IF ROUP 38 RRE' ar), CD, S CU PB - 30.0 re Rejea	SB, BI ZN AS DO GM ct Res	1, TH, 5 > 1% SAMPLI <u>runs.</u> 0/0	U&B , AG > E ANAL D S	= 2,00 -30 PPH YSIS BY	O PPH; & AU FA/IC BY.	CU, P > 1000 P	B, ZI PPB	ι, ΝΙ,	MN, A	, V, , C.LE	ONG, J	= 10,	G; CERT:	FIED	B.€.	Assaye	:RS
					. `	· · ·	• -							یر دی اور اور کار اور اور کار اور اور										
Ĕ	3,11,	2 20		·	æ.	, , , ,	0.1.								- 10		P							de la composición de la compos
	; P	- 39	72		20	lee	ea T	C		se	en	ale				7	J.	•						
		·		-													국 외국 	•						
	<i>ب</i> حر ,		25	50		49	2 -		4	03	8							- ','					۰	
	· · · · · · · · · · · · · · · · · · ·		, ,,,	. <u>.</u>															,				<u> </u>	
ALL TESULT		ເມືອ ເຜດກຳ້	cencial	proper	ty of	the ct i	ent. A	cme a	ssumes		1 801 (-11	ies i	or acti	ual c	ost of	the a	nalysi	s only	• <u>·</u>		-(inta	FA	<u></u>

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 (ISO 9002 Accredited Co.) GEOCHEMICAL ANALYSIS CERTIFICATE Kettle River Management File # A002100 (a) Box 1977, Grand Forks BC VOM 1HO Submitted by: John Carson SAMPLE# Co Cs Ga Ηf. Nb RЬ Sn Sr Τa Th ۲l 11 Zr Ce Sm Eu Gd ĩЬ Dv Нο Еr Τm Yb Lu ppm ppm ppm ppm ppm ppm ppm DDW. noq mad ppm ppm mag mag mqq nqq ppm ppm ppm ppm ppm ppm ppm **DDU** ppm ppm ppm ppm ppm ppm P 3961 8.3 1.0 12.1 2.4 6.9 176.6 1 1597.8 .4 3.7 1.7 2.0 47 3 72.0 5.5 11.6 21.4 2.59 9.5 1.7 .57 1.28 .18 1.12 .21 .62 .09 .71 .09 STANDARD SO-15 16.9 2.6 15.4 27.4 32.9 64.6 18 403.6 2.0 20.5 1.3 19.9 160 19 1035.9 21.6 27.3 56.9 6.39 22.9 4.7 1.13 3.93 .61 3.99 .82 2.49 .36 2.60 .41 GROUP 4B - REE - LIBO2 FUSION, ICP/MS FINISHED. - SAMPLE TYPE: ROCK DATE RECEIVED: JUN 30 2000 e considered the confidential property of the client. Acme assumes All resul Liebilities for actual cost of the analysis only.

		<u>kettle</u> B	x 1977, Grand Forks	BC VOM 1HO	FILE # AU Submitted by:	John Carson	
		SAMPLE#	Mo Cu ppm ppr	i Pb n ppm j	Zn Ni ppm ppm	As Cd ppm ppm	Sb Bi ppm ppm
		P 3961 STANDARD C3 STANDARD G-2	39 26234 27 62 1	1 76 2 36 L <3	$\begin{array}{ccc} 96 & 6 \\ 170 & 34 \\ 41 & 7 \end{array}$	19 7.6 59 25.6 <2 <.2	42.0 23.1 17.3 23.3 <.5 <.5
· .	GROUP 1D - 0.50 G UPPER LIMITS - AG ASSAY RECOMMENDED - SAMPLE TYPE: RC	SM SAMPLĘ LEACHED WITH G, AU, HG, W = 100 PPM O FOR ROCK AND CORE SA DCK	3 ML 2-2-2 HCL-HNO ; MO, CO, CD, SB, B MPLES IF CU PB ZN A	3-H2O AT 95 D I, TH, U & B S > 1%, AG >	EG. C FOR ONE H = 2,000 PPM; CU 30 PPM & AU > 1	OUR, DILUTED TO , PB, ZN, NI, MA 000 PPB	10 ML, ANALYSED BY ICP-ES. I, AS, V, LA, CR = 10,000 PPM.
DATE RECEIVI	ED: JUN 30 2000	DATE REPORT M	AILED: July	7/vo s	IGNED BY	. h	TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYER
				•.• •			
				, , , , , , , , , , , , , , , , , , ,		•	
		. :					

(ISO 9002 Accredited Co.)

GEOCHEM PRECIOUS METALS ANALYSIS

.

. .

Kettle River Management File # A002100 Box 1977, Grand Forks BC VOM 1HO Submitted by: John Carson **AA**

.

.

SAMPLE#	Au** ppb	Pt** ppb	Pd** ppb	Rh** ppb	
P 3961	382	641	3444	< 5	

GROUP 3B - FIRE GEOCHEM AU, PT, PD & RH - 30 GM SAMPLE FUSION, DORE DISSOLVED IN AQUA - REGIA, ICP ANALYSIS. UPPER LIMITS = 10 PPM. - SAMPLE TYPE: ROCK

DATE RECEIVED:	JUN 30 2000	DATE REPORT MAILED: July 17	100 SIGNED BY	.D. TOYE, C.LEONG, J. WANG; CERTIFIED B.C. ASSAYERS
----------------	-------------	-----------------------------	---------------	---

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Statement of Author's Qualifications

I, William John Wilkinson, of the City of Penticton, in the Province of British Columbia, hereby certify the following:

- 1. I am a geologist with a residence at 126 Nagle Place, Penticton, British Columbia.
- 2. I am a graduate of the University of British Columbia (B. Sc., 1966), and in 1967 completed an additional year of geological studies at U.B.C.
- I have practiced my profession continuously since 1967. My experience includes prospecting, field program management, underground mine geological supervision, mapping and exploration, open pit mine exploration, development and production supervision.
- 4. I am a Fellow of the Geological Association of Canada.
- I am registered with The Association of Professional Engineers and Geoscientists of British Columbia as a Professional Geoscientist (P. Geo.).
- I have no interest in this Property, but I do hold interests in other Mineral Claims in Franklin Camp.
- 7. I am currently self-employed.
- 8. I was on site for all of the fieldwork described in this Report.
- 9. Completed at Penticton, British Columbia, March 12, 2001.

J. WILKHNSON BRITISH W. J. Wilkinson, P. Geo.

<u>Statement of Costs</u> <u>Maple Leaf Mapping Project</u> Date of Field Expenditures: August 2000 - September 2000

Expense	Duration	Description	Sub-totals	Totals
Field Personnel:				\$1,275.00
J. Carson, prospector	August 10,September 17, 21, 2000	2 ½ days @150.00	\$375.00	
W.J. Wilkinson, P. Geo., geologist	August 10, Sept. 16- 21, 2000	4 ½ days @\$200.00	\$900.00	
All terrain vehicle:	Sept. 17-21,2000	5 days @\$50.00	\$250.00	\$250.00
Transportation and travel:	August 9, 10, Sept. 16-18, 21, 2000	6 days@\$50.00	\$300.00	\$300.00
Food and Accommodation:	August, 10, Sept. 16- 21, 2000	7 man-days @ \$50.00	\$350.00	\$350.00
Laboratory Analysis:		Acme Analytical Laboratories		\$119.20
Acme File A002100, July 17/00		1 sample: ICP; fire geochem for Au. Pt, Pd, Rh	\$46.55	
Acme File A003026, August 29/00		1 of 4 samples: ICP	\$24.40	
Acme File A004383, November 10/00		2 of 5 samples, ICP	\$48.25	
Equipment and Supplies:		Miscellaneous. Supplies	\$25.00	\$25.00
Report Preparation:			\$200.00	\$200.00
TOTAL:			\$2,519.20	\$2,519.20

