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REPORT #: 1 (EXT)

GLANFIELD GOLD PROSPECT SE-1 (ALLYRCK PROPERTY)

By

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ABSTRACT

The Mazinaw Terrane of the Central Metasedimentary Belt of the Grenville Province has a long History of Gold Exploration dating back to the early 1900’s. The Barrie Township prospects are largely forgotten and deserve further exploration due to anomalous gold and copper values in the area!
Regional and local geological setting, controls of gold deposition and structural associations are being examined; comparison of the Harlowe Camp to the Abitibi Camps is discussed with emphasis on mafic intrusions and their role in gold concentration and other unique mineralization.

(iii)
Cartography by Surveys, Mapping and Remote Sensing Branch, Ministry of Natural Resources.

3304 (5k P.R. 89 06 29) Rev.

FIG. #1
INTRODUCTION

Barrie Township lies proximal to a Terrane boundary and a metamorphic transition zone from Greenschist to lower Amphibolite Facies. There are many Gold Occurrences in this area, enough to give it a ‘Camp’ designation. This area has received extensive gold prospecting since the late 1800’s. The ‘Flinton Group’ of rocks and their unconformity status play a major role in Gold deposition. I believe also the unique mafic intrusions found on the property and surrounding area are important key structures; a rare rock with a common association throughout Ontario and not always recognized!

This area is part of the Grenville Province; the rocks reflect a long and complex geological history. Further detailed work is needed to resolve these anomalous gold values and find out what role the mafic intrusions play and what lies below the overlying metasediments? Is this an Island Arc Environment; do the regional Ottawa-bonnechere Graben marginal faults have an influence here? The mafic intrusion must be positively identified and dated as well as the associated mineralization catalogued.

Michael E. Glanfield
Prospector – CANADA
November, 1999

[Signature]
Location and access: The area lies approximately 225 km NE of Toronto and is accessible by highways 401, 41 and all weather roads. In addition, an extensive network of gravel roads serves local interests; supplies and services are readily available.

The main property can be accessed by travelling highway 41 from the 401 and driving north through Kaladar and Northbrook. Turn East at the Harlowe Road junction, travel ~ 8.6 km to the Harlowe intersection and proceed east to the Old Thompson Lodge Road, the property lies south of the road and may be accessed by a newer skidoo trail and an old wagon tote road.

Geological Setting: The area forms part of the Mazinaw Terrane in the Central Metasedimentary Belt of the Grenville Province in Ontario (OGS V4). It is underlain by metamorphosed Precambrian rocks of Proterozoic age, the Grenville Supergroup (Moore & Thompson, 1972). According to J.M. Moore and R.L. Morton 1986, the oldest rock units are Basaltic metavolcanics traceable into the Tudor metavolcanics (Lumbers 1967). These are overlain by a succession of flow and pyroclastic rocks and clastic metasediments (Kashwakamak Formation, calcalkalic affinity); to the north and northeast the metavolcanics are overlain by thick layers of dolomitic-calcitic marble. In the Western and Southern part, the metavolcanics are intruded by granodiorite plutons (Elzevir, Northbrook & Cross Lake tonalite) which are close in age to the volcanics. Unconformably overlying all these rocks is the Flinton Group, a clastic metasedimentary succession (dated 1157Ma, Kinsman & Parrish 1990).

"... The Flinton Group is preserved in tight, isoclinally folded synclines throughout the Mazinaw Terrane.” (Easton & Ford, MP157 1991)

"Moore and Thompson (1972,1980) suggested a fluvial environment for the coarse clastic units of the Flinton Group and a shallow-marine setting for the pelitic and carbonate units, both being deposited in an extensional environment. Easton and Ford (1991) postulate a fluvial-lacustrine environment for the Flinton Group in the Mazinaw Terrane, with deposition controlled by rift valleys resulting in longitudinally oriented alluvial-fan and braided stream trunk systems.” This explains the current form of the Flinton Group and they suggest that alternating beds of pelite and carbonate in the Fernleigh formation reflect yearly variations in sediments at the bottom of the rift lakes. (after OGS SV4, p.846)

Also, ... “... the ubiquitous and abundant presence of tourmaline throughout the Flinton Group (Thompson 1972, Easton 1988) would be expected in an arid depositional environment. The Myer Cave formation megabreccia unit probably formed by collapse of a cliff into a lake, allowing incorporation of Myer Cave Formation and Mazinaw Group blocks in a pelitic matrix.”

There is a series of northwest striking faults transecting the region. The rocks of the property occur in a region of Greenschist-Amphibolite metamorphic transition. Extensive gold prospecting occurred from the late 1800’s to the 1940’s.
Michael E. Glanfield Prospects - Ontario, Canada - 1999

There is approximately 27 known Gold Deposits in this area (after Harnois & Moore 1989). A proximal Granite Mass produced the anticlinal ridge along the South boundary (according to Meen, 1942) of the property which flanks the showing; the Flinton unconformity runs easterly covering underlying strata and potential older shear zones. There is a series of NW striking faults and NE striking shear zones in the area; including locally the prominent Mazinaw Lake Fault.

**Physiography and Structure:** The area is relatively flat with swampy sections and the strike of the geological formations are generally E - W.
The quartz-pebble conglomerate (the “Hastings Series” of Miller & Knight 1913) forms a ridge at the south end of the property. Structurally the area is represented by a closely folded syncline pitching northeast (Meen 1944), only a small remnant is evident of the south claim.

“The occurrence of a granite mass between Kashawakamak and Clarendon Lakes has had the effect of producing an anticlinal hump along the south boundary of Barrie township.” (V.B. Meen, 1942)

He goes on to say:

“Additional evidence that this is anticlinal structure lies in the fact that the limestone and basic schist are found in a valley between prominent hills of conglomerate. The one to the south lies chiefly in Kennebec township.”

The most prominent fault in the area occurs on the west flank of the Mazinaw Lake; the west scarp rises 200’ above the lake and strikes North 10° to 15° West.

Moore and Morton, 1980 Clarendon Lake Area, point out the following on structure:

“Structure is complex. Metavolcanics and intervening metasediments outline an open syncline facing northeasterly, enclosing the predominantly carbonate succession in the basin of Marble, Mississagagon, and Kashwakamak Lakes, and invaded in its lower part by the major plutons. In the Flinton Group, southwesterly-plunging structures were superimposed on this syncline. Pre-Flinton rocks appear in minor anticlines and possibly thrust wedges within the Flinton syncline south of Harlowe.”

**Sequence of Events / Metamorphism and Metallogeny:**
(after Carter, 1984 OFR 5515)
The geological setting in the Mazinaw Terrane is as follows: early (<1250Ma) shearing, thrusting and metamorphism of the Mazinaw Group; post 1160 Ma to ca 1050 Ma shearing and metamorphism of the Flinton Group; the gold is younger than 1250 Ma and possibly younger than 1150 Ma.

Lumbers 1990 states the main period of metamorphism is related to the ‘Grenville Orogeny’ and occurred between 1240 and 1180 Ma (consistent with Easton and Ford 1991).
The Flinton Group has a maximum age of approximately 1157 Ma (Kinsman & Parrish 1990).
A major orogenic period occurred between 1180 and 1160 Ma representing M1 and D1; the termination of the Elzevirian Orogeny.

M1 - upper amphibolite - granulite (all old rocks except Flinton)
D1 - thrusting and isoclinal folding >1160Ma
M2 - affected Flinton Group <1150Ma
Greenschist facies metamorphism south of Marble Lake, local deformation; creation of porphyroblasts, staurolite, chloritoid, kyanite and tourmaline.
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The following is from the Ontario Geological Survey Special Volume #4, p882, p.1238-:

There are two regional metamorphic events affecting the Mazinaw Terrane; the first is the Elzevirian Orogeny creating the quartz-tourmaline veins, a younger than 1230 to 1180 Ma Event; and secondly a 1150 to 1090 Ma Event - the Swamp Lake Shear zone and the Boerth Mine style of mineralization.

“Knowledge of events within the Central Metasedimentary Belt between circa 1160 and 1090 Ma is limited. In the Mazinaw Terrane, rapid uplift and erosion occurred, followed by Flinton Group Deposition in a probable extensional Environment.”

Mineralogy occurring in an extensional regime: (after OGS 4, p.1314)

1. Copper-Nickel-Platinum in 1290 - 1270 Ma mafic intrusions; oceanic crust generation in marginal environment
2. Iron-Titanium, iron skarn, iron sulphide - iron formation, stratiform carbonate hosted zinc and minor base metals; related to volcanism, sedimentation and emplacement of Lavant-Methuen suite Gabbro and Granite plutons 1255 - 1240 Ma
3. Gold Mineralization; related to extensional environments developed during and after Elzevirian Orogeny (1180-1155 Ma); also Graphite formation
4. Uranium, REE, Mo, related to Granite Pegmatite injection and regional metasomatism in Bancroft Terrane after Ottawa Orogen (1060 - 1030 Ma); also a variety of industrial minerals formed in the Mazinaw Terrane during the Ottawa Event and regional metamorphism at 1150 - 1090 Ma.

Gold Mineralization Control in the Grenville (from p.1248 OGS V4):

1. - occurrence near the greenschist-amphibolite facies transition hosted in greenschist facies rock
2. - common hosts are mafic metaigneous rocks or Dolomite marbles
3. - most occur in regional deformation zones, both with Domains and at Domain and Terrane Boundaries
4. Late Trondhjemite Dikes may occur proximal to the gold deposits
5. - in the Mazinaw Terrane there is a spatial association with the Mazinaw - Flinton Group unconformity

“The Flinton Group is a distinctive package of metaconglomerate, metamorphosed quartz arenite and metapelite.” (OGS V4, p. 842)

Property Lithology: (from ‘Marble Lake’ map #2499, Moore & Morton 1986)

2a - andesite flows, flow breccia, autosaic breccia
2b - andesite tuff breccia, lapillituff, mass flow deposits
3d - dacite, dacite porphyry dikes, sills, small intrusions
9b(Au) - clastic and subordinate, intercalated dolimitic marble, thin layered minor siltstone wacke
10a - gabbro peridotite, hornblendite, hornblende schist
15c - quartzite-pebble conglomerate, intercalated quartzite, micaceous quartzite
other: mafic intrusives - probable lamprophyric dike, age unknown to date (M. E. Glanfield)

Rocks important to Gold Mineralization:

The Flinton Group represents a sedimentary succession younger than the Grenville Supergroup; its oldest unit is the Ore Chimney Formation (OCF), it is an iron-rich schist (regolith, GSC OF3142); lying on top of this is the Bishop Corners Formation, a quartz rich pelitic unit containing pebble conglomerate and lenses of quartzite; and followed by the Lessard Formation, a biotite-carbonate schist, calcareous psammite and plutonic-pebble conglomerate (after GSC OF3142, p. 113)
Showing Description: (Geology/Mineralogy/Tectonic setting/controls of gold
deposition-associations)
"Carbonate rocks also host gold-pyrite-sphalerite-galena bearing, dolomite-quartz veins near
Flinton Unconformity." (V.C. Papertzian, 1984)
"The Biotite schists of the Ore Chimney Formation have been interpreted to be a shear zone."
(Harding, 1944; Dillon, 1985; Young, 1985)

Tectonic Setting of the Marble Lake - Harlowe Camp (after Carter 1984 and OGS):
Spatially associated with the basal Flinton Group unconformity; early thrust faults at the base of
the Flinton Group; unconformity and thrust faults that were fractionated during post-Flinton
Deformation and metamorphism; and with late Trondhjemite dikes.

Group 2 Deposit Type (after Harnois and Moore 1989):
Marble hosted in Pre-Flinton carbonate sediments; antimony sulfosalts are common; all associated
with one or more mafic to felsic shallow intrusions.
Gold concentration mechanism:
The Marble hosted gold deposits associated with shallow intrusions or are close to the contact
with underlying volcanics. There is an abundance of small intrusions within sedimentary clastic
and carbonate rocks intercalated with and overlying volcanics of the Flinton-Fernleigh area. This
indicates that igneous activity continued at the time of sedimentation; thus providing a heat source
for hydrothermal activity. The gold was leached from basement volcanics and precipitated in the
sediments.
Some chemical controls of deposition would be, a decrease or increase in pH, dilution or
reduction of the activity of Ligand species carrying the gold and changes in redox conditions of
the mineralizing fluid.

(From Morton and Moore, Marble Lake area, 1986)
"Two alternative controls of mineralization should not be ignored, however:
1. Secondary enrichment under the Pre-Flinton surface
2. Metamorphic remobilization, particularly of gold, by solutions generated in the Flinton Pelites
during regional metamorphism."

Further discussion on Local deposition:
"The formation of these two gold deposits near the base of, and immediately below, the Flinton
Group may be related to the difference between the mechanical properties of the coarse clastic
sediments of the Flinton Group and the underlying rocks, and to the presence of a regional
unconformity. Mills and Eyrich (1966) have stressed the role of unconformities as potential
plumbing systems. The regional unconformity may have focused the discharge of the mineralizing
fluids. Probable porosity and permeability contrasts between the pre-Flinton rocks and the clastic
sediments of the Flinton Group raise the possibility that vein formation through hydraulic
fracturing occurred." (Harnois and Moore, 1989)
Tectonic setting: isoclinally folded mafic metavolcanics intercalated with carbonate and clastic metasediments; influenced by the Addington shear zone to the east and NW striking regional faults; underlying shear zones and granitic plutons and their satellites and finally, possible paleo-fractures related to the Ottawa-bonnechere Graben.

V.B. Meen, 1942, describes the showing:
"The Pay Rock Gold Syndicate holds eight claims covering lots 8, 9, 10, and 16, concession 1, Barrie Township. In 1936 a number of trenches and shallow pits were put down in tracing a rusty zone in the dolomite in lot 16, about 500 feet north of the south boundary of the township. Numerous discontinuous quartz stringers occur in the rusty zone and adjacent dolomite. The strike is North 72 degrees East, and the dip 70 degrees south. Native gold was observed in the rusty dolomite in one of the western pits. An altered basic dike, probably a lamprophyre, occurs as a 1-foot strip along the length of the development. The tracing of a payable zone here will be a case of following assay values, since there is no definite vein and the gold is not restricted to the quartz alone."

Vein mineralization: quartz veinlets in Dolomite Marble, random quartz lenses/stockworks; hematite, chloritized in places, biotite/muscovite coarse to fine grained in the mafic dike running the length of the multiple shear zones; a rusty alteration along this zone, fault slickensides present in a few of the pits, native gold said to be present; some pyrite observed and the titanium mineral, rutile; the dolomite and mafic intrusion are extremely weathered in places

"The veins form random stockworks and the main mineral assemblage is gold +/- chalcopyrite-tetrhedrite. Examples of this type of mineralization are the Payrock Occurrence and Star Mine in Barrie township, and the Dome occurrence in Kennebec." (Homestake Assessment file, Kennebec tp., 1996)

The Glanfield Gold Prospect SE-1 mineralization occurs in quartz stringers in dolomite; good gold values are present. This prospect is associated with a mafic intrusive body within a series of shear zones (width undetermined at present) next to the contact of underlying volcanics. This Lamprophyric intrusion has not been positively identified or age dated. Work is being performed to determine the nature and distribution of the gold and the cause of the anomalous values and other unusual mineralogy observed; this property warrants further investigation!

Interestingly enough, V.K. Prest describes Lamprophyre and gold on a property in the vicinity of Kirkland Lake around 1949:
"In a rusty zone in a small Lamprophyre dike, Hogg recorded a 1/2” quartz stringer with specks of Visible Gold."
Area Lithology: (after Harnois and Moore, 1989)
As mentioned previously Gold is often associated with the Base of the Flinton Group overlying the Tudor volcanics. An example of this is the Addington Mine (golden Fleece) which lies within the Pelitic Ore Chimney Formation, between mafic volcanic rocks and the Bishop Corners Formation sediments.

Tudor Formation: 1279 +/- 3Ma, Heaman et al., 1987
- dark green, foliated fine to coarse grained amphibolites with minor quartz, chlorite, biotite, and accessory tourmaline, pyrite, magnetite and carbonate; sulphide free calcite veins common; amphibolite adjacent to contact contains up to 30% tourmaline
- tholeiitic basalts with minor intermediate pyroclastics (Sethurman & Moore, 1973)
- overlain by basaltic to felsic subalkaline volcanic rocks of Mazinaw Lake Formation (Ayer, 1979) and Kashwakamak Formation (Harnois & Moore, 1987); and by clastic and carbonate sedimentary rocks cut by small mafic to intermediate intrusions (Moore & Morton, 1986)
- this succission is intruded by large granitoid plutonic bodies; Elzevir Batholith, Mazinaw Granite

The preceding volcanic rocks are unconformably overlain by the Ore Chimney Formation, a locally transported paleoregolith derived from the volcanics (Harnois & Moore, 1988; Moore & Thompson, 1980)
- contains alternating layers of garnet free and garnet bearing mafic biotite schist with chlorite and muscovite, tourmaline (up to 40%), apatite, kyanite and staurolite are accessory
- a few garnet (with inclusions of ilmenite, As, chalcopyrite, pyrrhotite and tourmaline) + hornblende porphyroblasts have syn to post- tectonic growth texture

Bishop Corners Formation: immediately overlies Ore Chimney Formation, is 10 to 30m thick, massive, fine to medium grained, feldspathic quartzite with minor magnetite, hematite, muscovite and biotite; overlying quartzite is a quartzite-pebble conglomerate containing 0.5 to 2mm thick discontinuous quartzite interbeds

* * *

Ore Chimney Formation: Young, 1985 BSc Thesis, Queens University
- recognized deformed early barren quartz veins cut by late, sulphide bearing (up to 10%), quartz-carbonate-tourmaline veins transecting foliation at 5 to 90 degrees
- the predominate carbonate is ferroan calcite
ore zones >pyrite-chalco-Pyhr-limene+/As, ilmenite is ubiquitous

"To the east of Highway 41, south of Mazinaw Lake, are porphyritic basalts, andesite and dacite flows and pyroclastic rocks (1b, 2, 3) of calc-alkalic affinity, resembling an island-arc suite (Sethuraman and Moore 1973; Brown et al. 1975; Condie and Moore 1977; Moore 1977)."

... "On the basis of thickness and coarseness of pyroclastic rocks, and the distribution of small intrusions, three major volcanic centres are identified: around Pringle Lake, east of Mazinaw Lake, and south of Kashwakamak Lake." (map P2278, Moore and Morton, Clarendon Lake Area, 1980)
Flinton Group - Depositional Setting:

"Moore and Thompson (1972, 1980) suggested a fluvial environment for deposition of the coarse clastic units of the Flinton Group and a shallow marine setting for the pelitic and carbonate units, both occurring in an extensional environment. We postulate that the Flinton Group was deposited in a fluvial-lacustrine environment, with deposition in part controlled by rift valleys which results in longitudinally oriented alluvial-fan and braided stream trunk systems."

(Easton & Ford Mpl57, p.100-101, 1991)

... "the depositional setting of the Flinton Group outlined herein is similar to that described by Lefevbre (1989) for the Zambian Copper Deposits, as are the metal associations (Au, Cu, Pb, Zn, and As). Mineralization is the result of fluid movement along fault systems, with fluid flow localized in permeable unit below, along, and above the unconformity and in addition, black shales deposited on anoxic lakes are schists of the Myer Cave Formation."

This unconformity acted as a plumbing system (OGS) and is related to extensional environments developed during and after Elzevirian Orogeny 1180-1155Ma.

(see Figures 5, 6 and 7, Springer OFR5751)

"Eastern Ontario was part of an exposed continental landmass from late proterozoic to the early middle ordovician lying in the equatorial belt and subject to erosion and weathering in a warm, humid climate. The pre-paleozoic interval represented by the erosion surface may be of the order of 350m. Tectonically, the area lays at the edge of a continental block which began to rift and founder in the early Paleozoic." (J. Springer OFR 5751)

"The earliest deposits in eastern Ontario are terrestrial sediments of a wind swept, block-faulted continent, rimmed to the south and east by shelf carbonates. The Frontenac Arch, formed by the end of the Proterozoic, continued to rise intermittently through Phanerozoic time, influencing local sedimentary deposition in the area."

"The presence of Cambrian evaporites and subaerial silicification is consistent with paleo geographic reconstruction (Irving, 1979; Scotes et al, 1979) that suggest that most of cratonic North America lay with in 20 degrees of the equator throughout cambrian-Ordovician time and was subjected to high mean annual temperature." (J. Springer)

"Studies of Phanerozoic orogenic belts have revealed two major tectonic processes involved in the formation of mountain belts: lateral accretion of terranes commonly along strike-slip faults and vertical growth as a result of reverse faulting (ie. stacking or thrust sheets)." (K. Mezger, 1993)
Regional Geological Setting and Chronology: (after K. Mezger et al, 1993; Contributions to Mineralogy and Petrology 114: pp.13-26)
Regional and contact metamorphism occurred in the following intervals:

Central Granulite terrane: Adirondack Highlands 1150Ma, 1070-1050Ma; 1030-1000Ma

Central Metasedimentary Belt:
- Adirondack Lowlands 1170-1130Ma
- Frontenac Domain 1175-1150Ma
- Sharbot Lake Domain cal 1152Ma
- Elzevir Domain 1240Ma; 1060 - 1020Ma
- Bancroft Domain ca1150Ma; 1045 - 1030Ma

Central Gneiss Belt: ca 1450Ma; ca 1150Ma, 1100 - 1050Ma

Grenville Front Tectonic Zone ca 1000Ma

Sethuraman and Moore (Can. J. Earth Sci., p. 613, 1973) discuss geochronology and stratigraphy in the Bishop Corners and Donaldson area:

"... the oldest exposed rocks in the area are lavas and pyroclastic rocks, extruded about 1300 m.y. ago. Volcanic activity began with the eruption of alkali-olivine and olivine-tholeiite flows, and progressed through andesite flows and breccias to rhyodacite breccias and tuffs. The activity was largely submarine, accompanied and succeeded by deposition of carbonate and fine clastic sediments. The accumulation was intruded by large plutons, mainly granodiorite, and deformed, possibly with low grade regional metamorphism. Subsequently, a clastic and carbonate succession was deposited and the area subjected to isoclinal folding on a northeasterly-trending axes and regional metamorphism -- the principal "Grenville" orogenic event recognized throughout eastern Ontario and western Quebec."

"The low potassium content of the basalts implies that they were extruded on oceanic crust. The succeeding calc-alkalic activity is consistent with development of the entire assemblage at a consuming plate margin, such as is represented by the present-day Pacific border. If this interpretation is correct, then the presently exposed Grenville Province contains, in its southwestern part, segments of at least two crustal plates. The applicability of a plate tectonic model to this region deserves further consideration in studies of Grenville history."

(from Smith and Holm)

"Volcanic-arc granites (Pride and Moore,1983) and arc volcanics (Condie and Moore, 1977) occur at Harlowe (Fig. 1) to the east of the proposed marginal basin (Fig. 1) implying that the subduction zone dipped to the west rather than to the east, as suggested by Windley (1986) in his comparison of the Grenville with the western Himalaya. Windley (1986) was uncertain if the arc was intraoceanic or continental margin, and Brown et al. (1975) suggested that it was formed on oceanic crust. However, the development of the basin on attenuated continental crust implies that the associated arc was also founded on continental crust."

(T.E.Smith & P.E.Holm, "Geochemistry and tectonic significance of premetamorphic minor intrusions, Grenville Province")
Paleogeographic Setting: (after OFR 5751, Janet Springer, see Fig's 6 & 7 Springer) 
“Paleographic reconstructions of the position of continents (Scotese et al, 1979; Irving, 1979) 
suggest that by the Late Cambrian, the continents were located mainly along or near the equator. 
They were relatively dispersed and separated by small Seas (Scotese et al., 1979). Large oceans 
capped the polar regions and shallow epeiric seas were common. The Proto-Northern American 
continent, Laurentia, spread 10 degrees north of the equator and 25 degrees south of it. Land on 
the eastern shores, particularly between latitudes 20 - 35 degrees, was traversed by vigorous 
storm systems. The climate was thus tropical and humid (Marsaglia & klein, 1983).”

“... Much of the North American craton at the time probably had a tropical, wet climate (Ziegler 
et al., 1979).” 
From 600 to 400 Ma the Appalachian Orogen was developing and the Canadian Shield 
represented a tectonically positive feature from Late Proterozoic to the Cretaceous.

“During the Late Proterozoic, ridges of positive movement radiating across the Canadian Shield 
had begun to control sedimentary patterns and rates of deposition (figure 5).” (J. Springer)

On the Eastern Margin the Appalachian Orogen developing with the opening and closing of the 
Iapetus Ocean; crustal collision caused accretion of overthrust terranes; sea level changed with 
intermitent flooding of the craton margin. (After James et al., 1988)

The Frontenac Arch (positive feature) was established by Late Proterozoic; this was the most 
active of the ridges radiating across the shield. (After Sanford et al., 1984)

Late Proterozoic to early was a period of erosion.

The Potsdam Formation reflects environment of estuarine, aelian, braided river and wadi 
flashflood (R.G. Walker, 1988); developed on continental area rimmed and flooded by shallow 
seas. 
“Tectonically, Ontario is situated in an intraplate setting with its closest and most influential 
continental plate margin located along the eastern (present orientation) margin of North America 
(Bally et al. 1989).” (OGS V4, p.1314)

There were two cycles occurring in this tectonic regime during the Phanerozoic; described by 
Hatcher 1989 and Sanford, 1985 as the ‘Wilson cycles’. 
1st: rifting from Neoproterozoic to Early Cambrian till a passive margin opened up to the newly 
formed Iapetus Ocean; active phase - African plate collided with North America closing the 
Iapetus Ocean from Ordovician to late Paleozoic (Bally, 1989; Hatcher 1989)
2nd: rifting during late Proterozoic to early Mesozoic creating Atlantic Ocean and current passive 
continental margin (after hatcher 1989)

“During the Mesozoic, Ontario was within an overall extensional regime related to the opening of 
the Atlantic Ocean. Extensional tectonism was manifested in Ontario by faulting, graben 
development and extension-related alkaline and Kimberlitic plutonism in the Lake Timiskaming and 
Ottawa-Bonnechere grabens (Brummer 1978; Sage OGS V4),” (OGS V4, p.1314-15)
Tectonic Elements in Ontario: (OGS V4, p.1315)
- deposition occurred in 4 basins during Paleozoic and Mesozoic; a series of arches and basins were formed
Significant elements are:
1. Appalachian Orogen: orogenic belt formed during Paleozoic along Eastern margin of North American plate by collision
2. Appalachian Basin: elongate foreland basin developed on Western flank of Appalachian Orogen in response to lithospheric loading; clastic sediments dominant fill
3. Michigan, Moose River and Hudson Bay Basins: circular and saucer shaped intracratonic; thinner preserved sedimentation than Appalachian
4. Arches: basement-cored, structural highs separating basins; periodic uplift occurred on these arches controlling sedimentation during Phanerozoic; caused erosion of earlier sediments and basement; formed focus of unconformity development
5. Lake Timiskaming and Ottawa-bonnechere grabens: in response to Mesozoic rifting and opening of Atlantic (Kumarapeli 1978); preserves lower to middle Paleozoic sediments of Lake Timiskaming outlier; OBG preserves a number of Paleozoic outliers along Ottawa River valley and Lake Nipissing; Mesozoic lamprophyric dikes are associated with both; Paleozoic Alkaline-carbonatite intrusions associated with OBG.

Notes on Dike Swarms:
(from R. E. Ernst et al, Special Paper 34)
"Emplacement of the Great Abitibi and associated dykes is linked with contemporaneous igneous and tectonic activity in the Grenville Province, Lake Superior Basin, and Kapuskasing Structural Zone. The strike of the dykes east of the KSZ is consistent with stress systems arising from a tectonic interaction between the Superior and Grenville Provinces."

R. M. Easton on the Grenville dike Swarm from ‘The Geology of Ontario’, OGS:
"Kumarapeli (1985) has suggested that the Grenville dike swarm is related to the Tibbit Hill volcanics in Quebec, and that the Ottawa-Bonnechere Graben represents a failed rift with the Tibbit Hill volcanics being deposited at the apex of the rift. The Tibbit Hill volcanics have been dated by U-Pb zircon at 554Ma (Kumarapeli et al 1989)."
"Although the Ottawa graben is discordant to Grenville structural trends, Kumarapeli (1985) notes that the graben faults are controlled by a regional fracture pattern within the shield, which reflects long-lived crustal structures. The southern boundary between Archean and Paleoproterozoic to Mesoproterozoic crust within the Grenville Province that Dickin and McNutt (1989a) suggest represents a Penokean suture zone."

R.M. Easton talks about Carbonatites in the Bancroft Terrane:
"The carbonatites are generally small, elongate bodies, generally less than 1m wide, but a few, such as the Silver crater carbonatite, crop out as circular masses. Zircon ages from the carbonatites and fenites from the zone (Lumbers et al 1990) lie in the range 1070 to 1038Ma, and ages from the fenites span a similar range from 1072 to 1044Ma (Lumbers et al 1990; Mezger et al 1991)."(Easton,p.822, OGS V4)
"The localization of pegmatite injection, fenitization and carbonatite emplacement near the Bancroft Terrane/Central Metasedimentary Belt Boundary Zone may be structurally controlled. As noted in the geophysics section of this chapter, the CMBBZ extends to the base of the crust, the only such deep crustal structure noted in the CMB other than the Ottawa-Bonnechere Graben."
The Tectonic Setting of the Mazinaw Terrane/Harlowe Camp compared with the Kirkland Lake Area: (see p. 4 & area south of Kashwakamak L.)

"Crustal thickness and/or underplating by mafic or ultramafic magma induces partial melting of mafic granulites at the base of the crust producing magmas of Trondhjemitic composition (see Collerson and Fryer 1978; Barker 1979); these magmas utilize the major structures during ascent and emplacement. These trans and lithosphere structures are also the sites for emission of mantle-derived alkalic magmas possibly the lamprophyric dykes at Canadian Arrow and the alkali basalts of Kirkland Lake (Kerrich & Watson)."

They also conclude:
"The conjunction of Trondhjemite and lamprophyric rocks, major structures, and gold deposits is interpreted in terms of trans-crustal fractures utilized as a conduit for high Na magmas from the base of the crust, for alkalic magmas from the mantle, and for the discharge of hydrothermal fluids from a metamorphic or magmatic reservoir. A temporal relationship between all these events may be implied if the lamprophyre dike rocks are contemporaneous with the Trondhjemite, and a genetic relationship may be implied in terms of crust-mantle heating."

Finally on Lamprophyres and shear zones:
"Amongst the hierarchy of criteria for identification of calc-alkaline lamprophyres (Rock 1984), the Canadian Arrow rocks conform in terms of texture (panidiomorphic), form (dyke-like), inclusions (xenoliths), chemical composition (P, Nb, Ta, Zr, Hf, Re), and mineralogy (phenocrystic phlogopite, groundmass feldspar). Formal terminology of this type of lamprophyre may be narrowed down to either minette or kersantite (Streckeissen 1979)."

... "Ductile shear zones (see Ramsay & Graham 1970), together with gold mineralization, appear to have developed preferentially in lamprophyre dykes that cross-cut the stock and its contiguous volcanic envelope (see also Colvine et al, 1984, Fig. 9 & 10)."

* * *

The author has been researching the Gold and Lamprophyre association for the past 10 years as well as the association of specific type Lamprophyres with precious gems. It is because of this the old Payrock property as well as other areas are being investigated; most oldtimers failed to realize the significance of Lamprophyre dikes and considered them a nuisance in a mine setting. I consider them a Primary Target in my prospecting ventures and will continue my research steadfastly!

The following is from R.M. Easton, OFR5828, 1992, on local dike intrusions in the Mazinaw area:
"A variety of metamorphosed dike rocks are present in the map area, cutting all rock units except the Flinton Group. These include metagabbro dikes, metadiabase dikes, plagioclase-porphyritic mafic dikes, and quartz feldspar porphyry and trondhjemite dikes. The latter dikes show a spatial relationship with copper-gold occurrences in the area, as outlined in detail below. The age of the porphyry and trondhjemite dikes is not known, although they may be correlative with late felsic dikes dated by U-Pb zircon methods at 1229 +/- 11 Ma by Connelly et al. (1987)."
The Glanfield Gold Prospect SE - 1 (Payrock property) and Lamprophyre Association
(*also refer back to p.11)

Related information from OGS V4:
The age of gold mineralization is determined by crosscutting relationships between mineralized shear zones and host intrusions.

Area Gold Camps: Cordova-Malone: max. 1240 Ma
Addington-O'Donnell: <1240Ma (1240Ma?)
Lavant-Darling: as young as 1040Ma (Easton)

“In the Mazinaw Terrane, gold-copper-bearing quartz-tourmaline veins cut the Flinton Group, implying a maximum age of ca.1155Ma. However, these crosscutting veins may represent remobilization of mineralization during the younger regional metamorphism (Ottawa Orogeny) and the main mineralization event may have occurred post ca.1180Ma Elzevirian metamorphism.” (p.1242, OGS V4)

... “If one assumes that a single gold mineralizing event occurred, it most likely occurred at ca. 1180 to 1160 Ma.”

“In the Mazinaw Terrane, it is consistent with the observation that an early gold mineralization event (particularly in dolomite-marble-hosted concordant vein arrays, e.g. Dome and Payrock occurrences, see Fig 24.17) occurred prior to Flinton Group Deposition. The high metamorphic grade of the Flinton Group metamorphism would be sufficient to cause local remobilization to form crosscutting veins; perhaps the high Boron content of Flinton Group sediments (Easton, unpublished data) assisted this process.” (OGS V4, p.1242)

Determining the Nature and Distribution of Anomalous Gold Values and the structural control and role of the mafic intrusions:

M. E. Glanfield's property showing observations:
1. Quartz veins in dolomite with hematite alteration and visible gold reported; biotite and chlorite accessory minerals with muscovite and rutile observed.
2. Obvious multiple fracture zones closely paralleled by mafic intrusions up to 30cm wide; very hard mafic rock, sometimes soft and highly altered in places, forming a sinuous vertical appearance in places with dilitant zones into the dolomite country rock.
3. Where the mafic dike is altered larger mica flakes are present along with a dark and rusty, sooty residual material plus chlorite and hematite.
4. Slickensides present in a few of the pits; may be a southward extension of a prominent ~N-S fault on the south shore of Kashawakamak Lake several km's to the North.
5. Anomalous gold values have been obtained previously and presently in a few of the pits in two separate areas; confirmed by MNDM personnel.
6. Similar mafic intrusions and gold showings are present in proximity to this property.
7. The intrusion is younger than the dolomite and intercalated volcanics it cuts.
8. This property has never been drilled nor the mineralization thoroughly understood or investigated; or an explanation given for the anomalous gold values reported for the past 60 years.
9. From map #2499 (Moore & Morton, 1986) looking at the Northbrook-Cross Lake batholith dipping to the north, perhaps its contact or satellites lie below the metavolcanics and metasediments within this property.
Michael E. Glanfield Prospects - Ontario, Canada - 1999

A similar showing exists in the Kirkland Lake area;
V.K.Prest describes Lamprophyre and gold on a property in the vicinity of Kirkland Lake around 1949:

"In a rusty zone in a small Lamprophyre dike, Hogg recorded a 1/2" quartz stringer with specks of Visible Gold."

To Determine on the showing:
1. The extent and nature of the mineralized zone (size of shear zone, multiple?), define in two dimension; are there other zones within the property and area?
2. The role of the mafic intrusions and age; compare to age of regional gold deposition; how deep is it?
3. Are there other significant exploitable commodities present?

How? (previous data is conflicting and incomplete!)
1. Cut a new close spaced grid on the south section and perform detailed Geophysical surveys to map out the mafic intrusions properly; perhaps an I.P. survey will be necessary.
2. Put down a couple of shallow drill holes on the main showing.
3. Map and sample the entire property in detail to find out if other dike intrusions are present
4. Outcrop stripping and detailed methodical sampling and assaying to determine zone of mineralization and paragenesis on the main showings

Other:
1. Investigate proximal area targets by reconnaissance prospecting and staking.

Easton outlines an interesting porphyry copper model within the Mazinaw Terrane proximal to this property; he says all the known copper-gold mineralization in the area are hosted in dolomitic marble spatially associated with trondhjemite stocks and dikes. An area south of Kashwakamak Lake has multiple felsic and dacite porphyry dikes intruding with several gold prospects with similar mineralogy.

In conclusion, Hodgson talks about hosts for gold mineralization in the Abitibi:
“Some type of dyke or stock occurs in over three-quarters of the deposits, with dykes other than diabase occurring in 42%, stocks in 26% and diabase dykes in 27%. The relatively high incidence of diabase dykes, which are post-ore, is attributed to their emplacement being controlled by the same favourable structures as those which localized the ore (Hodgson & Troop, 1988)."

“...there is a world wide spatial association of mesothermal-type gold deposits with tectonic slices of ocean crustal rocks caught up suture zones between Terranes, where these rocks are cut by later felsic intrusions.”

“Timiskaming type sedimentary rocks lie unconformably on the older volcanic and sedimentary rocks and occur in linear belts aligned along the major tectonic zones in the Abitibi Belt. The reason for this association is thought to be structural, with both the gold and the sedimentary rocks being genetically related to the major tectonic zones.” (Hodgson)
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APPENDIX

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ONTARIO, CANADA NOB 2R0

Date: 22/07/98

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Date Submitted: 26/06/98
Report Comprises: Cover Sheet plus
Pages 1 to 1

Distribution of unused material:
Pulps: Pulps returned after 7 day of reporting.
Rejects: Rejects dumped after 30 days of reporting.

Certified By:
Dr. Hugh de Souza, General Manager
XRAL Laboratories

ISO 9002 REGISTERED

Report Footer: L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
*M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

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## XRAL Laboratories
A Division of SGS Canada Inc.

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Certified By:

Dr. Hugh de Souza, General Manager
XRAL Laboratories

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L.N.R. = Listed not received
n.a. = Not applicable
I.S. = Insufficient Sample
*INF = Composition of this sample makes detection impossible by this method
M after a result denotes ppb to ppm conversion, % denotes ppm to % conversion

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*Dup 68461
DAILY LOG REPORT (ADDENDUM) SUBMISSION FOR ASSESSMENT CREDIT ON:

GLANFIELD GOLD PROSPECT SE-1 (PAYROCK PROPERTY) – BARRIE TWP, ONTARIO

The Mazinaw Terrane of the Central Metasedimentary Belt of the Grenville Province has a long history of Gold Exploration dating back to the early 1900's; the Barrie Township prospects are largely forgotten and deserve investigation due to anomalous Gold and Copper values and other interesting structural relationships proximal to the Ottawa-Bonnechere Graben Faults.

This property is readily accessible to transport and is relatively void of human habitation, it is mainly scrub land! The author has visited this property on numerous occasions as well as surrounding areas.

The work mainly involved locating survey lines, ground traverses with random prospecting on unique mineralized structures and veins (grab sampling & mapping) as well as collecting samples of rock type within the property itself and of course claim staking.

An excellent review of this area is provided by J. M. Moore and R. L. Morton, “Geology of the Marble Lake Area”, 1986.

The following is a Daily Log of my activities based on, and referenced from my Private and Confidential Field Book and notes:

**February 8 & 9th, 1998:** The Payrock Property was revisited to investigate anomalous Gold values and unusual intrusions associated with these; previous traverses had revealed the location of the old Payrock Pits; these pits are well camouflaged with new growth spruce and could well be missed. The time was spent on the Property familiarizing myself with the rock types and property boundaries as their was 6” of snow on the ground. A sample of rock type 10a (Moore and Morton, 1986) was taken as a representative sample of hornblendite (schist?) as it forms an apparent single lens like structure within the property; sulphides often occur with this rock type and other unique mineralization!

**February 10th, 1998** Visited the Tweed Office to work on property research and Regional Geology.

**February 11th, 1998** This day was spent taking pictures of the pit areas and also noted 3rd party unknown and unauthorized sampling of pit #3; flagging tape #:s and chip samples present!

**April 11, 1998:** I visited the Payrock Property, Lot 16/Con 1, Barrie Twp. to establish a new baseline/control line North of the South Pit area (Fig. #7 report) located from previous reconnaissance work. I proceeded south from the road at the skidoo trail entrance and located the old wagon trail (60 years old) on the East side of the claim boundary. I discovered some mafic float along trail with sulphides embedded in the trail, foreign or local material, origin unknown to date?

I located the #1 post for claim #924356 and proceeded in a SW direction partially following the East claim boundary; the township lines are intermittently marked by rusty strands of old barb wire which I flagged as hazard. The outcrops are more plentiful towards the South claim, there are swampy sections with *slap me in the face* tag alder and cedar throughout the property; a few small maple seedlings are prevalent in the South area mixed with spruce, poplar and birch.

The main rock feature of the property is two prominent conglomerate ridges standing in relief and exhibiting a North-South compression, gently rolling terrain with a foot of overburden (thicker in some areas) is predominant.
The rocks on the property have an obvious E-W strike flow with several steeply dipping mafic intrusions and one felsic intrusion pushing through the meta-sediments (dolomite) prevalent in the South area of the claims.

I used the SE #2 post on the South Township Boundary of claim #924356 where an original Township Boundary Post and standard iron bar are located and provide a useful control point from which to start. I used this control point to measure North from to establish a control line to reference the pit area. Depending on the day, it is about a 1 hour steady hike into the property; I proceeded out along the West boundary to investigate the rock outcrops and end the day.

**April 12, 1998:** A control point had been established the previous day at 145mN/25mW; approximately 300m of Baseline was cut and chained with 25m stations to facilitate mapping. The old anomalous MNR Pit #3 was resampled, green mineralization was observed, also hematite and sulphides were noted in the black schist material highly weathered from the mafic dike area intruding the dolomite. It is a much altered structure displaying splaying from the main intrusion with sinous quartz and calcite stringers occurring within the proximal sediments.

**May 26, 1998:** I proceeded to the south pit area via the usual route to map in detail the pit areas to the control lines.

I started with the #1 and 2 pits(MNR) on the East boundary ~50m North of the Township Boundary; depth, width, length and strike were noted for each pit. Also observed some old posts and barb wire fencing which I flagged for reference.

I then walked up to the first 125N baseline to map in the old pit area with similar parameters; also noted an old trench striking 308 degrees from the pits and running for about 40m. Some grab sampling was done in the main pit area (Fig. #7); one sample contained well developed phenocryst of dark red/brown rutile (confirmed from private communica); also noted was chlorite, biotite, hematite, quartz and dolomite.

The mafic dike running through the pit area is weathered and friable.

END

**December 15 & 16, 1999:** No snow on ground; some of the swamps are frozen over and no bugs!

The day was spent preparing for the MNDM – Tweed visit; this included trail marking and revisiting the pit area. The next day I met with V.C. Papertzian (from the Tweed Office) East of Harlowe and we proceeded to the property via the old wagon trail. The bottom claim was examined starting with the #1 and #2 pit areas where a sample and picture was taken; we then proceeding to the main pit areas and baseline; Chris took a total of five sample and several pictures of the pits were documented. A piece of float material was noted along the baseline containing rutile; I discussed structure and gold mineralization on the property and future plans for the showing.

We proceeded out along the West boundary and called it a day! END
Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mineral Act, Subsection 55(2) and 66(3), R.S.O. 1990

Instructions:
- For work performed on Crown Lands before recording a claim, use form 0240.
- Please type or print in ink.

1. Recorded holder(s) (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Client Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICHAEL E. GLANFIELD</td>
<td>#297301</td>
</tr>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>BOX 805, TAUVISTOCK, ONTARIO</td>
<td></td>
</tr>
<tr>
<td>CANADA NOB 2R0</td>
<td></td>
</tr>
</tbody>
</table>

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

- Geotechnical: prospeccing, surveys, assays and work under section 18 (regs)
- Physical: drilling, stripping, trenching and associated assays
- Rehabilitation

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Office Use</th>
<th>Commodity</th>
<th>Total $ Value of Work Claimed</th>
<th>NT$ Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROSPECTING (TRAILING, RECON, CONTROL LINE)</td>
<td></td>
<td></td>
<td>4087</td>
<td></td>
</tr>
<tr>
<td>GEOLOGICAL (Sampling/Mapping/Report)</td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Dates Work Performed From</th>
<th>To</th>
<th>Township/Area</th>
<th>Mining Division</th>
<th>Resident Geologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 09 99</td>
<td>07 01 2000</td>
<td>Barrie TP</td>
<td>Southern Ontario</td>
<td>Tweed</td>
</tr>
<tr>
<td>Global Positioning System Data (if available)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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3. Person or companies who prepared the technical report (Attach a list if necessary)

<table>
<thead>
<tr>
<th>Name</th>
<th>Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICHAEL E. GLANFIELD</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>Telephone Number</td>
</tr>
<tr>
<td>Same as Above</td>
<td></td>
</tr>
</tbody>
</table>

4. Certification by Recorded Holder or Agent

I, MICHAEL E. GLANFIELD, do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent: [Signature]

Date: Jan 12 2000

RECEIVED

JAN 12 2000

GEO SCIENCE ASSESSMENT OFFICE

0241 (02/96)
5. Work to be recorded and distributed. Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

Mining Claim Number: Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.

<table>
<thead>
<tr>
<th>Number of Claim</th>
<th>Number of Claim</th>
<th>Value of work performed on this claim or other mining land.</th>
<th>Value of work applied to this claim.</th>
<th>Value of work assigned to other mining claims.</th>
<th>Bank. Value of work to be distributed at a future date.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB 7627</td>
<td>16 ha</td>
<td>$26,825</td>
<td>N/A</td>
<td>$24,000</td>
<td>$2,825</td>
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<tr>
<td>1234567</td>
<td>2</td>
<td>$8,892</td>
<td>$4,000</td>
<td>0</td>
<td>$4,892</td>
</tr>
</tbody>
</table>

1. 107,096.41   2043 | $4,000 | 0 | $1643.79 |

2. 924,356       2044 | $4,000 | 0 | $1643.79 |

Column Totals

---

1. Michael E. Grant, do hereby certify that the above work credits are eligible under subsection 7(1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing: Date

6. Instructions for cutting back credits that are not approved.

Some of the credits claimed in this declaration may be cut back. Please check (x) in the boxes below to show how you wish to prioritize the deletion of credits:

- [ ] 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.
- [ ] 2. Credits are to be cut back starting with the claims listed last, working backwards;
- [ ] 3. Credits are to be cut back equally over all claims listed in this declaration;
- [ ] 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp

Deemed Approved Date

Date Notification Sent

Date Approved

Total Value of Credit Approved

Approved for Recording by Mining Recorder (Signature)
## Statement of Costs

for Assessment Credit

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**Transaction Number (office use)**

W0090.00002

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Personal information collected on this form is obtained under the authority of subsection 6(1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, the information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to the Chief Mining Recorder, Ministry of Northern Development and Mines, 6th Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6S5.

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### Work Type

<table>
<thead>
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<th>Units of Work</th>
<th>Cost Per Unit of Work</th>
<th>Total Cost</th>
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<tbody>
<tr>
<td>Prospecting</td>
<td>$150/day</td>
<td>$1850</td>
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<td>Geological</td>
<td>$150/day</td>
<td>$2250</td>
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<tr>
<td>Assay &amp; Analysis</td>
<td>8 Samples</td>
<td>$151.67</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td></td>
<td><strong>$2251.67</strong></td>
</tr>
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</table>

**Associated Costs (e.g., supplies, mobilization and demobilization):**

<table>
<thead>
<tr>
<th>Date</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Feb 4-14/96</td>
<td>$221.75</td>
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<tr>
<td>June 7/97</td>
<td>$34.03</td>
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<tr>
<td>Jan 22/98</td>
<td>$84.81</td>
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<td>Jan 19/98</td>
<td>$187.25</td>
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<tr>
<td>May 15-20/98</td>
<td>$16.73</td>
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<td>June 26/98</td>
<td>$44.44</td>
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<td>July 11/98</td>
<td>$15.50</td>
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**Transportation Costs**

<table>
<thead>
<tr>
<th>Distance (Km)</th>
<th>Cost</th>
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<tbody>
<tr>
<td>180 x 2</td>
<td>$12.0</td>
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</table>

**Food and Lodging Costs**

<table>
<thead>
<tr>
<th>Date</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>PDAC 1998 Prop. Management &amp; Public Education</td>
<td>$407.50</td>
</tr>
</tbody>
</table>

**RECEIVED**

JAN 12 2000

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**Calculations of Filing Discounts:**

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

\[
\text{TOTAL VALUE OF ASSESSMENT WORK} \times 0.50 = \text{Total $ value of worked claimed.}
\]

**Note:**
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

**Certification verifying costs:**

I, **[Recorded Holder]**, do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as **[Recorded Holder's Name]**. I am authorized to make this certification.

---

0212 (02/96)
Dear Sir or Madam:

Submission Number: 2.20031

Subject: Transaction Number(s):

W0090.00002 Approval After Notice

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact STEVE BENETEAU by e-mail at steve.beneteau@ndm.gov.on.ca or by telephone at (705) 670-5855.

Yours sincerely,

Steve B. Beneteau
Acting Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 14858
Copy for: Assessment Library
Work Report Assessment Results

Submission Number: 2.20031

Date Correspondence Sent: May 10, 2000

Assessor: STEVE BENETEAU

<table>
<thead>
<tr>
<th>Transaction Number</th>
<th>First Claim Number</th>
<th>Township(s) / Area(s)</th>
<th>Status</th>
<th>Approval Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>W0090.00002</td>
<td>1076676</td>
<td>BARRIE</td>
<td>Approval After Notice</td>
<td>May 10, 2000</td>
</tr>
</tbody>
</table>

Section: 9 Prospecting PROSP

The deficiencies associated with this submission have been corrected. As well, the costs for travel and transportation have been added to the assessment credit total outlined in the 45 Day Notice. Accordingly, assessment credit has been approved as outlined on the attached Distribution of Assessment Work Credit form.

Correspondence to:
Resident Geologist
Tweed, ON

Recorded Holder(s) and/or Agent(s):
MICHAEL EDWARD GLANFIELD
TAVISTOCK, ONTARIO

Assessment Files Library
Sudbury, ON
The following credit distribution reflects the value of assessment work performed on the mining land(s).

**Date:** May 10, 2000  
**Submission Number:** 2.20031  
**Transaction Number:** W0090.00002

<table>
<thead>
<tr>
<th>Claim Number</th>
<th>Value Of Work Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1076676</td>
<td>2,082.00</td>
</tr>
<tr>
<td>924356</td>
<td>2,082.00</td>
</tr>
</tbody>
</table>

**Total:** $4,164.00
Problem Page
The original page in this document had a problem when scanned and as a result was unable to convert to Portable Document Format (PDF).

We apologize for the inconvenience.

Problème de conversion de page
Un problème est survenu au moment de balayer la page originale dans ce document. La page n'a donc pu être convertie en format PDF.

Nous regrettons tout inconvénient occasionné par ce problème.