ASSESSMENT REPORT ON THE HEAVY MINERAL SAMPLING ON THE WEST 1-12 & W 1F CLAIMS SECRET CREEK AREA

Mayo Mining District
September 16-26, 1997

Location: 1. 46 km Northwest of Mayo, Y.T.
2. NTS 106 D
3. Latitude 64° 00' N
Longitude 134° 55' W

Claims: West 1-12 (YB18768-YB18779)
W 1F (YB42202)

For: **NEW MILLENNIUM MINING LTD.**
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80237, U.S.A

By: R. Allan Doherty, P.Geo.
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December 28, 1997

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 5,204.51 .

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

SUMMARY

Aurum Geological Consultants Inc., was retained by New Millennium Mining Ltd. to complete sufficient work on the West 1-12 and W1F Claims to comply with the assessment requirements under the Yukon Quartz Mining Act. located in the Mayo Mining District, Yukon Territory. The property is accessible by helicopter from Mayo, Yukon.

The property is underlain by Proterozoic-Paleozoic Hyland Group gray phyllite, micaceus quartzite, schist, and massive quartzites. The Hyland Group is intruded by Biotite diorite to granodiorite and quartz feldspar porphyry dykes. Only the quartz feldspar porphyry dykes are exposed on the West 1-12 Claims.

The property is a bulk tonnage, low grade, gold target similar to the Fort Knox deposit in Alaska and forms part of the Dublin Gulch property. The West Claims surround the Peso Rex Property which has seen significant exploration including 1250 feet (381 m) of underground drifting on the No.1 vein and 3,500 feet of drifting and crosscuts on the Rex vein. The veins are mineralogically complex silver-lead- antimony sulphide veins localized along steeply dipping norteast and east-west striking faults and shear zones.

In September of 1997, Aurum Geological Consultants Inc. collected a total of 9 heavy mineral concentrate samples Secret Creek and two of its tributaries which drain the West 1-12 claims and W1F fractional claim. The samples were then processed at the core library in Whitehorse and the heavy mineral fraction was extracted and reported on by Walton Geological Services.

With 'Fort Knox' style mineralization as a target, future work should consist of systematic mapping and follow(c)up sampling of all existing quartz stockwork zones within the Cretaceous stock(s), and detailed prospecting over the entire claim block. Areas of poor rock exposure should be further explored with reconnaissance auger soil sampling to obtain the maximum sample depth.

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INTRODUCTION

This report was prepared at the request of Hans Smit of New Millenium Mining Ltd., owner of the West Claims. Its purpose is to summarize the exploration activities on the West Claims and to satisfy the reporting and work requirements under the Yukon Quartz Mining Act.

Exploration work consisted of heavy mineral concentrate sampling on creeks draining the West 1-12 claims and the W1F claim. The work was carried out on September 16, 1997 and the sample separates and microscope work was completed by Walton Geological Services between the 20-26th of September 1997. The samples were collected by Brian Sauer, Blair Blois and Mike Wienert of Aurum Geological Consultants Inc. Personnel were transported via Fireweed Helicopters from Clear Creek where the crew was working to Mayo to complete the sampling.

This report is based on the authors' knowledge of the property and area gained from exploration work on this and nearby properties, and from public and private reports.

Location and Access

The West Claims are located approximately 46 km northwest of Mayo., south of the junction of Lynx Creek and Skate Creek on an east-west trending ridge. The property is situated in the southeast corner of 1:50,000 Dublin Gulch map area (NTS 106D/4). The geographic coordinates of a point approximately in the centre of the claims are 64° 00' north latitude and 134° 55' west longitude (Figure 1).

Access to the property is by helicopter. Helicopter charters are available from Mayo, located 46 kilometres to the southwest, or from Dawson City.

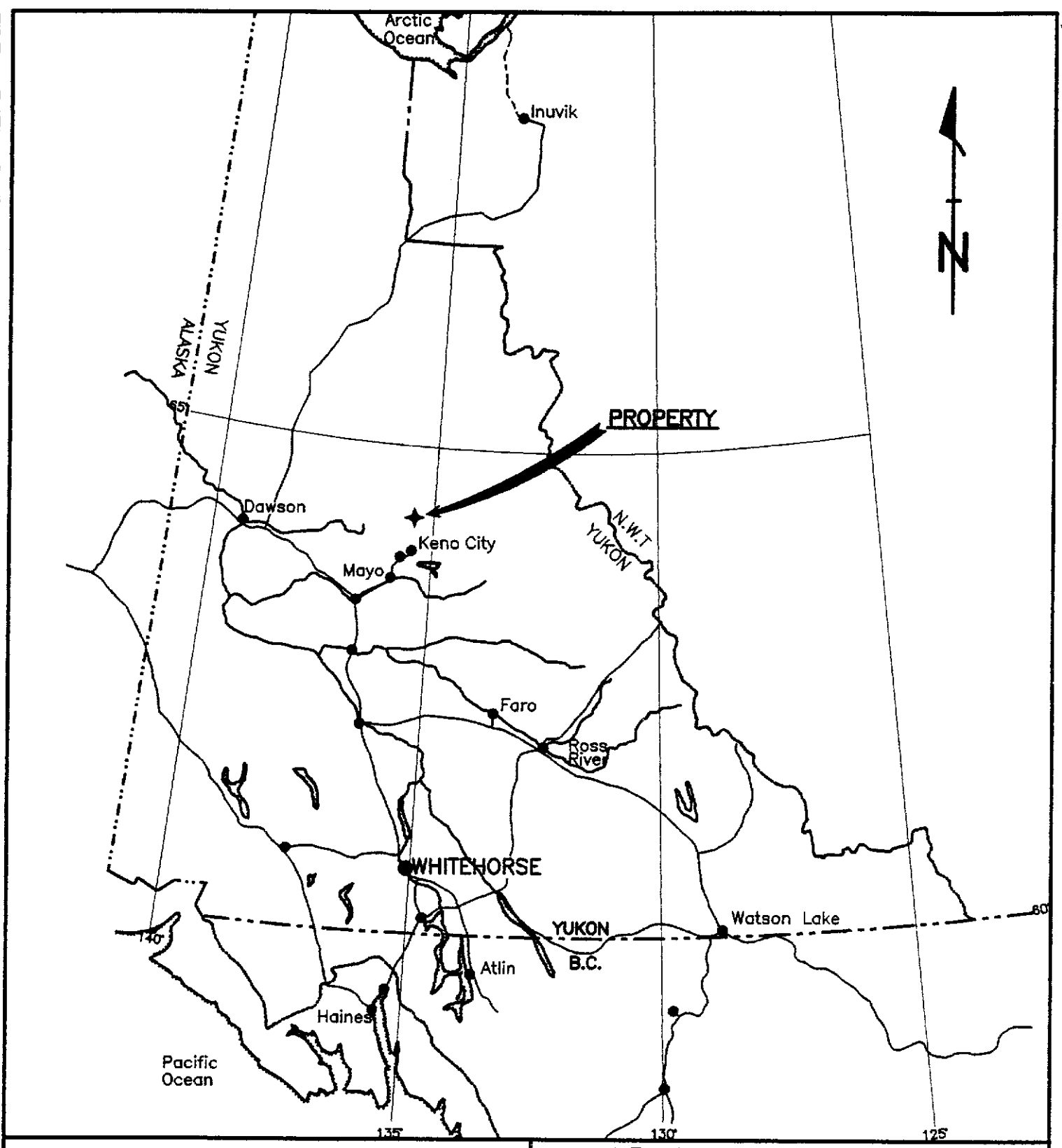
Property

The West Claims consists of 66 contiguous unsurveyed two post quartz claims,(Figure 2), covering approximately 1379 hectares. Figure 2 shows only the West Claims located on the west side of the Dublin Gulch property. The claims were staked in accordance with the Yukon Quartz Mining Act and are all within the Mayo Mining District. Current claim data are as follows:

TABLE I: West Claims Data

CLAIM NAME	GRANT NUMBERS	MINING DISTRICT	EXPIRY DATE *
WEST 1-12	YB18768-YB18779	Mayo	OCTOBER 1, 2000
W 1F	YB42202	Mayo	OCTOBER 1, 2000

* subject to approval of 1997 assessment work



200 100 0 200

kilometres

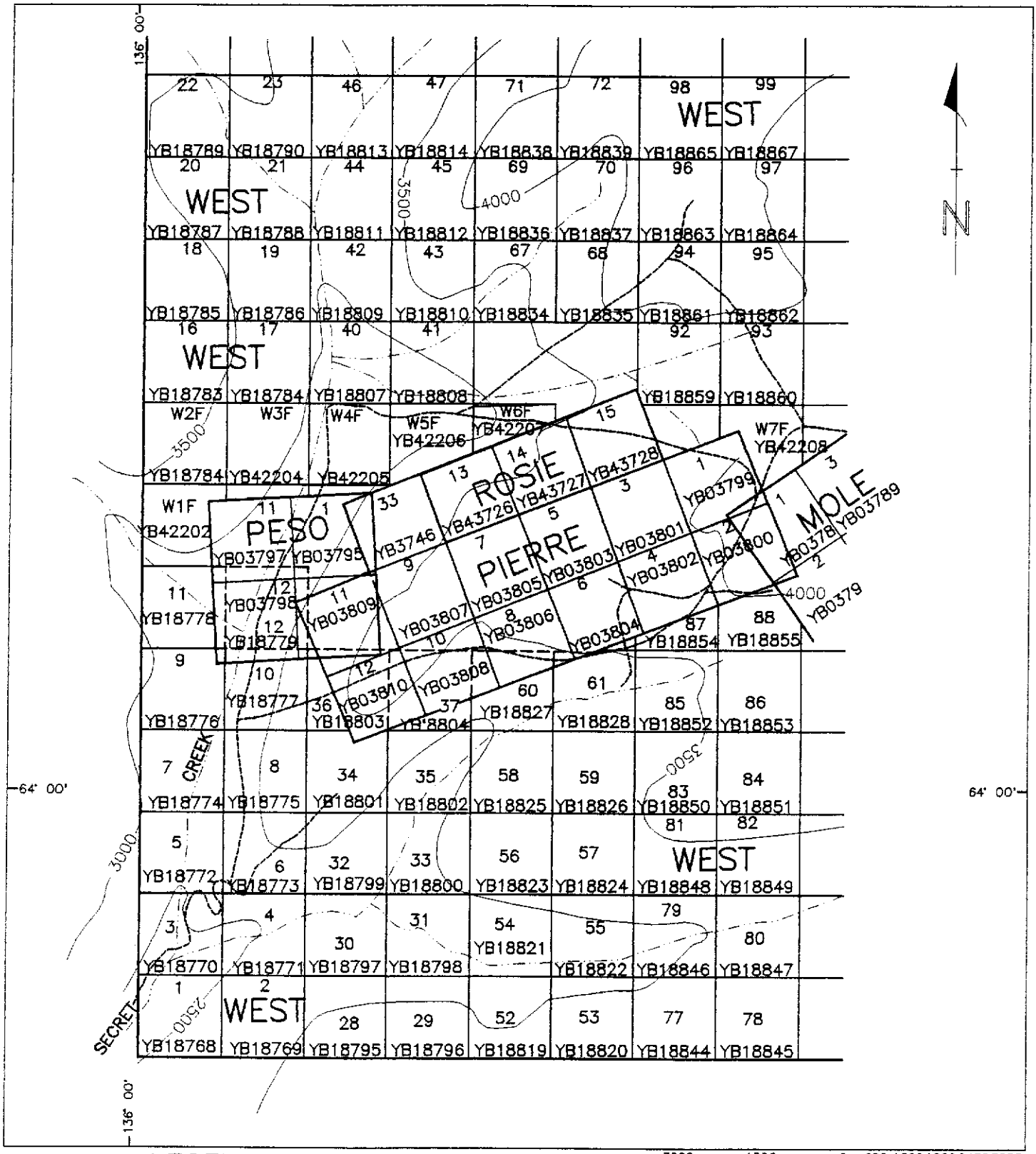
NEW MILLENNIUM MINING LTD.

WEST CLAIMS

MAYO MINING DISTRICT

PROPERTY LOCATION MAP

Aurum Geological Consultants Inc.			date: DECEMBER, 1997
NTS: 106 D	drawn: JC	scale: 1:6,000,000	figure: 1



LEGEND

- CLAIM GROUP BOUNDARY
- CLAIM LINE
- CREEK
- TRAIL/ROAD
- WEST — CLAIM NAME
- 22 — CLAIM NUMBER
- YB18789 — GRANT NUMBER
- 2500 — ELEVATION CONTOUR (500 FT INTERVAL)

3000 1500 0 600 1200 1800 2400 3000
metres

NEW MILLENNIUM MINING LTD.

WEST CLAIMS
MAYO MINING DISTRICT

CLAIM MAP

Aurum Geological Consultants Inc. | Date: DECEMBER, 1997
NTS: 105M/10SD Drawn: JD | Scale: 1:50,000 | Figure: 2

History

The Dublin Gulch property (of which the West claims are adjoining to the southeast and southwest) was first examined before the turn of the century by prospectors and placer miners (Yukon Minfile, 1993). Development work consisting of drifting on veins and driving adits, on five separate properties between 1904 and 1912. Sporadic exploration activities continued in the form of trenching and sampling by various companies.

United Keno Hill Mines Ltd., in 1965, followed up the release of stream sediment sample data collected by the Geological Survey of Canada during Operation Keno. This work led to the initial staking of the present Len claims and portions of the current West claims. This ground was explored and drilled as a siderite/galena vein target. The area was subsequently investigated by Canada Tungsten Mining Corporation Ltd. and Queenstake Resources Ltd. during the 1970's in search of bulk tonnage tungsten. Ivanhoe Capital Corp., Amax Gold Inc., and First Dynasty Mines have explored the Dublin Gulch property continuously since 1990 and New Millennium Mining Ltd., is currently the claim owners and are in the process of permitting for an open pit heap leach gold project from reserves identified on the Eagle Zone of the Dublin Gulch property.

More proximal to the West 1-12 claims, The Peso Rex Property saw significant exploration and development between 1961 and 1964 on silver-lead-antimony sulphide veins.

Physiography, Climate and Vegetation

An interior continental climate with moderate to low precipitation (30 cm annually), warm summers and cold winters typifies the area. Permafrost is discontinuous, present only on the steeper north and east facing slopes and low, marshy, forested areas. The property is normally snow free from mid June to late September. Relief on the property is 518 metres, with the highest point reaching 1400 metres. The majority of the property is below tree line. Vegetation on the north facing slope consists of black spruce, willow and alder. The most recent glaciation did not cover this area of the Yukon except for small alpine glaciers on the highest peaks. As a result, outcrop exposure is poor (~5%) except on ridge tops and incised drainage channels and gullies.

GEOLOGY

Regional Geology

The West claims are situated within the western portion of the Selwyn Basin. The geology of the Nash Creek map area (NTS 106 D) has been mapped by L.H. Green (1972) at a scale of 1:253,440. The Selwyn Basin is imperfectly defined (Abbott et al., 1986) and is used here to describe that part of the Cordilleran miogeocline comprised of a prism of Proterozoic to Mesozoic sedimentary rocks deposited along the western margin of ancient North America. The eastern margin of the basin is marked by the Paleozoic shale-carbonate contact while the western margin is in fault contact with accreted terranes. The sedimentary basin was active from the Late Proterozoic to Middle Jurassic time (Abbott et al., 1986) and is attributed to rifting at or near the western margin of ancient North America. Selwyn Basin rocks were deformed during the Jura-Cretaceous compressional tectonic event. This event generated several regional thrust faults, namely the Robert Service, Tombstone, and Dawson thrusts, that moved large packages of Selwyn Basin rocks to the north. The Dawson Thrust juxtaposes 'offshelf' rocks from the south against 'shelf' rocks to the north (Abbot t, 1993). The Robert Service thrust underlies and defines one of the largest thrust sheets in the Canadian Cordillera (Murphy et al., 1993a). It extends eastward from Dawson City area through the Keno Hill Silver Camp and into the Lansing area northeast of Mayo Lake. The Robert Service thrust typically juxtaposes Upper Proterozoic Hyland Group rocks against Mississippian 'Keno Hill' quartzite (Murphy et al., 1993a). Early Cretaceous granitic stocks and sills intrude both thrust sheets (Roots & Murphy, 1992). Two suites of granitoid intrusives, ranging from Paleozoic to Cenozoic age, related to underplating and or subduction, are found on both sides of the Tintina fault.

Granitoid emplacement peaked during the Early-Middle Cretaceous (Tempelman-Kluit, 1981). The Western Suite of granitoid intrusives, found west and southwest of the Selwyn Basin, are predominantly granodiorite in composition and are associated with porphyry copper -molybdenum and copper skarn deposits. The Eastern or Selwyn Plutonic Suite of granitoid intrusives are distributed along a northwest trending arcuate belt within the Selwyn Basin. The Selwyn Plutons are mainly granitic in composition, and are associated with tin, tungsten, and molybdenum mineralization (Emond, 1992).

Regional metamorphism has imprinted a greenschist facies metamorphic mineral assemblage on the Hyland Group rocks. Contact metamorphic aureoles surround the intrusive bodies producing biotite hornfels enriched in iron, tin(c)tungsten skarns, and precious metals. Often the larger intrusions have a low magnetic signature surrounded by an area of high magnetic relief related to the hornfelsed zone.

The exploration target on the West Claims is a bulk tonnage low grade gold 'Fort Knox' style deposit. The 'Fort Knox' deposit model is one of intrusive hosted gold genetically related to a porphyritic granite stock. The genesis of the 'Fort Knox' deposit is comparable to porphyry copper or porphyry molybdenum systems and, as such, these

deposits may be classified as a 'porphyry gold' system (Hollister, 1991). Deuteric and hydrothermal fluids deposited economic concentrations of native gold within the granite during and after emplacement of the stock. Mineralization may be concentrated near the roof of the intrusion which makes still capped portions of the intrusion good exploration targets.

The deposits are sulphide deficient; gold is associated with trace amounts of molybdenum, tungsten and bismuth. Mineralization is primarily within quartz stockwork sheeted veins, and shears within the intrusive although gold is also found as disseminations within the stock (Hollister, 1991). Associated minerals are molybdenite, scheelite, arsenopyrite, pyrite, and bismuthinite.

Potassic, phyllic, and argillic alteration is locally present within the intrusive (Hollister, 1991). Generally, small amounts of potassium feldspar, sericite, and or clay minerals are found within or as thin selvages adjacent to the mineralized quartz veins. Post mineral veins consist of calcite, calcite-quartz, and clay. Tourmalinization is common in the host intrusion. Overall alteration is incipient and can easily go unrecognized.

PROPERTY GEOLOGY

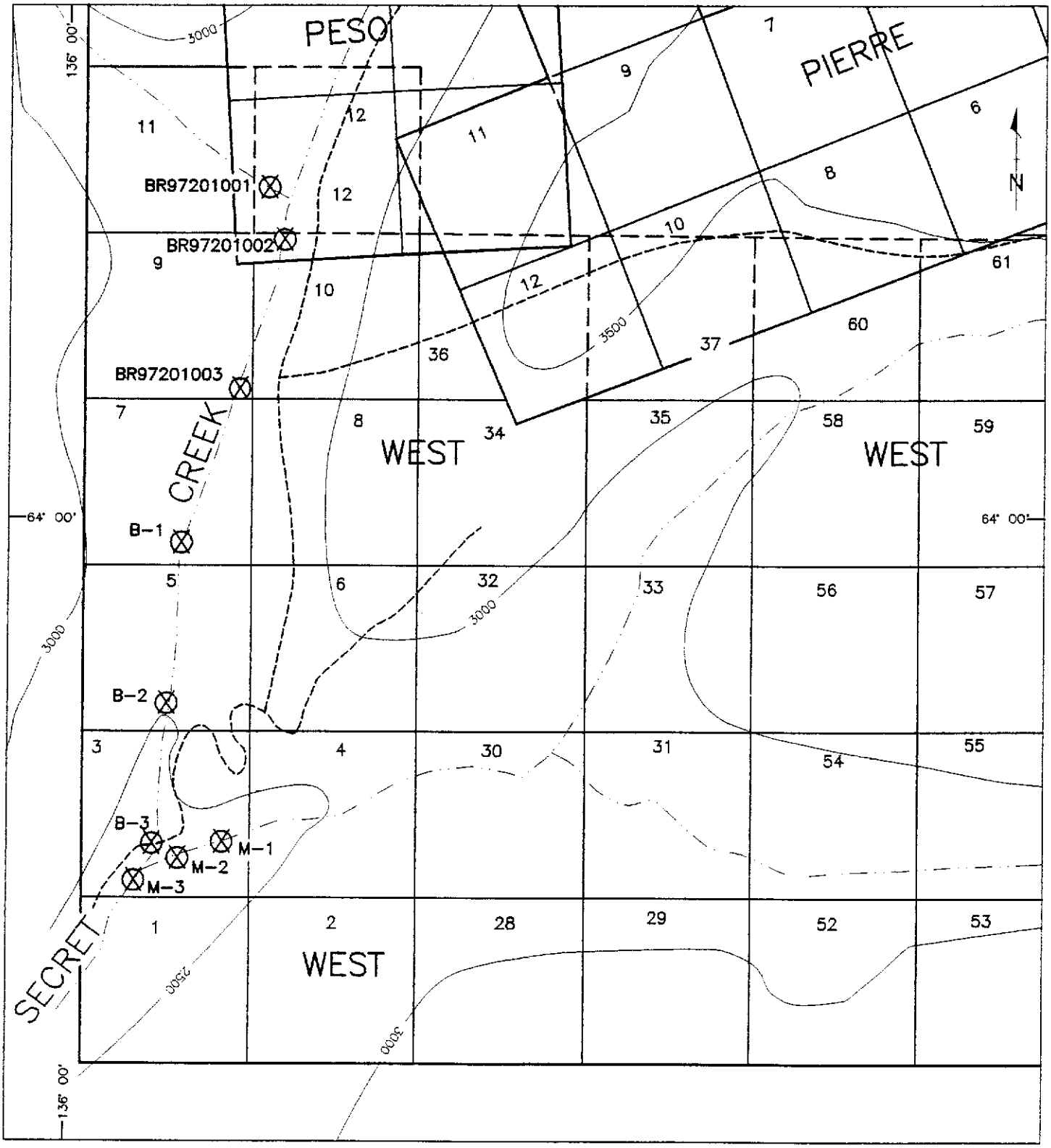
The West Claims, and surrounding area, is underlain by variably deformed, low-grade metamorphosed sedimentary rocks of the Proterozoic Hyland Group consisting of gray phyllite, micaceous quartzite, schist, and massive quartzites. The Hyland Group is intruded by Biotite diorite to granodiorite and quartz feldspar porphyry dykes. Only the quartz feldspar porphyry dykes are exposed on the West 1-12 Claims.

The Hyland Group is part of a warped northerly dipping structural panel (Murphy et al., 1993a), which has been intruded by a number of Cretaceous stocks and dykes. Stratigraphic relations are difficult to recognize within the Hyland Group due to the lack of marker horizons, poor outcrop exposure (~5%), degree of metamorphism, and deformation in the area.

EXPLORATION RESULTS

The nine heavy Mineral samples were processed in Whitehorse at the Bostock Core library and minerals with a SG > 3.32 were identified under a binocular microscope. Details of methodology and results are presented in Appendix A. The location of sample sites with respect to the claims is shown in Figure 3.

Five samples contained visible scheelite with the largest concentration of grains in Sample B97201001 collected on a tributary of Secret Creek on the West 12 claim. Samples B97202001, Mike #3, and Blair #3 all contained galena or secondary weathering products derived from galena. No visible gold was noted in any of the samples.



LEGEND

- CLAIM GROUP BOUNDARY
- CLAIM LINE
- CREEK
- TRAIL/ROAD
- WEST — CLAIM NAME
- 22 — CLAIM NUMBER
- ⊗ — 1997 SILT SAMPLE LOCATION
- 2500 — ELEVATION CONTOUR (500 FT INTERVAL)

500 250 0 100 200 300 400 500
metres

NEW MILLENNIUM MINING LTD.
WEST CLAIMS
MAYO MINING DISTRICT

SILT SAMPLE LOCATION

Aurum Geological Consultants Inc. | Date: DECEMBER, 1997
NTS: 105M/106D Drawn: JC | Scale: 1:15,000 | Figure: 3

CONCLUSIONS AND RECOMMENDATIONS

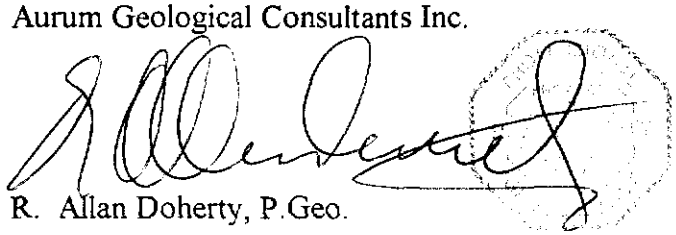
The West Claims are underlain by a sequence of metamorphosed and deformed sedimentary rocks of the Late Proterozoic-Early Paleozoic Hyland Group, gray phyllite, micaceus quartzite, schist, and massive quartzites. The Hyland Group is intruded by Biotite diorite to granodiorite and quartz feldspar porphyry dykes. Only the quartz feldspar porphyry dykes are exposed on the West 1-12 Claims.

Heavy Mineral concentrate samples were collected on Secret Creek and its tributaries. Heavy minerals identified in the samples included magnetite and ilmenite, heamatite/goethite pseudomorphs after pyrite, sphene, zircon, garnet, and scheelite.

Scheelite was most abundant in Sample B97201001 with 5-10 grains present and decreased down stream in subsequent samples to 3 grains in Sample Blair #3.

With 'Fort Knox' style mineralization as a target, future work should consist of systematic mapping and follow-up sampling, and detailed prospecting over the entire claim block. Areas of poor rock exposure should be explored with reconnaissance auger soil sampling to obtain the maximum sample depth.

Respectfully submitted;
Aurum Geological Consultants Inc.



R. Allan Doherty, P.Geo.

December 28, 1997

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STATEMENT OF QUALIFICATIONS

I, R. Allan Doherty, with business address:
Aurum Geological Consultants Inc.
205 - 100 Main Street
P.O. Box 4367
Whitehorse, Yukon
Y1A 3T5

1. I am a geologist with AURUM GEOLOGICAL CONSULTANTS INC., 205 - 100 Main Street, P.O. Box 4367, Whitehorse, Yukon.

2. I am a graduate of the University of New Brunswick, with a degree in geology (Hons.B.Sc., 1977) and that I attended graduate school at Memorial University of Newfoundland (1978-81). I have been involved in geological mapping and mineral exploration continuously since then.

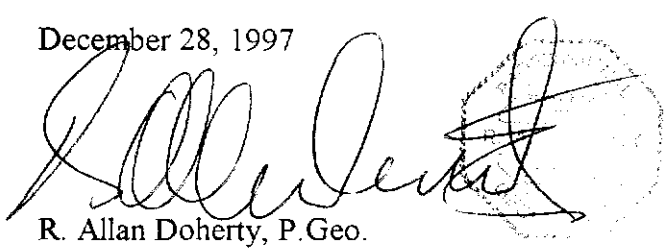
3. I am a member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia, Registration No. 20564.

4. I have based this report on my knowledge of the area and on referenced sources.

5. I have no direct or indirect interests in the properties or securities owned by New Millennium Mining Ltd.

6. I consent to the use of this report by New Millennium Mining Ltd. provided that no portion is used out of context in such a manner as to convey a meaning differing materially from that set out in the whole.

December 28, 1997



R. Allan Doherty, P.Geo.

STATEMENT OF COSTS

1997 Assessment Work Valuation; West 1-12 & W1F Claims, 106 D/4. Work completed between September 16-26, 1997.

A. Personnel

Brian Sauer, Prospector, Sampler September 16, 1997, 1 Day @ $300/day	$ 300.00
Michael Wienert, Prospector, Sampler September 16, 1997, 1 Day @ $250/day	$ 250.00
Blair Blois, Prospector, Sampler September 16, 1997 1 day @ $225.00	$ 250.00

B. Expenses

Camp Costs	3 man days @ $60 per day	$ 180.00
JP4 Jet B fuel		$ 147.38
Fireweed Helicopters		$2,056.00
Walton Geological Services		$1,110.00

C. Report Costs

Report Writing and Reprographics	$ 820.65
Sub-Total	**$4,864.03**
GST (7% of $4,864.03)	$ 340.48
TOTAL ASSESSMENT VALUE	**$5,204.51**

APPENIX A

DUBLIN GULCH
HEAVY MINERAL INVESTIGATION

BY: WALTON GEOLOGICAL SERVICES

WALTON GEOLOGICAL SERVICES
55 Boswell Crescent
Whitehorse, Yukon
CANADA Y1A 4T2

DUBLIN GULCH
Heavy Mineral Investigation

This report presents the results from a study of the heavy mineral content of samples collected during the 1997 field season from the Dublin Gulch area of Yukon Territory. Walton Geological Services of Whitehorse, Yukon was commissioned to extract and study the heavy mineral fraction of nine sediment samples collected for this purpose.

Methodology

A total of nine samples were processed at the core library (Exploration and Geological Services Division - Department of Indian and Northern Affairs) facility in Whitehorse, Yukon. The samples were contained in large plastic sample bags and ranged from about 5 to 15 kg in weight.

The following procedure was followed:

1. The silt sample was sieved through a 12 mesh screen. The -12 mesh size fraction was collected and panned down by hand to approximately 10 grams of heavy mineral concentrate.
2. Each pan concentrate was checked for gold content before removal from the goldpan.
3. The pan concentrate was allowed to dry on a coffee filter perched on top of a paper plate.
4. The coffee filter containing the dried pan concentrate was used as a funnel to shepherd the concentrate into a separating funnel containing methylene iodide. This procedure was carried out under a fume hood.
5. Minerals or rock fragments with a specific gravity greater than 3.32 sink to the bottom of the funnel and were harvested by releasing the pinch clip and letting the heavy fraction to pour onto filter paper.
6. When dry, the filter paper was used as a trough to get the >3.32 fraction into a labeled glass vial.

Examination of Heavy Mineral Fraction

The following equipment was used for examination of the heavy mineral fraction:

- binocular microscope
- longwave and shortwave ultraviolet light
- penlight and handheld microscope with micrometer (for measuring the size of individual grains).
- wine cork with needle stuck in it (the most used piece of equipment - for moving around mineral grains)
- fine-tipped tweezers
- variety of magnets
- dilute HCl
- dichroscope for determining pleochroism
- stainless steel pushpin (for scratch tests) and hardness points

Mineral identification was difficult due to the very small size of most mineral grains, which was, on average, less than 1.0 mm. Mineral identification was done using basic techniques (ultraviolet light,

magnification, magnetism, crystal form). A selected number of interesting heavy mineral grains were extracted and sent to Cannon Microprobe in Seattle for microprobe analysis (see Attachment A).

Project Results

Table 1 lists the percentages of the more common heavy minerals noted in the sample sets. Results from the microprobe study are given in Attachment A. Notes on the characteristics of each sample are given below:

Heavy Mineral Identification Notes
Dublin Gulch Project - 1997 Samples

B97201001
Very high yield of heavy minerals and rock fragments; many with a limonite coating. Original sample contained abundant organic material. Mainly magnetite, the rest of the sample is ilmenite, hematite/goethite replacing pyrite, creme, yellow to white sphene and rock fragments. Trace amounts of scheelite and a mineral grain consisting of galena/cerrusite and plumbojarosite were noted.

B97201002
Medium to high yield of heavy minerals. Original sample was mainly clay. Mainly magnetite, rock fragments, hematite/goethite replacing pyrite and ilmenite. Trace amounts of scheelite, untarnished pyrite and anatase.

B97201003
Very high yield of heavy minerals. At least half of the mineral grains are magnetite, the rest are ilmenite, rock fragments and yellowish green sphene crystals. Trace amounts of scheelite.

BLAIR #1
Medium yield of very small (<0.1mm) heavy mineral grains or rock fragments. Mainly limonite coated well rounded rock fragments, ilmenite, magnetite, sphene and garnet. No scheelite grains.

BLAIR #2
Very low yield of heavy mineral grains/rock fragments. Sample is mainly limonite coated rounded rock fragments, magnetite, ilmenite, hematite/goethite replacements after pyrite and garnet. Minor cassiterite (0.5%) and hematite. Trace amounts of zircon and anatase.

BLAIR #3
Medium yield. Mainly hematite/goethite replacements after pyrite, ilmenite, magnetite, rock fragments and sphene. Minor garnet and limonite. Trace cassiterite crystals, anatase, fresh, untarnished pyrite, pyroxene, hypersthene and one small grain scheelite.

MIKE #1
Very low yield of heavy mineral grains/rock fragments. Sample consists of limonite coated rock fragments, ilmenite and zircon (zircon is 3-10% of total sample). Minor magnetite and trace amounts of rutile and garnet.

MIKE #2
Low to medium yield of heavy mineral grains/rock fragments. Sample consists mainly of rock fragments, magnetite and zircon (1-3% of total sample). Trace anatase, epidote and one scheelite grain.

MIKE #3
Medium yield of heavy mineral grains/rock fragments. Sample consists mainly of rock fragments. Also, ilmenite (5-10%), hematite, magnetite, pyroxene and hematite/goethite replacements after hematite. Minor amounts of epidote and garnet. One cubic cleavage fragment of galena.

Mineralogy of Samples

Anatase TiO_2
Low-temperature polymorph of TiO_2. It occurs as striated blue/white/gray dipyramidal crystals with a bright adamantine lustre.

Cassiterite SnO_2
Euhedral brown/gray tetragonal crystals and also noted as "woodtin" which is a colloform variety of cassiterite. Woodtin forms in secondary oxidation zones.

Epidote $Ca_2(Al,Fe)_3Si_3O_{12}(OH)$
Epidote is a common trace mineral. It occurs as yellowish green to yellow anhedral to subhedral grains.

Garnet *Variety of compositions*
Garnet is one of the three most common heavy minerals found in the study. Garnets vary from light pink, tan, orange, red to almost clear. Garnets vary from being completely transparent to included/cloudy. They are euhedral, forming gem-like dodecahedral and trapezohedral crystals to anhedral colorless blebs, sometimes etched.

Goethite (mixture of limonite and hematite)
Most of the goethite observed forms euhedral cubes and pyritohedrons pseudomorphous after pyrite.

Hypersthene $(Mg,Fe)SiO_3$
Euhedral, glassy olive green to brown crystals of hypersthene were identified in trace amounts. The crystals showed characteristic spherical gas bubbles and inclusions of magnetite and ilmenite. The crystals often show rounded edges, as though they were slightly melted.

Ilmenite $FeTiO_3$
Ilmenite is one of the most common minerals noted in the study. It generally forms black, submetallic grains which show conchoidal fracture and a high lustre. Ilmenite grains sometimes display an alteration rim of leucoxene.

Leucoxene
Leucoxene was found as a creme-colored alteration product on ilmenite grains. Gleeson (1970) notes that much of the material he initially called leucoxene was identified, after XRF analysis, as very fine grained anatase or sphene.

Magnetite Fe_3O_4
Mainly octahedrons and massive forms.

Pyrite FeS_2
Most pyrite observed in the sample sets has oxidized to goethite. Fresh, lustrous, untarnished pyrite is rare.

Rutile TiO_2
Submetallic red-brown prismatic fragments, some showing elbow twins.

Sphene $CaTi(SiO_4)(O,OH,F)$
Euhedral sphene was easily identified in the samples as a common trace mineral. Sphene is in the form of pale yellow, green or brownish euhedral flattened crystals.

Staurolite $FeAl_4Si2O_{10}(OH)_2$
Staurolite is in the form of transparent, amber-colored broken fragments showing a blocky form and conchoidal fracture.

Zircon $Zr(SiO_4)$
Zircon is present in trace amounts in many samples. It generally forms colorless to pale brown, yellow or pink euhedral to spherical crystals of high relief. Most zircon fluoresces a bright orange-yellow under shortwave ultraviolet light.

Discussion

The most abundant heavy minerals in the Dublin Gulch samples are magnetite and ilmenite. Significant other minerals include hematite/goethite pseudomorphs after pyrite, sphene, zircon, and garnet. Trace amounts of scheelite, galena, staurolite, rutile, pyrite, hypersthene, cassiterite and anatase were noted in many of the samples.

The following Dublin Gulch samples contain scheelite:

Sample Number	Number of Scheelite Grains
B97201001	5-10
B97201002	4-5
B97201003	4-5
BLAIR #3	3
MIKE #2	1

Galena, or secondary weathering products derived from galena were observed in samples MIKE #3 and BLAIR #3.

Samples MIKE #1 and MIKE #2 contain greater than 1% zircon (3-10% for MIKE #1 and 1-3% for MIKE #2), which may indicate a nearby granitic source rock.

Sample BLAIR #3 contains trace amounts of euhedral cassiterite crystals, while sample BLAIR #2 contains "woodtin" cassiterite.

Gold was not observed in any of the samples.

Summary

Heavy minerals were extracted from a total of nine samples collected in 1997 for the Dublin Gulch project.

Magnetite and ilmenite are the most abundant heavy minerals in the study. Significant other minerals include hematite/goethite pseudomorphs after pyrite, hematite, sphene, zircon, and garnet. Trace amounts of epidote, rutile, anatase, cassiterite, and pyrite were observed. One cleavage fragment of galena was

noted in sample MIKE #3 and a cleavage fragment of galena accompanied by cerrusite and plumbojarosite was noted in sample B97201001. Trace amounts of scheelite were noted in samples B97201001, B97201002, B97201003, BLAIR #3 and MIKE #2.

Sample B97201001 is the most interesting sample; it contains trace amounts of galena and scheelite.

References

Gleeson, C.F., 1970, Heavy mineral studies in the Klondike area, Yukon Territory. Geological Survey of Canada, Bulletin 173, 63 p.

Note 1: Yukon Quaternary Geology, Volume 2, soon to be published by Exploration and Geological Services Division, Department of Indian and Northern Affairs, Whitehorse, will contain additional information on heavy mineral samples from the Dublin Gulch area.

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Whitehorse, Yukon

Table 1.

DUBLIN GULCH Project (1997 Samples)
Heavy Mineral Content

Sample Number	Yield	Mag	Grnt	Hem	Ilm	Zir	Sphene	Rk Frag	Trace Minerals
B97201001	H	40-60%	1-2%	10-20	15-25%	0.5%-1%	10-20%	10-20%	scheelite, anatase, galena
B97201002	M-H	60-70%	1-2%	5-10%	5-10%	0.5%	5-10%	10-20%	scheelite, anatase, pyrite
B97201003	H	50-60%		Tr	5-15%	Tr	10-20%	20-30%	scheelite, hypersthene
MIKE #1	L	1-2%	Tr		10-15%	3-10%		75-90%	rutile
MIKE #2	M	10-15%				1-3%		80-90%	scheelite, anatase, epidote
MIKE #3	M	1-3%		5-10%	5-10%	0.1%		50-80%	hypersthene, pyrite, galena
BLAIR #1	M	5-10%	1-2%	5-10%	10-20%	0.5%	2-5%	40-60%	pyrite, epidote
BLAIR #2	L	10-15%	1-2%	1%	10-20%	Tr		60-70%	cassiterite, anatase
BLAIR #3	M	10-15%	1%	20-40	15-25%	Tr	5%	20-30%	anatase, cassiterite, hypersthene

Yield of heavy minerals (estimate only): High (H) = 200 milligrams or greater, Medium (M) = 50 to 200 milligrams, Low (L) = less than 50 milligrams recovery
Mag: Magnetite
Grnt: Garn Hem: Hematite
Zir: Zircon Ilm: Ilmenite
Rk Frag: Rock Fragments

Trace Minerals: less than 0.5% of sample

Attachment "A"

Cannon Microprobe

ELECTRON MICROPROBE ANALYSIS
OF MINERAL UNKNOWNS

Walton Geological Services
55 Boswell Crescent
Whitehorse, Yukon
CANADA Y1A 4T2

OPERATING CONDITIONS AND INSTRUMENT USED
ARL SEMQ electron Microprobe with six wavelength dispersive x-ray spectrometers and energy dispersive x-ray spectrometer and television rate backscattered electron detector operated at 25 KV and 50 nA beam current.

Mike 3
11 = galena
12 = iron aluminum silicate with 2% CaO
13 = CaMgAl silicate with tr FeO Tiny fragment, remainder lost (plucked from mount during polishing)
14 = calcium aluminum iron silicate, (grossular?)

B97201003
15 = anatase
16 = cerussite

Blair #3
17 = cassiterite
18 = anatase
19 = anatase
20 = cassiterite
21 = anatase
22 = anatase

B97201001
23 = intergrowth of galena, cerussite, and plumbojarosite

B97201002
24 = anatase