MINERALOGICAL ANALYSIS OF

FIVE ORE SAMPLES

GETTY COPPER
CANADA

KM1196

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August 14, 2001

Mr. John Lepinski
President
Getty Copper
1000 Austin Ave
Coquitlam, B.C. V3K 3P3

Dear Mr. Lepinski:

Re: Mineralogical Analysis of Five Ore Samples – KM1196

We have now completed the mineralogical analysis that was requested on 5 ore samples submitted to the laboratory on July 23, 2001. The principal objective of this work was to identify and quantify the various copper minerals present in the ore samples.* This objective was to be accomplished using two established procedures: Copper speciation chemical analysis and mineralogical analysis.** As you requested, a formal report detailing our findings has not been prepared. The following notes, however, provide a brief synopsis of the results achieved in this limited analysis.

The samples, which were received as broken drill core and outcrop rock, were crushed to 2mm in preparation for chemical and mineralogical analysis. A representative subsample was removed from each of the crushed ore samples and pulverized prior to chemical analysis to estimate various copper mineral species present in the samples. The results of the chemical analyses are shown below in Table 1.

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* The program objectives were defined by Dr. Vic Preto during a meeting in Kamloops on July 16, 2001.

** Photo images are attached to this letter which displays the mineral assemblages in two of the ore samples.

TABLE 1
COPPER SPECIATION ASSAYS

Identification	Mass	Assay - Percent			
	kg	$Cu_{(t)}$	$Cu_{(ox)}$	$Cu_{(CN)}$	$Cu_{(res)}$
GN-97-58 Min 1	4.2	0.36	0.233	0.013	0.092
GN-97-58 Min 2	6.9	0.35	0.188	0.017	0.112
GN-97-64 Min 1	7.4	0.38	0.204	0.017	0.125
GN-97-64 Min 2	8.1	1.28	0.983	0.073	0.113
Oxt Min 1	2.1	1.17	1.04	0.013	0.055

Notes: a) Total copper – Cu (t) was determined by using peroxide fusion. Copper oxides – Cu (ox) were determined using dilute sulphuric acid leach procedure. Cyanide soluble copper was determined on the sulphuric acid leach residue and finally the remaining residual copper – Cu(res) was determined by digesting the cyanide leach residue with aqua regia.
b) See Appendix I, Table I-1 for additional assay data.

Based on the chemical analyses, shown in Table 1, the distributions of copper by mineral species were estimated for each of the ore samples. The results of these calculations are reveal that, with the exception of the Oxt Min 1 sample, about 60 percent of the copper is present as oxide copper mineral: Most of the remaining copper is present as chalcopyrite. Chalcocite, and other unquantified copper mineral species, possibly silicates, comprise the remaining copper. In contrast, about 90 percent of the copper present in the Oxt Min 1 sample is present as an oxidized copper mineral. The distributions of copper by mineral species are presented below in Table 2.

TABLE 2
DISTRIBUTION OF COPPER BY MINERAL SPECIES
(Estimated Based on Speciation Analysis)

Identification	Copper Distribution - Percent			
	Cu(Cp)	Cu(Ch)	Cu(Ox)	Cu(Other)
GN-97-58 Min 1	25	4	65	6
GN-97-58 Min 2	32	5	53	10
GN-97-64 Min 1	32	5	54	9
GN-97-64 Min 2	9	6	76	9
Oxt Min 1	5	1	89	5

Notes: a) Standard abbreviations: Cp-chalcopyrite and bornite, Ch-chalcocite, covellite, native copper, Ox-malachite, azurite, Other-difference between the total copper assayed and the summation of the speciation analysis.

In preparation for mineralogical analysis a representative portion of the crushed ore samples were ground in a laboratory rod mill for two minutes. To determine the relative proportion of copper mineral species in the samples, polished sections of the mill discharge samples were prepared and subjected to standard point counting and gross counting procedures. The results of these mineralogical speciation analyses are summarized below in Table 3.

TABLE 3
COPPER MINERAL SPECIATION ASSAYS

Identification	Copper Mineral Distribution – Percent by Weight				
	Cp	Bn	Ch	Ox	NCu
GN-97-58 Min 1	29	n/o	1	70	n/o
GN-97-58 Min 2	27	n/o	n/o	73	n/o
GN-97-64 Min 1	20	n/o	n/o	80	n/o
GN-97-64 Min 2	10	n/o	1	83	6
Oxt Min 1	10	2	1	86	n/o

Notes: a) Standard abbreviations: Cp-chalcopyrite, Bn-bornite, Ch-chalcocite, Ox-malachite, azurite, NCu-native copper.
b) N/O – not observed.
c) See Appendix I, Tables I-2 to I-6 for additional mineralogical speciation data and liberation estimates.

The mineralogical assessment of the ore samples confirms the speciation results determined from chemical analysis. Again oxide copper minerals account for the bulk of the copper present in the samples. It is interesting to note that significant metallic or native copper values were evident in the GN-97-64 Min 2 ore sample.

If you have any question regarding the results of this limited analysis please feel free to contact us at your convenience. Thank you for allowing us the opportunity to participate in your mineralogical program.

Yours truly,

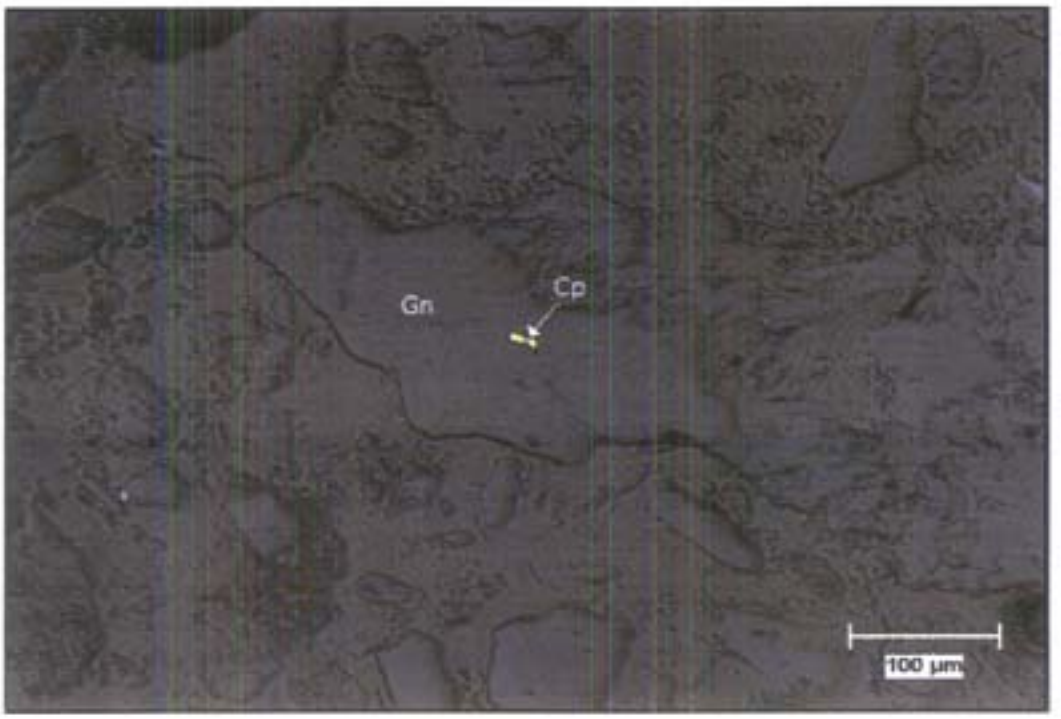
Lisa Jamrich, P. Geol
Manager - Mineralogy

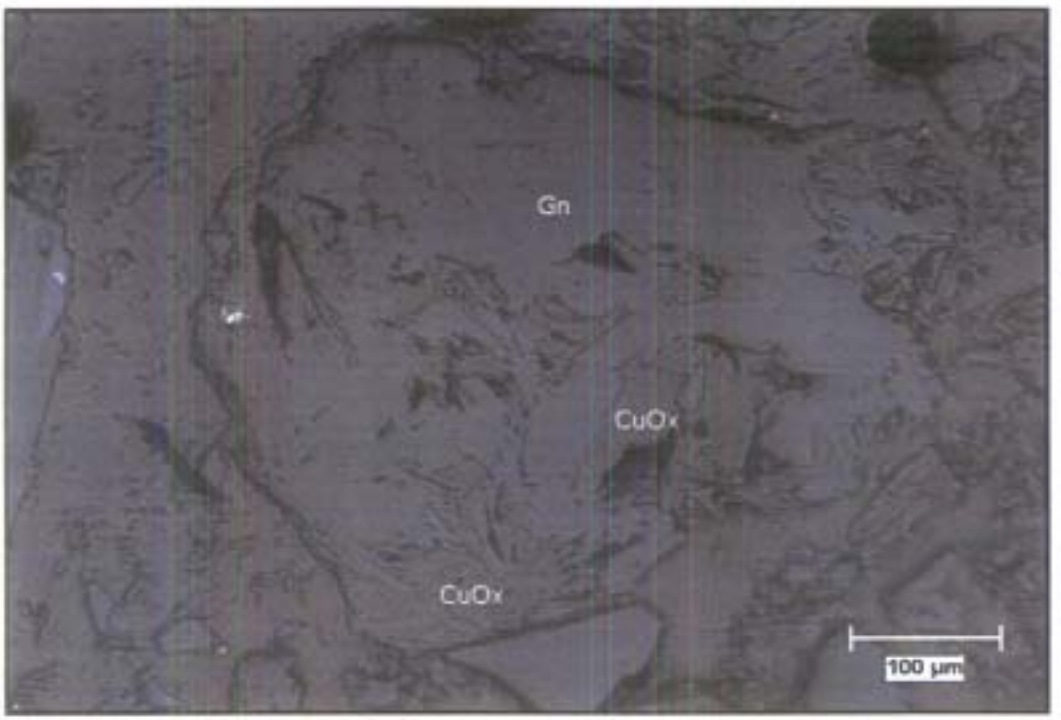
T.H. Lafreniere, A.Sc.T.
President

PHOTO IMAGE 1

GETTY COPPER – GN-97-64 MIN2

Unsized Fraction



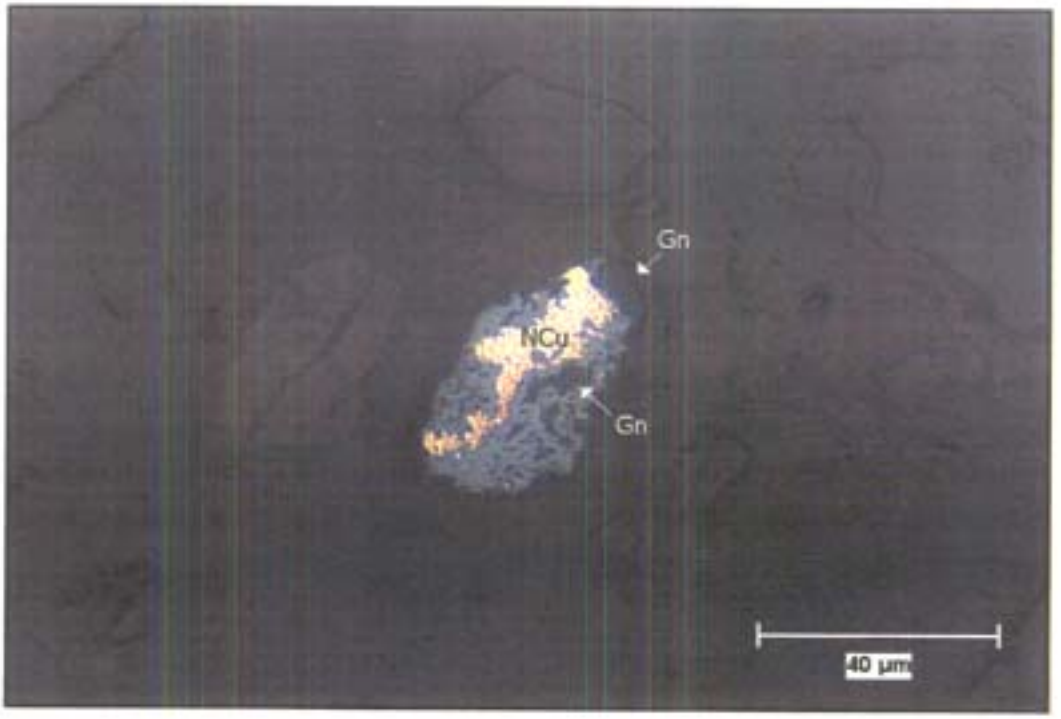


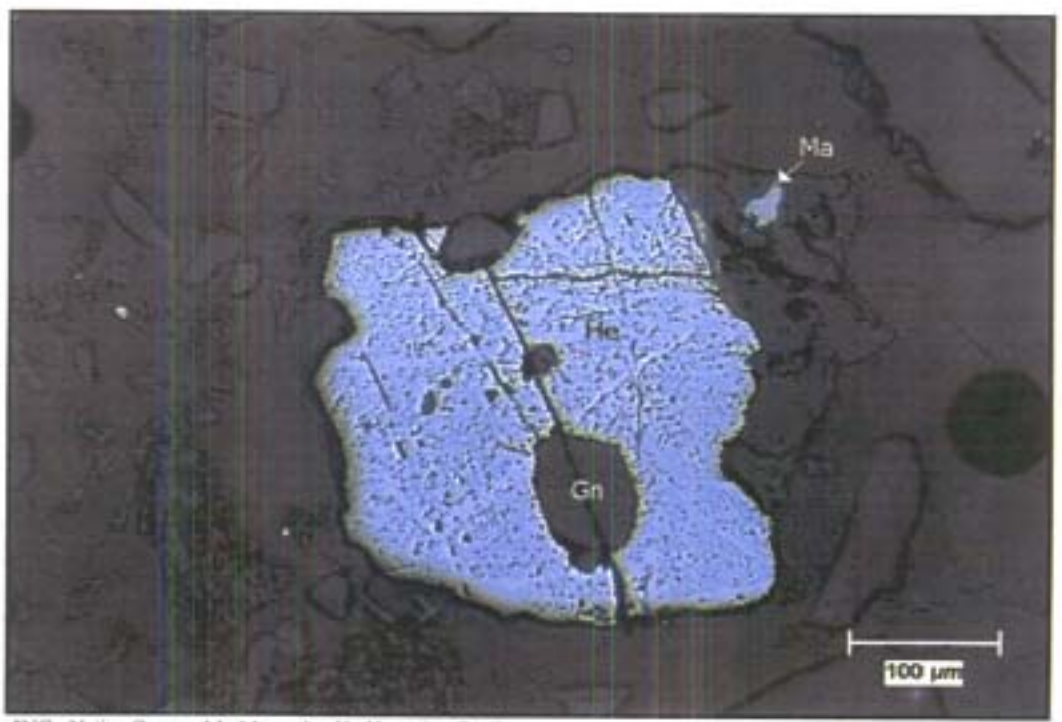
*Cp-Chalcopyrite, CuOx-Copper Oxide, Gn-Gangue

PHOTO IMAGE 2

GETTY COPPER – GN-97-64 MIN2

Unsized Fraction





*NCu-Native Copper, Ma-Magnetite, He-Hematite, Gn-Gangue

APPENDIX I KM1196

SPECIAL ASSAY DATA

INDEX

TABLE I-1A
COMPOSITION OF THE HEAD SAMPLES

Identification	Replicate	Total Copper	Copper Speciation		
			H_2SO_4	NaCN	Aqua Regia
GN-97-58 Min 1	I	0.359	0.233	0.013	0.092
	II	0.363	-	-	-
GN-97-58 Min 2	I	0.341	0.188	0.017	0.112
	II	0.351	-	-	-
GN-97-64 Min 1	I	0.373	0.204	0.017	0.125
	II	0.397	-	-	-
GN-97-64 Min 2	I	1.27	0.983	0.073	0.113
	II	1.28	-	-	-
Oxt Min 1	I	1.16	1.04	0.013	0.051
	II	1.18	-	-	-

TABLE I-1B
SPECIAL HEAD SAMPLE REASSAYS

Identification	Replicate	Total Copper	Copper Speciation		
			H_2SO_4	NaCN	Aqua Regia
GN-97-58 Min 1	I	0.39	-	-	-
GN-97-58 Min 2	I	0.36	-	-	-
	II	0.35	0.178	0.026	0.132
	III	0.35	0.177	0.026	0.135
GN-97-64 Min 1	I	0.40	-	-	-
GN-97-64 Min 2	I	1.23	-	-	-
Oxt Min 1	I	1.17	-	-	-

Notes a) The chemical speciation analysis was performed using the following procedure:

1) Total copper was determined by digesting the pulverized samples using fusion techniques.
2) To assess oxide copper content the samples were leached using diluted sulphuric acid solution.
3) Chalcocite group minerals were determined by leaching the sulphuric acid leach residue with sodium cyanide solution.
4) Finally the cyanide leach residue was digested in aqua regia to estimate the copper present as chalcopyrite and bornite.

TABLE 2A

SPECIATION ANALYSIS OF THE GN 97-58 MIN 1 COMPOSITE - KM1196

Sample: GN 97-58 MIN 1, Unsized

Magnification: 200-400X

Mineral	Liberated	Copper Sulphides Units Locked in Binary with:							Ternary	Total	Copper Mineral	
	Units	CuOx	Cp	Bn	Ch	Py	FeOx	Gn	Units	Units	Wt Units	% Wt
Copper Oxides	0		0	0	0	0	0	93	0	93	363	70
Chalcopyrite	0	0		0	0	0	0	35	0	35	147	29
Bornite	0	0	0		0	0	0	0	0	0	0	0
Chalcocite	0	0	0	0		0	0	1	0	1	6	1

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, Bn-Bornite, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

2) Most Cp-Gn binaries are small pieces of Cp in large piece of Gn. Cp about 3-5% of total mineral.

3) Very small amount of pyrite and sphalerite seen (<<1%)

TABLE 2B

LIBERATION ANALYSIS OF THE GN 97-58 MIN 1 COMPOSITE - KM1196

Sample: GN 97-58 MIN 1, Unsized

Mineral	Liberated	Percent Copper Sulphides Locked in Binary with:							Ternary	Total
	%	CuOx	Cp	Bn	Ch	Py	FeOx	Gn	%	%
Copper Oxides	<1		<1	<1	<1	<1	<1	100	<1	100
Chalcopyrite	<1	<1		<1	<1	<1	<1	100	<1	100
Bornite	<1	<1	<1		<1	<1	<1	<1	<1	0
Chalcocite	<1	<1	<1	<1		<1	<1	100	<1	100

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, Bn-Bornite, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

TABLE 3A

SPECIATION ANALYSIS OF THE GN 97-58 MIN 2 COMPOSITE - KM1196

Sample: GN 97-58 MIN 2, Unsized

Magnification: 200-400X

Mineral	Liberated	Copper Sulphides Units Locked in Binary with:							Ternary	Total	Copper Mineral	
	Units	CuOx	Cp	Bn	Ch	Py	FeOx	Gn	Units	Units	Wt Units	% Wt
Copper Oxides	2		0	0	0	0	0	76	0	78	304	73
Chalcopyrite	3	0		0	0	0	0	24	0	27	113	27
Bornite	0	0	0		0	0	0	0	0	0	0	0
Chalcocite	0	0	0	0		0	0	0	0	0	0	0

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, Bn-Bornite, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

2) Most Cp-Gn binaries are small pieces of Cp in large piece of Gn. Cp about 3-5% of total mineral.

3) Small amount of pyrite seen, but more than in GN-97-58-MIN 1.

4) Liberated CuOx was approximately 106µm size and liberated Cp was C6 size.

TABLE 3B

LIBERATION ANALYSIS OF THE GN 97-58 MIN 2 COMPOSITE - KM1196

Sample: GN 97-58 MIN 2, Unsized

Mineral	Liberated	Percent Copper Sulphides Locked in Binary with:							Ternary	Total
	%	CuOx	Cp	Bn	Ch	Py	FeOx	Gn	%	%
Copper Oxides	3		<1	<1	<1	<1	<1	97	<1	100
Chalcopyrite	11	<1		<1	<1	<1	<1	89	<1	100
Bornite	<1	<1	<1		<1	<1	<1	<1	<1	0
Chalcocite	<1	<1	<1	<1		<1	<1	<1	<1	0

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, Bn-Bornite, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

TABLE 4A

SPECIATION ANALYSIS OF THE GN 97-64 MIN 1 COMPOSITE - KM1196

Sample: GN 97-64 MIN 1, Unsized

Magnification: 200-400X

Mineral	Liberated	Copper Sulphides Units Locked in Binary with:							Ternary	Total	Copper Mineral	
	Units	CuOx	Cp	Bn	Ch	Py	FeOx	Gn	Units	Units	Wt Units	% Wt
Copper Oxides	9		0	0	0	0	0	80	0	89	347	80
Chalcopyrite	1	0		0	0	0	0	20	0	21	88	20
Bornite	0	0	0		0	0	0	0	0	0	0	0
Chalcocite	0	0	0	0		0	0	0	0	0	0	0

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, Bn-Bornite, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

2) Most Cp-Gn binaries are small pieces of Cp in large piece of Gn. Cp about 2-4% of total mineral.

3) Small amount of pyrite seen (<1%) and some sphalerite (<<1%)

4) Liberated CuOx was approximately 106µm size and liberated Cp was C6 size.

TABLE 4B

LIBERATION ANALYSIS OF THE GN 97-64 MIN 1 COMPOSITE - KM1196

Sample: GN 97-64 MIN 1, Unsized

Mineral	Liberated	Percent Copper Sulphides Locked in Binary with:							Ternary	Total
	%	CuOx	Cp	Bn	Ch	Py	FeOx	Gn	%	%
Copper Oxides	10		<1	<1	<1	<1	<1	90	<1	100
Chalcopyrite	5	<1		<1	<1	<1	<1	95	<1	100
Bornite	<1	<1	<1		<1	<1	<1	<1	<1	0
Chalcocite	<1	<1	<1	<1		<1	<1	<1	<1	0

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, Bn-Bornite, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

TABLE 5A

SPECIATION ANALYSIS OF THE GN 97-64 MIN 2 COMPOSITE - KM1196

Sample: GN 97-64 MIN 2, Unsized

Magnification: 200-400X

Mineral	Liberated	Copper Sulphides Units Locked in Binary with:							Ternary	Total	Copper Mineral	
	Units	CuOx	Cp	Ncu	Ncu	Py	FeOx	Gn	Units	Units	Wt Units	% Wt
Copper Oxides	3		0	0	0	0	0	88	0	91	355	83
Chalcopyrite	1	0		0	0	0	0	9	0	10	42	10
Native Copper	2	0	0		0	0	0	1	0	3	27	6
Chalcocite	0	0	0	0		0	0	0	1	1	6	1

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, NCu-Native Copper, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

2) Most Cp-Gn binaries are small pieces of Cp in large piece of Gn. Cp about 3-5% of total mineral.

3) Small amount of pyrite (<1%)

4) Chalcocite ternary was Ch rimming Py associated with Gn.

TABLE 5B

LIBERATION ANALYSIS OF THE GN 97-64 MIN 2 COMPOSITE - KM1196

Sample: GN 97-64 MIN 2, Unsized

Mineral	Liberated	Percent Copper Sulphides Locked in Binary with:							Ternary	Total
	%	CuOx	Cp	Ncu	Ncu	Py	FeOx	Gn	%	%
Copper Oxides	3		<1	<1	<1	<1	<1	97	<1	100
Chalcopyrite	10	<1		<1	<1	<1	<1	90	<1	100
Native Copper	67	<1	<1		<1	<1	<1	33	<1	100
Chalcocite	<1	<1	<1	<1		<1	<1	<1	100	100

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, NCu-Native Copper, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

TABLE 6A

SPECIATION ANALYSIS OF THE OXT MIN 1 COMPOSITE - KM1196

Sample: OXT MIN 1, Unsized

Magnification: 200-400X

Mineral	Liberated	Copper Sulphides Units Locked in Binary with:							Ternary	Total	Copper Mineral	
	Units	CuOx	Cp	Bn	Ch	Py	FeOx	Gn	Units	Units	Wt Units	% Wt
Copper Oxides	0		0	0	0	0	109	0	0	109	425	86
Chalcopyrite	0	0		0	0	0	11	0	1	12	50	10
Bornite	0	0	0		0	0	0	2	0	2	10	2
Chalcocite	0	0	0	0		0	0	1	0	1	6	1

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, Bn-Bornite, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

2) Most Cp-Gn binaries are small pieces of Cp in large piece of Gn. Cp about 2-4% of total mineral.

3) Bn-Gn and Ch-Gn binaries are small pieces of CuS in large piece of Gn. Cp about 2-4% of total mineral.

4) Very small amount of pyrite seen (<<1%)

TABLE 6B

LIBERATION ANALYSIS OF THE OXT MIN 1 COMPOSITE - KM1196

Sample: OXT MIN 1, Unsized

Mineral	Liberated	Percent Copper Sulphides Locked in Binary with:							Ternary	Total
	%	CuOx	Cp	Bn	Ch	Py	FeOx	Gn	%	%
Copper Oxides	<1		<1	<1	<1	<1	100	<1	<1	100
Chalcopyrite	<1	<1		<1	<1	<1	92	<1	8	100
Bornite	<1	<1	<1		<1	<1	<1	100	<1	100
Chalcocite	<1	<1	<1	<1		<1	<1	100	<1	100

Notes 1) CuOx-Copper Oxides, Cp-Chalcopyrite, Bn-Bornite, Ch-Chalcocite, Py-Pyrite, FeOx-Goethite, Hematite and Magnetite, Gn-Gangue.

SAMPLE: GN97-58(PS-2). Drill Core.

1. HAND SPECIMEN DESCRIPTION

Mottled greys with pinkish specks. Fine to medium grained crowded feldspar porphyry. Tabular zoned feldspars to 2mm in length. Approximately 3 to 5% fine interstitial-groundmass K.feldspar from staining. Altered mafics included dark biotite. Fine linear, strongly oxidized fracture veinlets commonly at high angles to core-axis. Veinlets density is 1 per 2 to 3cm. Local malachite staining. Non magnetic, no carbonate reaction to strong HCl.

2. THIN SECTION DESCRIPTION

a) Mineralogy: Modal (estimated %)

Quartz		15%	
Plagioclase (An_{32-40})		60	weak-mod., white mica/clay alteration
K.feldspar		5	as above, generally weak
Biotite		9	
Hornblende (Altered)		4	Chlorite, local 2nd biot, minor carbonate alt.
Carbonate (calcite)		Tr	
Epidote	Tr		
Oxides (non vein)		2	Hematite/specularite >> goethite
Veinlets	5		Mainly goethite, sericite some quartz, Tr. malachite

b) Comments

This is a crowded feldspar porphyry with tabula,r commonly zoned plagioclase phenocrysts 0.5 to 2mm in length. These have andesine cores (An_{35-40}) and more sodic rims. White mica/clay alteration is generally weak away from vein areas and features patchy, very fine disseminated, laths and specks.

The rest of the mineralogy is hypidiomorphic-granular, fine to locally medium grained. Tabular greenish biotite displays weak chlorite alteration and often occurs in clusters with more altered green hornblende with similar grain size. The latter displays variable patchy alteration to chlorite, rare secondary fine biotite and extremely fine grained carbonate trails.

Quartz forms fine grained interstitial mosaics with patchy, weak sericite/clay altered K.feldspar and fine anhedral carbonate up to 0.7mm (rare).

Outside of veinlet areas disseminated extremely fine to fine grained oxides are often concentrated within mafic mineral clusters. Anhedral grains of specularite/hematite up to 0.4mm are more abundant that finer orange brown goethite.

1 to 2mm wide, subparallel, fairly linear veinlets are dominated by extremely fine grained laths of sericite enveloping small quartz patches/lenses and abundant oxides. Oxidized core areas to veinlets feature masses of lamellar-colloform, orange-brown goethite, minor limonite, malachite.

The wallrocks to the veinlets feature stronger pervasive sericite (white mica/clay) alteration of feldspars and very fine irregular sericite fracture veinlets. Disseminated fine oxides are mainly goethite, limonite. Only traces of extremely fine carbonate were noted in the wallrocks.

SAMPLE: GN97-64(PS-1). Drill Core.

1. HAND SPECIMEN DESCRIPTION

Mottled medium grained, fairly equigranular, plagioclase rich quartz-diorite. No K.feldspar is apparent from staining. Altered mafic minerals mainly dark biotite? Non magnetic and no carbonate reaction to strong HCl. Numerous fine oxidized fractures and veinlets at variable angles to core-axis. These locally have fine quartz druse, goethite and widespread malachite.

2. THIN SECTION DESCRIPTIONS

Polished thin sections were cut from each of the two pieces of core PS-1A and PS-1B. PS-1A contains a higher density of fine oxidized veinlets, many of which are subparallel.

Sample PS-1A

a) Mineralogy: Modal (estimated %)

Quartz	20%	
Plagioclase (An_{35-40})	58	variable weak to strong white mica/clay alteration strong near veinlets.
K.feldspar	Tr-1	as above
Altered Biotite, Hornblende	15	occur together, variable alteration to chlorite, 2nd biotite, some actinolite
Epidote	Tr	
Carbonate (calcite)	Tr	
Oxides	2	goethite, minor limonite
Veinlets	5	quartz + fine oxides, sericitic selvedges. (Malachite Tr-1%)

b) Comments

This sample is quite oxidized along fractures and veinlets. It is predominantly medium grained, hypidiomorphic-granular, plagioclase rich with a mineral composition transitional between quartz-diorite and tonalite.

Plagioclase dominates with tabular forms up to 2.5mm long. These display patchy pervasive (disseminated) white mica/clay alteration which ranges from weak to quite strong with proximity to veinlets. Some of the larger feldspars are clearly fractured.

Altered biotite and hornblende form patches with up to 2mm grain size however alteration often makes it difficult to distinguish the two minerals. Chlorite alteration is most common and patchy followed by some fine secondary biotite and possible actinolite. Clusters of fine oxides are common in these areas mainly crystalline goethite and some hematite.

R. C. Wells, P.Geo., FGAC. Kamloops Geological Services Ltd.

Fine interstitial quartz mosaics display variable recrystallization and local strain. Minor fine K.feldspar is locally apparent and sericite altered.

Veinlets are generally linear from 0.1 to 2mm wide and frequently feature fine grained often lensy quartz aggregates. These may be multi-phase. Central fractures are oxidized with fine goethite and, or limonite often with some dusty malachite. Peripheral areas to veins and wallrock feldspars are pervasively sericitized. Mafic minerals are strongly chloritized locally with secondary biotite.

Very little carbonate was observed occurring as extremely fine grains mainly in altered plagioclase and some mafics (altered hornblende?).

Sample PS-1B

Petrographically this sample is quite similar to the previous. The main differences lie in the weaker alteration and lower vein density in PS-1B. White mica/clay alteration in plagioclase is generally weak. Some isolated feldspar however is strongly sericitized. Quartz veinlets are quite narrow often less than 0.3mm. Many are as 'en-echelon gashes'. 0.02 to 0.05 sericite veinlets locally occur in the same areas. A few of the quartz veinlets have narrow sericitic selvedges, most especially the very narrow do not.

Fine clusters of crystalline orange-brown goethite are common in altered mafic minerals often forming linear trails. Specularite/hematite often pseudomorphs precursor magnetite or sulfides with up to 0.6mm grain size. Carbonate was not observed in this sample other than trace malachite in some larger veinlets.

SAMPLE: GN97-64(PS-2). Drill Core.

1. HAND SPECIMEN DESCRIPTION

Moderate to strongly oxidized, crowded feldspar porphyry with tabular plagioclase phenocrysts commonly 1 to 3mm long, local zoning. Some feldspars are greenish through sericite alteration? Interstitial finer grained quartz, no K.feldspar indicated through staining. One centimetre wide zone of quartz veining and sericite and features stronger oxidation with malachite staining-polished thin section PS-2A. Another area (PS-2B) has subparallel quartz veinlets and zones 50^0 to core-axis. These have narrow sericitic envelopes (some chlorite). Sample PS-2A gave a spotty reaction to strong HCl in quartz vein and phenocryst areas. Both samples were non-magnetic.

2. THIN SECTION DESCRIPTIONS

Sample PS-2A

a) Mineralogy: Modal (estimated %)

Host Rock (85%)

Quartz	15%	
Altered Plagioclase (some K.feldspar?)	56	strong white mica/clay
Chloritized Mafics (Biot + Hbl?)	3-4	strong chlorite and some white mica (sericite) carbonate
Carbonate (calcite)	1	
Disseminated oxides mainly goethite	2	minor limonite, hematite
Zeolite	1-2	mainly veinlets

Quartz Veins (15%)

Quartz	8
Sericite/clay	4-5
Goethite	1-2
Zeolite	Tr-1

*Note: Malachite occurs along open fracture (coatings) in quartz veinlets and veins.

b) Comments

This crowded feldspar porphyry sample features stronger quartz veining, sericite-clay alteration and malachite staining than the other core samples.

Tabular plagioclase phenocrysts 0.5 to 3mm in length dominate and are generally strongly altered to white mica (sericite), clay and local fine carbonate. Original textures are often masked by this alteration, some compositional zoning is indicated by pseudomorphing.

Interstitial quartz mosaics are fine grained commonly with weakly serrated grain boundaries. One millimetre size mafic mineral grains are strongly chloritized with local fine sericite, carbonate and oxides (goethite). Original biotite appears to be more abundant than hornblende.

Extremely narrow <0.1mm and irregular veinlets of zeolite, probably laumontite occur throughout. Approximately 15% of this sample is a 1cm wide zone of quartz veining with sericite (clay) envelopes and strong oxidation. The quartz has variable 0.1 to 3mm grain size, often forming lensy aggregates. Within these areas crystalline orange-brown goethite grains 0.02 to 0.4mm form clusters. The quartz is enveloped by mats of fine sericite and remnant sericite/clay altered plagioclase with local carbonate (extremely fine). Fine veinlets of zeolite (laumontite) post-date the quartz. Some very fine disseminated zeolite occurs in the altered wallrocks (late feldspar replacement?). Mafic minerals proximal to quartz veins are intensely chloritized and locally sericitized.

Sample PS-2b

This section is very similar to PS-2A and is clearly a quartz veined crowded feldspar porphyry. Quartz veining and flooding accounts for 20 to 25% of this sample.

Angular areas (brecciated!) of feldspar porphyry are pervasively sericitized and clay altered, in particular the plagioclase (some K.feldspar?). Remnant twinning locally allows composition determination for the plagioclase giving An_{33-43} (core areas). Extremely fine carbonate (calcite) is rare to absent. Both altered biotite and hornblende are evident and commonly feature orientated rods of oxides along clevages. Chlorite alteration of biotite is generally weak, carbonate (calcite) is absent.

The quartz areas are very similar to PS-2A with disseminated goethite and strong sericite (clay) envelopes. Much of the coarser quartz is fractured with late, crosse-cutting, fine zeolite (laumontite) veinlets. Some coarser zeolite of the same type locally fills small cavities. Total zeolite content in this sample is less than 2%.

The carbonate (calcite) is less than 1%, occurring mainly as extremely fine grains in white mica/clay altered plagioclase. No calcite was observed within vein quartz areas. In hand specimen malachite was observed in vuggy areas within quartz veins.

OXT SAMPLES. Surface outcrop.

Three hand samples were submitted from an oxidized and copper mineralized surface outcrop. These were hand size and fairly massive allowing 50x50mm. polished thin sections. One polished section was prepared from each hand specimen.

1. HAND SPECIMEN DESCRIPTIONS

OXT-1

Mottled greys, greens local pink, medium grained, fairly equigranular (2 to 4mm) quartz diorite to granodiorite. Plagioclase dominates, approximately 3% fine K.feldspar (interstitial) from staining. Chlorite altered mafic minerals including biotite. Numerous oxidized fine fractures and veinlets at variable angles, 1 to 3 per cm^2. These locally contain goethite and malachite. No carbonate reaction to strong HCL.

OXT-2

Very similar to OXT-1, higher density of fine veinlets 2-3 per cm^2. Non magnetic, non carbonated.

OXT-3

As above. Subparallel fine veinlets with malachite, 2 to 3 per cm^2. Some of these are drusy with zeolite? Non magnetic, non carbonated.

2. THIN SECTION DESCRIPTIONS

a) Mineralogy: Modal (estimated %)

OXT-1

Quartz	15%	
Plagioclase (An_{33-38})	65	weak -mod. white mica/clay altered
K.feldspar	5	as above
Biotite	8	
Hornblende	3	
Sphene	Tr	
Veinlets	2	includes 1-2% fine zeolite (laumontite) and <1% chlorite, fine oxides $\pm$ quartz

b) Comments

Sample OXT-1 is predominantly medium grained, hypidiomorphic-granular with quartz-diorite composition.

Tabular plagioclase laths up to 4mm long are weak to moderate altered to white mica and clay. Areas with twinning yield andesine compositions. An_{33-38}. K.feldspar is barely recognizable and interstitial (fine grained) displaying similar alteration. Quartz is also fine grained and interstitial forming small patches, often with serrated grain boundaries (variable recrystallization).

Green-brown biotite has vague tabular form, generally 1 to 2mm grain size with weak chlorite alteration. Locally these grains are dusty with fine oxides. Hornblende occurs as similar size, more ragged and chlorite altered grains.

Disseminated fine to extremely fine grained oxides occur throughout but are notably concentrated with mafic minerals. Specularite (hematite) grains are generally coarser up to 0.4mm and appear to locally pseudomorph precursor magnetite. Clusters of finer oxides include fairly abundant orange-brown goethite and limonite.

A variety of fine veinlets generally less than 0.1mm wide cross-cut the silicate minerals. Early veinlets which are often extremely narrow (<0.06mm) are often chloritic with fine oxides and local quartz. These do not appear to have alteration envelopes. Later veinlets with fine zeolite (laumontite) are fairly abundant, up to 0.1mm wide and at a variety of angles. These are penetrative and locally have associated fine limonite, goethite and malachite.

No carbonate was observed in this sample.

Sample OXT-2 has similar mineralogy to)XT-1. Biotite is more abundant at 12% and chlorite alteration is stronger. Relict amphibole grains up to 3mm have marked concentrations of opaques up to 0.4mm, mainly specularite with finer goethite-limonite? Specularite pseudomorphs after magnetite are again evident.

Early anastomosing quartz veinlets up to 1mm wide may have local weak chloritic selvedges with fine oxides (rare sericite). These and the host rocks are cut by networks of fine <0.2mm zeolite veinlets (laumontite). Locally these follow central fractures in earlier quartz or chlorite veinlets. Open fractures contain some fine malachite. No carbonate (calcite) was observed in this sample.

Sample OXT-3 is very similar to the two previous samples. Much of the feldspar displays stronger clay/white mica alteration (or weathering). K.feldspar can only be distinguished by staining. Fine veinlets are better developed in this sample. Early quartz veins 0.1 to 1mm wide are often refractured-brecciated and do not exhibit any noticeable wallrock alteration other than local chlorite and fine oxides. Later penetrative zeolite (laumontite) veinlets are up to 0.4mm wide, clearly open-space filling. Minor amounts of malachite are associated with both vein sets. No carbonate (calcite) was observed in this sample.

APPENDIX B

ANALYTICAL DATA
ICP Certificate AK2001-284

30-Aug-01

ECO-TECH LABORATORIES LTD.
10041 Dallas Drive
KAMLOOPS, B.C.
V2C 6T4

Phone: 250-573-5700
Fax : 250-573-4557

ICP CERTIFICATE OF ANALYSIS AK 2001-284

KAMLOOPS GEOLOGICAL SERVICES LTD.
910 HEATHERTON COURT
KAMLOOPS, B.C.
V1S 1P5

ATTENTION: RON WELLS

No. of samples received: 9
Sample type: Rock
Project #: GC 2001
Shipment #: None Given
Samples submitted by: R. Wells

Values in ppm unless otherwise reported

Et #.	Tag #	Ag	Al %	As	Ba	Bi	Ca %	Cd	Co	Cr	Cu	Fe %	La	Mg %	Mn	Mo	Na %	Ni	P	Pb	Sb	Sn	Sr	Ti %	U	V	W	Y	Zn
1	58 PS-1	<0.2	2.21	10	505	<5	0.78	<1	22	156	9860	2.57	<10	1.42	218	8	0.07	23	390	14	10	20	63	0.12	<10	99	<10	7	45
2	58 PS-2	<0.2	1.78	25	115	<5	0.94	<1	37	142	2896	3.19	<10	1.29	303	8	0.06	20	800	12	15	20	69	0.17	<10	113	<10	<1	53
3	64 PS-1A	<0.2	2.14	15	2445	<5	0.39	<1	14	102	8565	1.94	<10	1.43	241	<1	0.03	19	150	12	<5	20	39	0.03	10	62	<10	6	42
4	64 PS-1B	<0.2	2.56	15	2225	<5	0.78	<1	22	175	8647	2.47	<10	1.68	282	6	0.10	29	390	14	<5	20	52	0.15	<10	95	<10	11	41
5	64 PS-2A	<0.2	2.25	10	165	<5	0.33	<1	11	180	>10000	1.89	<10	1.40	275	8	0.03	20	*	12	10	20	108	<0.01	<10	43	<10	<1	37
6	64 PS-2B	<0.2	2.12	10	1445	<5	0.47	<1	13	80	>10000	2.10	10	1.31	263	6	0.03	21	370	8	5	<20	153	0.01	<10	62	<10	2	40
7	OXT-1	<0.2	1.58	20	40	<5	0.41	<1	16	59	>10000	1.80	<10	1.42	440	6	0.03	19	440	10	10	<20	15	0.09	<10	84	<10	14	68
8	OXT-2	<0.2	1.93	15	45	<5	0.73	<1	21	70	9690	2.47	<10	1.59	376	3	0.03	24	520	12	5	20	20	0.18	<10	111	<10	14	57
9	OXT-3	<0.2	1.69	10	40	<5	0.51	<1	16	95	>10000	1.69	<10	1.33	349	2	0.04	19	440	12	10	20	20	0.13	<10	84	<10	13	60
	QC/DATA:																												
	Repeat:																												
1	58 PS-1	<0.2	2.24	15	505	<5	0.78	<1	22	155	9918	2.59	<10	1.44	220	8	0.08	23	430	12	5	20	62	0.12	<10	101	<10	5	44
	Standard:																												
	GEO'01	0.8	1.72	65	145	<5	1.56	<1	19	52	116	3.46	<10	0.94	666	<1	0.02	24	710	22	5	20	62	0.10	<10	70	<10	<1	79

NOTE: * = No Results available, massive Cu interference.

ECO-TECH LABORATORIES LTD.
Frank J. Pezzotti, A.Sc.T.
B.C. Certified Assayer

df/284
XLS/01Kam Geological
FAX 372-1012

Invoice

G & T Metallurgical Services Ltd.
2957 Bowers Place
Kamloops,B.C.
V1S 1W5

ORIGINAL COMMERCIAL INVOICE

BUSINESS NUMBER: BN12213-7730

DATE: September 12, 2001

INVOICE NO: 9920-194
Final Project Costs

PURCHASE ORDER: No Purchase Order No.

CLIENT: Getty Copper Corp
Attention: John Lepinski

PROJECT: Mineralogical Analysis of Five Ore Samples
KM1196

CHARGES:	Per Attached Summary		$ 2,617.25
	Total Charges		$ 2,617.25
	GST		183.21
	Total Charges	**SC.A.D.**	**$ 2,800.46**

Please Bank Transfer Funds to:

G & T Metallurgical Services Ltd.
Account Number 503209
Toronto Dominion Bank Transit #9145
Aberdeen Mall
Kamloops, B.C.
V2C 5P5
Phone: (250) 314-5080

Notes: a) This is the only invoice you will receive. It is our policy to fax all invoices which are payable upon receipt.