Report to:

AMERICAN BONANZA GOLD CORPORATION

Technical Report on the Taurus Project, Liard Mining District, British Columbia Resource Estimate and Metallurgical Review

Project No. 0551780200-REP-R0001-00

AMERICAN BONANZA GOLD CORPORATION

TECHNICAL REPORT
ON THE
TAURUS PROJECT,
LIARD MINING DISTRICT, BRITISH COLUMBIA
RESOURCE ESTIMATE AND METALLURGICAL REVIEW
FEBRUARY 2006

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1.0 SUMMARY

This report presents the findings of the resource estimate and metallurgical review carried out by Wardrop Engineering Incorporated for the Taurus project, located near the reclaimed site where the Town of Cassiar was located in north-western British Columbia (Figure 1.1). This report has been prepared for the owner of the property, American Bonanza Gold Corporation. This report will also be used to support any required filing with Canadian regulatory authorities.

The Taurus Property covers approximately 800 hectares located in the Liard Mining Division, north-central British Columbia, approximately 8 kilometres east of the former townsite of Cassiar, B.C., 117 kilometres north of Dease Lake, B.C., and 141 kilometres south of Watson Lake, Yukon Territory. The property consists of 46 claims. All of the claims are registered in the name of the owner, American Bonanza Gold Corporation. The claims are all in good standing until September 11 of 2006. Two of them are in good standing for one additional year. Ten of the claims namely Mack 1-4, Hopefull 1-4, Hillside and Highgrade are subject to a 2.5% NSR payable to Sable Resources Ltd.

Orequest completed a technical report on the area in early 2005 (Cavey et al, 2005). The summary on geology, mineralization development and operations has been extracted from this report. Some of the exploration and drilling described below did not take place on the claims presently owned by American Bonanza Gold Corporation.

The Cassiar area was first explored by placer miners in 1874, nearly 25 years before the Klondike gold rush. These miners followed the gold up from the Pacific to McDame Creek and by 1895 had produced 2.2 million grams. Gold-quartz veins were discovered in Troutline Creek in 1934, leading to the discovery of many more veins that lead to the establishment of several small gold mining operations. In 1949, a GSC mapping crew first encountered the Cassiar Asbestos deposit on McDame Mountain. Rocks of the Sylvester Allochthon, an accreted terrane of Mississippian to Triassic age, underlie the Taurus property. The allochthon was thrust over miogeoclinal platformal rocks of the Cassiar Terrane, forming a flat-bottomed, northwest-trending synclinorium of stacked thrust slices. The North American continental margin can be characterized as platformal limestones interbedded with clastic rocks including quartzite, grey to green phyllite, sandstone, phyllitic siltstone, and shale of Cassiar Terrane. Emplacement of the allochthon may not have occurred until early Jurassic time. The Sylvester Group can be divided into three major divisions (Nelson et al., 1988). The base of the group, Division I, is composed of mainly chert and black argillite, with lesser sandstone, siltstone, diorite and diabase sills, and bedded quartz-pyrite-barite exhalites. Division II, which hosts mineralization at Taurus, is made up of basaltic flows and breccias, chert and argillite, intercalated with variably altered, narrow bodies of ultramafic rocks. The highest exposed structural level of the allochthon, Division III, is comprised of island arc volcanic rocks of basic to felsic composition and limestones. The Sylvester Group is correlated with Slide Mountain Terrane. The Sylvester allochthon is intruded by the late Cretaceous Cassiar batholith to the west, and several other smaller stocks in the Cassiar area ranging in age from 90 Ma to 50 Ma. In terms of composition, these intrusive rocks are quartz monzonites. The Taurus property and surrounding area are underlain by an upright sequence of Division II massive to pillowed to rarely amygdaloidal, medium grey-green basaltic flows, chert and argillite, occasional ultramafic flows or sills, and mafic and lamprophyre dykes.

The Taurus Mine was originally covered by seven claims of the Cornucopia Group staked by J.C. Simpson in 1935. Simpson carried out stripping, trenching and rock sampling until 1944. The following year, Benroy Gold Mines Ltd. optioned the property and completed more than 700 metres of trenching and 1500 metres of diamond drilling. In 1960, Cornucopia Explorations Ltd. was incorporated to acquire the property. The following year, Cornucopia changed names to Hanna Gold Mines Ltd. In 1964, Newconex Canadian Exploration Ltd. optioned the property and completed an additional 180 metres of drifting and crosscutting and 210 metres of drilling. In 1972, Hanna Gold Mines became Dorchester Resources Ltd. and then in 1979, United Hearne Resources Ltd. optioned the property and continued underground development and drilling, confirming a “reserve”. A 135 tonne per day mill was constructed at the Taurus Mine in 1980-81, treating 220,000 tonnes of ore, averaging 5.14 g/t gold prior to closing in 1988.

Two types of gold mineralization are predominantly hosted in altered basalt. The first (designated T4) consists of pyritic quartz veins which are best developed at the Taurus Mine and 88 Hill Areas, in three main structural trends described in the Geology section of this report. At the Taurus Mine most of the ore came from five veins. Four of these veins had a nearly east west strike while Vein 5 had a strike of about 50 degrees. The second type of mineralization (designated T3), termed disseminated pyritic or pyrite – carbonate mineralization, is characterized by 10-40% fine-grained pyrite, commonly banded and lacking significant quartz veining. The banded appearance is actually a shear fabric with basalt altered to sericite/muscovite + dolomite +/- leucoxene +/- quartz. Unmineralized quartz + carbonate veinlets are common, as are irregular, hairline, locally graphitic fracturing.

After the closure of the Taurus mine several companies explored other mineralized areas of the property that were not actively explored during the time of operations. Geochemistry, geophysics and more than 25,000 metres of drilling were completed between 1993 and 1997. Companies involved included Sable Resources Ltd., International Taurus Resources Inc., Hera Resources Inc., Cyprus Canada, Cusac Gold Mines, and finally Navasota Resources in 2003. In 1988, drilling in the 88 Hill area discovered the 1988-1 and 1988-2 vein systems. Hole 88- 5 intersected 5.99 g/t over 12.34 metres. Subsequently, a small open pit extracted 2600 tonnes grading 2.06 g/t from the 1988-2 vein. The 1994-drill program, completed by International Taurus, totalled 7,592 metres in 88 holes, predominantly on the north side of the highway, west along strike from the Taurus workings, dubbed the Taurus West zone. Drilling, mainly NQ size, encountered a mineralized zone locally over 200 feet in width, consisting of a quartz stockwork system in a broad zone of pyritic altered basalt. For example, 94-56 intersected1.6 g/t over 44.5 metres core length.

Cyprus Canada Inc. conducted an extensive diamond drilling program of 12,692 metres in 79 holes concentrated in the Taurus West, 88 Hill, and Taurus Mine areas. In March 1995, four holes drilled on section 1100W intersected long intervals of disseminated pyrite mineralization that included 2.47g/t Au over 86 metres in T95-29 in the Taurus West area. Unfortunately, continuity between holes combined with metallurgical test recoveries resulted in lower emphasis on Taurus West as a target in subsequent programs.

Both diamond core and reverse circulation (RC) percussion drills have been used on the property. Variable core recoveries have resulted in some statements that RC is the preferred technique. Broughton and Masson (1996) concluded that these variances between core and RC holes in disseminated pyrite mineralization were the result of statistical variation, systematic overestimation of grade due to contamination in RC samples, and/or a more representative sample from RC due to the greater sample size. From their study, no firm conclusion can be made. In late 2003, Navasota Resources Limited conducted a two-phase program consisting firstly of general geological compilation with some geochemistry as well as limited remapping and relogging of specific core. Phase II consisted of a drill hole program of 13 NW holes totalling 1,974 metres in length. The holes were designed to test the zones identified in post 1994 work. In general terms these results confirmed the results reported in previous programs on the Taurus property. The zones intersected in the 2003 program do not seem to match up identically with those from previous work and therefore more work is needed to understand the nature of the zones on the property. Difficulties arising from the high nugget affect associated with the T4 mineralization may be the cause of this and some small test pits and/or underground sampling may be needed to understand the geology better.

The Taurus concentrator was constructed in 1981 and commissioned in 1982 running until accessible ore reserves in the Taurus mine area were exhausted in 1988. The concentrator consisted of a two-stage, closed circuit crushing and closed circuit single stage grinding. Ball mill discharge passed over a mineral jig to produce a gravity concentrate upgraded using a small shaking table. A single bank of flotation cells was used to produce a bulk flotation concentrate.

In 1986 Taurus custom milled Cusac ore after the Erickson mill caught fire. Combined gravity and flotation circuits recovered 90% of the gold from the mill feed. The cyanidation recovery of 75% of the contained gold within the flotation concentrate, although not tremendous, made a significant improvement to the cash flow by reducing trucking costs and costs associated with refining relatively low grade concentrates (3 ounce per ton gold) in Montana, USA.

These operating statistics represent the best metallurgical data for Taurus T4 material. Subsequent work has been performed by Westcoast Mineral Testing (G. Hawthorn, December 1994), Beattie Consulting, (M. Beattie, March, 1995), and Hazen Research, (April 1996). In a letter to Cusac Gold Mines Ltd. by Hawthorn in 1999 it was stated that: "The material [T4] responds very well to bulk sulphide flotation to produce a low-grade (10-15 g/t Au) pyritic rougher concentrate. Gold recovery (Hazen pg. 20/ 8 tests on 8 composites) averaged 94.6% into a 20% by weight rougher concentrate from feed grading 1.7 g/t Au."

Hawthorn also reported that the material responded to direct cyanidation with 67.5% recovery at minus 200-mesh grind (Hazen pg.17) for the same composites as above. Leaching was rapid with completion in a few hours. Heap leach tests at one half-inch crush produced only 25% recovery. Hazen also reported a 73.4% recovery from material ground to minus 400 mesh.

The first metallurgical information on T3 material was in 1987 when a sample of the "pyrite zone" found on the 3275 level was tested by Westcoast Mineral Testing. The flotation test resulted in 94% recovery of gold in 30 weight percent concentrate from feed with a calculated head grade of 2.331 g/t. Another portion of the same sample was treated by cyanidation with 48% recovery. A second higher-grade sample (4.423 g/t calculated grade) of similar material was collected with cyanidation recovery of 60%. It does not appear that any consideration was given to either pressure or bacterial oxidation of the T3 concentrates and would have been worth at least cursory investigation.

The heap leaching process could be economically viable. However, recoveries obtained vary significantly from the very low 24% to a relatively high 74%. These values are based on incomplete test detail including the lack of the type of mineralization of the samples, and a lack of testing procedures and test details. The validity of the heap leach tests could be crucial to the viability of the project. Improved gold recovery coupled with low processing costs could improve the viability of this deposit.

The largest environmental risks present in open pit mining operations are the tailings and waste rock dumps. Some preliminary Acid/Base Accounting (ABA) work has been done on various rock types on the property. The test results indicated that only the T3 mineralization was potentially acid generating and that this would require careful commingling with other strongly neutralising component rocks. Waste rock and rock that have undergone carbonate alteration that occur within the mine lease area may be a suitable source for this material.

Wardrop carried out a resource estimate, which included the seven known zones on the property (Sable, 88 Hill, 88 West, Highway, Taurus West, Taurus Mine and Plaza). The work also included a metallurgical review of the historical testwork conducted to date.

Verification of the database carried out by Wardrop indicates that the database is of a quality that meets industry standards for post 1994 drill holes. These drill holes make up the larger portion of the database. The sampling of the pre-1995 drill holes concentrated on the higher-grade intersections. The database contains a total of 370 drill holes of which approximately 330 lie within the American Bonanza Gold Corporation claims. The site review indicated that portions of the core that are logged as either T4 or T2 mineralization contain significant amounts of T3 mineralization. Also, the abbreviations used for the rock codes differ in these earlier drill holes.

Documentation made available to the authors indicates that the sampling procedures for the 1995 drill holes onwards meet industry standards. It is not possible to comment on the earlier drill holes, as no documentation was available for the pre-1994 drill holes.

The resource estimate is based on drill hole data from the property. Trends of mineralization were established using categorical indicator techniques. A bulk density of 2.7 tonnes per cubic metre was used for determining tonnage.

During the resource estimate unsampled intersections have been set to zero grade. This is likely to result in a conservative estimate, particularly in areas comprised predominantly of pre-1995 drilling.

At a cut off grade of 0.50 g/t Au there is an Inferred Mineral Resource of 21.2 million tonnes at an average Au grade of 1.07 g/t, which equates to a metal content of 724,539 troy ounces of Au. Table 1-1 summarizes the total mineral resource for the property by area.

Due to the uncertainty of Inferred Mineral Resources it cannot be assumed that all, or any part of this resource will be upgraded to an Indicated or Measured Resource as a result of continued exploration. To justify upgrading of the mineral resource demonstrated economic viability is required.

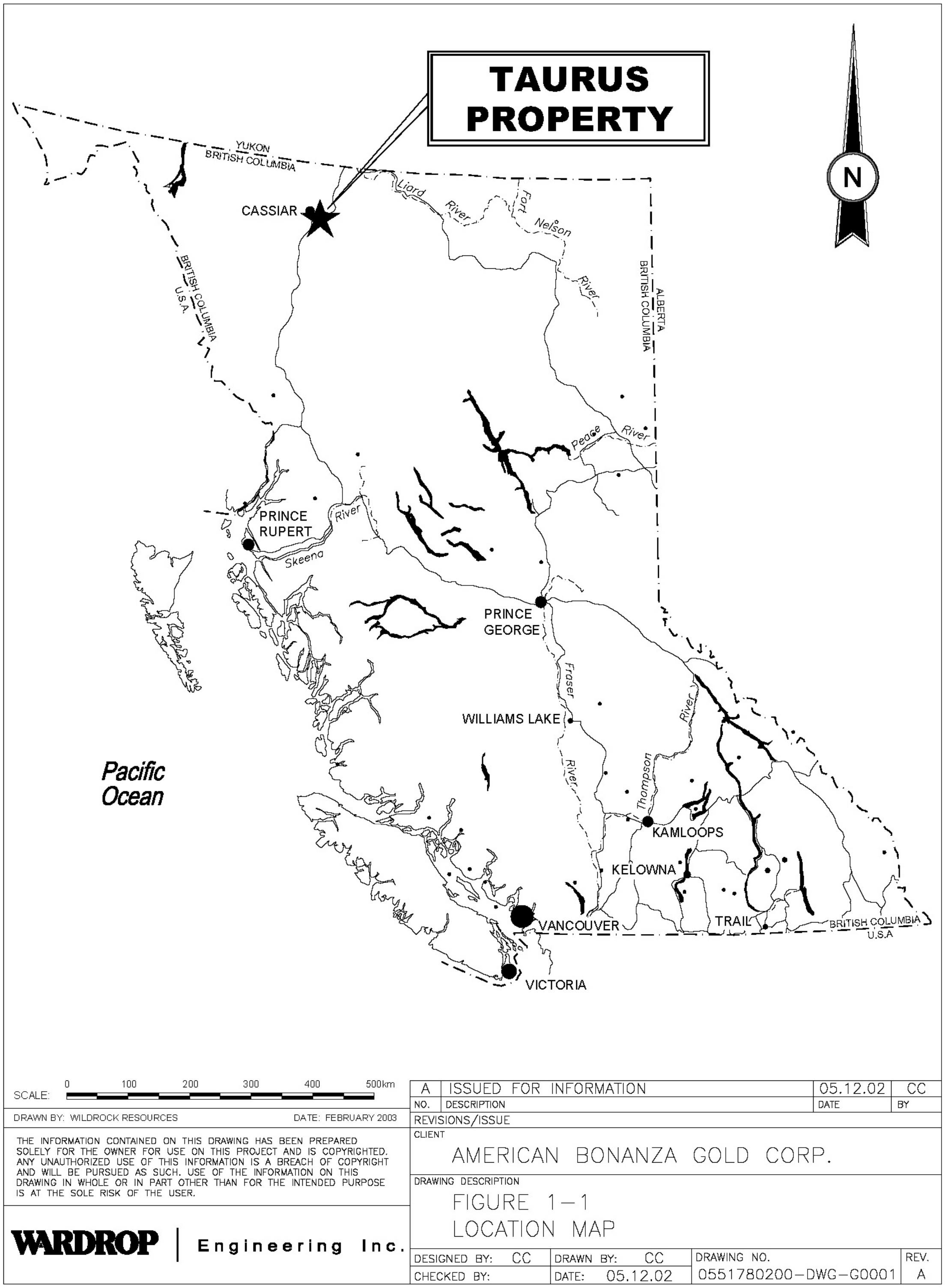
Table 1-1: Summary of Inferred Mineral Resource Estimate

	Sable			88 Hill			88 West			Highway		
Cut Offs	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz
0.50	1,349	1.32	57,306	7,405	1.19	283,969	3,535	0.87	99,219	1,891	1.00	60,611
	Taurus W			Taurus			Plaza			Total		
Cut Offs	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz
0.50	3,706	1.02	120,996	2,346	0.99	74,441	917	0.95	27,997	21,150	1.07	724,539

Further metallurgical testwork is recommended and this would include drilling of drill holes in Taurus Mine, Sable and Plaza areas to ensure that the tests are carried out on unoxidized samples. Additional bulk density determinations may be required.

A program of re-logging and re-sampling to establish a consistent application of lithological descriptions, definition of the mineralization styles and sampling of the lower grade portion of the pre-1995 drill holes, as well as the completion of infill drill holes in 88 Hill West area, would increase the confidence and continuity in the grade model. The re-sampling of the earlier drill holes would serve to verify this data.

A geological interpretation based on a compilation of old reports, re-logging, and the re-sampling should then be carried out. The interpretation should define the high –grade veins as well as the low grade mineralized envelopes. In addition bulk densities and drill recoveries would be inserted into the database.


TAURUS PROPERTY
YUKON
BRITISH COLUMBIA
CASSIAR
Liard River
Fort Nelson River
ALBERTA
BRITISH COLUMBIA
BRITISH COLUMBIA
U.S.A.
Peace River
PRINCE RUPERT
Skeena River
PRINCE GEORGE
Fraser River
WILLIAMS LAKE
Thompson River
Pacific Ocean
KAMLOOPS
KELOWNA
VANCOUVER
TRAIL
BRITISH COLUMBIA
U.S.A
VICTORIA
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LOCATION MAP
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2.0 INTRODUCTION AND TERMS OF REFERENCE

American Bonanza Gold Corporation retained Wardrop Engineering Inc. (Wardrop) to carry out an independent resource estimate and metallurgical review on the Taurus Project, located near the reclaimed townsite of Cassiar in north-western British Columbia. The mineral claims are 100% owned by American Bonanza Gold Corporation.

All the areas of the property were examined and evaluated including the original underground operations and the extensive low-grade zones. The work entailed a verification and review of relevant historic data, resource estimation and a metallurgical assessment. The resource estimate has been carried out to CIM standards. Further data verification, geological modelling and bulk density determinations are required should a pre-feasibility study be carried out on the project

The report entitled " Technical Report on the Taurus Project, Laird Mining District, British Columbia for International Taurus Resources Inc., American Bonanza Gold Mining Inc., Fairstar Exploration Inc. and 0710887 BC Ltd " by G. Cavey et al (2005) and "Report on Exploration Activities on the Taurus Property" by C. J. Wild (2003) have been used as the primary reference sources.

Critical information has been verified with the original documents including assay certificates and drills logs, where possible. No limitations were imposed on Wardrop during the preparation of this report.

Rob Carter P. Eng. of Wardrop in the company of Joe Kircher of ABG visited the project site from 18th to 20th October 2005. During the site visit drill core was reviewed and drill hole collar positions were verified.

This report has been prepared by Wardrop in the format set out in National Instrument (NI) 43-101 and will be used to support any required filing with Canadian regulatory authorities.

All reference to currency in this report is in Canadian dollars. All units in this report are metric unless otherwise stated.

3.0 RELIANCE ON OTHER EXPERTS

Wardrop has followed standard professional procedures in preparing the contents of this resource estimate and metallurgical review report. Data used in this report has been verified where possible and Wardrop has no reason to believe that the data was not collected in a professional manner. Wardrop has relied upon the outline of claim boundaries used in the technical report by Cavey et al (2005) and Wardrop could not verify the boundaries as the 1995 legal survey was not completed. Wardrop has verified by reference to the Mineral Titles website of the Government of British Columbia Ministry of Mines, the claims that are registered in the name of American Bonanza Gold Corporation.

4.0 PROPERTY DESCRIPTION AND LOCATION

Refer to "Technical Report on the Taurus Property, Liard Mining District, British Columbia for International Taurus Resources Inc., American Bonanza Gold Mining Corp., Fairstar Explorations Inc. and 0710887 BC Ltd." by G. Cavey, D. Gunning and C. J. Wild (2005).

Cavey et al (2005) noted an inaccuracy in the government website (http://www.mtonline.gov.bc.ca/mtov/searchTenures.do), which at the time of their report indicated that Navasota Resources owned 55 % of most of the claims. This website presently indicates that the claims are 100% owned by American Bonanza Gold Corporation.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

Refer to “Technical Report on the Taurus Property, Liard Mining District, British Columbia for International Taurus Resources Inc., American Bonanza Gold Mining Corp., Fairstar Explorations Inc. and 0710887 BC Ltd.” by G. Cavey, D. Gunning and C. J. Wild (2005).

6.0 HISTORY

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Portions on the history and resource estimates have been extracted from Cavey et al (2005).

6.1 HISTORY

The Cassiar area was first explored by placer miners in 1874, nearly 25 years before the Klondike gold rush. These miners followed the gold up from the Pacific to McDame Creek and by 1895 had produced 2.2 million grams. Gold-quartz veins were discovered in Troutline Creek in 1934, leading to the discovery of many more veins that lead to the establishment of several small gold mining operations. In 1949, a GSC mapping crew first encountered the Cassiar Asbestos deposit on McDame Mountain. Rocks of the Sylvester Allochthon, an accreted terrane of Mississippian to Triassic age, underlie the Taurus property. The allochthon was thrust over miogeoclinal platformal rocks of the Cassiar Terrane, forming a flat-bottomed, northwest-trending synclinorium of stacked thrust slices. The North American continental margin can be characterized as platformal limestones interbedded with clastic rocks including quartzite, grey to green phyllite, sandstone, phyllitic siltstone, and shale of Cassiar Terrane. Emplacement of the allochthon may not have occurred until early Jurassic time. The Sylvester Group can be divided into three major divisions (Nelson et al., 1988). The base of the group, Division I, is composed of mainly chert and black argillite, with lesser sandstone, siltstone, diorite and diabase sills, and bedded quartz-pyrite-barite exhalites. Division II, which hosts mineralization at Taurus, is made up of basaltic flows and breccias, chert and argillite, intercalated with variably altered, narrow bodies of ultramafic rocks. The highest exposed structural level of the allochthon, Division III, is comprised of island arc volcanic rocks of basic to felsic composition and limestones. The Sylvester Group is correlated with Slide Mountain Terrane. The Sylvester allochthon is intruded by the late Cretaceous Cassiar batholith to the west, and several other smaller stocks in the Cassiar area ranging in age from 90 Ma to 50 Ma. In terms of composition, these intrusive rocks are quartz monzonites. The Taurus property and surrounding area are underlain by an upright sequence of Division II massive to pillowed to rarely amygdaloidal, medium grey-green basaltic flows, chert and argillite, occasional ultramafic flows or sills, and mafic and lamprophyre dykes.

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Two types of gold mineralization are predominantly hosted in altered basalt. The first (designated T4) consists of pyritic quartz veins which are best developed at the Taurus Mine and 88 Hill Areas, in three main structural trends described in the Geology section of this report. At the Taurus Mine most of the ore came from five veins. Four of these veins had a nearly east west strike while Vein 5 had a strike of about 50 degrees. The second type of mineralization (designated T3), termed disseminated pyritic or pyrite – carbonate mineralization, is characterized by 10-40% fine-grained pyrite, commonly banded and lacking significant quartz veining. The banded appearance is actually a shear fabric with basalt altered to sericite/muscovite + dolomite +/- leucoxene +/- quartz. Unmineralized quartz + carbonate veinlets are common, as are irregular, hairline, locally graphitic fracturing.

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6.2 Historic Estimates

These estimates are not compliant with National Instrument 43-101 and in the context of CIM standards on mineral resources and reserves would be considered to be conceptual in nature. These resource figures are disclosed only for historical context and should not be used outside this context. These estimates are for the Taurus area and include portions that lie outside the American Bonanza Gold Corporation claims.

Early resource and reserve work on the Taurus property focused exclusively on the Taurus Mine. From 1960, exploration and development attempted to prove up mineable ore reserves in small high-grade zones within a very small area. By the end of 1963, an "indicated reserve" of 72,500 tonnes grading 22.6 g/t gold had been outlined (Gunning, 1988). Then, in 1979, United Hearne Resources Ltd. optioned the property and continued underground development and drilling, confirming a "reserve" of 60,000 tonnes grading 16.1 g/t gold. Then, late in 1993, International Taurus Resources Inc. acquired the Sable ground and drilled 26 tightly spaced (10 – 25 metre) diamond drill holes totalling 1,554 metres on the east side of 88 Hill. A "potential resource" of 436,000 tonnes in individual narrow quartz veins grading 6.99 g/t gold was reported by Spencer (1994).

In 1995, Cyprus Canada entered the project to develop a pittable, high tonnage resource. Their work, which included 78 generally widely spaced diamond drill holes, confirmed that a large, low-grade resource is present. A preliminary resource calculation gave an inferred, undiluted mineral inventory of 38 million tonnes grading 1.42 g/t calculated for the 88 Hill, Taurus West and Highway Zones. A second calculation utilized the same data but a different set of assumptions came up with a potential resource of 40.6 million tonnes grading 1.07 g/t. Both calculations are considered to have a low degree of accuracy due to the wide drill spacing and a lack of information on the geometry and continuity, that is, the structural controls of mineralized zones. These estimates demonstrated the possible existence of potentially bulk mineable resource on the property.

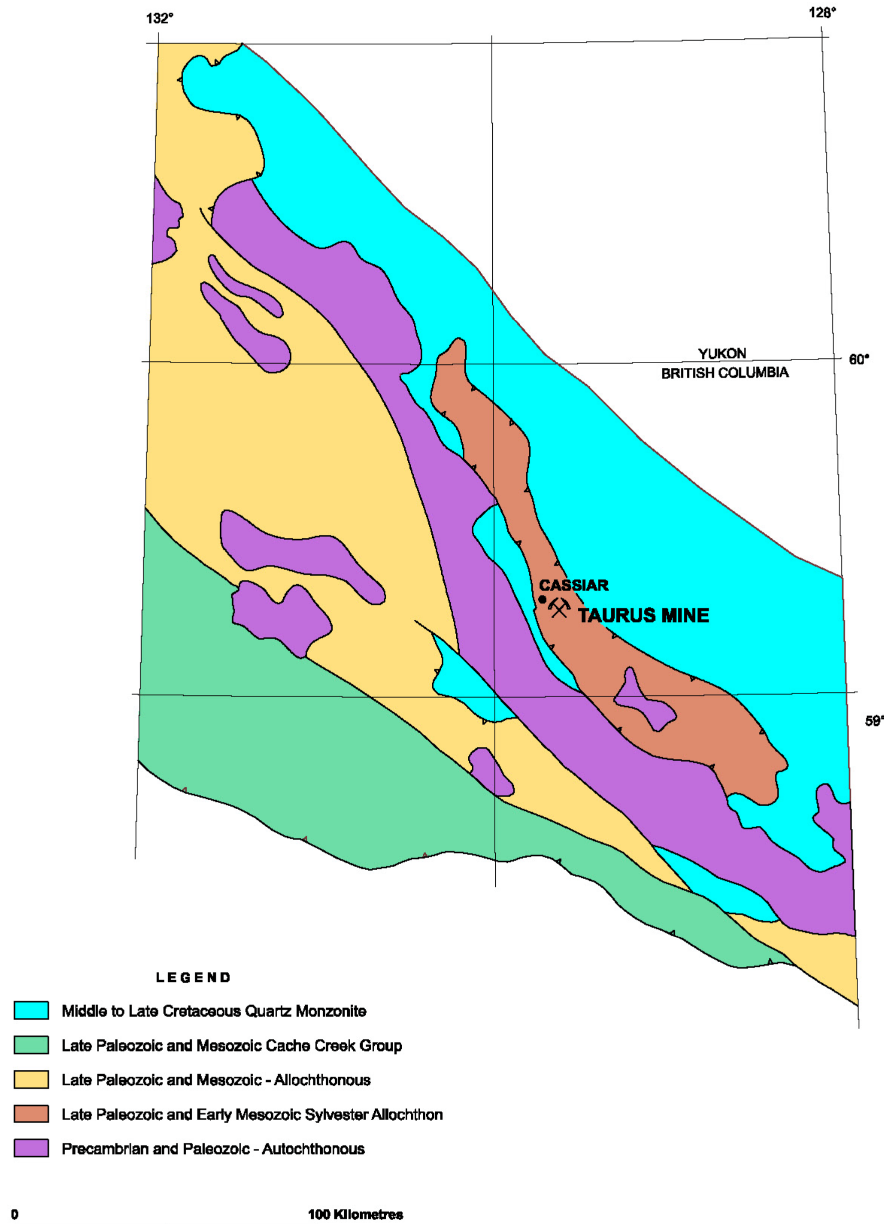
Trenaman (1997) completed a resource estimate for the 88 Hill zone on behalf of International Taurus following the 1996 infill-drilling program. This calculation utilized diamond drill hole results from the 1995 Cyprus Canada program and the 1996 International Taurus reverse circulation and diamond drill hole program. A sectional method was employed, with data plotted on sections drawn every 50 to 100 metres. The “drill-indicated reserve” applies to the portion of 88 Hill area drilled on 50-metre centres. Sections run from 500W to 1000W, blocks were projected up to 25 metres east and west of the section with generally vertical north and south block boundaries.

In 1999, Cusac Gold Mines Ltd. completed another resource calculation. Cusac defined six distinct zones using factors including geography, geology, data density, and apparent amenability to open pit mining methods. These include the 88 Hill, 88 West, Plaza, Sable, Highway Zone, and Taurus West. Cusac estimated a total of 23.4 million tonnes grading at 1.06 g/t at a reported 1.0 g/t cut off for 88 Hill, 88 West and Highway. The database includes 130 drill holes. Gemcom Software was used to calculate a total mineral inventory. Details on the modelling procedure were not made available to the author, so no comment on the validity of the Cusac resource calculation is offered except to say that it compares well with the Trenaman estimation for the 88 Hill area, discussed above. It should be noted that the Cusac resource estimate was made public on June 22, 1999 and was described as a “total mineral inventory”.

7.0 GEOLOGICAL SETTING

Refer to "Technical Report on the Taurus Property, Liard Mining District, British Columbia for International Taurus Resources Inc., American Bonanza Gold Mining Corp., Fairstar Explorations Inc. and 0710887 BC Ltd." by G. Cavey, D. Gunning and C. J. Wild (2005).

Regional and local geology is shown in Figures 7.2 and 7.3.



1986. Drawn by Wildrock Resources, February 2003.

NO.	DESCRIPTION	DATE	BY
A	ISSUED FOR INFORMATION	05.12.14	CC

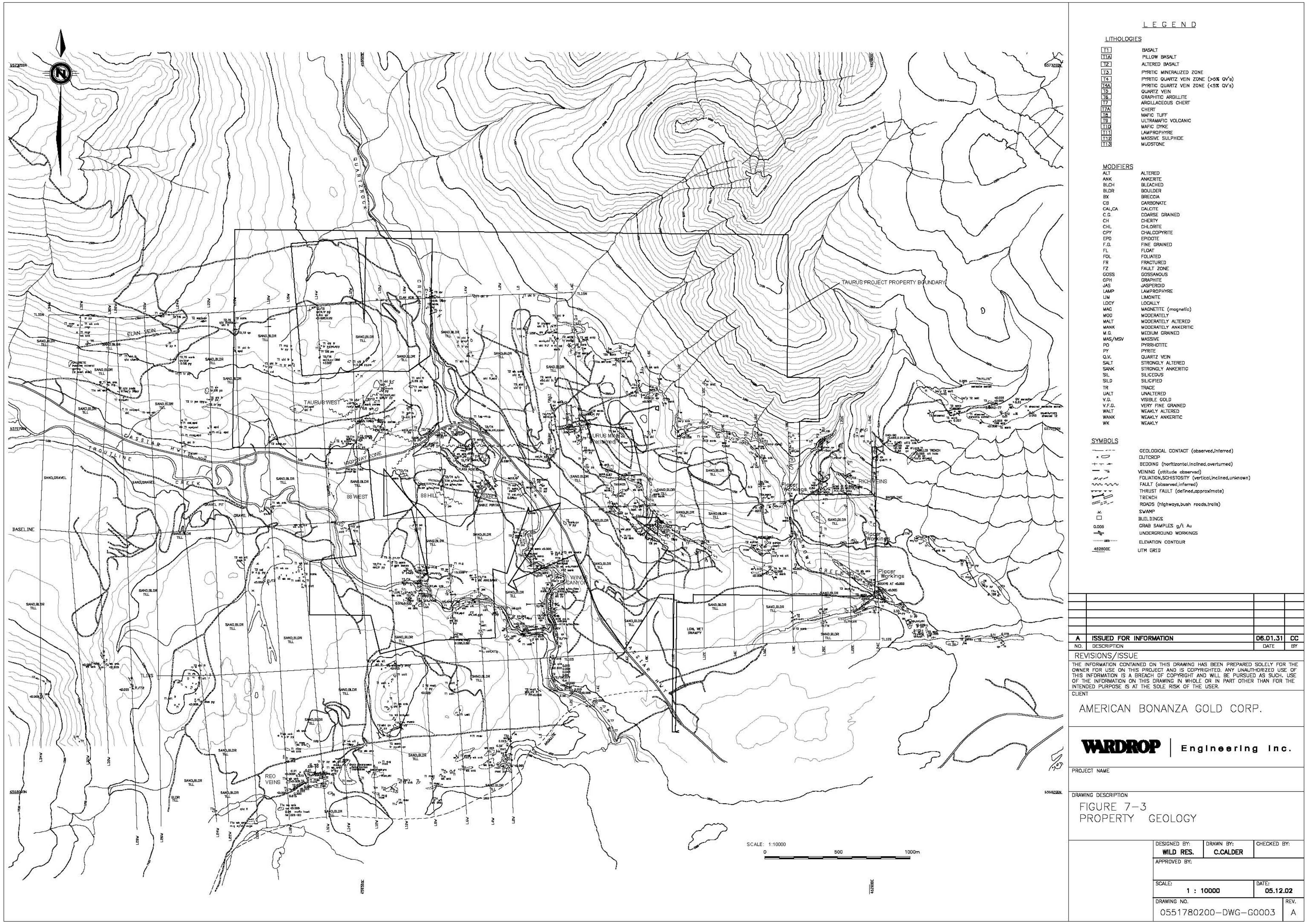
REVISIONS/ISSUE

WARDROP | Engineering Inc.

CLIENT
AMERICAN BONANZA GOLD CORP.

DRAWING DESCRIPTION
FIGURE 7–2
REGIONAL GEOLOGY

DESIGNED BY: CC	DRAWN BY: CC	DRAWING NO.	REV.
CHECKED BY:	DATE: 05.12.02	0551780200–DWG–G0001	A



TAURUS PROJECT PROPERTY BOUNDARY
TAURUS WEST
88 WEST
88 HILL
RICH VEINS
REO VEINS
ELAN VEIN
Placer Workings
CASSIAR HWY
TROUTLINE CREEK
BASELINE
SCALE: 1:10000
0
500
1000m
LEGEND
LITHOLOGIES
T1 BASALT
T1A PILLOW BASALT
T2 ALTERED BASALT
T3 PYRITIC MINERALIZED ZONE
T4 PYRITIC QUARTZ VEIN ZONE (>5% QV's)
T4A PYRITIC QUARTZ VEIN ZONE (<5% QV's)
T5 QUARTZ VEIN
T6 GRAPHITIC ARGILLITE
T7 ARGILLACEOUS CHERT
T7A CHERT
T8 MAFIC TUFF
T9 ULTRAMAFIC VOLCANIC
T10 MAFIC DYKE
T11 LAMPROPHYRE
T12 MASSIVE SULPHIDE
T13 MUDSTONE
MODIFIERS
ALT ALTERED
ANK ANKERITE
BLCH BLEACHED
BLDR BOULDER
BX BRECCIA
CB CARBONATE
CAL,CA CALCITE
C.G. COARSE GRAINED
CH CHERTY
CHL CHLORITE
CPY CHALCOPYRITE
EPD EPIDOTE
F.G. FINE GRAINED
FL FLOAT
FOL FOLIATED
FR FRACTURED
FZ FAULT ZONE
GOSS GOSSANOUS
GPH GRAPHITE
JAS JASPEROID
LAMP LAMPROPHYRE
LIM LIMONITE
LOCY LOCALLY
MAG MAGNETITE (magnetic)
MOD MODERATELY
MALT MODERATELY ALTERED
MANK MODERATELY ANKERITIC
M.G. MEDIUM GRAINED
MAS/MSV MASSIVE
PO PYRRHOTITE
PY PYRITE
Q.V. QUARTZ VEIN
SALT STRONGLY ALTERED
SANK STRONGLY ANKERITIC
SIL SILICEOUS
SILD SILICIFIED
TR TRACE
UALT UNALTERED
V.G. VISIBLE GOLD
V.F.G. VERY FINE GRAINED
WALT WEAKLY ALTERED
WANK WEAKLY ANKERITIC
WK WEAKLY
SYMBOLS
GEOLOGICAL CONTACT (observed,inferred)
OUTCROP
BEDDING (horizontal,inclined,overturned)
VEINING (attitude observed)
FOLIATION,SCHISTOSITY (vertical,inclined,unknown)
FAULT (observed,inferred)
THRUST FAULT (defined,approximate)
TRENCH
ROADS (highways,bush roads,trails)
SWAMP
BUILDINGS
0.005 GRAB SAMPLES g/t Au
UNDERGROUND WORKINGS
ELEVATION CONTOUR
462800E UTM GRID
A ISSUED FOR INFORMATION 06.01.31 CC
NO. DESCRIPTION DATE BY
REVISIONS/ISSUE
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CLIENT
AMERICAN BONANZA GOLD CORP.
WARDROP Engineering Inc.
PROJECT NAME
DRAWING DESCRIPTION
FIGURE 7-3
PROPERTY GEOLOGY
DESIGNED BY: WILD RES.
DRAWN BY: C.CALDER
CHECKED BY:
APPROVED BY:
SCALE: 1 : 10000
DATE: 05.12.02
DRAWING NO. 0551780200-DWG-G0003
REV. A

8.0 DEPOSIT TYPE

Refer to "Technical Report on the Taurus Property, Liard Mining District, British Columbia for International Taurus Resources Inc., American Bonanza Gold Mining Corp., Fairstar Explorations Inc. and 0710887 BC Ltd." by G. Cavey, D. Gunning and C. J. Wild (2005).

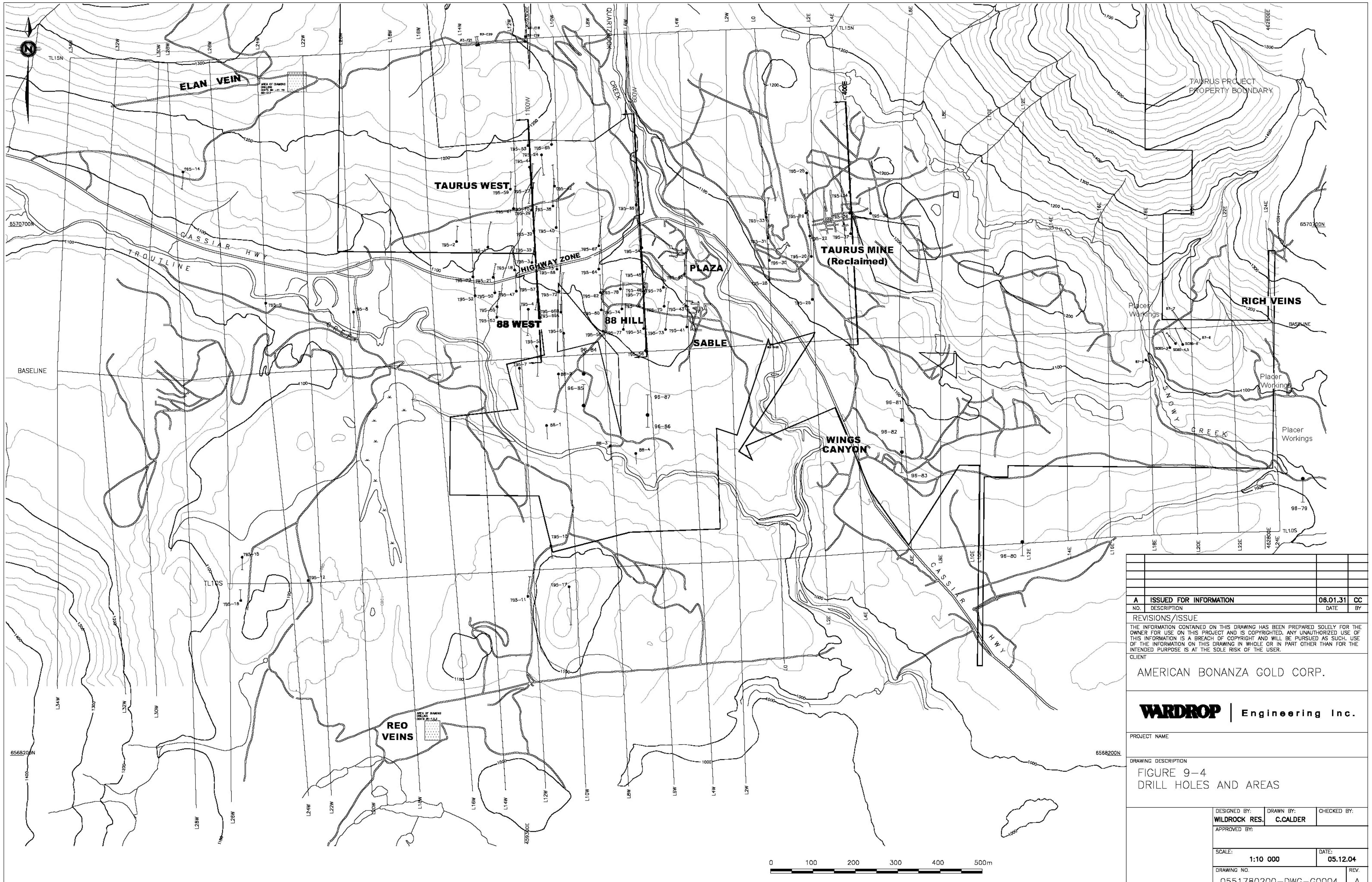
9.0 MINERALIZATION

Refer to "Technical Report on the Taurus Property, Liard Mining District, British Columbia for International Taurus Resources Inc., American Bonanza Gold Mining Corp., Fairstar Explorations Inc. and 0710887 BC Ltd." by G. Cavey, D. Gunning and C. J. Wild (2005).

The following paragraph summarises the two major types of mineralization on the property and was extracted from Cavey et al (2005).

Two types of gold mineralization are predominantly hosted in altered basalt. The first (designated T4) consists of pyritic quartz veins which are best developed at the Taurus Mine and 88 Hill Areas, in three main structural trends described in the Geology section of this report. At the Taurus Mine most of the ore came from five veins. Four of these veins had a nearly east west strike while Vein 5 had a strike of about 50 degrees. The second type of mineralization (designated T3), termed disseminated pyritic or pyrite – carbonate mineralization, is characterized by 10-40% fine-grained pyrite, commonly banded and lacking significant quartz veining.

The seven areas of mineralization, Sable, 88 Hill, 88 West, Highway, Taurus West, Taurus Mine and Plaza are indicated on Figure 9.4.


ELAN VEIN
TAURUS WEST
HIGHWAY ZONE
88 WEST
88 HILL
PLAZA
SABLE
TAURUS MINE
(Reclaimed)
TAURUS PROJECT
PROPERTY BOUNDARY
RICH VEINS
WINGS
CANYON
REO
VEINS
CASSIAR HWY
TROUTLINE
BASELINE
QUARTZROCK CREEK
SNOWY CREEK
Placer Workings
0 100 200 300 400 500m
A ISSUED FOR INFORMATION 08.01.31 CC
NO. DESCRIPTION DATE BY
REVISIONS/ISSUE
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CLIENT
AMERICAN BONANZA GOLD CORP.
WARDROP Engineering Inc.
PROJECT NAME
DRAWING DESCRIPTION
FIGURE 9-4
DRILL HOLES AND AREAS
DESIGNED BY: WILDROCK RES.
DRAWN BY: C.CALDER
CHECKED BY:
APPROVED BY:
SCALE: 1:10 000
DATE: 05.12.04
DRAWING NO. 0551780200-DWG-G0004
REV. A

10.0 EXPLORATION

There is no current exploration to report.

Historic exploration techniques have included induced polarization and ground magnetic surveys, soil geochemistry, trenching and drilling. A summary of the historic drilling is included in Section 11.0.

This report has analysed the historic exploration at Taurus, which targeted high tonnage gold mineralization that would be amenable to open cast operations. Three main zones, 88 Hill, Taurus West and the Highway Zone, have been identified during exploration, which commenced in 1988. Presently there is little to no information available on earlier exploration that was carried out around the underground operations.

The following description for sections 10.1 to 10.4 has been extracted from Wild (2003). Minor changes have been made to grammar and spelling. Portions of the work described in this section may describe work that has been carried out outside of the American Bonanza Gold Corporation claims.

10.1 Induced Polarization Surveys

In 1988, Sable Resources Ltd. conducted an Induced Polarization (IP) survey that outlined 33 anomalies on the "Main Grid" area in the 88 Hill area. Trenching and five diamond drill holes tested one anomaly resulting in the discovery of the 1988-1 and 1988-2 vein systems. In 1993, Sable extended IP coverage and completed additional trenching. Late in 1993, trenching tested six of 42 geophysical (IP) targets, discovering three gold-bearing vein systems (1993-1 to 3), which were subsequently drill-tested. A later IP survey completed by Cyprus Canada covers the same area and is discussed in more detail below.

The following year, another IP survey was completed over 26.68 kilometres of grid, along strike to the west of the Taurus mine workings and north of the 1993 survey. One anomaly, the B.M. Zone, is an 850-metre long IP anomaly, approximately 300 metres north of Taurus West. In 1994, a large amount of trenching was completed in the 88 Hill area expanding the coverage from 1993 to the north and south

In March 1995, Cyprus Canada contracted Lloyd Geophysics Ltd. of Vancouver to conduct IP and ground magnetic surveys over the 1995 Taurus grid. Coverage was expanded in August 1995. The IP survey utilized a pole-dipole configuration with a dipole spacing of 50 metres and n=1 to n=6. Lines were spaced at 200 metres. A high chargeability graphitic argillite, chased from the south end of Wings Canyon along Troutline Creek may be the basal basalt-argillite contact

Strong chargeabilities (15-40 msec) combined with high resistivities (>200 ohm-m) are associated with disseminated pyrite mineralization in the Taurus West area and immediately south-west of the Taurus Mine area. Moderate chargeabilities (5-15 msec) are characteristic of the 88 Hill area, reflecting less and coarser grained pyrite. Low chargeabilities (<5 msec) reflect unaltered basalt. High chargeabilities (>20 msec) and low resistivities (<100 ohm-m) dominate to the south and west, reflecting the presence of shallow graphitic argillite which locally masks weaker responses from pyritic quartz vein mineralization. The east-trending Wings Canyon trend dominates the eastern side of the property, across from a sharp north-east feature at the north end of Wings Canyon.

The survey appears to conform to industry standards for reliability of data. Geological interpretations from the data match the geology from diamond drilling quite well, indicating that chargeability and resistivity are useful parameters in the search for mineralization.

10.2 Ground Magnetic Surveys

The ground magnetic surveys utilized 2 Omni Plus proton precession magnetometers, one to serve as a base station to measure and store daily fluctuations in the earth's magnetic field. After each survey day, field data was corrected for diurnal variations using base station data. As with the IP survey, line spacing was 200 metres, station intervals were 12.5 metres. A strong north-west-trending magnetic high runs through the Taurus area, associated with magnetic, jasperoidal basalt. Aside from these rocks, most basalt, chert and argillite all exhibit very weak magnetic susceptibilities (Broughton and Masson, 1995).

Once again, the survey, data, and conclusions appear to be quite reasonable but of limited use for the Taurus Property.

10.3 Soil Geochemistry

During the summer of 1995, Cyprus Canada also conducted geological mapping and limited trenching on Taurus West, chip sampling in Wings Canyon and in trenches, and a soil geochemical survey. Soil samples were collected from the "B" horizon at 50 metre stations on lines spaced at 200 metres. Cyprus divided the results into background (<15 ppb Au), moderately anomalous (15-99 ppb), and strongly anomalous (>100 ppb). In general, soil geochemistry highlighted areas with significant mineralization. However, due to significant development in the Taurus, Sable and Plaza areas, contamination may be a problem. A significant anomaly is apparent on the Wings Canyon trend (Broughton and Masson, 1995).

As described, the survey conforms to industry standards for soil geochemical surveys. The most significant contributor to uncertainty in the soil geochemical data is the extensive but variable depth of glacial till on the property. However, the distribution of gold and potential pathfinder elements such as arsenic and base metals may be useful in targeting new vein systems.

10.4 Trenching

Trenching was typically undertaken in conjunction with diamond drilling, to expose vein systems and mineralized zones at surface. These data figure prominently in several resource calculations. Despite that, information regarding geology, sample locations and methodology is lacking in the reports reviewed.

The 1993 exploration program included trenching on six IP anomalies by first Sable Resources, then Hera Resources Inc. Spencer (1994) reports that two of the 1988 trenches were mapped and sampled and trenching in 1993 tested four high priority anomalies. This work resulted in the discovery of 3 gold-bearing vein structures, 1993-1, 1993-2, and 1993-3 or Sable vein. Sample results from these trenches are integral to his resource calculation and plotted on sections, but no sample and analysis methodologies are discussed.

Trenching continued in the 1994 exploration program (Trenaman, 1995), but again, the trenching part of that program is not discussed. A total of 46 trenches were dug, sampled and backfilled. Trench results are relied on heavily in the resource calculation by Beaton (1994). Spencer and Bridge (1995) describe the trench geology of the 88-1 zone in general terms as indicating that "the intensity and width of the pyritic alteration increased to the west…."

Limited trenching in 1995 was carried out on the Taurus West zone, uncovering disseminated pyrite mineralization with an east-west strike and steep dip. Although the chip sampling in the trenches is mentioned, no results are reported (Broughton and Masson, 1995).

Trenaman (1997) mentions "a minor amount of trenching" in conjunction with reverse circulation and diamond drilling conducted from August 5, 1996 to September 27, 1996. Presumably, this trenching was done in the 88 Hill area.

In 1999, Cusac Gold Mines trenched and sampled the 93-2 vein near the Sable portal (Glover, 1999). Here, a Cat 235 excavator and Wajax fire pump were used to clean the bedrock surface. A total of 210 metres of trench exposed two quite continuous east-west structures over 70 metres and 30 metres, respectively, and three crosscutting north-south trenches exposed several thin, less continuous structures. Mapped quartz veins are steeply south dipping and are slightly offset by steep, north-south normal faults. Veins have developed in dilational and shear structures that are quite continuous before horsetailing at either end. Veins were chip sampled at one and two metre intervals. Samples were analyzed by Acme Analytical Labs using a total metallics fire assay. Results show highly variable assay returns; uncut weighted average grade for the veins is 4.9 g/t. Wall rock mineralization appears to be lacking in this area.

11.0 DRILLING

There is no current drilling to report and this section concentrates on the historic drilling which targeted the high tonnage low-grade zones that could be potentially mined by open pit. This drilling commenced in 1988 when Sable Resources Inc. successfully intersected the 88 Hill Zone. Navasota carried out the most recent phase of drilling in 2003. The sections on the 1988 to 2003 drilling were extracted from Wild (2003) and for the 2003 drilling was extracted from Cavey et al. (2005)

Table 11-1 summarizes the drilling that has taken place in these areas. Approximately 330 drill holes out of the 372 holes lie within the American Bonanza Gold Corporation claims. This summary used the information available in the supplied collar file. Minor differences in northings and eastings were noted when compared to the Cavey et al. (2005) summary. All drill intercepts are over drill lengths, true widths were not reported by the companies who completed the drilling.

Table 11-1: Drill Hole Summary

Year	No. Holes	Type	Length(m)
1979	10	ddh?	992
1980	7	ddh?	689
1981	16	ddh?	1,209
1982	8	ddh?	1,361
1984	17	ddh?	1,759
1985	16	ddh?	1,820
1986	14	ddh?	1,002
1987	5	ddh?	618
1988	9	ddh	740
1993	26	ddh	1,555
1994	88	NQ	7,592
1995	17	HQ	2,639
1995	62	NQ	10,053
1995	5	RC	826
1996	5	NQ	583
1996	48	RC	5,333
1997	6	ddh	790
2003	13	NW	1,974
Total	**372**		**41,535**

11.1 1988-1994

Five diamond drill holes were completed in 1988 in the 88 Hill area discovering the 1988-1 and 1988-2 vein systems. Hole 88-5 intersected 5.99 g/t over 12.34 metres. Subsequently, a small open pit extracted 2,600 tonnes grading 2.06 g/t from the 1988-2 vein. No additional information on the 1988 drill program was provided to the author.

In 1993, Hera Resources Inc. completed 26 holes totalling 1,555 metres (5099 feet), as 10-25 metre spaced definition holes, near the Sable workings, on the east side of 88 Hill. Drilling followed up on three gold-bearing vein systems, 1993-1 to 3, uncovered in the 1993 trenching program. Details on the drilling and sampling procedure, including drill logs and assay certificates were not provided, but some and perhaps the entire NQ core from the program is stacked on site.

The 1994 drill program, completed by International Taurus, totalled 7,592 metres in 88 holes, predominantly on north side of the highway, west along strike from the Taurus workings, dubbed the Taurus West zone. Drilling, mainly NQ size, encountered a mineralized zone locally over 200 feet in width consisting of a quartz stockwork system in a broad zone of pyritic altered basalt. For example, 94-56 intersected 1.6 g/t over 44.5 metres core length. The B.M. Zone, consisting of mineralization controlled by east-trending fractures, dipping to the north at 45^o, was also intersected in several holes.

11.2 1995 – Cyprus Canada Program

Cyprus Canada Inc. conducted an extensive diamond drilling program of 13,518 metres in 78 holes concentrated in the Taurus West, 88 Hill, and Taurus Mine areas. The drilling contractor was DJ Drilling Ltd. of Surrey, B.C. Both Longyear 38 and Boyles 56 diamond drills were used. In September, a reverse circulation drill program totalling 826 metres in five holes twinned with existing diamond drill holes was completed to test the viability of RC techniques on the property. Midnight Sun Drilling Co. of Whitehorse, Yukon, completed the test program with a truck-mounted Schramm T66H drill with face sampling bits.

In March 1995, Cyprus Canada drilled 7 NQ holes totalling 1357.2 metres in the south-west portion of the Taurus West zone (T95-1 to 3) and western edge of the 88 Hill area (T95-4 to 7).

Later in May and June 1995, Cyprus Canada drilled seven more NQ holes totalling 1209.4 metres to test chargeability anomalies to the south (T95-10, 11), south-west (T95-12), and west (T95-8, 9) and north-west (T95-14). One hole, T95-13, tested the south flank of Taurus West.

Between July and October 1995, Cyprus Canada drilled 64 NQ and HQ holes totalling 10,104.1 metres in 88 Hill, Taurus Mine, and Taurus West areas. T95-15 to 17 were drilled to the south and south-west, outside the current property boundaries.

A total of 13 diamond drill holes were completed in the Taurus Mine area. Pyritic quartz vein mineralization was reported in hole T95-19 which intersected 32 metres of 1.56 g/t gold immediately below the Decline Fault, and T95-36 which returned 1.29 g/t over 39.2 metres above the Decline Fault, 200 metres east of T95-19. One hundred metres further east and on strike from T95-36, T95-39 intersected 1.23 g/t over 10 metres. Drilling confirmed that the best potential is in the 200 metres above the Decline Fault.

The 88 Hill area has been explored since 1988, including surface and underground work on the Sable and Plaza vein systems on the east and north-east flank. A total of 34 diamond drill holes were drilled into the 88 Hill area during the 1995 program. The area is bound by the Decline Fault to the east and Taurus West Fault to the west and hosts pyritic quartz vein mineralization in non-magnetic basalt above chert and argillite footwall. Section 600W shows broad zones of pyritic, sheeted quartz vein mineralization above a weakly altered chert and basalt footwall. Composite results include 0.97g/t over 14 metres in T95-56, 1.16g/t over 130 metres in T95-51, 1.59g/t over 55 metres in T95-46, and 0.94 g/t over130 metres in T95-48. Mineralization is weak on section 700W, but 1.65g/t over 46 metres was intersected in T95-62, on section 800W and 1.07g/t over 55.3 metres in T95-66B, on section 1000W. The east-dipping Taurus West Fault underlies mineralization on sections 1100W to 1300W, with quartz veining becoming much more abundant at the base. The 88 Hill zone is open to the south and to the north appears continuous with the Highway Zone.

A total of 14 diamond drill holes were completed in the Taurus West Zone, to follow up encouraging results from the 1994 drill program. Four holes drilled on section 1100W intersected long intervals of disseminated pyrite mineralization that included 2.47g/t over 86 metres in T95-29. T95-70 was collared 5 metres west of T95-29 and drilled 5° shallower at -45°. Unfortunately, continuity of grade between the two holes is weak, as T95-70 returned 0.53g/t over 76 metres. T95-44, drilled to the south under a trench, intersected a number of zones averaging 0.88g/t over 85.9 metres. Step-out drilling100 metres to the east and the west encountered in only thin, low-grade mineralization. In addition to poor grade continuity, the disseminated pyrite mineralization did not perform well in preliminary metallurgical testing.

Five reverse circulation (RC) holes twinned five diamond drill holes: T95-18 and 21 in the Highway Zone, T95-32 and 35 in Taurus West, and T95-48 in 88 Hill. T95-21R averaged 56% recovery until a rotary wet splitter was installed, increasing recovery to 82%.

11.3 1996 AND 1997

After the exit of Cyprus Canada from the project in early 1996, International Taurus drilled 36 RC holes totalling 3869 metres, in the 88 Hill area, drilling on 50-metre centres, and five NQ holes, totalling 582 metres extending the zone 300 metres to the west. According to Trenaman (1997), drilling utilized a 5.25 inch outside diameter bit with water injection. Samples were collected at 1.5 metre (5 foot) intervals and split using a riffle splitter to obtain two 20-pound (approximate) samples. Both halves were assayed and the two results averaged. Assays were cut to 10 g/t. Trenaman believed that these RC results were more reliable than diamond drill samples due to poor recoveries by the latter in critical sections.

The zone defined in the 88 Hill area is approximately 500 metres by 150 metres. Mineralization consists of a steeply dipping quartz vein system cut off between 50 and 125 metres depth by a south-dipping thrust fault. Diamond drilling pulled this mineralization an additional 300 metres to the west where it merges with a second zone localized along an east-dipping thrust fault, presumably the Taurus West Fault. Trenaman suggests that a thick zone of mineralization occurs where the two thrust faults intersect. Wild (2003) was unable to check drill logs or assay certificates to verify the geology but was comfortable with the results of this program because of the overlap with the well-documented 1995 program.

In 1997, International Taurus drilled a further six holes totalling 790 metres. No information concerning this program was made available for the report of Cavey et al (2005).

11.4 2003

In late 2003, Navasota Resources Limited conducted a two-phase program, Phase 1 consisting firstly of general geological compilation with some geochemistry as well as limited remapping and relogging of specific core. Phase II consisted of a drill program of 13 NQ holes totaling 1974 metres in length. In a press release dated January 8, 2004, Navasota Resources Ltd. reported that it had decided “not to maintain its option on the Cassiar Ore project, Taurus Gold Property, in the Cassiar Gold camp in northern British Columbia. Management’s decision weighed the substantial costs of maintaining the option and conducting sufficient additional exploration to increase the mineral inventory to a size and grade sufficient to justify mining operations against other opportunities.” The holes were designed to test the zones identified in post 1994 work. All of the holes with the exception of COR 03-11 were drilled at azimuths of either 322^{o} or 142^{o} (south-east or north-west).

In the 13 holes only three samples returned values greater than 4 g/t Au. They include 104.14 - 106.18 metres in COR-03-6 which ran 5.82 g/t Au over the 2.04 metres, 35.4 - 36.1 metres down COR-03-7 which ran 8.78 g/t Au over the 0.7 metres, and from 14.4 to 16 metres down COR- 03-13 which ran 11.5 g/t Au over the 1.6 metres. Within the zones of interest most of the assays are between 0.5 and 2.0 g/t Au. The previous table highlights some thick intersections with grades between 1 and 2 g/t Au. Most of the intercepts greater than 2 g/t Au are less than three metres in length and the biggest exception to this is from

2.74 to 17.6 metres in COR-03-13 which averaged 2.44 g/t Au, almost 50% of the gold in this length is from one interval grading 11.5 g/t, of the 7 other intervals sampled three were less than 1 g/t, 2 were between 1 and 2 g/t and two were between 2 and 3 g/t. The 2003 drilling was oriented along different sections than previous drilling but some of the holes can be projected onto sections 1100W and 600W.

In general terms, these results confirm the results reported in previous programs on the Taurus property. The zones intersected in the 2003 program do not seem to match up identically with those from previous work and therefore more work is needed to understand the nature of the zones on the property. The grade variability associated with the T4 mineralization may be the cause of this and some small test pits and or underground sampling may be needed to understand the geology better. The T3 mineralization seems to be more predictable but rarely contains more than 2 g/t (of 69 intervals sampled in COR-03-01, 62 were >0.5 g/t Au and only 11 were >2 g/t Au with 3.24 g/t Au being the highest).

12.0 SAMPLING METHOD AND APPROACH

The sections on the 1995 and 1996 campaigns have been extracted from Wild (2003). Minor changes have been made to spelling and grammar.

Broughton and Masson (1996) describe the sampling methodology for the 1995 Cyprus Canada exploration program in some detail. Information concerning sampling method for the other programs has either not been documented or the documents were unavailable to Wild.

Cyprus Canada collected soil samples in the summer of 1995. A grid was cut on a 200-metre spacing, with stations every 50 metres for control. The grid was surveyed for even tighter control. The grid ran from 4E to 34W between 1500S to 1500N, and 6E to 24E from 1000S to 500N or 1000N. Samples were collected from the B-horizon. More details regarding the sample collection and analysis procedures were unavailable to the Wild.

DJ Drilling Ltd. of Surrey, B.C, performed diamond drilling in 1995. All core from the Cyprus Canada diamond drill program was sampled initially (T95-1 to 7) using geological control, with sample lengths typically around one metre. Drilling utilized a conventional NQ core barrel. The second set of holes (T95-8 to 14) employed a standard two-metre sample interval, except where visible gold was noted. In that case, a shorter interval was marked and whole core was collected. To improve recovery to greater than 95%, a triple tube set-up was utilized. The remaining holes, T95-15 to 78, were drilled with Longyear 38 and Boyles 56 rigs, using both NQ and HQ triple tube equipment.

Also in 1995, five reverse circulation (RC) holes twinned five diamond drill holes in three distinct zones. A 12.5% sample split was sent for analysis. Samples from the three holes in pyritic quartz vein mineralization assayed an average 23.8% higher in the RC samples than in core samples. In disseminated pyrite mineralization (Taurus West), RC samples assayed lower than core samples. Broughton and Masson (1996) concluded that these variances were the result of statistical variation, systematic overestimation of grade due to contamination in RC samples, and/or a more representative sample from RC due to the greater sample size. From their study, no firm conclusion can be made.

In 1996, RC drilling utilized a 5.25-inch outside diameter bit with water injection. Samples were collected at 1.5 metre (5 foot) intervals and split using a riffle splitter to obtain two 20-pound (approximate) samples. Both halves were assayed and the two results averaged. Assays were cut to 10 g/t. Trenaman (1997) believed that these RC results were more reliable than diamond drill samples due to poor recoveries by the latter in critical sections. Core holes were sampled using the same two metre sample interval criteria established by Cyprus in 1995.

Although there is no complete description on the sampling method and approach in Wells (2003), it can be inferred from the report that a similar approach to that of Cyprus was used.

A total of three cored drill holes and three RC holes were reviewed by Rob Carter of Wardrop during his site visit. The process indicated that samples have been taken across lithological boundaries. Mineralization was mainly identified by the logging geologist as either T4 or T2 type mineralization with very few intersections of T3 mineralization. In reviewing the core, T3 mineralization is evident but has not been identified.

No list of samples or sample composites is provided, as there are 15,787 assays in the database.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

The following section has been extracted from Wild (2003) and Cavey et al. (2005) and describes historic information. Minor changes have been made to spelling and grammar.

Core samples from the 1995 Cyprus Canada program were split with a conventional core splitter, bagged and sent to Chemex Laboratories in Vancouver. Half the core was left in the core boxes as a permanent record. Check samples were analyzed at Acme Labs, also in Vancouver. In the lab, the entire sample was pulverized to 90% passing through –60 mesh, followed by splitting, final pulverization, and fire assay with an atomic absorption finish of a 200 gram subsample. Chemex in Reno, Nevada created two standard samples, from the reject portion of samples from the first stage drill program (T95-1 to 7), one grading 0.45 g/t and the second at 1.40 g/t. Standards were included with every sample batch. Check assays were conducted on 10% of the samples at Chemex, and every 20th sample was checked at Acme. Specific gravity tests were also conducted by Chemex using a standard immersion weighing technique on split 10-cm pieces of core collected every five to 10 metres.

Core sampling was thorough and appears to have been done to industry standards. Chain of custody and security issues are not addressed in the Cyprus reports but given the nature of the program and volume of samples, no concerns have been raised. Sample preparation and analytical procedures also conform to industry standards. No information about the sampling protocols of other drill programs was provided.

In the recently completed Navasota program, core was split on site by a mechanical splitter. The project geologists then transported, bagged and tagged samples to Eco-Tech Laboratories sample preparation facility in Stewart, B.C. The samples were crushed, split, and pulverized to produce 200-gram pulps, which were shipped to Kamloops for analysis. Each pulp had 30 grams removed for digestion and ICP analysis of gold and 29 other elements. Any sample with gold greater than 1 g/t was repeated using 30-gram fire assay. Eco-Tech ran duplicate samples every 10 to 15 samples as an in-house quality control check.

In addition Navasota inserted blanks and a standard purchased from West Coast Minerals in Burnaby. Metallic assays were run on 19 samples with results between 0.5 and 11 g/t Au. Navasota concluded that none of the blanks returned elevated gold values and hence cross sample contamination in the lab is not expected. Duplicate Navasota gold samples were mainly within 20% of each other. Of the six samples outside the 20% correlation, five were greater than 0.6 g/t Au.

Of the 19 metallic assays run, eight returned higher values with the largest discrepancy being a 5.82 g/t Au fire assay on a 30 gram subsample that came back as 10.76 g/t Au after metallic assays.

The quality control procedures used by Navasota indicate that variable results are due to the presence of relatively coarse gold particles. This indicates the gold may be underestimated and further check work is warranted.

In Wardrop's opinion the sampling from 1995 onwards meet industry standards. It is not possible to comment on earlier samples, as there is little to no documentation. There is however, no reason to assume that the earlier samples were not collected to industry standards. The data is regarded as adequate for a resource estimate.

A programme of duplicate sampling should be carried should there be a need to improve the level of confidence in any of the areas where there is predominantly pre-1995 drilling.

14.0 DATA VERIFICATION

The following section on historic verification has been extracted from Wild (2003) and Cavey et al (2005). Minor changes have been made to the text. It is apparent in the available documentation that work was carried out to industry standard. However, there is no documentation for the pre-1994 drill holes.

Wardrop has carried out an independent verification of the database with the available assay certificates and log sheets. Further verification of collars and drill logs was carried out on-site.

14.1 HISTORIC VERIFICATION

Core sampling and analysis of drill core was conducted to an industry standard. Sampling was apparently done in a consistent and professional manner. Chemex Laboratories in Vancouver, was the primary lab used, with one set of check analyses done at Acme Labs in Vancouver.

Chemex conducted automatic check analyses on 10% of the samples. In addition, every 20th sample was check assayed by Acme. The Chemex check assays compared well with the original assays, with an R^2 value of 0.9488. Graphs of the Chemex versus Acme duplicate assay results give an R^2 value of 0.8968. Cyprus Canada also compared reproducibility of gold assays on the metallics minus fraction with an AA (atomic absorption) finish versus gravimetric finish and achieved an R^2 value of 0.9759.

Two standards were made up for the bulk of the 1995-drill program utilizing rejects from the winter drill program (T95-1 to 7). The low standard was assayed at 0.45 g/t and the high standard at 1.40 g/t. Standards were submitted with each sample batch. A total of 87 analyses were made on the low standard, with a mean of 0.4556, standard deviation of 0.0369 and upper and lower limits of 0.5334 and 0.3777, respectively. A total of 94 analyses were made on the high standard, with a mean of 1.3969, standard deviation of 0.1279 and upper and lower limits of 1.6667 and 1.1271, respectively.

The 2003 geology and drill programs were basically designed as due diligence programs to verify historic data. These programs have succeeded in obtaining similar gold grades along comparable lengths from similar mineralized areas of the property. Individual intercepts are different and can be explained by the variability present in the T4 vein mineralization. It appears that the reproduction of individual sample results will be difficult given the large number of variable grade quartz veins located on the property.

14.2 WARDROP VERIFICATION

14.2.1 GENERAL VALIDATION

During the initial validation of the database it was noted that the 2003 drill holes were missing from the database. These drill holes were entered into the database using a double entry system. Collar positions, downhole dips and lithologies were extracted from the drill hole logs. Although it was necessary to extract some assays from log sheets, where possible they where taken from assay certificates. Minor errors were noted in the logged intervals and these were modified in order to carry out the estimate.

During the validation of the database, assays for which certificates were not available were compared to the assays in the drill logs. Due to the lack of documentation of the pre-1994 drill holes, it was not possible to carry out any validation on the assays and lithologies.

During the site visit three diamond drill holes and three RC holes were reviewed.

14.2.2 COLLAR POSITIONS

A total of 34 drill hole collars were found during the site visit and handheld Global Positioning System (GPS) measurements taken. The GPS used was GARMIN GPSmap76, and the average accuracy reading recorded was within 6 metres. An additional five locations were measured but as these did not have bore hole identification, their identification has had to be assumed.

Apart from drill holes TT96-122 the majority of positions show acceptable differences when compared to the collars in the database (Table 14.1).

Table 14-1: Comparison of Database Collar Positions and GPS Readings

	Difference in metres				Difference in metres		
BHID	**X**	**Y**	**Z**	**BHID**	**X**	**Y**	**Z**
TT95-30	5	-2	-2	**TT96-105**	-2	-1	-4
TT95-46	9	-1	-7	**TT96-106**	-2	-5	-3
TT95-51	-3	-4	-7	**TT96-107**	-3	-5	-5
TT95-62	2	3	1	**TT96-108**	-9	-4	-1
TT95-66A	13	-10	-3	**TT96-109**	-8	-10	-7
TT95-66B	16	-3	-1	**TT96-110**	-4	4	-4
TT96-91	6	1	-5	**TT96-111**	0	-7	-4
TT96-92	4	1	-14	**TT96-112**	-1	3	2
TT96-93	-1	-2	-5	**TT96-114**	-2	-12	14
TT96-94	-8	1	-4	**TT96-115**	-5	-11	9
TT96-95	-5	1	-6	**TT96-117**	11	0	-5
TT96-96	-3	8	-5	**TT96-122**	36	-3	-1
TT96-97	2	0	-9	**TT96-124**	4	-8	5
TT96-98	9	3	-11	**TT96-126**	-3	0	11
TT96-99	5	-1	-9	**COR-03-05**	-6	1	13
TT96-100	-1	-3	-4	**COR-03-06**	0	-7	5
TT96-101	-1	0	-6	**COR-03-07**	3	-2	2
TT96-102	-7	0	-7	**COR-03-08**	3	-3	2
TT96-103	-7	2	-5	**COR-03-10**	8	2	1
TT96-104	-6	-3	-1				

The collar positions were also compared to the topography in Datamine. Discrepancies were noted only in five drill holes. These holes plotted between 11 and 40 metres above the topography. The collar positions were not changed in the database as there is not certainty to the source of the error and it was not believed that they would significantly alter the resource estimate. These positions should be resurveyed prior to further resource estimates to establish the correct topography and collar position.

14.2.3 ASSAYS

A total of 3,477 samples were checked out of a database of 15,787. The database has some assays set to zero where no samples were taken. Assay certificates were used as the primary source but in some instances where there are no certificates, the records were compared to those in drill logs. There are assay certificates from two laboratories for the 1996-drill campaign, namely Chemex Labs Ltd. and Mineral Environments Laboratory. The assays in the Excel database correspond to those from Chemex. Results are summarized in Table 14.2.

Table 14-2: Summary of Samples Checked by Year

Drill Campaign	Total Assays	Number Checked	No Data	%Checked	Errors	Comments
1979	283	0	283	0.00%		
1980	115	0	115	0.00%		
1981	234	0	234	0.00%		
1982	372	0	372	0.00%		
1984	482	0	482	0.00%		
1985	376	0	376	0.00%		
1986	155	0	155	0.00%		
1987	78	0	78			
1988	334	0	334	0.00%		
1993	451	0	451	0.00%		
1994	2710	671	2039	24.76%	5	sample 71458 is 10.97 but should be 1.097, sample 71459 is 11.66 but should be 1.166, sample 71490 is 89.49 but should be 8.949, sample 71494 is 17.83 but should be 1.783, sample 73211 is 8.23 but should be 0.823
1995	5861	1300	4561	22.18%	0	from drill logs- no assay certificates
1996	3253	369	2884	11.34%	0	
1997	414	414	0	100.00%	0	
2003	669	669	0	100.00%	0	
Total	**15787**	**3423**	**12364**	**21.68%**	**5** **0.15%**	

14.2.4 DOWNHOLE SURVEYS

No primary downhole survey data was present. Downhole dips recorded on drill logs were checked with the information in the database.

14.2.5 *DRILL HOLE REVIEW*

Core drill holes T95-62, T95-66B, T95-78 and COR-03-06 as well as RC holes T96-105, T96-115 and T96-120 were reviewed during the site visit. The observed lithologies and zones of mineralization generally matched those in the logging sheet. However, there are portions of the core that are logged as either T4 or T2 mineralization contain significant amounts of T3 mineralization. In the pre-2003 drill holes sampling was carried out across lithological units and mineralization.

15.0 ADJACENT PROPERTIES

The following section has been extracted from Wild (2003). Minor changes have been made to spelling and grammar.

The Taurus Property sits proximal to the larger Table Mountain Property, owned by Cusac Gold Mines Ltd., and is partly surrounded by claims controlled by Cusac. Wardrop has noted that there are also claims within the American Bonanza Gold Corporation external boundaries that are owned by others. The Table Mountain Property includes the Cusac (formerly Erickson) Mine, located approximately 10 kilometres south of the Taurus Property. The property hosts gold in steeply dipping quartz-carbonate veins in basalts immediately below listwanite zones. The listwanite zones are represent quartz-carbonate alteration along many shallow-dipping thrust planes. Mineralized veins pinch and swell and are characterized by multiple brecciation, ribboning, increased carbonate content and usually less than 2% pyrite with traces of chalcopyrite and sphalerite (Westervelt, 1994). This style of mineralization is very similar to mineralization on the Taurus Property. Information concerning the Cusac Mine is available in the Minfile database, accessible on the BC Ministry of Energy and Mines website.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

16.1 REVIEW OF METALLURGICAL DATA – INTRODUCTION

A commercial gold producing plant was operational during the period 1982 to 1988 treating ore from the American Bonanza claim area/deposit and the nearby Cusac Mine. Although some plant data is available and will be discussed, the first recorded metallurgical test program appears to only have been done during 1987 by Westcoast Mineral Testing. This was followed by further tests by the same company in 1994, and by Beattie Consulting during 1995. However, the test details, procedures used, and origin(s) of the samples tested were in many cases not recorded, and the results obtained from these test programs are therefore listed as an indication of the anticipated outcomes only. Hazen Research conducted a more detailed test program in 1996 and the results of these tests provides the basis of the estimated recoveries for the various process treatment options as detailed in this report. The anticipated recovery of silver will also be reported in this review. Initially it had apparently not been recognised that the different ore types responded differently to recovery processes, and some of the earlier testwork did not make any distinction between the ore types. The Hazen Research test program highlighted the significantly different gold extraction results obtained from the different ores. It is therefore deemed imperative that the different ore types be identified and tested separately in order to assist with the economic evaluation of this deposit.

16.2 PLANT DATA

The best available metallurgical processing information for (apparently) T4-type material, or ore, is based on the production data from the Taurus concentrator for the period 1986 to 1988. This mill was constructed in 1981 and commissioned during 1982. The plant operated until1988 when the ore reserves from the Taurus Mine lease area were exhausted. From 1986, the mill also processed ore from the nearby Cusac Mine on a custom toll-milling basis.

The mill initially comprised the following unit operations and operated at a throughput of 155 tonnes/day (t/d), subsequently reduced to 125 t/d for the harder ore from Cusac Mine. Specific plant parameters, details and accuracy of plant measurements cannot however, be evaluated since these are not discussed in the information made available for review. The unit operations included:

- A two-stage, closed-circuit, crusher operation
- A closed-circuit, single-stage, ball mill for grinding

- Jigging of the mill discharge to obtain a gravity concentrate
- Upgrading of the jigging concentrate using a shaking table to obtain a high grade gold concentrate
- Flotation of the gravity tailings to produce a bulk flotation concentrate, for onward sale to a refinery in Montana for credit for the gold content
- [subsequently installed during 1985] the cyanidation of the bulk flotation concentrate for gold recovery
- Cyanide destruction of the leached flotation concentrate tailings prior to discharge to a tailings dam.

A summary of the plant production data for the period 1986 to 1988 is given in Table 16-1 below. Although the ore was considered to be T4 material in previous reports, this would require geological verification.

Table 16-1: Taurus Concentrator Plant Results

Item	Tons	Grade, Au g/t	kg Gold Produced	Distribution Total, %	Distribution Excluding Gravity, %	Distribution Cyanidation only, %
Mill Feed	33694	4.19	141.15	100.0	100.0	-
Gravity Concentrate	-	-	55.05	39.0	-	-
Flotation Concentrate	909	79.87	72.60	51.4	84.3	-
Cyanide Gold ex Flot. Conc.	-	-	54.31	38.5	63.1	74.8
Cyanide Tailings ex Flot. Conc.	909	20.12	18.29	13.0	21.2	25.2
Flotation Tailings	32785	0.41	13.50	9.6	15.7	-
Gold Produced	-	-	109.36	77.5	-	-

The results indicate that the overall gold recovery achieved was 77.5% over this milling period of which 50.3% was recovered by gravity concentration with an overall gravity concentration recovery of 39.0%. It should also be noted that the overall flotation recovery of gold was 51.4% or 84.3% if the gravity concentration recovery is excluded. Of the flotation gold recovered into a bulk concentrate, only 74.8% of the gold was extracted by the subsequent cyanidation leach and recovery from solution process. No operational details have been reported in the literature provided for this study. Plant parameters and conditions, such as fineness of grind, flotation procedures and reagents, cyanidation concentration, and gold recovery from cyanide solutions, are therefore unknown and no comments can be made about the efficiency of the plant operations. However, the data provides a good and reliable indication of the amount of gold that could be recovered from T4-type material using the above processing methods.

16.3 METALLURGICAL TEST PROGRAMS

16.3.1 WESTCOAST MINERAL TESTING, 1987

The Westcoast Mineral Testing Company was apparently the first to report metallurgical testwork results in 1987 from samples taken from the Taurus mine deposit. These samples subsequently became known as T3-type material. This material was a low gold grade, high-pyrite content and was found to give poor gold recoveries. Flotation, cyanidation and gravity concentration tests were conducted by Westcoast Mineral Testing. Details regarding the test procedures and techniques used have not been reported. The test results are therefore quoted verbatim and summarized in Table 16-2.

Table 16-2: Test Results, Westcoast Mineral Testing, 1987

Test Procedure	Head Grade Au, g/t	Recovery %	Remarks
Gravity Concentration	4.4	"low"	
Flotation	2.4	94	30% mass recovery
Cyanidation - Ore, Test 1	2.4	48	
Cyanidation - Ore, Test 2	4.4	60	

Since no test procedures and details regarding the sample origins, sampling methods, test procedures and parameters, test data, and assaying methods have been reported, these results can only be used in a general manner. Thus the flotation recovery for gold into a sulphide concentrate can be expected to be high, namely > 90%, while the cyanide extraction of gold could be expected to be between 50 and 60%. However, this gold extraction is significantly higher than the results subsequently reported by Hazen Research in 1996 for T3-type material. Specifically, the Hazen Research test results showed major differences in the treatment of T3A and T3B material. The origin of the sample used by Westcoast Mineral Testing, although claiming to be T3-type material is therefore seen to be crucial for the accurate estimation of gold recoveries from the different ore zones.

16.3.2 WESTCOAST MINERAL TESTING, 1994

Westcoast Mineral Testing conducted a more comprehensive testing program in 1994 and the results of these tests are given in Table 16-3. Again, test details and procedures have not been detailed. Also, the type of material used in the test program, that is, the T3 or T4 origin of these samples, was not disclosed either, although mention was made that the samples had a high pyrite content of up to 10%.

Table 16-3: Test Results, Westcoast Mineral Testing, 1994

Test Procedure	Head Grade Au, g/t	Conc. Grade Au, g/t	Recovery %	Remarks
Gravity Concentration, I	8.8	147	8.3	
Gravity Concentration, II	6.8	~ 120	8 to 31	average of 4 tests
Flotation	8.2	51	94	15% mass recovery: 56% - 74 microns
Cyanidation - Ore, Test 1	8.2	-	25	24 hour test; 100% - 6730 microns
Cyanidation - Ore, Test 2	2.8	-	74	24 hour test; 100% - 6730 microns
Cyanidation - Ore, Test 3	1.8	-	24	24 hour test; 100% - 6730 microns
Cyanidation - Ore, Test 4	1.9	-	57	24 hour test; 100% - 6730 microns
Cyanidation - Ore, Test 5	5.8	-	70	43% - 74 microns
Cyanidation - Ore, Test 6	6.2	-	76	53% - 74 microns
Cyanidation - Flotation Conc.	10.3	-	78	39% - 74 microns

The general conclusions that could be drawn from the results of this set of tests are the following.

(a) The recovery of gold by gravity concentration was not as significant as had been obtained by the Taurus plant operations. The highest recovery obtained was 31%, whereas the plant recorded an overall recovery of 50% of the gold produced, or 39% of the ore feed. It was reported that no visible gold was observed in any of the gravity concentrates produced.

(b) A relatively low-grade flotation concentrate of about 51 g/t Au was recovered although the actual flotation recovery was high at 94%. The attempted gold – pyrite flotation separation tests were unsuccessful. Also, no sulphide sulphur assays were reported and the overall sulphide mineral flotation efficiency can not be evaluated.

(c) Heap leach amenability tests on various different samples of crushed material of minus 6.73-mm particle size resulted in various extractions being obtained. A relatively high grade sample of 8.2 g/t Au gave a gold extraction of 25%, while three low-grade samples varying in grade between 1.8 and 2.8 g/t Au gave extractions between 24 and 74%. These significantly different extraction results probably reflects the different geological origins of the various samples. The cyanide consumption of the various tests remained relatively consistent at between 0.4 and 0.6 kg/t NaCN.

(d) The extraction of gold was found to be dependent on the grind size. A finer grind increased the extraction of gold.

(e) The cyanidation of flotation concentrate resulted in an extraction of 78% of the gold. This recovery was very similar to that obtained by the Taurus plant operations which reported a recovery of 75%.

(f) The origin of the samples tested remained unknown and conclusions cannot be drawn. Given the relatively high cyanidation extractions indicated in Table 16-3, it would appear to indicate that the samples tested were from T4-type material.

16.3.3 *Beattie Consulting, 1995*

Beattie Consulting Company conducted some metallurgical tests during March 1995 reportedly using ore samples of both types, namely T3 and T4 material. The details of these tests are also not available but have been reported by Hawthorn and are quoted from this reference.

The gravity concentration tests, although achieving ratios of concentration approaching 1000:1, gave low gold recoveries of < 10%. The grades of the concentrates obtained were not recorded. The detailed results of the flotation tests done by Beattie were also not reported, although mention was made of substantial recovery losses during the cleaning stages, but the extent of the losses was not quantified and the objectives of the flotation tests were not specified.

16.3.4 *Hazen Research, 1996*

In contrast to the above, a comprehensive test program was conducted by Hazen Research during April 1996. Eleven composite samples of T3 and T4 material were tested, although some samples were mixed with T2 and/or T1 material. The tests were reported to have been carried out on composite samples of which eight were of the quartz – pyrite, T4-type samples, and three were of the disseminated pyrite, or T3-type samples. A distinction was made between samples labelled as T3A and T3B material. The T3A sample was regarded as a T4-type material, while the T3B was the disseminated pyrite type of T3-type material. Nothing is known about the nature of the samples labelled as T2 and T1 types.

Hazen Research did not conduct any gravity concentration tests. However, in addition to flotation and cyanidation tests, Hazen Research also conducted acid-base accounting tests, diagnostic leach tests, and detailed assays on the samples tested using Fire Assay for gold and silver, and Inductively Coupled Spectrometry (ICP) and X-Ray Fluorescence (XRF) analytical techniques for other elements of interest.

The flotation test results obtained are detailed in Table 16-4, the cyanide leach results are given in Table 16-5A and Table 16-5B, while Table 16-6 gives the results of the diagnostic leach tests. Table 16-7 summarizes the analytical results obtained of various elements of interest in the samples of both ore types that were tested.

Table 16-4: Flotation and Flotation Concentrate Leaching Test Results, Hazen Research, 1996

Sample Type	Head Grade Au, g/t	Conc. Grade Au, g/t	Flotation Recovery %	Cyanidation Extraction %	NaCN, kg/t	Lime kg/t	Overall Recovery %
Sample #1; T4	3.98	25.0	98.2	84.1	6.5	6.0	82.6
Sample #2; T3A with T2 & T1	1.13	15.2	95.2	73.9	10.8	10.0	70.4
Sample #3; T4, with T2	2.02	18.5	97.4	65.9	8.3	8.5	64.2
Sample #4; T4, with T3A	2.13	24.9	97.4	81.0	10.3	8.0	78.9
Sample #5; T4, with T2	1.75	14.0	96.8	86.3	7.0	5.5	83.5
Sample #9; T4	1.89	25.5	97.4	87.1	10.2	9.5	84.8
Sample #10; T4	0.55	5.0	87.5	39.0	8.0	6.0	34.1
Sample #11; T4, with T2	0.58	8.4	90.0	69.8	12.2	9.5	62.8
Sample #6; T3B	2.98	8.9	96.7	7.5	3.3	8.0	7.3
Sample #7; T3A and T3B	1.30	7.3	88.1	21.1	3.9	7.0	18.6
Sample #8; T3A and T3B	1.03	-	-	-	-	-	-

The flotation results given in Table 16-4 are similar to those obtained with previous tests, namely a low gold grade bulk concentrate with high gold recoveries, generally varying between 88 and 98% for both sample types. The flotation concentrates were subsequently reground to a particle size of minus 37 microns, and then cyanided for gold extraction. The gold extractions varied between eight and 21% for the T3 samples confirming the refractory nature of the flotation concentrates despite the fine grind, particularly for the T3B-type material. The T4 samples gave a mixed response varying from a low of 39 to a high of 87%. It is unclear whether the presence of T2 and/or T1 sample types mixed with the T3 and T4 material effected these results, or whether it again demonstrated the inherently varied nature of both T3 and T4 ore types respectively. Cyanide and lime reagent consumption values were high. For the reground T4 material, the cyanide consumption was between 7 and 12 kg/t, although it was significantly lower for the T3-type material at about 4 kg/t (excluding Sample #2). The lime consumption was relatively high for all the tests as a result of the high sulphide mineral content of the flotation concentrates and varied from six to 10 kg/t.

The overall gold extractions achieved by flotation and the cyanidation of the flotation concentrate is seen to vary greatly. For T3-type material, the low overall recoveries of 7 and 19% were anticipated from the test results of previous investigations. The T4 material overall recoveries also gave mixed results with an overall range from 34 to 85% gold recovery, or between 63 and 85% if the results of Sample #10 are excluded.

The results show that the concentration ratio achieved by flotation is generally low with low bulk concentrate gold grades being attained, for both ore types. Similar findings had been reported by Westcoast Mineral Testing.

Hazen Research have been reported as apparently being unable to selectively recover gold from the associated pyrite in the flotation tests performed during their test program. This also confirms similar results reportedly being obtained by Westcoast Mineral Testing.

Table 16.5A: Cyanidation Leach Bottle-Roll Test Results, Hazen Reset, 1996

	Head	Particle Size; 100% -210 micron			Grind; 100 - 74 microns		
	Grade	Extraction	NaCN,	Lime,	Extraction	NaCN,	Lime,
Sample Type	Au, g/t	%	kg/t	kg/t	%	kg/t	kg/t
Sample #1; T4	3.98	67.4	0.7	2.1	76.1	0.9	1.6
Sample #2; T3A with T2 & T1	1.13	66.3	0.6	1.7	68.6	1.0	1.5
Sample #3; T4, with T2	2.02	52.8	0.7	1.9	65.6	1.2	2.0
Sample #4; T4, with T3A	2.13	71.0	0.8	2.3	73.4	1.0	2.3
Sample #5; T4, with T2	1.75	78.8	0.8	1.9	81.2	1.2	1.8
Sample #9; T4	1.89	76.6	0.3	0.6	83.1	0.8	0.6
Sample #10; T4	0.55	26.6	0.8	1.4	31.2	1.0	1.3
Sample #11; T4, with T2	0.58	52.4	1.2	2.0	61.1	1.2	1.9
Sample #6; T3 B	2.98	3.6	0.6	1.0	6.0	0.9	1.1
Sample #7; T3A and T3B	1.30	15.8	0.5	1.1	14.1	0.8	1.2
Sample #8; T3A and T3B	1.03	11.7	0.6	1.1	14.2	1.2	1.6

Table 16-5B: Cyanidation Test Results, Hazen Research, 1996

	Head	Extraction, %		
	Grade	Base	High T.	"Higher"
Sample Type	Au, g/t	Case	60 deg C	Cyanide
Sample #1; T4	3.98	56.9	50.9	74.1
Sample #2; T3A with T2 & T1	1.13	54.5	66.7	81.8
Sample #3; T4, with T2	2.02	33.9	44.1	50.8
Sample #4; T4, with T3A	2.13	69.4	79.0	82.3
Sample #5; T4, with T2	1.75	64.7	82.4	99.5
Sample #9; T4	1.89	52.7	83.6	90.9
Sample #10; T4	0.55	18.8	25.0	37.5
Sample #11; T4, with T2	0.58	41.2	41.2	58.8
Sample #6; T3 B	2.98	2.3	4.6	4.6
Sample #7; T3A and T3B	1.30	13.2	14.5	18.4
Sample #8; T3A and T3B	1.03	6.7	13.3	10.0

Hazen Research reported two sets of cyanidation test results. The results given in Table 16-5A are from bottle-roll cyanide leach test. Two different particle size samples were tested, namely a particle size of minus 210 microns, and a particle size of minus 74 microns. The duration of these tests was 72 hours, although the test conditions and cyanide strengths have not been reported. The tests generally confirmed that a finer grind was beneficial to leach extraction for both ore types, although the T4 samples gave higher incremental recoveries compared with the T3 material. Cyanide consumption values were fairly consistent for all the tests conducted, with a small increase for the finer grind tests. Lime consumption was relatively static for the two corresponding sets of tests. The gold extractions were very low for T3 material, namely between 4 and 16%, and between 6 and 14% for the finer grind. The T4 material generally gave significantly higher, although widely scattered, gold extractions varying between 27 and 79% for the coarser particle size, and between 31 to 81% for the finer grind. These test results also confirms the varied characteristics of the material within the same ore type.

The cyanide test results given in Table 16-5B generally confirm the gold extraction results reported in the bottle-roll tests. This series of tests was reportedly done as “base case”, a “base case” test at a higher temperature, namely 60^0 Centigrade, and the third set of test results are for double the cyanide concentration as used in the “base case” tests. The “base case” test conditions have not been reported and no comment can be given regarding these tests. However, the differences in gold extractions obtained for the T4-type material were significant varying between 19 and 69% for the “base case” condition [generally similar to the results of Table 16-5A], between 25 and 84% for the higher temperature condition, and between 38 and 99% for the increased cyanide concentration. In the case of T3 material, the respective differences in extractions were not significant.

A further set of results can be compared with the cyanidation results reported above in that the cyanide leach part of the diagnostic test gave results consistent with those reported in Table 16-5A and Table 16-5B for both T3 and T4-type samples (see Table 16-6 below).

It can therefore be concluded that higher cyanidation concentrations and finer grinds will give the highest gold extractions of the T4 material.

The results of the diagnostic leach tests conducted by Hazen Research were consistent with previous observations regarding the refractory nature of the T3, and specifically the T3B material, in particular. However, certain of the T4 samples also exhibited a relatively high degree of refractoriness.

The diagnostic procedure showed that the bulk of the gold not recovered during the cyanide leach is encapsulated/occluded within the pyrite grains. The results obtained are given in Table 16-6.

Table 16-6: Diagnostic Leach Test Results, Hazen Research, 1996

Sample Type	Head Grade Au, g/t	% Gold Extracted Cyanide Leach	HCl Acid Leach	Ntric Acid Leach	Cumulative Total
Sample #1; T4	3.98	74.0	1.5	23.7	99.2
Sample #2; T3A with T2 & T1	1.13	77.1	3.8	17.4	98.3
Sample #3; T4, with T2	2.02	74.5	1.7	23.2	99.4
Sample #4; T4, with T3A	2.13	74.5	2.3	22.1	98.9
Sample #5; T4, with T2	1.75	88.0	1.4	9.6	99.0
Sample #9; T4	1.89	78.8	2.5	17.0	98.3
Sample #10; T4	0.55	35.7	5.0	56.4	97.1
Sample #11; T4, with T2	0.58	61.0	3.9	31.3	96.2
Sample #6; T3B	2.98	6.5	2.0	90.6	99.1
Sample #7; T3A and T3B	1.30	17.0	2.5	78.7	98.2
Sample #8; T3A and T3B	1.03	13.8	3.9	76.6	94.3

The implications of the cyanidation and diagnostic leach sets of results are that the T3-type material has to be regarded as extremely refractory and that standard gold extraction processes will not recover the gold to any acceptable extent. More expensive treatment options, for example, oxidative pressure treatment, or roasting, or biological leaching will be required for this material possibly after a pre-concentration step such as the flotation of the sulphide minerals [containing the gold] into a bulk concentrate.

Detailed sets of assays were also conducted on these samples using ICP and XRF methods. Generally these indicated that no deleterious elements were present in the samples tested that would influence the cyanide extraction of gold. Arsenic was present in concentrations up to 0.26% in both T3 and T4 samples and this may be partially contributing to the refractory nature of both ore types. The manganese content of both ore types was found to be low at < 0.14% and would therefore not be expected to contribute to the refractory nature of the ore. Copper, lead, zinc and nickel were all present in low concentrations in both ore types. The sulphide sulphur assay results confirmed the high sulphide mineral content of some of the samples returning assays of up to 13%. This is apparently present mainly as pyrite. No mineralogical analyses were performed.

A summary of the main elements of interest is given in the following table (Table 16-7). This ICP analytical data gives additional insight into the different sample tested since previously only Fire Assays for gold analyses had been conducted.

Table 16-7: ICP Analyses of Selected Elements, Hazen Research, 1996

	T4 Material, Range		T3 Material, Range	
Element	Low	High	Low	Range
As, %	0.032	0.260	0.092	0.253
Co, ppm	17	30	26	44
Cu, ppm	15	62	26	40
Fe, %	6.73	7.78	7.13	11.20
Hg, ppm		< 1		< 1
Mn, %	0.053	0.142	0.133	0.140
Mo, ppm	1	10	2	7
Ni, ppm	19	27	21	38
Pb, ppm	< 2	4	4	20
S(sulphide), %	0.93	3.61	5.00	12.99
Zn, ppm	12	80	28	50

Hazen Research also reportedly simulated a heap leach test using minus 12 mm-crushed sample, although the origin of the sample was not recorded. An extraction of 25% was obtained for this test confirming the need for a finer grind to liberate/expose the gold. No test details have been reported and the result is included in this review only on the basis that it has been reported elsewhere.

Hazen Research also determined the Bond Ball Mill Work Index as well as the Bond Abrasion Index but without further identification of the sample. Similarly, a High Energy Crushing Work Index tests was done on a sample from the deposit, although its origin was also not recorded. The Bond Ball Mill Work Index and High Energy Crushing Work Index both reported values of 13.3 kWh/short ton indicating moderate energy requirements for the crushing and grinding of this sample and categorising this as a moderately hard quartzite. The Bond Abrasion Index was determined to be 0.33 lb/kWh, which is in the lower end of the range for quartzite, namely 0.19 to 0.99 lb/kWh.

In addition, Hazen Research also tested 10 of the composite samples, as well as samples classified as waste, and flotation tailing samples, to determine the static acid-base accounting (ABA) values. The results obtained indicated that the T4 and waste rock samples were not acid generating. The three T3 composite samples tested gave the lowest Net Neutralisation Potential values, with Sample #6 recording a negative value. Samples from the T3 material were considered as borderline with respect to potential acid generating potential and would probably have to be mixed with waste rock to ensure compliance with environmental regulations.

16.4 Review of Metallurgical Results.

In assessing the results of the tests conducted at various times, the following reflects the anticipated recoveries of gold. The anomalous results, and results from tests with no specific sample identity, have been disregarded for purposes of this estimation. Note that the T3 category in this section implies only the highly refractory T3B-type material as tested by Hazen Research.

1. Cyanidation Recovery – Whole Ore Leach

   Whole ore cyanidation of crushed and milled T4 material to a P80 (80% passing 74 microns/200 mesh) would be expected to give a gold recovery of about 77%. For T3 material, the anticipated gold recovery would be about 4%.

2. Flotation Recovery

   The flotation of T4 material into a bulk concentrate would result in an anticipated gold recovery of about 95%. For T3 material, the corresponding anticipated gold recovery would be about 97%.

   The flotation of gravity concentration tailings of T4 material would result in about 84% of the gold being recovered into a bulk sulphide concentrate. No results are available for T3-type material.

3. Cyanidation Recovery – Flotation Concentrate Leach

   The extraction of gold by the leaching of the bulk flotation concentrates produced from T4 material would be about 79%. The extraction of gold from a bulk flotation concentrate of T3 material would be about 8%.

4. Overall Recovery – Flotation and Cyanidation

   The overall recovery of gold from T4 material would be expected to be about 76% using flotation and the subsequent cyanidation of the bulk concentrate. The corresponding overall recovery of gold from T3 material would be about 7%.

5. Gravity Concentration

   The anticipated recovery of gold from T4 material would be expected to be about 40% using gravity concentration only.

   No specific results are available to estimate the recovery of gold by gravity concentration for T3 material.

6. Heap Leach

   No detailed tests were conducted on specifically identified T4 or T3 material. The one reported test from Hazen Research gave 25% gold extraction at a particle size of minus 12 mm, but the origin of the sample is not known. It could possibly be inferred that this was a sample from the T4-type material since the extraction of gold from T3 material is significantly lower. Other tests conducted at minus 6.73 mm particle size were performed by Westcoast Mineral Testing, but no sample identification was done nor were the test details given. In this case, the head grades and resulting gold extractions differed significantly. The range of gold recoveries reported by Westcoast varied from 24 to 74%.

The process options as discussed above are summarized in the following Table 16-8.

Table 16-8: Metallurgical Results

	Est. Recovery, %		
Process Option(s)	T4	T3	Remarks
Heap Leach I	25	-	crushed to minus 12 mm; T4 inferred
Heap Leach II	24 to 74	-	crushed to minus 6.73 mm; T4 inferred
Gravity Concentration	40	-	after crushing and grinding
Flotation - Whole Ore	95	97	after crushing and grinding
Flotation - Gravity Tailings	84	-	after crushing, grinding & gravity conc.
Gravity, Flotation & Leaching	78	-	leaching of flotation concentrate
Cyanidation - Whole Ore	77	4	after crushing and grinding
Cyanidation - Flotation Conc.	79	8	after crushing and grinding
Flot. & Leaching of Flot. Conc.	76	7	

16.5 SILVER RECOVERY

Although the recovery of silver from the American Bonanza deposit will be secondary to the recovery of gold, silver extraction results have been reported by Hazen Research and are summarized below. Table 16-9 gives a summary of the silver extraction results.

Table 16-9: Summary of Silver Extraction Results, Hazen Research, 1996

Sample Type	Head Grade Ag, g/t	Cyanide Extraction, % Diagnostic Test	Coarse -210 micron	Finer -74micron
Sample #1; T4	8.05	50.2	57.9	26.5
Sample #2; T3A with T2 & T:	2.74	34.8	51.2	8.2
Sample #3; T4, with T2	1.37	42.9	32.0	21.6
Sample #4; T4, with T3A	2.57	40.8	42.2	17.1
Sample #5; T4, with T2	3.08	50.3	52.9	43.9
Sample #9; T4	1.20	29.6	36.0	21.2
Sample #10; T4	2.23	48.8	28.4	36.3
Sample #11; T4, with T2	0.51	31.8	33.5	27.5
Sample #6; T3B	5.48	42.7	74.5	47.0
Sample #7; T3A and T3B	3.08	21.4	42.7	18.4
Sample #8; T3A and T3B	4.97	24.1	43.9	43.8

The cyanide leach part of the diagnostic leach test results, and the bottle-roll cyanidation test results for the minus 210 microns tests, generally give similar extraction results for T4 material (except for Samples #2 and #10). The results for the T3-type samples are significantly different. Comparison of the silver extraction results of the minus 210 microns tests with the corresponding minus 74 microns tests also show significant differences although it would have been expected that the finer grind would give higher extraction results, as was found to be the case with gold extraction. However, without the test details available, it cannot be stated with any degree of certainty as to the reason(s) for the observed differences, except that possibly a cyanide starvation condition could have prevailed during the testing of the minus 74 microns samples.

The anticipated silver extraction by cyanidation leach would be expected to be about 42% for T4 material, and between 43 and 75% for T3B material. It is to be noted that the cyanide extraction for silver for the T3B sample is higher than the gold extraction. However, the re-calculated head assay for silver appears to indicate poor correlation with the sample head assay, and possibly this result has to be regarded as spurious. Alternatively, this could indicate a mineralogical feature inherent to that ore type. Mineralogical and additional metallurgical tests would be required to resolve this apparently anomalous result. It is also assumed that all the silver assays have been conducted in a reliable manner with respect to sample preparation and assay procedure.

16.6 Ore Grade

The above discussion has been an evaluation of the plant data and the metallurgical tests, and an assessment of the results obtained from these tests. During this evaluation, it has been assumed that the ore grade would be such that any of the proposed mill treatment options [namely crushing, grinding, gravity concentration, cyanidation, etc] would be economically viable. The process option for economic consideration will probably be the heap leach option. Conflicting results were obtained with heap leach gold recoveries which varied between 24 and 74% for inferred T4-type material [see Table 16-10]. T3-type material may not be financially viable since its treatment for gold recovery requires relatively expensive unit processes. About 42% of the silver present in the ore is expected to be recovered with the gold.

16.7 Plant Cost Estimates.

Further to the discussion in the previous section (Section 16.6, Ore Grade), a capital and operating cost estimate was evaluated for purposes of illustrating the economic situation of processing T4-type material from the American Bonanza claim area. The two processing options selected were a CIP plant and a low cost heap leach facility. The two extreme recoveries obtained with the heap leach results are used in this cost estimate. The following assumptions are explicit to the derivation of these calculated numbers. All costs are in US dollars.

(a) The capital cost estimate for a typical CIP plant is based on data obtained from the publication “Western Mining Handbook, 2005”.

(b) The operating cost estimate for a typical CIP plant is also based on data from the same publication.

(c) The capital and operating costs for a heap leach plant have been calculated using the CIP costs and factors obtained from the handbook “Evaluation, Design and Operation of Heap Leaching Projects”.

(d) The minimum cost option as calculated above will be selected for this presentation.

(e) The plant feed treatment rate will be 7500 tons per day, or 2.7375 million tons per year.

(f) The head grade of the plant feed will be 1.0 g/t Au.

(g) The gold recovery using the CIP processing method will be 77% (see Table 16-8).

(h) In the absence of any detailed laboratory test results, the gold recovery values used for the heap leach method will be assumed to be 25% and 74% (see Table 16-8).

Using the above information, the following cost and potential revenue estimates have been derived (Table 16-10).

Table 16-10: Cost Estimates

Details	CIP Plant	Heap Leach Plant I	Heap Leach Plant II
Plant Feed, t/d	7,500	7,500	7,500
Plant Feed, t/year	2,737,500	2,737,500	2,737,500
Ore Grade, g/t Au	1	1	1
Anticipated Recovery, %	77	25	74
Gold Recovered, kg/year	2,108	684	2,026
Assumed Price of Gold, $/oz	450	450	450
Calculated Revenue, $/year	30,495,682	9,901,195	29,307,538
Estimated Capital Cost, $ million	80	28	28
Estimated Operating Cost, $/t	8	3	3
Estimated Operating Cost, $/year	22,447,500	8,212,500	8,212,500
Estimated Annual Income, $/year	8,048,182	1,688,695	21,095,038

Viewed simplistically and disregarding the capital cost of the plant, it is apparent that at a gold price of $450/oz, an operating profit will be attained, even at the low recovery of 25%. However, it should be appreciated that there is an absence of reliable heap leach extraction data, and that the above costs have been derived for a general situation. A specific assessment of the capital cost of plant equipment [new or used] is required to validate the above estimates. In particular, the opportunity exists for a significant reduction in the capital cost of either the CIP plant or the Heap Leach plant should suitable used equipment be available. Similarly, the operating costs should be specifically assessed for either the CIP plant or the Heap Leach plant options. However, these numbers can be used for a preliminary cash flow analysis.

16.8 CONCLUSIONS

1. The amount of gold recovered by gravity concentration at the Taurus Mine was significant, namely 39% of the gold in the feed during the treatment of (apparently) T4-type material. Since gravity concentration technology has improved markedly since the late 1980s when the plant was operational, it would be anticipated that the recovery could be improved should a centrifugal gravity concentrator be installed in a similar plant treating this type of ore.

2. The Taurus Plant feed material is readily floated into a low gold grade, high mass recovery pyritic concentrate having a high gold recovery.

3. The results of some of the metallurgical tests done by some investigators do not add to the knowledge as a result of incomplete description of details of these tests and/or procedures employed, and/or the fact that the ore type was not specified.

4. The Hazen Research test results are consistent with the results of other investigators. The detailed nature of the test program makes these results acceptable for the estimation of gold recoveries using various treatment options. The results from the diagnostic leach tests are also comparable to the whole ore cyanidation results thereby confirming the cyanidation results in general terms.

5. Finer grinds improve the cyanide extraction of gold for both ore samples tested, although the proportional increase for T4 material is higher.

6. The highest recovery of gold is estimated to be 78% for T4 material using the process route originally used at the Taurus Plant, namely gravity concentration, flotation and the cyanidation of the flotation concentrate. The equivalent recovery of T3 material would be about 6%.

7. The whole-ore cyanidation process will potentially result in the highest gold recoveries being obtained for T4-type material. Higher cyanidation concentrations will increase the recovery values, although it will result in higher cyanide consumption.

8. Gravity concentration followed by the cyanidation of the gravity tailings [with increased cyanide concentration] would probably be the optimal processing option but would require testing for confirmation. Should coarse gold, or nuggets, be present in the ore, the use of gravity concentration prior to cyanidation would probably be the recommended processing route.

9. The heap leach tests results have given conflicting results. An extraction of 74% may be an economically viable option, but not at the lower extractions recorded. The high extraction result of 74% is encouraging, but this must be properly defined and confirmed. Further work is required to determine why such a range of recoveries occurs, and if the lower recoveries can be improved.

10. Flotation of the gold into a pyritic concentrate gives high gold recoveries but also results in high losses during the subsequent treatment for gold recovery as per the Taurus Plant results.

11. Approximately 42% of the silver present in the T4-type ore would be recovered by a cyanidation leach process.

12. The T3-type ore is highly refractory and should be kept separate from T4-type material if any of the conventional process options are to be used for gold recovery.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

17.1 INTRODUCTION

In order to carry out the evaluation on the property, it was divided into the seven areas based on historic information. Drill holes where subdivided into these seven areas. In some instances where drill holes straddle boundaries or lie close to the boundary they have been included in more than one area. The seven subdivisions are:

- Sable
- 88 Hill
- 88 West
- Highway
- Taurus West (Taurus W)
- Taurus and
- Plaza.

The database used to carry out the resource contains a total of 372 drill holes and 15,787 assay entries, of these approximately 330 lie within the American Bonanza Gold Corporation claims.

Kevin Palmer P. Geo. of Wardrop who is independent of American Bonanza Gold Corporation as specified in Ni 43-101 has carried out the resource estimate.

17.2 DATA

17.2.1 DATABASE

American Bonanza Gold Corporation supplied Wardrop with Gemcom and Excel Databases. The resource estimate by Wardrop was carried out using Datamine software. The Excel Database was used as the primary source of data. The topography solid model was imported into Datamine from Gemcom.

It became apparent early on in the process that the names of lithologies differed from the early logging when compared to later logging. During the site visit and from reviewing literature it became apparent that sampling had been carried out across lithological contacts and that significant amounts of T3 mineralization had been misidentified.

17.2.2 BULK DENSITY AND RECOVERIES

The database supplied to Wardrop did not contain any information on recoveries or bulk densities. A bulk density of 2.7 tonnes per cubic metre has been used (Broughton and Masson, 1996). There is information on recoveries in some of the drill logs and this should be compiled. Wardrop has used the 2.7 tonnes per cubic metre to calculate tonnage. A test programme to establish an appropriate bulk density should be implemented.

17.2.3 CHANGE OF SUPPORT

Drilling on the Taurus property has included several sizes of diamond drill holes as well as RC drilling. Each type of hole will produce a different volume of rock per metre drilled. During the Cyprus drilling campaign in 1995 a number of core holes were twinned with RC holes. Samples from the 3 holes in pyritic quartz vein mineralization assayed an average 23.8% higher in the RC samples than in core samples. In disseminated pyrite mineralization (Taurus West), RC samples assayed lower than core samples. Broughton and Masson (1996) concluded that these variances were the result of statistical variation, systematic overestimation of grade due to contamination in RC samples, and/or a more representative sample from RC due to the greater sample size. From their study, no firm conclusion can be made.

Statistical evaluation of the post 1994 drill holes in 88 Hill area indicate that both the mean and median values are higher for RC drilling than for core drill holes (Figure17-1).

It is recommended that this issue should be further investigated prior to reporting resources at higher confidence than inferred.

17.3 GEOLOGICAL INTERPRETATION

There is at present no complete geological model of the mineralised zones on the Taurus property. During the site visit it was noted that sampling was carried out across lithological boundaries and based on the drill holes reviewed it is apparent that portions of the core that are logged as either T4 or T2 mineralization contain significant amounts of T3 mineralization.

There is also a different set of rock codes used in the earlier drill holes and it was therefore not possible carry out a reasonable interpretation with the mixed data set.

In order to carry out the evaluation a process of categorical or indicator kriging was applied. Grades greater than or equal to 0.30 g/t Au were set to 1 and those below to 0 in order to estimate the probability of blocks having a mineralization of greater than 0.30 g/t. Ordinary kriging was used for interpolation.

Examination of sections indicated that blocks with a greater than 40% probability of being greater than 0.30 g/t best reflected the higher grade samples. Blocks below 40% were defined as low grade and those equal to or greater than as higher grade. The blocks were then used to subdivide the drill holes into low-grade and higher-grade.

17.4 Exploratory Data Analysis

17.4.1 Assays

The seven areas Sable, 88 Hill, 88 West, Highway, Taurus West, Taurus and Plaza were sampled by 372 drill holes. The basic statistics for the samples for each area are listed in Table 17-1. Some drill holes have been included in more than one area. Appendix A contains the basic statistics by rock type for each of the areas. The lithologies of the post-1994 drilling commence with "T". Rock types that have fewer than 10 samples have not been included.

Table 17-1: Taurus Raw Statistics by Area

		Sable	88 Hill	88 West	Highway	Taurus W	Taurus	Plaza
Valid cases		1090	6081	1632	685	2763	1869	685
Mean		3.83	0.72	0.54	1.33	0.58	1.44	1.33
Std. error of mean		0.85	0.03	0.02	0.14	0.02	0.26	0.14
Variance		784.37	5.89	0.95	12.97	0.93	125.82	12.97
Std. Deviation		28.01	2.43	0.98	3.60	0.97	11.22	3.60
Variation Coefficient		7.31	3.37	1.82	2.70	1.67	7.80	2.70
rel. V.coefficient(%)		22.15	4.32	4.50	10.32	3.17	18.04	10.32
Skew		30.16	15.63	7.44	14.03	4.57	23.53	14.03
Minimum		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum		899.07	77.10	20.30	75.60	19.17	357.01	75.60
Range		899.07	77.10	20.30	75.60	19.17	357.01	75.60
Percentile	1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5th	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10th	0.02	0.00	0.00	0.00	0.00	0.00	0.00
	25th	0.34	0.01	0.03	0.03	0.00	0.00	0.03
	50th	1.47	0.07	0.24	0.61	0.14	0.07	0.61
	75th	3.20	0.70	0.64	1.44	0.83	0.89	1.44
	90th	6.10	1.77	1.32	3.12	1.71	2.19	3.12
	95th	10.23	2.81	2.14	4.78	2.43	3.77	4.78
	99th	34.28	7.44	4.43	11.69	4.18	18.91	11.69

17.4.2 Composites

Assays were composited into 1.5 metre down-hole composites while honouring the interpreted geological solids. Zero grades were assigned if the intervals were not sampled. Assays below detection limit have been recorded as zero grades in the database so it was not possible to quantify their individual contribution.

17.4.3 CAPPING

All data sets with a coefficient of variation (C.O.V.) of greater than 1.5 were investigated, using rank disintegration techniques, to determine the potential risk of grade distortion from higher grade assays.

Table 17-2: Grade Capping Levels

	Sable		88 Hil		88 West		Highway	
	Low Grade	High Grade	Low Grade	High Grade	Low Grade	High Grade	Low Grade	High Grade
Top Cut Applied	15.05	9.77	13.99	12.42	2.52	NTC	10.15	NTC
Topcut Mean	0.61	1.55	0.22	1.14	0.15	0.77	0.30	0.96
Raw Mean	0.78	2.07	0.24	1.21	0.16	0.77	0.32	0.96
% Decrease	22%	25%	7%	6%	7%	0%	8%	0%
Topcut C.O.V .	3.2	1.5	3.6	1.5	2.3	1.2	3.4	1.2
Raw C.O.V .	7.1	3.0	6.0	1.9	3.1	1.2	4.2	1.2
% Decrease	54%	50%	39%	22%	26%	0%	18%	0%

	Taurus West		Taurus		Plaza	
	Low Grade	High Grade	Low Grade	High Grade	Low Grade	High Grade
Top Cut Applied	NTC	NTC	11.33	NTC	9.45	9.49
Topcut Mean	0.18	0.96	0.16	0.99	0.42	1.13
Raw Mean	0.18	0.96	0.22	0.99	0.48	1.15
% Decrease	0%	0%	28%	0%	14%	1%
Topcut C.O.V .	3.1	1.2	5.4	1.4	2.9	1.5
Raw C.O.V .	3.1	1.2	13.4	1.4	4.7	1.6
% Decrease	0%	0%	60%	0%	38%	4%

Although the Taurus West low-grade data has a high C.O.V. there was no apparent disintegration in the data and hence no capping was applied. NTC means that no capping was applied.

17.5 SPATIAL ANALYSIS

Variography, using Sage2001 software, was completed for a grade indicator and for the low and high grade zones identified using categorical indicator kriging. This was carried out for each of the seven areas. Downhole variograms were used to determine nugget effect and then correlograms were modelled to determine spatial continuity. A single structure spherical model was used to model the correlogram. Tables 17-3 to 17-5 summarize the results of the variography.

The indicator variography indicates an East-West trend for 88 Hill, 88 West, Taurus and Plaza. The higher-grade variography indicates an East –West trend for Sable, 88 Hill, 88 West and Taurus. This conforms to the general interpreted trends of mineralization for the property. The trends indicated for the Highway probably reflect the orientation of the samples.

Table 17-3: Indicator Variography

Ind	Direction	Azimuth	Dip	Nugget	Sill C1	Range A1(m)
Sable	1	016	-50	0.30	0.70	7.2
Sable	2	003	40	0.30	0.70	6.8
Sable	3	098	06	0.30	0.70	4
88 Hill	1	090	00	0.25	0.75	27.7
88 Hill	2	179	85	0.25	0.75	16.9
88 Hill	3	360	05	0.25	0.75	15.3
88 West	1	082	08	0.30	0.70	92.8
88 West	2	340	57	0.30	0.70	27.2
88 West	3	177	32	0.30	0.70	24.4
Highway	1	044	20	0.20	0.80	26
Highway	2	206	69	0.20	0.80	17.5
Highway	3	312	06	0.20	0.80	11.4
Taurus W	1	027	-55	0.20	0.80	29.4
Taurus W	2	057	31	0.20	0.80	19.6
Taurus W	3	318	15	0.20	0.80	14.2
Taurus	1	091	-25	0.30	0.70	63.6
Taurus	2	062	62	0.30	0.70	15.4
Taurus	3	175	12	0.30	0.70	10.9
Plaza	1	108	09	0.35	0.65	27.9
Plaza	2	352	69	0.35	0.65	14.6
Plaza	3	201	19	0.35	0.65	8.2

Table 17-4: Higher Grade Variography

HG	Direction	Azimuth	Dip	Nugget	Sill C1	Range A1(m)
Sable	1	087	10	0.80	0.20	131.9
Sable	2	004	-31	0.80	0.20	11.4
Sable	3	341	57	0.80	0.20	5.8
88 Hill	1	079	-66	0.55	0.45	79.6
88 Hill	2	088	24	0.55	0.45	18.3
88 Hill	3	176	-03	0.55	0.45	4.5
88 West	1	080	35	0.30	0.70	27.7
88 West	2	317	39	0.30	0.70	25.7
88 West	3	196	32	0.30	0.70	13.6
Highway	1	037	35	0.30	0.70	19.3
Highway	2	242	52	0.30	0.70	14.7
Highway	3	135	12	0.30	0.70	7.8
Taurus W	1	011	-51	0.20	0.80	21.8
Taurus W	2	353	38	0.20	0.80	11.2
Taurus W	3	090	09	0.20	0.80	9.6
Taurus	1	101	03	0.55	0.45	32.8
Taurus	2	014	-48	0.55	0.45	14.4
Taurus	3	009	41	0.55	0.45	4.5
Plaza	1	026	20	0.30	0.70	47.5
Plaza	2	081	-16	0.30	0.70	11.0
Plaza	3	165	20	0.30	0.70	7.2

Table 17-5: Low Grade Variography

LG	Direction	Azimuth	Dip	Nugget	Sill C1	Range A1(m)
Sable	1	093	-66	0.75	0.25	8.6
Sable	2	348	-06	0.75	0.25	7.1
Sable	3	076	23	0.75	0.25	3.2
88 Hill	1	080	-16	0.75	0.25	50.1
88 Hill	2	332	-48	0.75	0.25	14.4
88 Hill	3	002	38	0.75	0.25	9.9
88 West	1	096	-05	0.65	0.35	86.8
88 West	2	012	51	0.65	0.35	21.3
88 West	3	182	38	0.65	0.35	17.4
Highway	1	027	59	0.75	0.25	25.1
Highway	2	299	-02	0.75	0.25	12.7
Highway	3	210	31	0.75	0.25	3.7
Taurus W	1	021	-42	0.25	0.75	14.8
Taurus W	2	142	-30	0.25	0.75	12.7
Taurus W	3	074	34	0.25	0.75	10.0
Taurus	1	267	71	0.90	0.10	60.2
Taurus	2	060	17	0.90	0.10	59.8
Taurus	3	152	08	0.90	0.10	6.2
Plaza	1	037	70	0.30	0.70	41.4
Plaza	2	094	-11	0.30	0.70	25.2
Plaza	3	180	17	0.30	0.70	6.0

17.6 Block Model

Block models were established in Datamine for each of the seven areas. The models were confined to below the topography and to perimeters created around each area. All areas used the same protomodel so that they could be combined in order to facilitate the pit optimisation.

17.6.1 *Block Size*

A standard block size of 15 x 15 x 5 metre was used for the interpolation. This was based on the average sampling spacing on the property and taking into consideration probable open cast mining.

17.6.2 *Interpolation Plan*

The details of the interpolation plan for each area is included in Appendix B. In summary, a single pass at the sill range was used for the indicator model, except for the Sable area where a second pass was carried out at twice the sill range. A three-pass strategy was used for the grade models where the third pass was designed to ensure that there was a high probability of grades being assigned to the blocks.

Three methods of interpolation were used for grade estimation, ordinary kriging, inverse distance squared and nearest neighbour.

17.6.3 MINERAL RESOURCE CLASSIFICATION

Due to it not being possible to create a geological model, the lack of bulk density data and the inability to verify portions of the database as well as the potential problem areas being noted during the site review the deposit has been classified as an Inferred Mineral Resource.

17.6.4 MINERAL RESOURCE TABULATION

A total of 220,000 tonnes at a grade of 5.14 Au g/t (Cavey et al., 2005) was treated through the mill prior to its closure in 1988. There is no information available to author as to the location from which this tonnage was extracted. The tonnage has been depleted from Taurus Mine area based on metal content. A small open pit extracted 2,600 tonnes from 88 Hill area. It is not clear as to whether this has been included in the 220,00 tonnes. This tonnage has not been depleted from the resource estimate.
Table 17-6 shows the Inferred Mineral Resources for Sable, 88 Hill, 88 West, Highway, Taurus West, Taurus Mine and Plaza areas. Wardrop recommends using the 0.50 g/t Au cut off as the base case. At a cut-off grade of 0.50 g/t Au the seven areas of the Taurus property contain an Inferred Mineral Resource of 21.2 million tonnes at an average grade of 1.07 g/t Au.

Due to the uncertainty of Inferred Mineral Resources it cannot be assumed that all, or any part of this resource will be upgraded to an Indicated or Measured Resource as a result of continued exploration. To justify upgrading of the mineral resource demonstrated economic viability is required.

The setting of the unsampled sections of the drill hole to zero grade will result in a conservative estimate for the property.

Table 17-6: Taurus Property Cumulative Inferred Resources by Area

	Sable		88 Hill		88 West		Highway	
Cut Offs	**Tonnes*1,000**	**Au g/t**	**Tonnes*1,000**	**Au g/t**	**Tonnes*1,000**	**Au g/t**	**Tonnes*1,000**	**Au g/t**
0.25	1,819	1.07	11,171	0.91	5,095	0.72	2,740	0.80
0.50	**1,349**	**1.32**	**7,405**	**1.19**	**3,535**	**0.87**	**1,891**	**1.00**
0.75	990	1.58	5,333	1.41	1,769	1.13	1,205	1.21
1.00	731	1.83	3,580	1.68	909	1.39	721	1.44
1.25	551	2.05	2,388	1.96	572	1.57	379	1.74
1.50	434	2.24	1,590	2.26	231	1.82	188	2.09
1.75	286	2.57	1,257	2.43	102	2.11	125	2.33
2.00	194	2.90	963	2.61	54	2.34	76	2.63
	Taurus W		**Taurus**		**Plaza**		**Total**	
Cut Offs	**Tonnes*1,000**	**Au g/t**	**Tonnes*1,000**	**Au g/t**	**Tonnes*1,000**	**Au g/t**	**Tonnes*1,000**	**Au g/t**
0.25	5,644	0.79	5,225	0.67	1,743	0.67	33,436	0.81
0.50	**3,706**	**1.02**	**2,346**	**0.99**	**917**	**0.95**	**21,150**	**1.07**
0.75	2,212	1.28	1,163	1.24	516	1.21	13,188	1.32
1.00	1,422	1.52	455	1.52	251	1.60	8,068	1.60
1.25	825	1.82	110	1.77	159	1.88	4,984	1.88
1.50	510	2.11	0		105	2.14	3,058	2.19
1.75	362	2.31	0		69	2.40	2,201	2.41
2.00	267	2.46	0		42	2.78	1,596	2.62

17.7 MODEL VALIDATION

17.7.1 *VISUAL VALIDATION*

The visual comparisons of block model grades with composite grades for each of the seven areas show a reasonable correlation between the values. No significant discrepancies were apparent from the sections and plans reviewed.

17.7.2 *GLOBAL COMPARISONS*

The global block grade statistics for the ordinary kriging model are compared to the inverse distance, nearest neighbour model grades and capped declustered composite means in Table 17-7 for each of the seven areas. In general, there is agreement between the models and the capped declustered composites, apart from the Sable and Plaza areas. There is a very good correlation between the inverse ordinary kriging and inverse distance methods.

Table 17-7: Block Model Validation

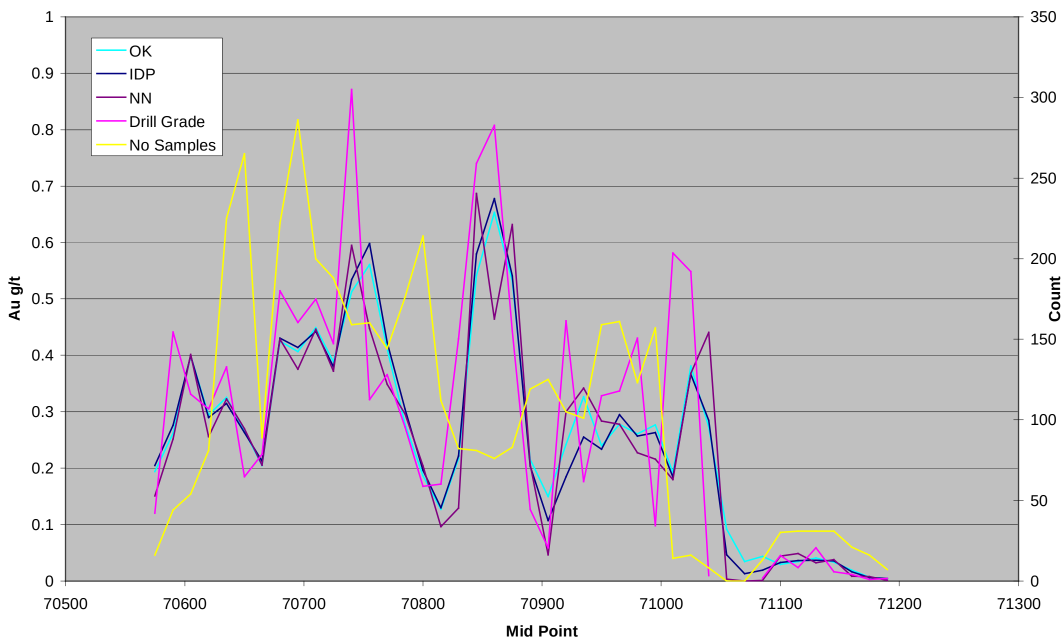
AREA	OKAU	NNAU	IDPAU	Declust DH	OKAU vs NNAU	OKAU vs IDPAU	OKAU vs Declus
Sable	0.63	0.49	0.63	0.58	28%	1%	8%
88 Hill	0.43	0.43	0.43	0.45	0%	0%	-3%
88 West	0.38	0.37	0.38	0.38	2%	-2%	-1%
Highway	0.41	0.40	0.42	0.43	4%	-2%	-4%
Taurus W	0.31	0.30	0.31	0.32	3%	0%	-4%
Taurus	0.18	0.17	0.18	0.19	9%	1%	-2%
Plaza	0.30	0.27	0.30	0.37	11%	1%	-18%

Only the Plaza area shows discrepancy for both the nearest neighbour and declustered values and as the tonnage is relatively small from this area the overall impact was not regarded as being significant.

17.7.3 SWATH PLOTS

Swath plots were plotted for each of the seven areas in order to compare drill samples, ordinary kriged, inverse distance squared and nearest neighbour grades. A review of the plots indicate that although ordinary kriging smoothed the data it generally reflected the drill samples.

Figure 17-2 Taurus West Swath Plot in Y Direction



All of the swath plots have in included in Appendix C.

18.0 OTHER RELEVANT DATA AND INFORMATION

18.1 ENVIRONMENTAL CONSIDERATIONS

There are currently no known environmental liabilities on the property as the past Taurus Mine has been reclaimed. The largest environmental risks present from open pit mining operations are acidic and/or metal laden effluent from tailings and waste rock dumps. Some preliminary Acid/Base Accounting (ABA) work has been done on various rock types on the property.

This data indicates that low grade portions of T3 mineralization may need to be carefully disposed of, perhaps commingled with waste rock as regulators prefer average Neutralization Potential Ratios (NPR) in excess of 2.

19.0 CONCLUSIONS

Verification of the Taurus property database indicates that it meets industry standards for the portions that could be verified. Although there is no documentation for the pre-1994 data there is no reason to believe that it is not accurate.

Due to it not being possible to create a geological model, the lack of bulk density data and the inability to verify portions of the database as well as the potential problem areas being noted during the site review, the deposit has been classified as an Inferred Mineral Resource.

At a cut-off grade of 0.50 g/t Au the seven areas of the Taurus property contains an Inferred Mineral Resource of 21.2 million tonnes at an average grade of 1.07 g/t, which equates to 724,539 troy ounces of Au within the American Bonanza Gold Corporation claims

Due to the uncertainty of Inferred Mineral Resources it cannot be assumed that all, or any part of this resource will be upgraded to an Indicated or Measured Resource as a result of continued exploration. To justify upgrading of the mineral resource demonstrated economic viability is required.

Table 19-1 provides a summary by area for the property.

Table 19-1: Summary of Inferred Mineral Resource Estimate

	Sable			88 Hill			88 West			Highway		
Cut Offs	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz
0.50	1,349	1.32	57,306	7,405	1.19	283,969	3,535	0.87	99,219	1,891	1.00	60,611
	Taurus W			Taurus			Plaza			Total		
Cut Offs	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz	Tonnes*1,000	Au g/t	Au Troy oz
0.50	3,706	1.02	120,996	2,346	0.99	74,441	917	0.95	27,997	21,150	1.07	724,539

Results from the metallurgical assessment can be summarized as follows:

- The heap leaching process could be a viable process option but requires confirmatory testwork. Significantly different recovery values ranging from 24 to 74% have been reported but were based on incompletely described test results. If testing indicated that improved gold recoveries were attainable, opportunities could be investigated to lower the processing, mining or capital costs.
- The lower capital cost for the heap leaching facility favours this process over the CIP.
- The deposit appears to have numerous higher-grade pods within a low-grade matrix. These pods may be a result of the drilling information available and the estimating method used. Improving the continuity of the high grade and mineralized zones should be investigated, particularly if a mill not a heap leach is contemplated.

- Metallurgical recovery has considerable impact on the process selection economics and efforts should be expended in improving this parameter.
- Given the inconclusive results obtained, a detailed pit design and cash flow analysis is not warranted at this time.

Metallurgical recovery has considerable impact on the process selection and economics of the project. It is imperative that further metallurgical testing be performed to provide definitive results on which project viability can be based.

20.0 RECOMMENDATIONS

It should be stressed that a general classification between T4 and T3 material has been made in this review. However, it would appear as if there are at least two T3 types, namely a T3A and a T3B classification. From the Hazen Research testwork, it can be concluded that the T3B-type is the highly refractory ore type only, although certain T4-type material samples also displayed a significant degree of refractoriness. It is therefore vital that the classification of ore types, particularly T3 and T4, be done systematically followed by detailed testwork as per the Hazen Research program, in order to metallurgically characterize these different ores types.

The refractory nature of the T3B-type ore has not been fully researched mainly because of the low grades found during the exploration phase. Further testwork is recommended to fully characterize this ore type, and provide more information about the T4 and T3 material, as well as the T2 and T1 types. The recommended tests include the following:

- A detailed mineralogical study to identify the minerals present and to determine the liberation sizes and characterise the mineral associations;
- A systematic sequence of heap leach tests to characterise the extraction potential of gold from this material under heap leach conditions;
- Bioleaching amenability tests on each of the ore types, but particularly on the respective bulk sulphide flotation concentrates;
- Gravity concentration tests using the centrifugal gravity concentrator particularly if coarse gold is present. These tests should then be extended to include cyanidation of the gravity tailings at different cyanide concentrations;
- Cyanide destruction tests on the tailings after the most suitable processing option routes have been identified;
- ABA tests on the tailings of cyanided flotation concentrates;
- Pressure oxidation tests on each of the ore types, as well as the respective bulk flotation concentrates;
- The economic implications of the flotation of cyanidation leach tailings for the recovery of gold into a pyritic concentrate, and the subsequent sale to a smelter, roaster or bioleach plant with credit for the gold content, should be evaluated. This option would be of particular interest in the treatment of T3-type material; and
- Carbon-in-pulp, and/or carbon-in-leach tests on whole-ore T4-type samples, or gravity concentration tailings. These tests would also indicate whether preg-robbing would be expected to occur during the cyanidation process.

A recommended test program outlining the first phase of metallurgical testing has been given in Appendix D, together with a budget cost for these tests. The T4-type of ore requires metallurgical characterisation in order that process selection and development may follow. However, some basic tests on the other ore types are also recommended. A further, more detailed, phase of the testing of the Taurus ore types will be required should the project develop to the engineering design and pre-construction feasibility stage.

In order to improve the confidence in future resource estimates and to establish a uniform sampling method the following recommendations should be implemented:

- Sampling of low grade intersections and verification of high grade intersections in the pre-1994 drill holes;
- Re-logging of core to establish a common lithological nomenclature and to identify high grade veins and envelopes of low grade mineralization;
- Confirm geological interpretation and correlate with mineralization of high- and low-grade zones;
- Investigate the grade differences between the various types of drilling; and
- Document/obtain bulk density and recovery information based on lithological and grade criteria.

Further, drilling would be based on results from the above programme and may be required prior to recalculating the resource estimate.

It is estimated that it would require a geologist three months to relog and interpret the drill holes. A further month would be required to write up the report. A technician would be needed to assist in moving core boxes and to carry out the sampling. The exact number of samples that will be taken is not known, but a figure of 1,000 has been assumed. Further, it is recommended that 1,000 metres of infill drilling be carried out in the 88 Hill area to improve the understanding of the mineralization in that area.

Depending on the number of tests total metallurgical testing cost will vary, but an initial budget of $50,000 is recommended, including metallurgical program preparation, assaying and evaluation of results. Drilling for metallurgical testing, 900 metres should also be carried out in the older areas where the core may be oxidised.

The overall estimated costs are summarized in Table 20-1

Table 20.1 - Summary of Estimated Costs

Relogging and Sampling		60,000
Interpretation		24,000
Sample Analysis		30,000
Travel and Accommodation		20,000
	Subtotal	**134,000**
Metallurgical Drilling		112,500
Metallurgical Testwork		50,000
	Subtotal	**162,500**
Logging and Sampling		20,000
Infill Drilling		125,000
	Subtotal	**145,000**
	Total	**441,500**
Contingency at 10%		44,150
Grand Total		**485,650**

21.0 CERTIFICATES OF AUTHORS

21.1 CERTIFICATE OF ROBERT CARTER

I, Robert Carter of Oakville, Ontario, do hereby certify that I visited and reviewed drill core, reverse-circulation cuttings and drill hole collar locations (see section on Data Verification) at the Taurus project Property near the reclaimed site where the Town of Cassiar was located in north-western British Columbia. I visited the Property along with Joe Kircher, Vice President and Chief Operating Officer at American Bonanza Gold Corporation from October 18 to 21, 2005, I hereby make the following statements:

I am Geologist with Wardrop Engineering Inc. with a business address at 604-330 Bay Street, Toronto, ON, M5H 2S8.

- I am a graduate of University of Manitoba (B.Sc. Geological Engineering, 1997).
- I am a member in good standing of the Association of Professional Engineers of Ontario, Registration #00089189.
- I am a member in good standing of the Association of Professional Engineers & Geoscientists of the Province of Manitoba, Registration #21836.
- I have practised my profession in mineral exploration continuously since graduation.
- I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.
  - I am responsible for site visit and portions of the section on Data Validation of this technical report titled "Technical Report on the Taurus Project-Liard Mining District, British Columbia, Resource Estimate and Metallurgical Review", dated January 31, 2006. I have visited the Property from October 18 to 21, 2005.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- As of the date of this Certificate, to my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

- I am independent of the Issuer applying the tests set out in Section 1.5 of National Instrument 43-101.
- I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.
- I consent to the filing of this Technical Report with any stock exchange or other regulatory authority and any publication by them, including electronic publication in the public company files on their web sites accessible by the public, of this Technical Report.

Signed and dated this 6th day of February 2006 at Toronto, Ontario.

__*"Rob Carter"*_____

Rob Carter, P.Eng.
Geologist
Wardrop Engineering Inc.

21.2 CERTIFICATE OF KEVIN PALMER

I, Kevin John Palmer of Nanaimo, British Columbia, do hereby certify that as an author of this **TECHNICAL REPORT ON THE TAURUS PROJECT, LIARD MINING DISTRICT, BRITISH COLUMBIA, RESOURCE ESTIMATE AND METALLURGICAL REVIEW**, dated January, 31, 2006, I hereby make the following statements:

- I am a Senior Geologist with Wardrop Engineering Inc. with a business address at 905 – 1130 West Pender Street, Vancouver, British Columbia.
- I am a graduate of the University of the Witwatersrand (B.Sc. Hons., 1984).
- I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia (Registration #145645).
- I have practised my profession in mineral exploration and mining continuously since graduation and have carried resource estimates on similar gold deposits in British Columbia and the Yukon. I have over 12 years experience in using Datamine to carry out 3D modelling, resource and reserve estimates.
- I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.
- I am responsible for section 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, and17 and portions of 1, 14, 19 and 20 of this technical report titled "Technical Report on the Taurus Project-Liard Mining District, British Columbia, Resource Estimate and Metallurgical Review ", dated Jamuary,31, 2005.
- I have no prior involvement with the property that is the subject of the Technical Report.
- I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
- I am independent of the Issuer applying the tests set out in Section 1.5 of National Instrument 43-101.
- I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

- I consent to the filing of this Technical Report with any stock exchange or other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of this Technical Report.

Signed and dated this 6th day of February 2006 at Vancouver, British Columbia.

__*"Kevin J. Palmer"*___

Kevin J Palmer, P.Geo
Senior Geologist
Wardrop Engineering Inc.

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Appendix A

Raw Basic Statistics by Area

WARDROP

		Sable	T1	T2	T3	T4	T7A	MZ	QV	V7
Valid cases		1090	58	77	11	47	26	589	52	209
Mean		3.83	0.29	0.24	2.11	1.67	0.04	5.61	4.00	2.38
Std. error of mean		0.85	0.10	0.06	0.72	0.27	0.02	1.56	1.00	0.25
Variance		784.37	0.57	0.29	5.63	3.43	0.02	1434.42	51.96	13.37
Std. Deviation		28.01	0.75	0.54	2.37	1.85	0.12	37.87	7.21	3.66
Variation Coefficient		7.31	2.59	2.25	1.12	1.11	3.54	6.75	1.80	1.54
rel. V.coefficient(%)		22.15	34.00	25.68	33.89	16.15	69.40	27.82	24.98	10.64
Skew		30.16	4.15	4.06	1.28	3.41	4.91	22.48	4.91	5.26
Minimum		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum		899.07	4.73	3.49	7.06	11.46	0.64	899.07	48.51	34.59
Range		899.07	4.73	3.48	7.06	11.45	0.64	899.07	48.51	34.59
Percentile	1st	0.00	----	----	----	----	----	0.03	----	0.00
Percentile	5th	0.00	0.00	0.00	----	0.00	0.00	0.10	0.00	0.03
Percentile	10th	0.02	0.00	0.00	0.02	0.03	0.00	0.31	0.00	0.03
Percentile	25th	0.34	0.00	0.00	0.51	0.69	0.00	0.99	0.71	0.48
Percentile	50th	1.47	0.00	0.03	1.45	1.31	0.00	2.13	2.08	1.65
Percentile	75th	3.20	0.04	0.23	3.93	2.18	0.01	3.86	4.53	2.95
Percentile	90th	6.10	1.14	0.69	6.77	3.42	0.06	7.89	9.69	4.80
Percentile	95th	10.23	1.68	1.23	----	4.62	0.44	12.45	14.49	7.29
Percentile	99th	34.28	----	----	----	----	----	67.16	----	24.66

		88 West	T1	T1A	T2	T3	T4	T5	T6	QV	V7
Valid cases		1632	179	18	542	212	376	139	41	62	48
Mean		0.54	0.12	0.01	0.27	1.27	0.71	0.52	0.48	0.78	0.61
Std. error of mean		0.02	0.03	0.01	0.02	0.09	0.04	0.08	0.09	0.34	0.07
Variance		0.95	0.16	0.00	0.25	1.70	0.64	0.79	0.33	7.32	0.26
Std. Deviation		0.98	0.41	0.04	0.50	1.30	0.80	0.89	0.58	2.71	0.51
Variation Coefficient		1.82	3.53	2.61	1.86	1.03	1.12	1.71	1.20	3.47	0.85
rel. V.coefficient(%)		4.50	26.37	61.45	7.99	7.07	5.79	14.49	18.74	44.10	12.26
Skew		7.44	6.91	3.82	5.72	1.95	3.23	4.12	1.80	6.57	1.54
Minimum		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Maximum		20.30	4.20	0.16	6.51	8.29	6.51	6.92	2.52	20.30	2.54
Range		20.30	4.20	0.16	6.51	8.29	6.51	6.92	2.52	20.29	2.54
Percentile	1st	0.00	0.00	----	0.00	0.00	0.00	0.00	----	----	----
Percentile	5th	0.00	0.00	----	0.00	0.03	0.04	0.00	0.00	0.01	0.03
Percentile	10th	0.00	0.00	0.00	0.00	0.14	0.10	0.01	0.01	0.01	0.03
Percentile	25th	0.03	0.00	0.00	0.01	0.41	0.25	0.04	0.06	0.03	0.24
Percentile	50th	0.24	0.01	0.00	0.09	0.82	0.48	0.21	0.30	0.15	0.51
Percentile	75th	0.64	0.03	0.00	0.35	1.60	0.86	0.65	0.73	0.55	0.85
Percentile	90th	1.32	0.24	0.06	0.72	3.15	1.46	1.40	1.35	1.21	1.25
Percentile	95th	2.14	0.66	----	1.09	4.25	2.25	1.99	1.91	2.63	1.72
Percentile	99th	4.43	2.14	----	2.29	6.04	4.54	6.07	----	----	----

		88 Hill	T1	T1A	T11	T2	T3	T4	T7	T7A	L10	MZ	OVB	QV	SHRZ	V7
Valid cases		6081	1246	251	83	1405	233	1925	29	85	16	261	47	26	12	426
Mean		0.72	0.10	0.09	0.08	0.33	1.00	1.17	0.20	0.23	0.13	1.61	0.03	3.84	0.48	1.65
Std. error of mean		0.03	0.01	0.02	0.02	0.03	0.11	0.07	0.09	0.11	0.07	0.20	0.02	2.61	0.14	0.18
Variance		5.89	0.14	0.13	0.04	1.46	2.61	9.02	0.26	1.06	0.08	10.14	0.02	176.68	0.24	14.45
Std. Deviation		2.43	0.37	0.35	0.20	1.21	1.61	3.00	0.51	1.03	0.28	3.18	0.14	13.29	0.49	3.80
Variation Coefficient		3.37	3.83	3.92	2.52	3.71	1.61	2.57	2.50	4.51	2.26	1.98	4.54	3.46	1.02	2.31
rel. V.coefficient(%)		4.32	10.84	24.72	27.63	9.90	10.53	5.85	46.41	48.91	56.54	12.23	66.18	67.88	29.40	11.19
Skew		15.63	9.03	5.67	3.79	16.22	4.75	12.59	3.26	7.53	2.88	5.74	5.34	4.98	0.97	10.71
Minimum		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Maximum		77.10	6.66	2.78	1.29	31.80	16.20	77.10	2.24	8.92	1.05	32.67	0.86	68.57	1.38	62.50
Range		77.10	6.66	2.78	1.29	31.80	16.20	77.10	2.24	8.92	1.05	32.67	0.86	68.57	1.37	62.50
Percentile	1st	0.00	0.00	0.00	----	0.00	0.00	0.00	----	----	----	0.00	----	----	----	0.00
Percentile	5th	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	----	0.00	0.00	0.01	----	0.00
Percentile	10th	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.18	0.01	0.00
Percentile	25th	0.01	0.00	0.00	0.00	0.01	0.10	0.09	0.00	0.00	0.00	0.17	0.00	0.33	0.05	0.03
Percentile	50th	0.07	0.01	0.00	0.00	0.04	0.52	0.52	0.02	0.01	0.03	0.86	0.00	0.60	0.37	0.65
Percentile	75th	0.70	0.04	0.02	0.04	0.24	1.23	1.28	0.10	0.04	0.07	1.71	0.00	1.57	0.69	2.06
Percentile	90th	1.77	0.16	0.10	0.31	0.89	2.54	2.53	0.78	0.47	0.72	3.35	0.02	5.19	1.37	4.23
Percentile	95th	2.81	0.48	0.47	0.54	1.41	4.17	3.61	1.94	0.84	----	5.93	0.29	46.76	----	5.34
Percentile	99th	7.44	1.74	2.40	----	3.56	6.94	13.04	----	----	----	19.03	----	----	----	15.66

		Highway	T1	T1A	T2	T3	T4	T7	T7A	MZ	V7
Valid cases		685	113	24	90	18	82	17	26	229	75
Mean		1.33	0.20	0.09	0.28	1.02	1.06	0.19	0.17	2.60	1.88
Std. error of mean		0.14	0.05	0.08	0.06	0.20	0.16	0.13	0.08	0.38	0.23
Variance		12.97	0.25	0.15	0.28	0.74	2.02	0.29	0.18	33.27	3.81
Std. Deviation		3.60	0.50	0.39	0.52	0.86	1.42	0.54	0.43	5.77	1.95
Variation Coefficient		2.70	2.43	4.24	1.85	0.84	1.34	2.90	2.55	2.22	1.04
rel. V.coefficient(%)		10.32	22.89	86.61	19.53	19.80	14.81	70.26	50.07	14.67	12.00
Skew		14.03	3.34	4.79	2.47	0.74	5.19	3.89	3.78	9.58	1.77
Minimum		0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03
Maximum		75.60	3.08	1.91	2.38	2.69	11.50	2.24	2.03	75.60	8.50
Range		75.60	3.07	1.91	2.38	2.69	11.48	2.24	2.03	75.60	8.47
Percentile	1st	0.00	0.00	----	----	----	----	----	----	0.01	----
	5th	0.00	0.00	0.00	0.00	----	0.06	----	0.00	0.24	0.03
	10th	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.34	0.17
	25th	0.03	0.00	0.00	0.02	0.41	0.34	0.00	0.00	0.75	0.65
	50th	0.61	0.01	0.00	0.04	0.83	0.74	0.01	0.03	1.30	1.23
	75th	1.44	0.06	0.00	0.26	1.68	1.28	0.10	0.08	2.54	2.37
	90th	3.12	0.85	0.12	0.98	2.46	2.09	0.76	0.66	4.87	4.83
	95th	4.78	1.33	1.49	1.68	----	3.06	----	1.62	7.53	7.45
	99th	11.69	2.94	----	----	----	----	----	----	23.95	----

		Taurus	T1	T1A	T11	T2	T3	T4	T7	T7A	MZ	QBX	QV	V7	5Cc
Valid cases		1869	193	103	14	365	106	56	36	52	49	18	133	707	23
Mean		1.44	0.08	0.02	0.19	0.14	0.69	0.74	0.01	0.01	5.88	1.98	3.57	2.36	0.84
Std. error of mean		0.26	0.02	0.01	0.11	0.06	0.09	0.11	0.00	0.00	1.45	0.38	1.33	0.62	0.36
Variance		125.82	0.10	0.01	0.17	1.12	0.90	0.65	0.00	0.00	102.53	2.66	235.33	275.70	2.91
Std. Deviation		11.22	0.32	0.12	0.41	1.06	0.95	0.81	0.01	0.01	10.13	1.63	15.34	16.60	1.70
Variation Coefficient		7.80	4.13	5.17	2.22	7.73	1.37	1.10	1.43	1.93	1.72	0.82	4.29	7.03	2.02
rel. V.coefficient(%)		18.04	29.76	50.94	59.38	40.47	13.29	14.67	23.78	26.77	24.62	19.43	37.23	26.43	42.17
Skew		23.53	5.93	6.80	2.52	16.41	1.70	1.65	2.94	4.91	3.04	1.18	9.40	17.56	3.95
Minimum		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.10	0.00	0.00	0.00
Maximum		357.01	2.59	0.89	1.44	19.20	4.10	3.79	0.04	0.08	54.86	6.45	165.67	357.01	8.16
Range		357.01	2.59	0.88	1.44	19.20	4.10	3.79	0.04	0.08	54.55	6.35	165.67	357.01	8.16
Percentile	1st	0.00	0.00	0.00	----	0.00	0.00	----	----	----	----	----	0.00	0.00	----
	5th	0.00	0.00	0.00	----	0.00	0.00	0.00	0.00	0.00	0.34	----	0.00	0.00	0.00
	10th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.32	0.00	0.00	0.00
	25th	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.00	0.93	0.57	0.27	0.10	0.17
	50th	0.07	0.00	0.00	0.00	0.00	0.25	0.60	0.00	0.00	1.37	2.03	0.96	0.55	0.34
	75th	0.89	0.00	0.00	0.14	0.00	0.94	1.08	0.00	0.00	4.99	3.15	1.78	1.37	0.89
	90th	2.19	0.05	0.00	1.01	0.17	2.26	1.68	0.02	0.01	18.45	4.16	4.40	3.22	2.09
	95th	3.77	0.47	0.04	----	0.55	2.83	2.26	0.03	0.03	28.15	----	12.25	5.42	7.08
	99th	18.91	2.59	0.88	----	2.97	4.08	----	----	----	----	----	127.90	22.22	----

		Plaza	T1	T1A	T2	T3	T4	T7	T7A	MZ	V7
Valid cases		685	113	24	90	18	82	17	26	229	75
Mean		1.33	0.20	0.09	0.28	1.02	1.06	0.19	0.17	2.60	1.88
Std. error of mean		0.14	0.05	0.08	0.06	0.20	0.16	0.13	0.08	0.38	0.23
Variance		12.97	0.25	0.15	0.28	0.74	2.02	0.29	0.18	33.27	3.81
Std. Deviation		3.60	0.50	0.39	0.52	0.86	1.42	0.54	0.43	5.77	1.95
Variation Coefficient		2.70	2.43	4.24	1.85	0.84	1.34	2.90	2.55	2.22	1.04
rel. V.coefficient(%)		10.32	22.89	86.61	19.53	19.80	14.81	70.26	50.07	14.67	12.00
Skew		14.03	3.34	4.79	2.47	0.74	5.19	3.89	3.78	9.58	1.77
Minimum		0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.03
Maximum		75.60	3.08	1.91	2.38	2.69	11.50	2.24	2.03	75.60	8.50
Range		75.60	3.07	1.91	2.38	2.69	11.48	2.24	2.03	75.60	8.47
Percentile	1st	0.00	0.00	----	----	----	----	----	----	0.01	----
	5th	0.00	0.00	0.00	0.00	----	0.06	----	0.00	0.24	0.03
	10th	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.34	0.17
	25th	0.03	0.00	0.00	0.02	0.41	0.34	0.00	0.00	0.75	0.65
	50th	0.61	0.01	0.00	0.04	0.83	0.74	0.01	0.03	1.30	1.23
	75th	1.44	0.06	0.00	0.26	1.68	1.28	0.10	0.08	2.54	2.37
	90th	3.12	0.85	0.12	0.98	2.46	2.09	0.76	0.66	4.87	4.83
	95th	4.78	1.33	1.49	1.68	----	3.06	----	1.62	7.53	7.45
	99th	11.69	2.94	----	----	----	----	----	----	23.95	----

		Taurus W	T1	T1A	T11	T2	T3	T3A	T4	T8	T?	MZ	QV	V7
Valid cases		2763	502	191	31	312	287	34	159	16	58	612	21	501
Mean		0.58	0.15	0.11	0.27	0.14	1.28	1.63	0.72	0.17	0.06	1.07	0.71	0.44
Std. error of mean		0.02	0.02	0.03	0.13	0.02	0.07	0.21	0.05	0.08	0.02	0.05	0.18	0.04
Variance		0.93	0.22	0.15	0.54	0.12	1.46	1.54	0.47	0.09	0.03	1.45	0.66	0.71
Std. Deviation		0.97	0.47	0.38	0.74	0.35	1.21	1.24	0.69	0.30	0.17	1.20	0.81	0.85
Variation Coefficient		1.67	3.17	3.48	2.69	2.46	0.94	0.76	0.95	1.80	2.75	1.13	1.14	1.91
rel. V.coefficient(%)		3.17	14.16	25.17	48.37	13.92	5.56	13.10	7.57	45.07	36.09	4.56	24.90	8.55
Skew		4.57	6.55	5.42	3.63	4.14	1.88	0.82	1.39	1.70	3.78	6.31	1.42	3.17
Minimum		0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Maximum		19.17	5.17	3.46	3.62	2.56	8.93	5.01	3.38	0.95	0.98	19.17	2.74	6.34
Range		19.17	5.17	3.46	3.62	2.56	8.92	4.88	3.38	0.95	0.98	19.17	2.74	6.34
Percentile	**1st**	0.00	0.00	0.00	----	0.00	0.00	----	0.00	----	----	0.00	----	0.00
	5th	0.00	0.00	0.00	0.00	0.00	0.04	0.21	0.00	----	0.00	0.00	0.00	0.00
	10th	0.00	0.00	0.00	0.00	0.00	0.14	0.27	0.04	0.00	0.00	0.07	0.01	0.00
	25th	0.00	0.00	0.00	0.00	0.00	0.36	0.59	0.19	0.00	0.00	0.34	0.14	0.00
	50th	0.14	0.00	0.00	0.00	0.00	0.99	1.44	0.54	0.00	0.00	0.79	0.38	0.07
	75th	0.83	0.04	0.01	0.03	0.09	1.86	2.72	0.98	0.33	0.02	1.43	1.03	0.48
	90th	1.71	0.43	0.20	1.27	0.42	2.87	3.46	1.71	0.77	0.12	2.30	2.26	1.40
	95th	2.43	0.79	0.95	2.41	0.81	3.56	4.16	2.29	----	0.54	2.95	2.69	2.13
	99th	4.18	1.99	2.30	----	2.08	5.62	----	3.05	----	----	4.49	----	4.45

Appendix B

Grade Interpolation Plans by Area

Model Name	Sable Indicator			
Dimensions	X		Y	Z
Parent Cell	15		15	5
Minimum sub cell	5		5	Datamine Generated
Model origin	58960		69900	800
Total parent cells	150		90	95
Parent discretisation	5		5	1
	Attribute	Unit	Comment	
Estimated attributes	MININD		Indicator, Ordinary Kriging	
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1=range; 2=primary x 2; 3= primary x 2)		
	MINIMUM	Minimum number of samples 4		
	MAXIMUM	Maximum number of samples 32		
	0CTANT	Octant search ON/OFF OFF		

Model Name	Sable Low Grade			
Dimensions	X		Y	Z
Parent Cell	15		15	5
Minimum sub cell	5		5	Datamine Generated
Model origin	58960		69900	800
Total parent cells	150		90	95
Parent discretisation	5		5	1
	Attribute	Unit	Comment	
	KAU_GT	g/t	Gold, Ordinary Kriging	
	NNAU	g/t	Gold , Nearest Neighbour	
Estimated attributes	IPAU	g/t	Gold, Inverse Distance to Power 2	
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= 0.5*range; 2=primary x 4; 3= primary x 8)		
	MINIMUM	Minimum number of samples 4		
	MAXIMUM	Maximum number of samples 32		
	0CTANT	Octant search ON/OFF OFF		

Model Name	Sable High Grade			
Dimensions	X		Y	Z
Parent Cell	15		15	5
Minimum sub cell	5		5	Datamine Generated
Model origin	58960		69900	800
Total parent cells	150		90	95
Parent discretisation	5		5	1
	Attribute	Unit	Comment	
	KAU_GT	g/t	Gold, Ordinary Kriging	
	NNAU	g/t	Gold , Nearest Neighbour	
Estimated attributes	IPAU	g/t	Gold, Inverse Distance to Power 2	
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= range; 2=primary x 2; 3= primary x 4)		
	MINIMUM	Minimum number of samples 4		
	MAXIMUM	Maximum number of samples 32		
	0CTANT	Octant search ON/OFF OFF		

Model Name	88 Hill Indicator		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1

	Attribute	Unit	Comment
Estimated attributes	MININD		Indicator, Ordinary Kriging
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1=range; 2=primary x 1; 3= primary x 1)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	88 Hill Low Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1

	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= 0.5*range; 2=primary x 4; 3= primary x 12)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	88 Hill High Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1

	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= range; 2=primary x 2; 3= primary x 10)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	88 West Indicator			
Dimensions	X	Y	Z	
Parent Cell	15	15	5	
Minimum sub cell	5	5	Datamine Generated	
Model origin	58960	69900	800	
Total parent cells	150	90	95	
Parent discretisation	5	5	1	
	Attribute	Unit	Comment	
Estimated attributes	MININD		Indicator, Ordinary Kriging	
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1=range; 2=primary x 1; 3= primary x 1)		
	MINIMUM	Minimum number of samples 4		
	MAXIMUM	Maximum number of samples 32		
	0CTANT	Octant search ON/OFF OFF		

Model Name	88 West Low Grade			
Dimensions	X	Y	Z	
Parent Cell	15	15	5	
Minimum sub cell	5	5	Datamine Generated	
Model origin	58960	69900	800	
Total parent cells	150	90	95	
Parent discretisation	5	5	1	
	Attribute	Unit	Comment	
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging	
	NNAU	g/t	Gold , Nearest Neighbour	
	IPAU	g/t	Gold, Inverse Distance to Power 2	
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= 0.5*range; 2=primary x 4; 3= primary x 8)		
	MINIMUM	Minimum number of samples 4		
	MAXIMUM	Maximum number of samples 32		
	0CTANT	Octant search ON/OFF OFF		

Model Name	88 West High Grade			
Dimensions	X	Y	Z	
Parent Cell	15	15	5	
Minimum sub cell	5	5	Datamine Generated	
Model origin	58960	69900	800	
Total parent cells	150	90	95	
Parent discretisation	5	5	1	
	Attribute	Unit	Comment	
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging	
	NNAU	g/t	Gold , Nearest Neighbour	
	IPAU	g/t	Gold, Inverse Distance to Power 2	
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= range; 2=primary x 2; 3= primary x 10)		
	MINIMUM	Minimum number of samples 4		
	MAXIMUM	Maximum number of samples 32		
	0CTANT	Octant search ON/OFF OFF		

Model Name	Highway Indicator		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1

	Attribute	Unit	Comment
Estimated attributes	MININD		Indicator, Ordinary Kriging
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1=range; 2=primary x 1; 3= primary x 1)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Highway Low Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1

	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= 0.5*range; 2=primary x 4; 3= primary x 10)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Highway High Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1

	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= range; 2=primary x 2; 3= primary x 6)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Taurus West Indicator		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	MININD		Indicator, Ordinary Kriging
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1=range; 2=primary x 1; 3= primary x 1)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Taurus West Low Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= 0.5*range; 2=primary x 4; 3= primary x 10)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Taurus West High Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= range; 2=primary x 2; 3= primary x 10)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Taurus Indicator		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	MININD		Indicator, Ordinary Kriging
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1=range; 2=primary x 1; 3= primary x 1)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Taurus Low Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= 0.5*range; 2=primary x 4; 3= primary x 8)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Taurus High Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL	Search neighbourhood volume for gold estimate (1= range; 2=primary x 2; 3= primary x 10)	
	MINIMUM	Minimum number of samples 4	
	MAXIMUM	Maximum number of samples 32	
	0CTANT	Octant search ON/OFF OFF	

Model Name	Plaza Indicator		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	MININD		Indicator, Ordinary Kriging
Assigned attributes	SVOL		Search neighbourhood volume for gold estimate (1=range; 2=primary x 1; 3= primary x 1)
	MINIMUM		Minimum number of samples 4
	MAXIMUM		Maximum number of samples 32
	0CTANT		Octant search ON/OFF OFF

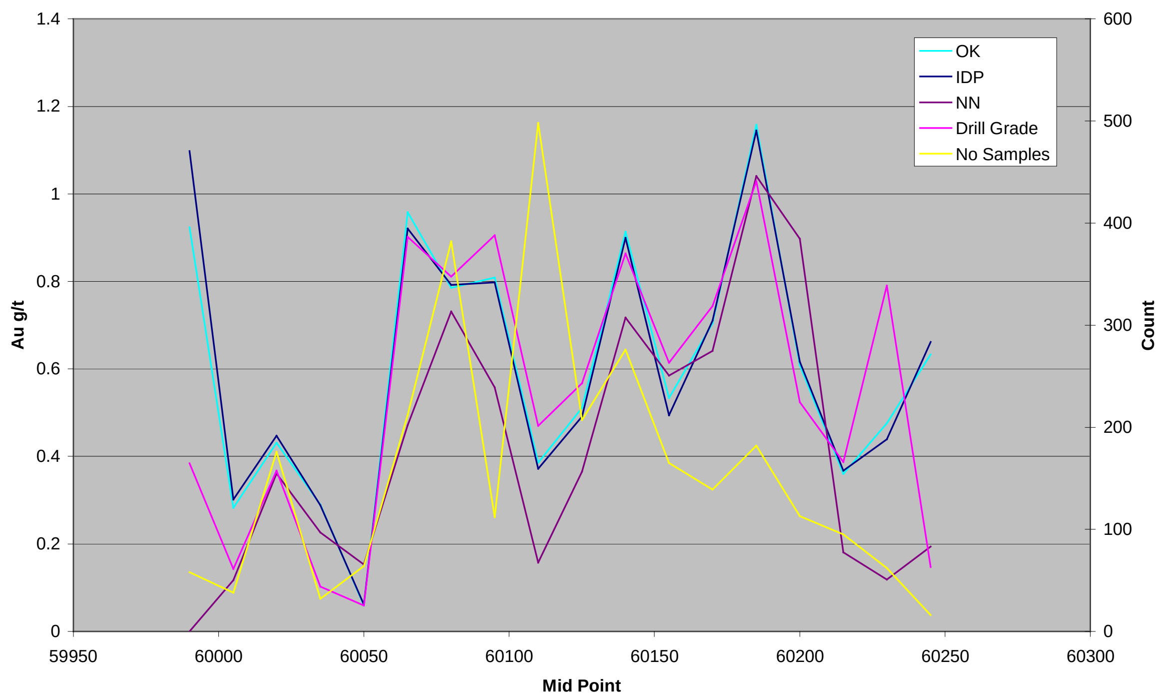
Model Name	Plaza Low Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL		Search neighbourhood volume for gold estimate (1= 0.5*range; 2=primary x 4; 3= primary x 10)
	MINIMUM		Minimum number of samples 4
	MAXIMUM		Maximum number of samples 32
	0CTANT		Octant search ON/OFF OFF

Model Name	Plaza High Grade		
Dimensions	X	Y	Z
Parent Cell	15	15	5
Minimum sub cell	5	5	Datamine Generated
Model origin	58960	69900	800
Total parent cells	150	90	95
Parent discretisation	5	5	1
	Attribute	Unit	Comment
Estimated attributes	KAU_GT	g/t	Gold, Ordinary Kriging
	NNAU	g/t	Gold , Nearest Neighbour
	IPAU	g/t	Gold, Inverse Distance to Power 2
Assigned attributes	SVOL		Search neighbourhood volume for gold estimate (1= range; 2=primary x 2; 3= primary x 10)
	MINIMUM		Minimum number of samples 4
	MAXIMUM		Maximum number of samples 32
	0CTANT		Octant search ON/OFF OFF

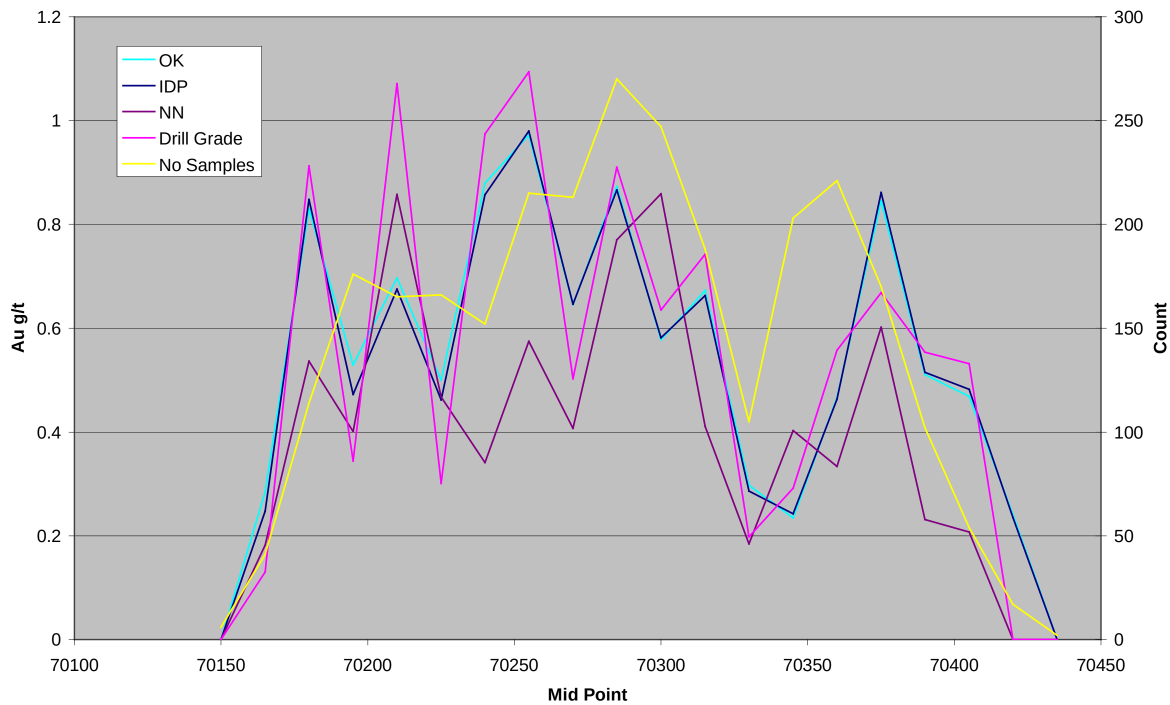
Appendix C

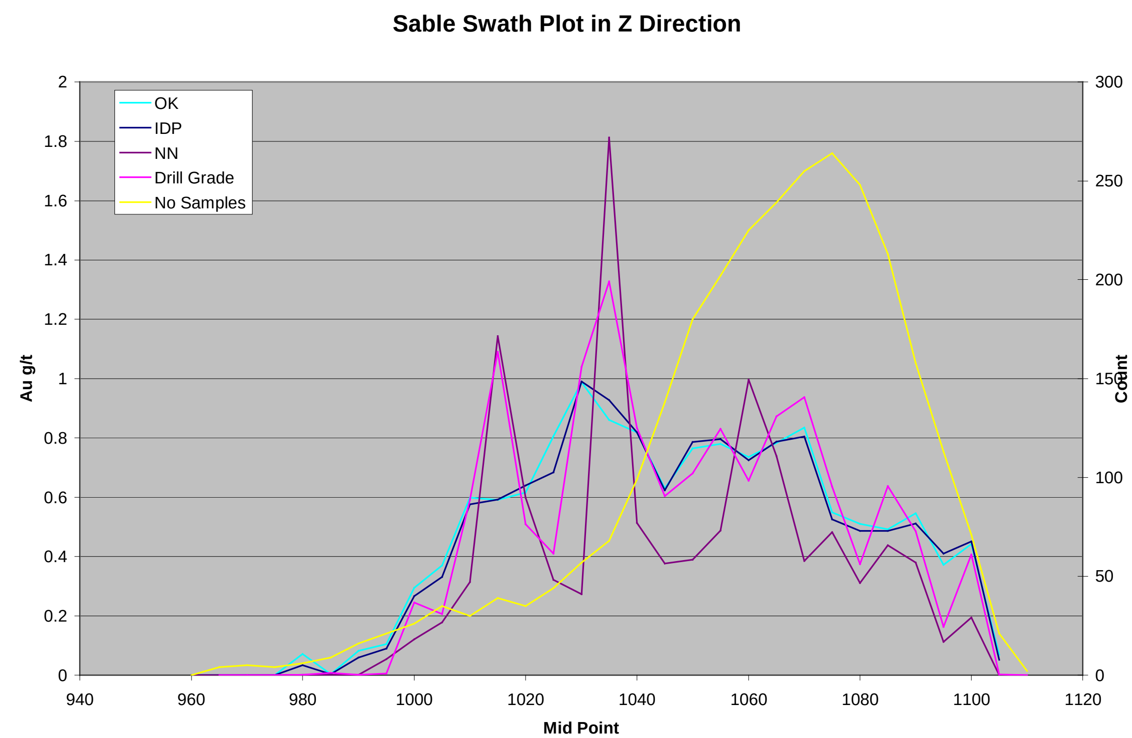
Swath Plots by Area

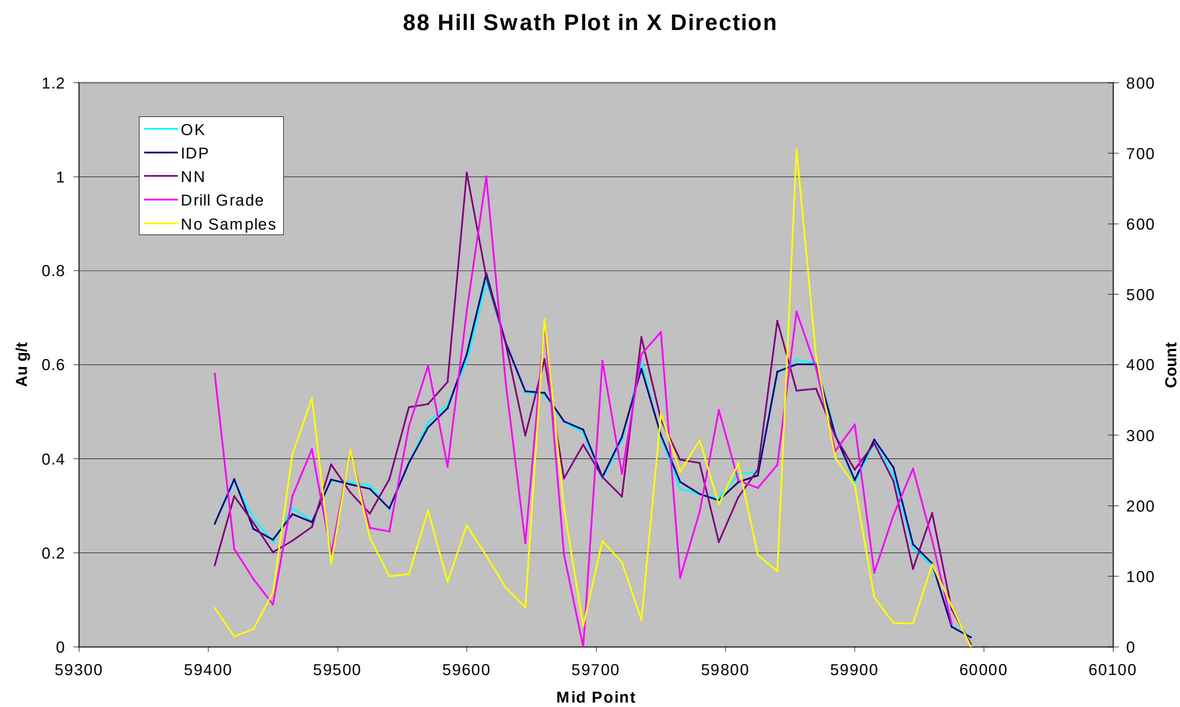
Sable Swath Plot Sliced in X Direction

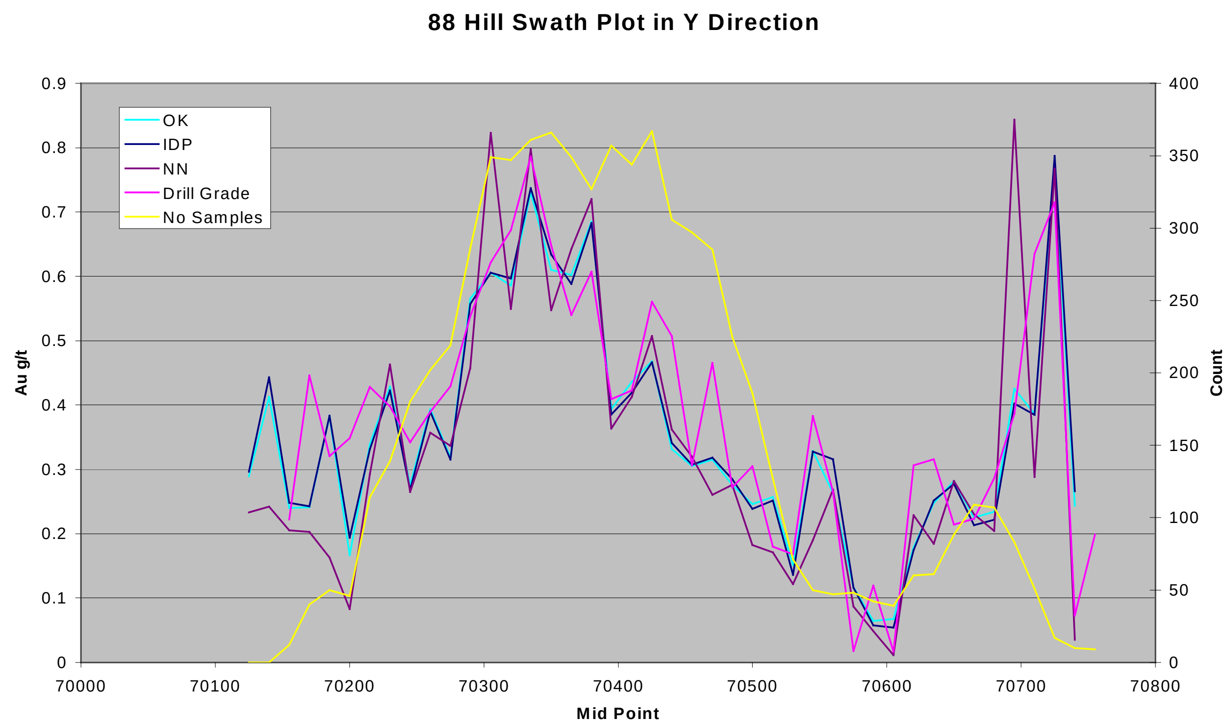


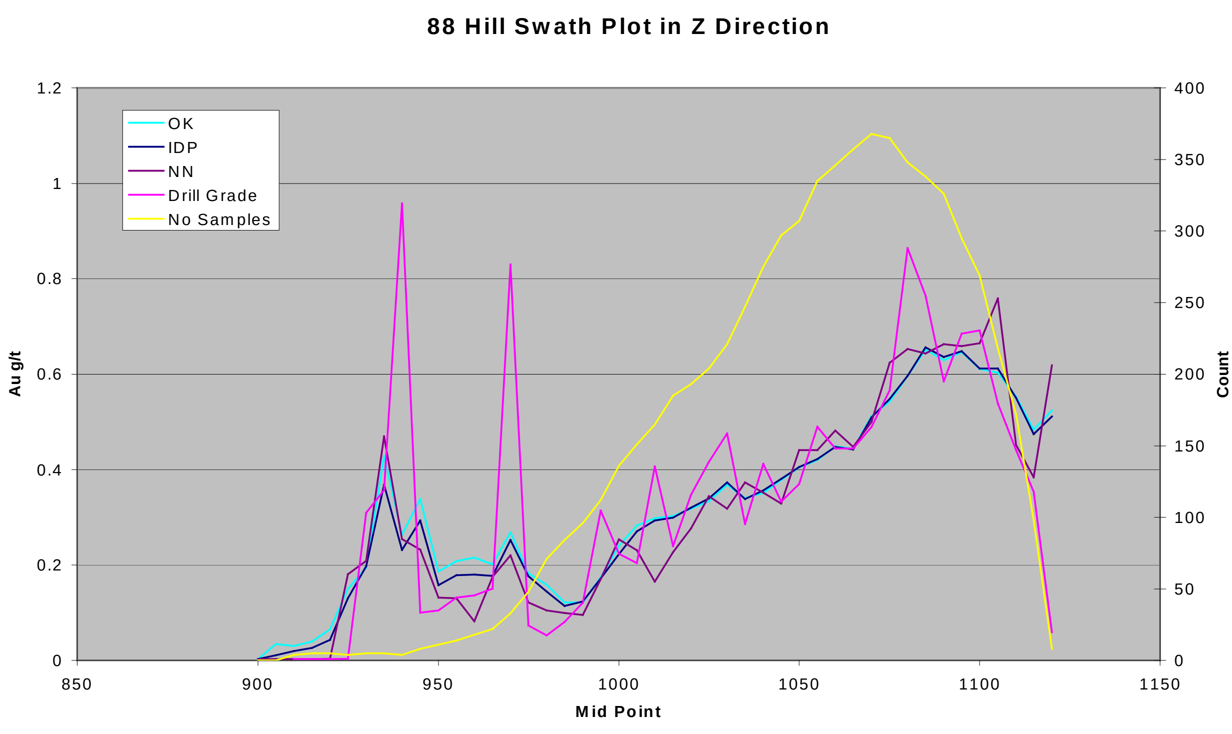
Sable Swath Plot in Y Direction



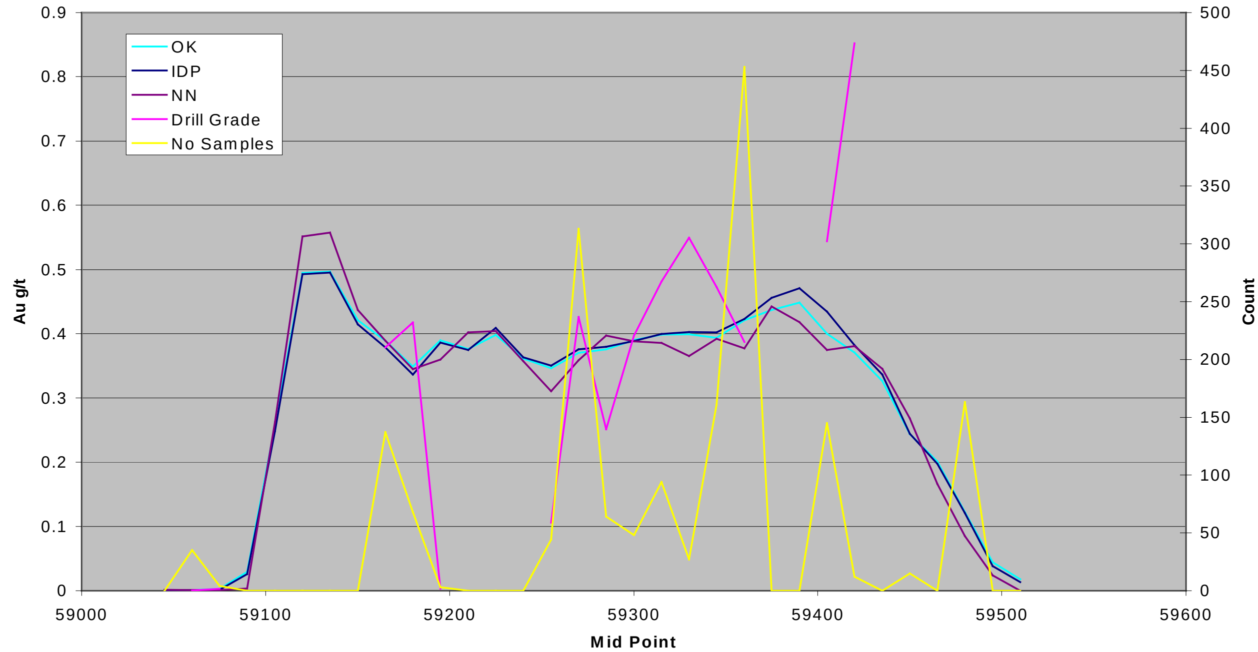

Sable Swath Plot in Z Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
0
50
100
150
200
250
300
940
960
980
1000
1020
1040
1060
1080
1100
1120


88 Hill Swath Plot in X Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.2
0.4
0.6
0.8
1
1.2
0
100
200
300
400
500
600
700
800
59300
59400
59500
59600
59700
59800
59900
60000
60100

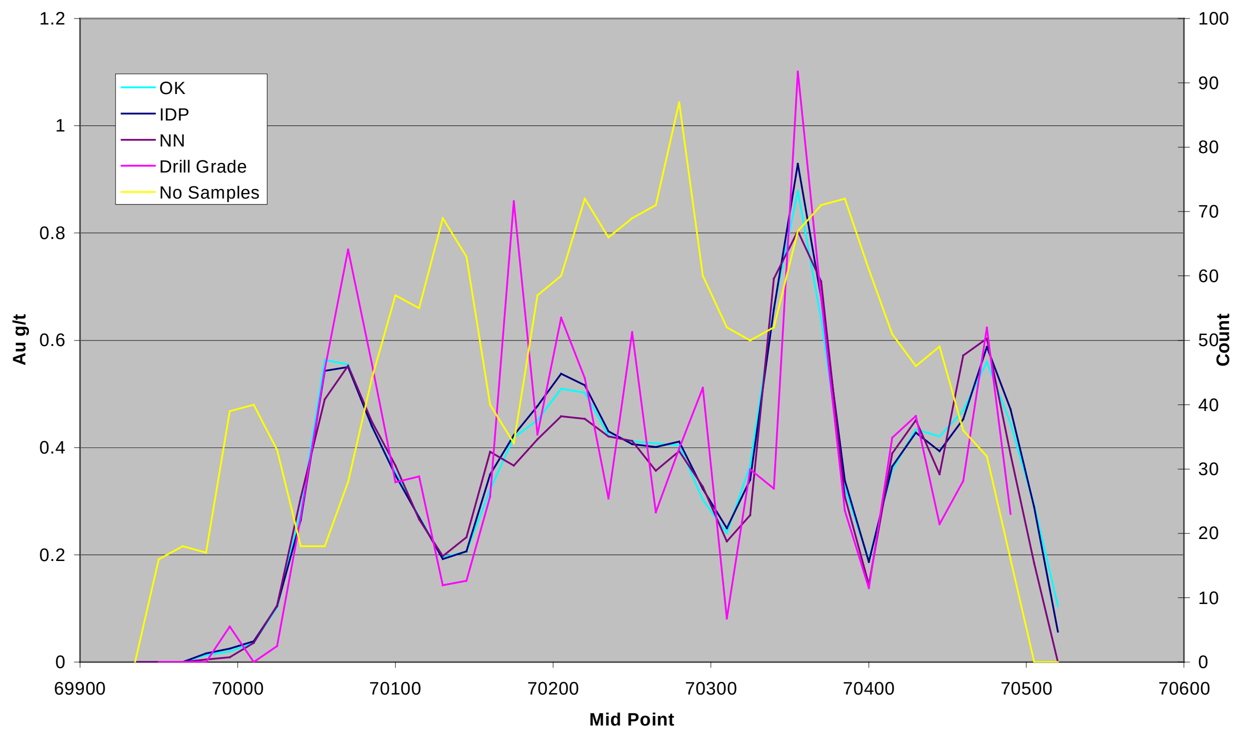

88 Hill Swath Plot in Y Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
50
100
150
200
250
300
350
400
70000
70100
70200
70300
70400
70500
70600
70700
70800

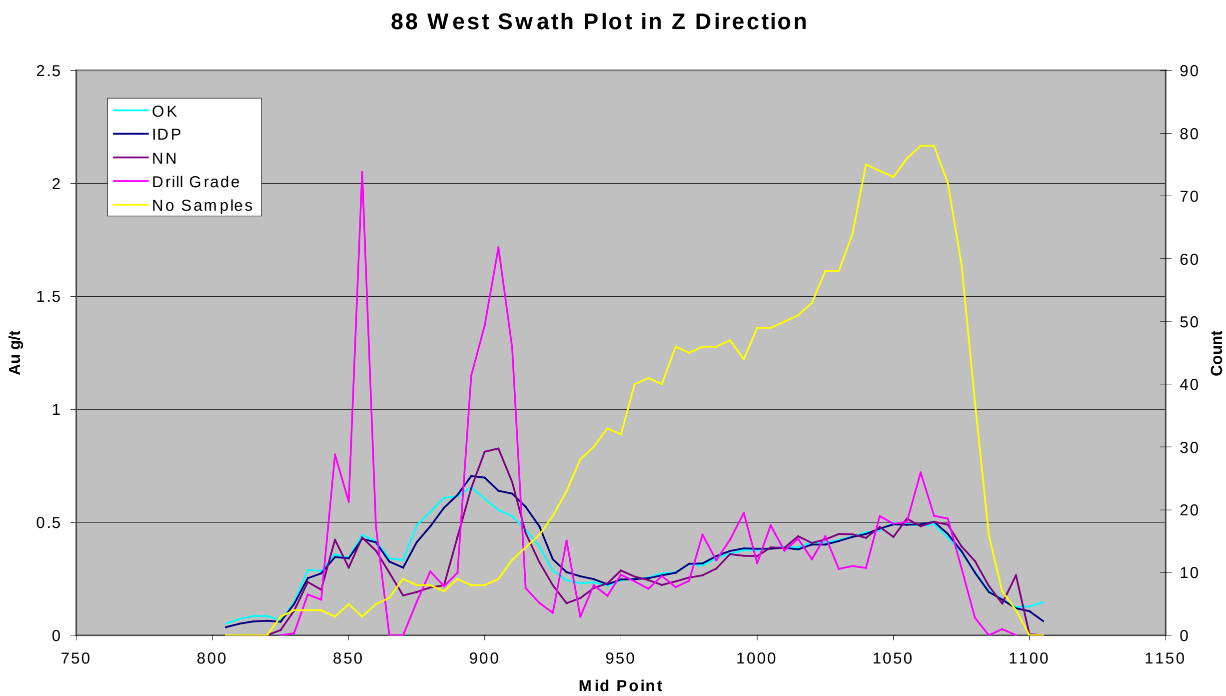

88 Hill Swath Plot in Z Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.2
0.4
0.6
0.8
1
1.2
50
100
150
200
250
300
350
400
850
900
950
1000
1050
1100
1150

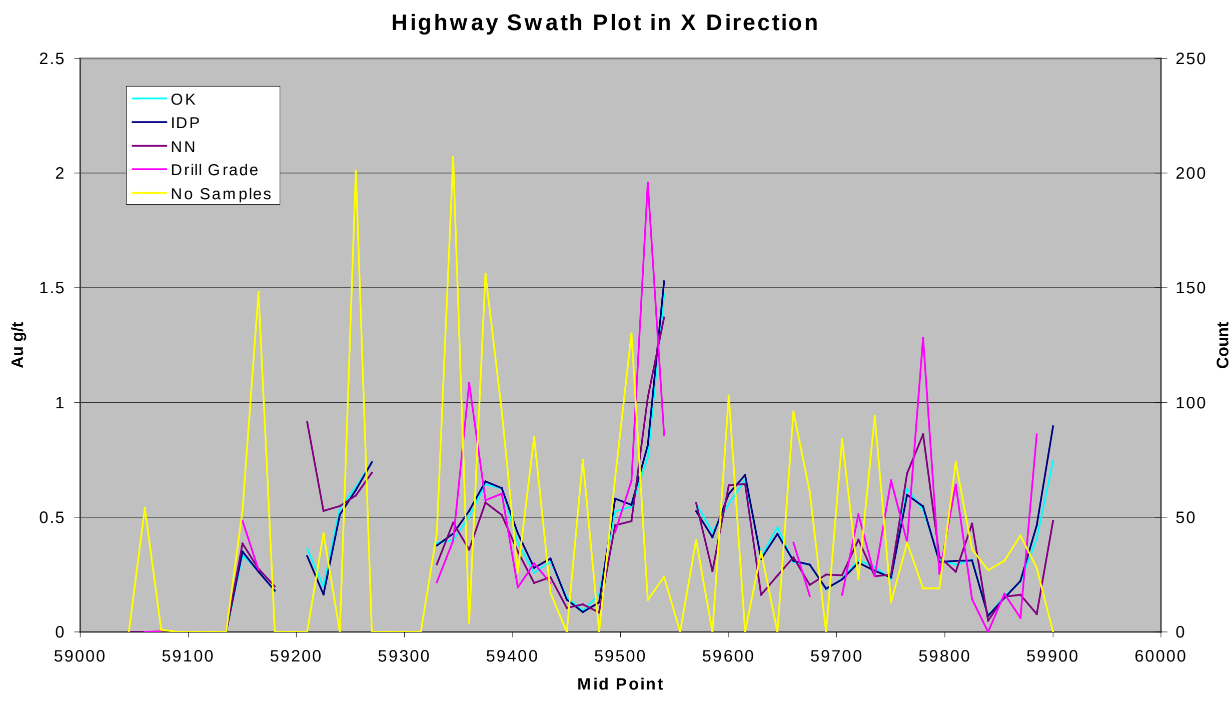
88 West Swath Plot in X Direction

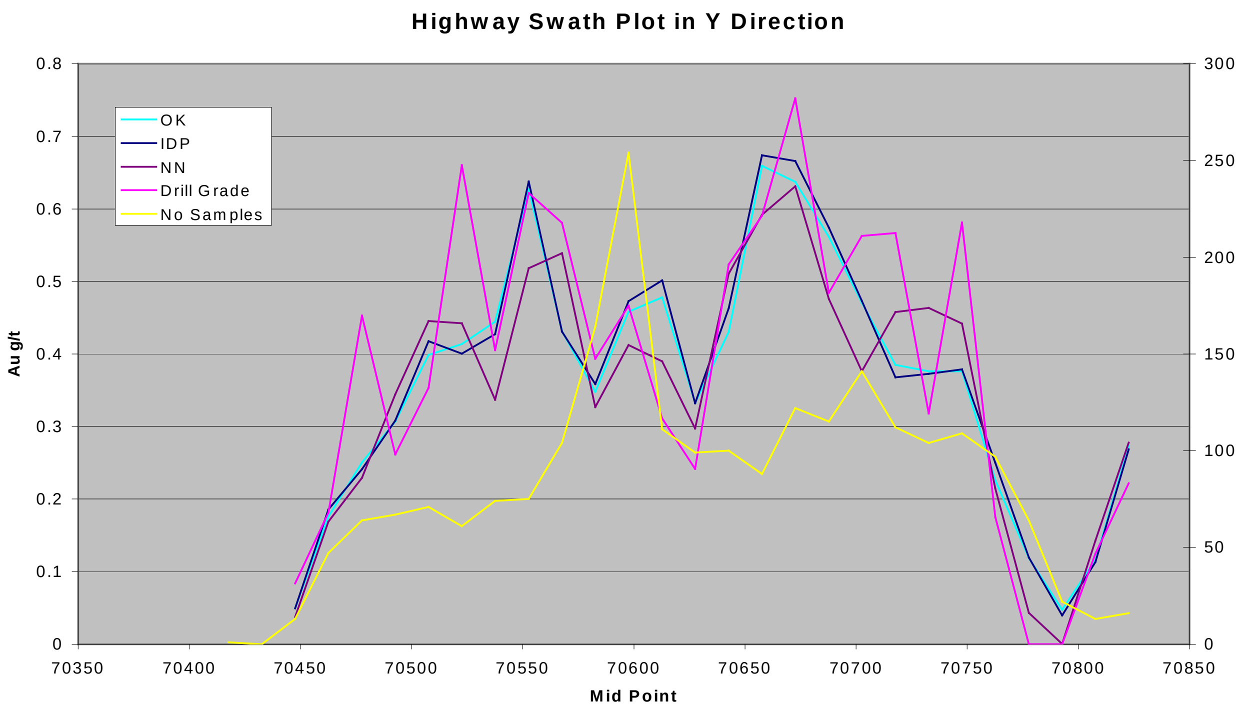


88 West Swath Plot in Y Direction




88 West Swath Plot in Z Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.5
1
1.5
2
2.5
0
10
20
30
40
50
60
70
80
90
750
800
850
900
950
1000
1050
1100
1150


Highway Swath Plot in X Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.5
1
1.5
2
2.5
0
50
100
150
200
250
59000
59100
59200
59300
59400
59500
59600
59700
59800
59900
60000


Highway Swath Plot in Y Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
300
250
200
150
100
50
70350
70400
70450
70500
70550
70600
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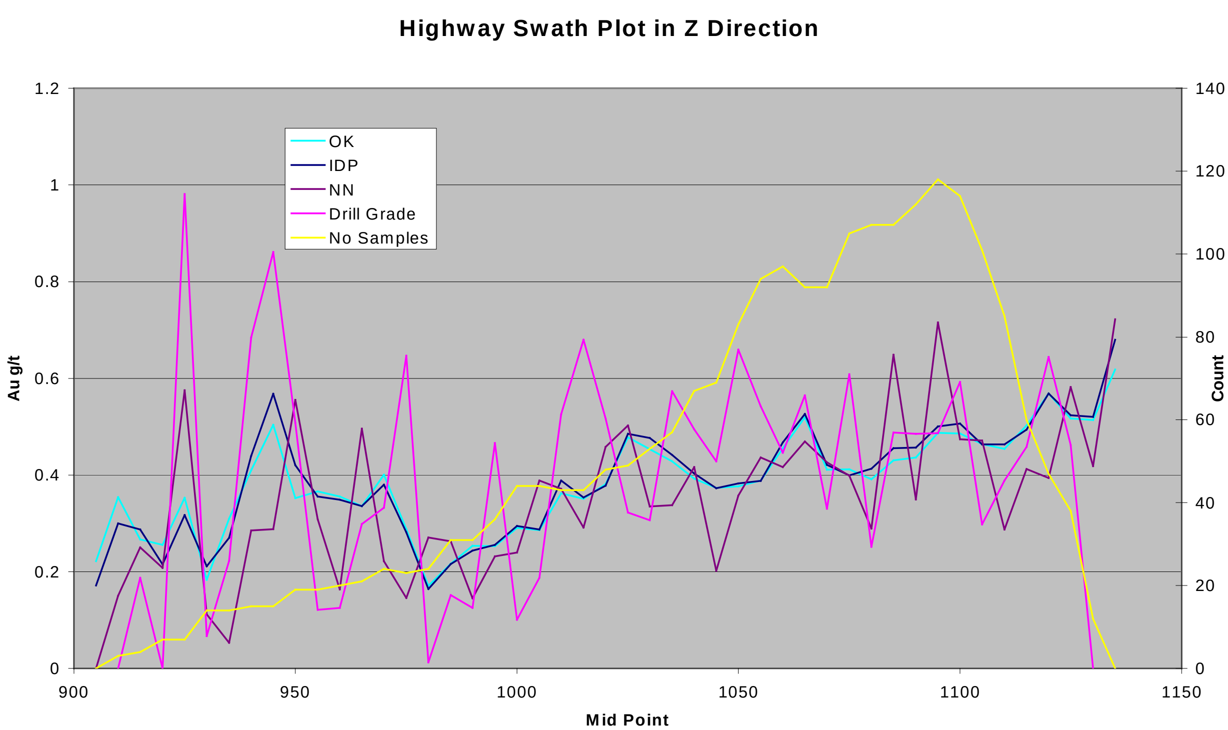
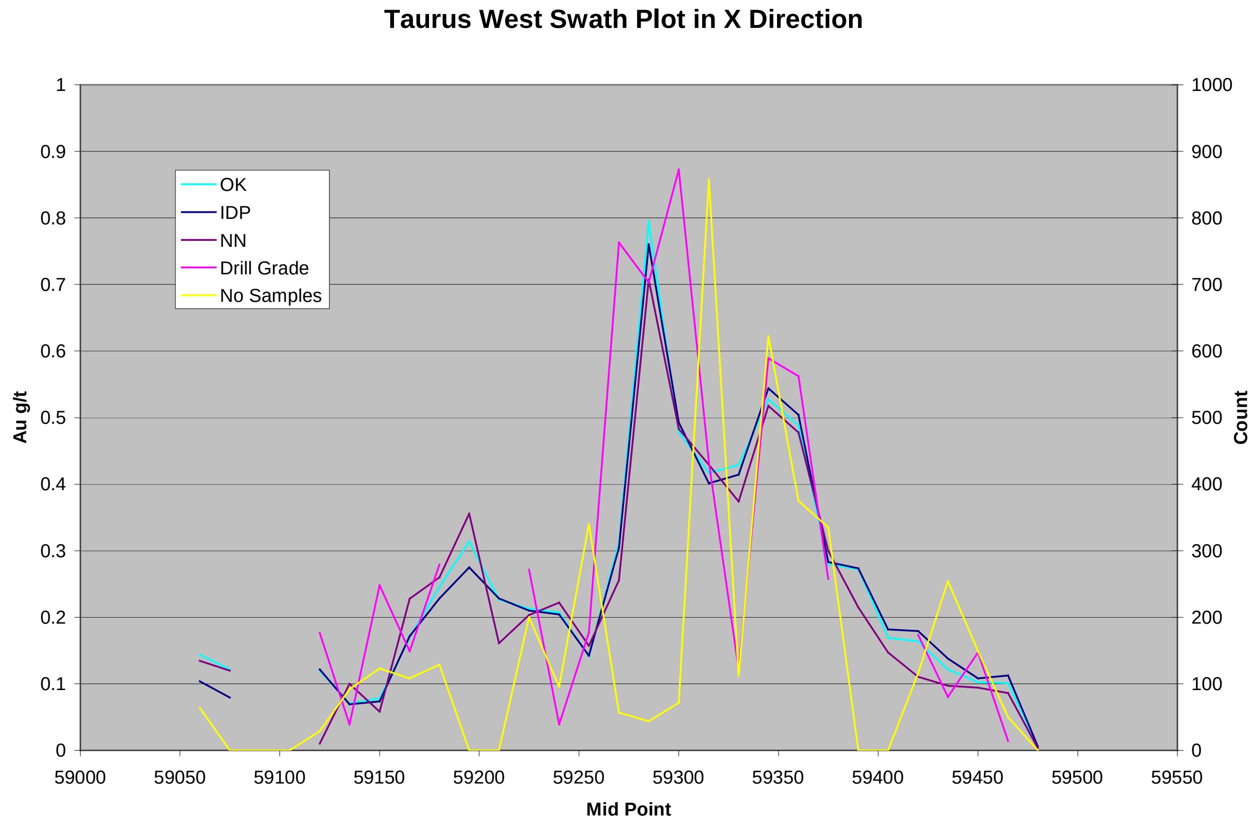
70700
70750
70800
70850


Highway Swath Plot in Z Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
1.2
1
0.8
0.6
0.4
0.2
0
140
120
100
80
60
40
20
900
950
1000
1050
1100
1150


Taurus West Swath Plot in X Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
100
200
300
400
500
600
700
800
900
1000
59000
59050
59100
59150
59200
59250
59300
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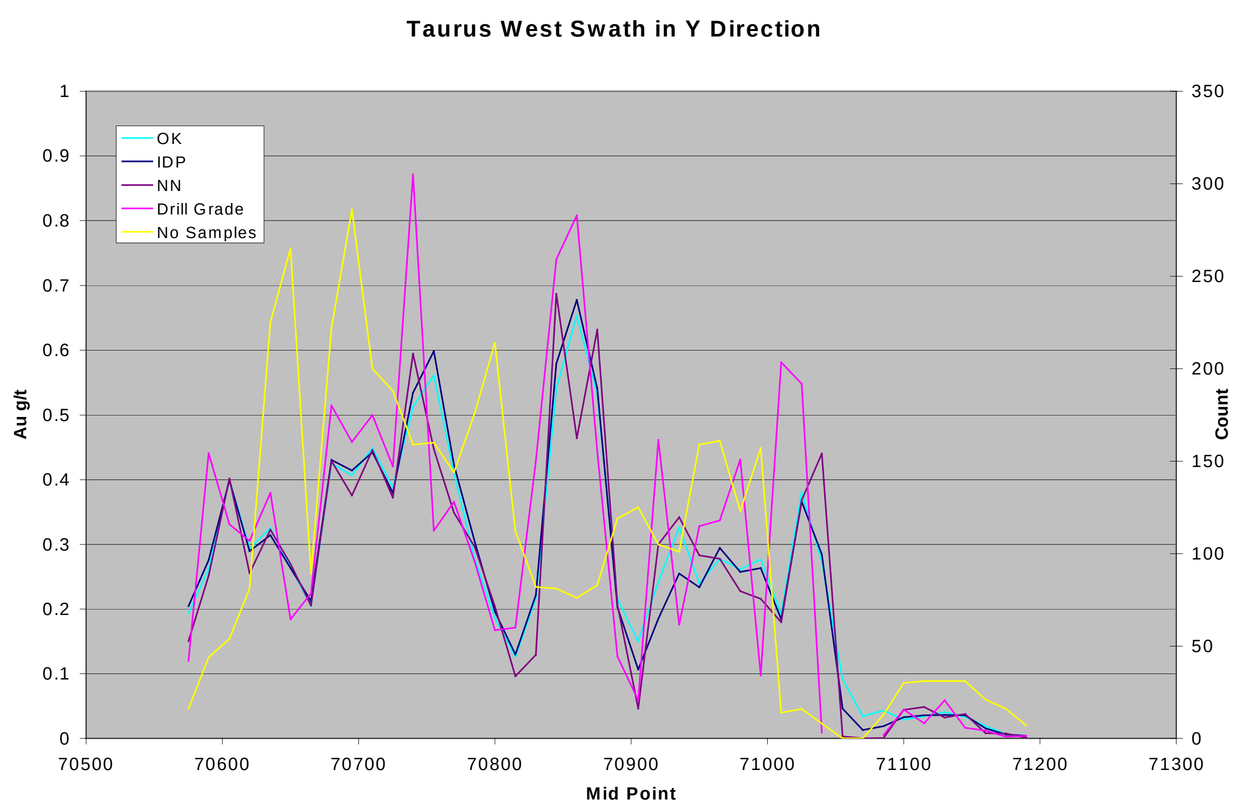
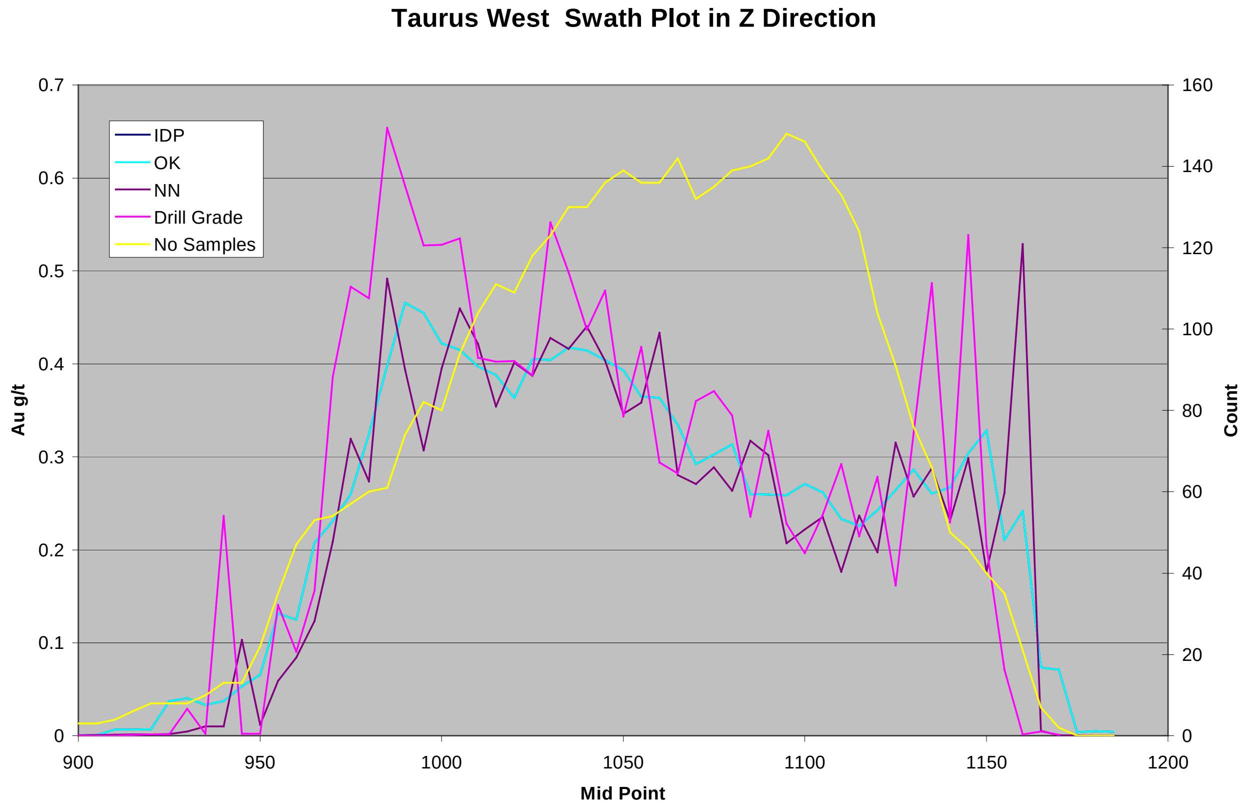
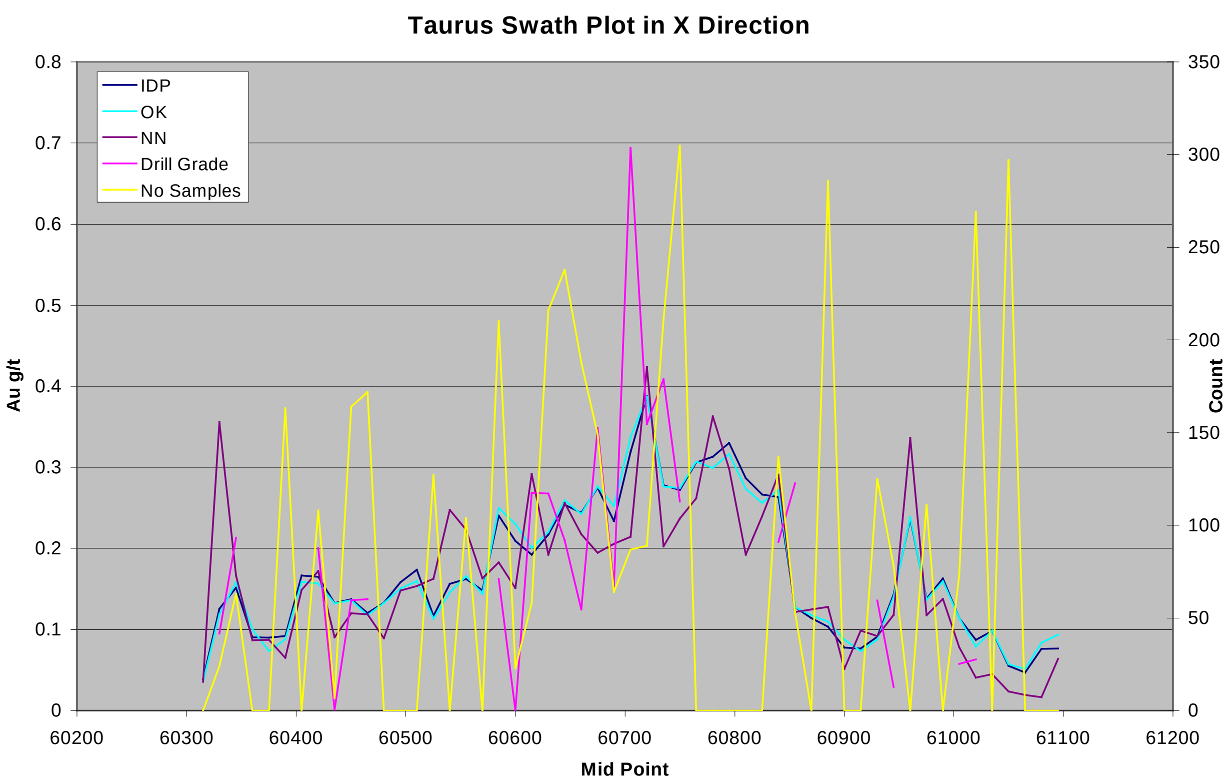
59400
59450
59500
59550

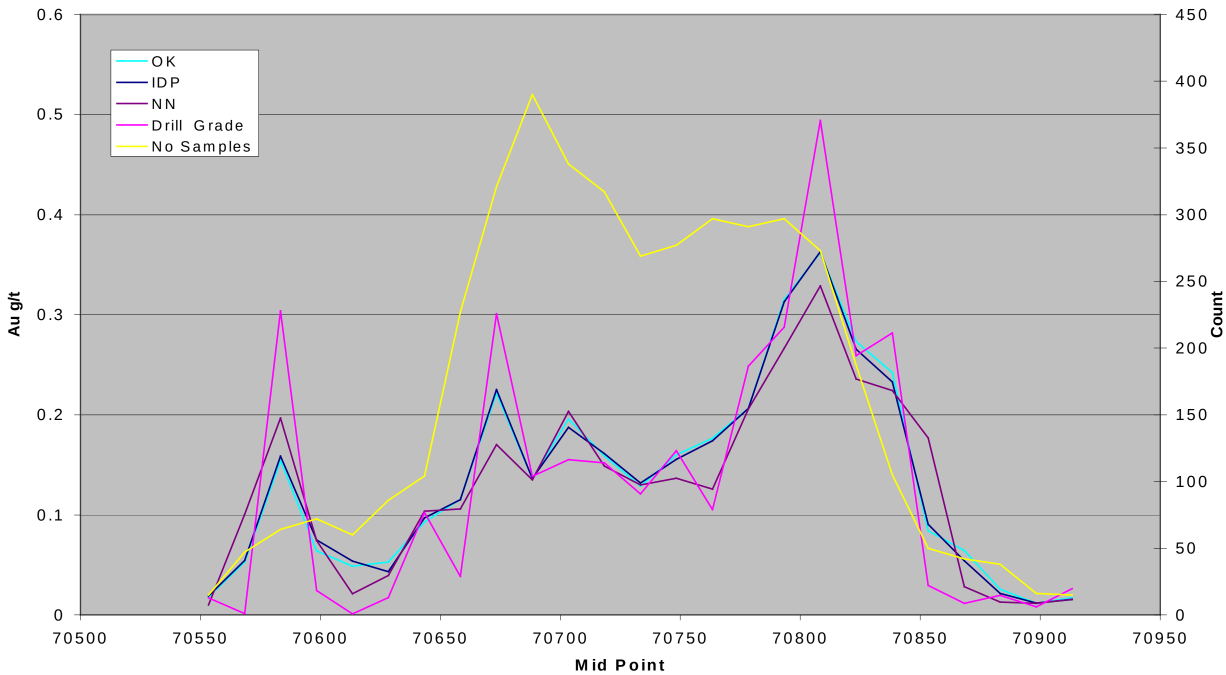

Taurus West Swath in Y Direction
OK
IDP
NN
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
50
100
150
200
250
300
350
70500
70600
70700
70800
70900
71000
71100
71200
71300


Taurus West Swath Plot in Z Direction
Au g/t
Count
Mid Point
IDP
OK
NN
Drill Grade
No Samples
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0
20
40
60
80
100
120
140
160
900
950
1000
1050
1100
1150
1200

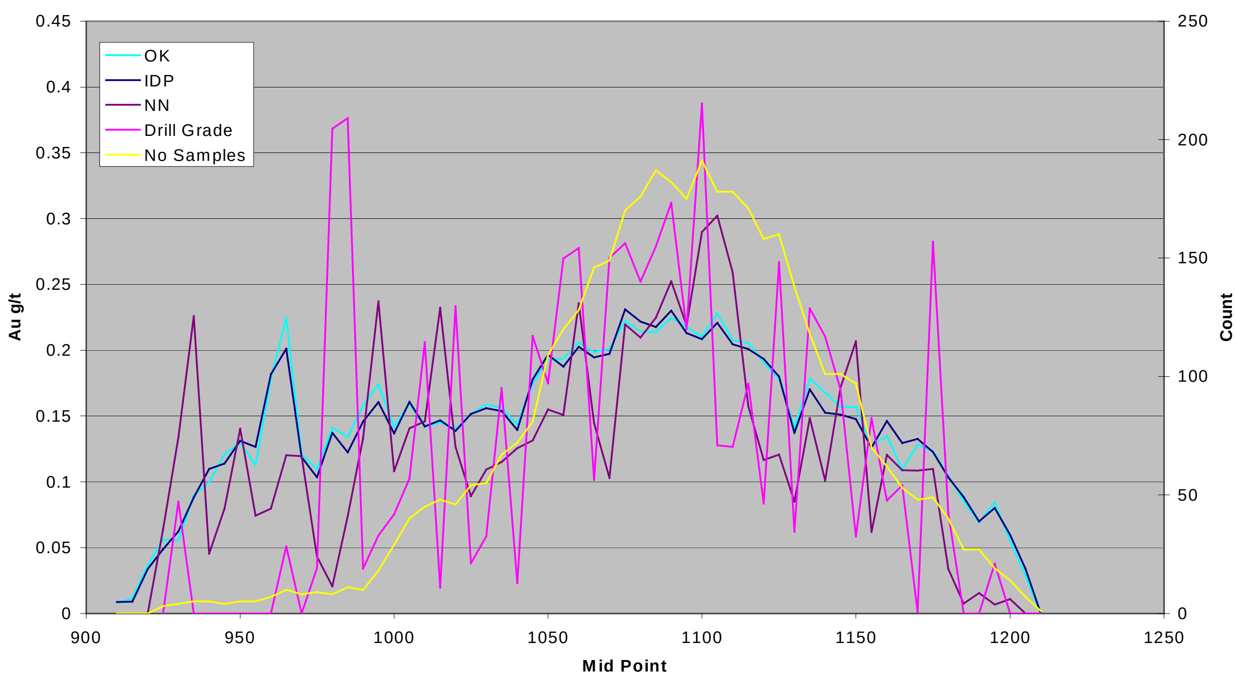

Taurus Swath Plot in X Direction
Au g/t
Count
Mid Point
IDP
OK
NN
Drill Grade
No Samples
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0
50
100
150
200
250
300
350
60200
60300
60400
60500
60600
60700
60800
60900
61000
61100
61200

WARDROP

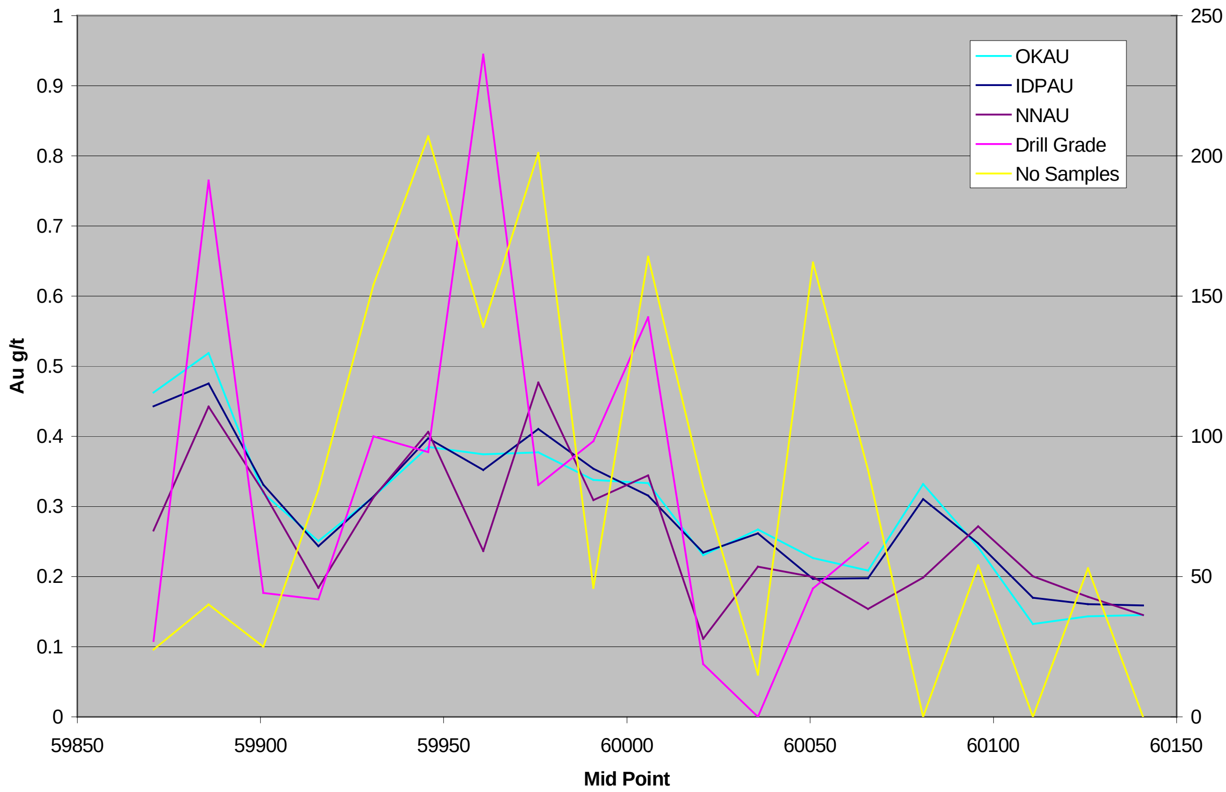
Taurus Swath Plot in Y Direction



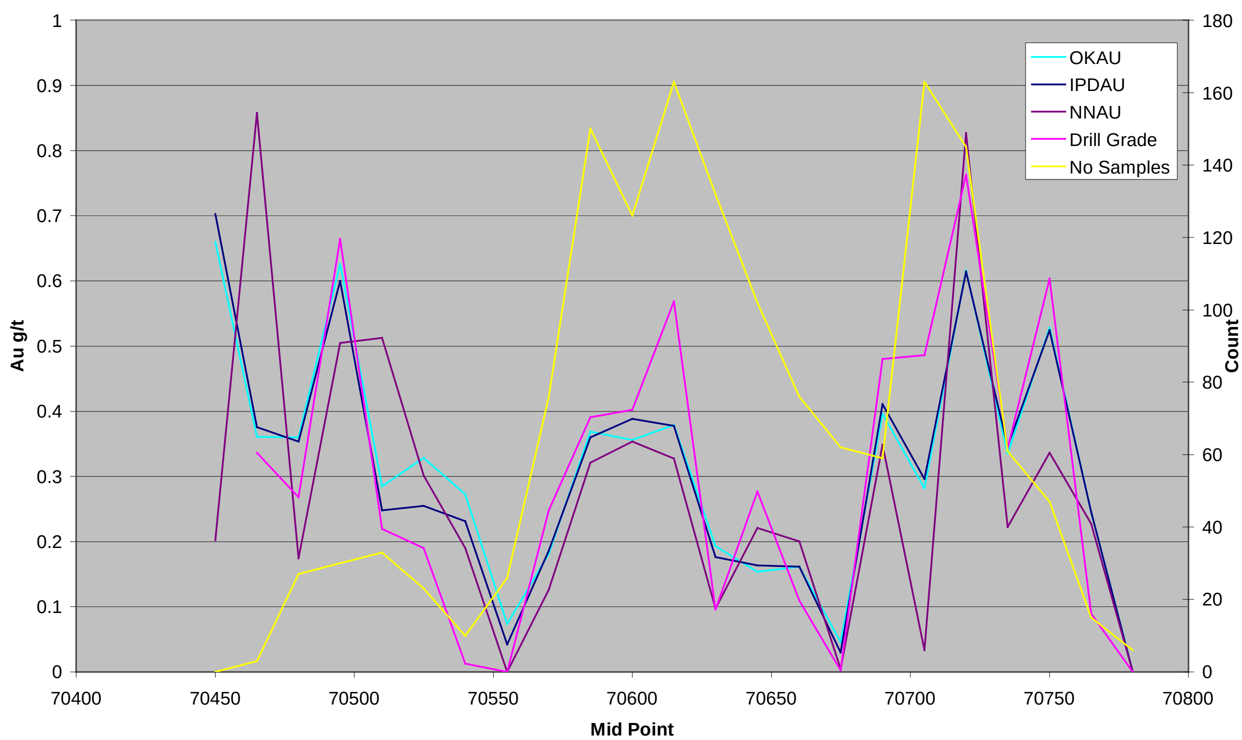
Taurus Swath Plot in Z Direction

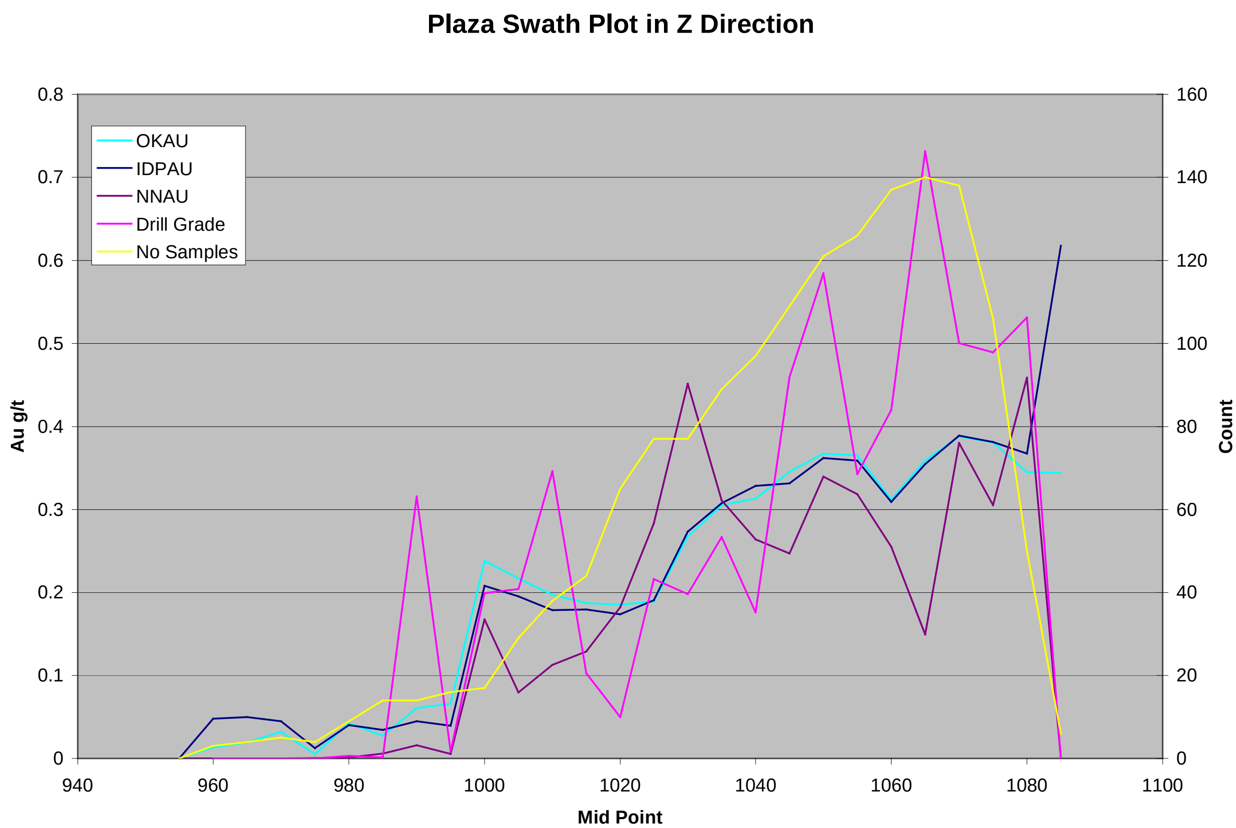


Plaza Swath Plot in X Direction



Plaza Swath Plot in Y Direction




Plaza Swath Plot in Z Direction
OKAU
IDPAU
NNAU
Drill Grade
No Samples
Au g/t
Count
Mid Point
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0
20
40
60
80
100
120
140
160
940
960
980
1000
1020
1040
1060
1080
1100

Appendix D

Metallurgical Recommendations

Proposed Metallurgical Test Program

In order to determine the necessary metallurgical parameters required for engineering design purposes, the metallurgical testing of a gold ore requires the following basic tests. More detailed and complex tests will be required should the ore samples prove to refractory. Although some of the ore types from the American Bonanza appear to fall in this category, the testwork may only become necessary once the geological assessment of this deposit has been completed.

A representative sample from each of the five ore types is required. Should several drill cores be obtained, it is recommended that a geologist identify the cores with respect to the ore type, namely as T4, or T3B, or T3A, or T2, or T1, during the logging process. The appropriate sections from the different zones can then be separated and subsequently be combined for metallurgical testing.

In this case, a basic test program is recommended to characterise the response to basic metallurgical processes. A subsequent, more detailed test phase, which may include more specific tests, is recommended for the second phase of the project, namely the engineering design and feasibility level study. The bulk of the testwork will be done on the T4-type material, but in order to understand the response of the other ore types, some basic scoping tests will be recommended as well. A minimum sample weight of 50 kg is required for the T4-type material, while about 20 kg is required for each of the other four ore types. Any sample excess should be archived under appropriate storage conditions.

The prices are budget estimate costs only.

The following tests are recommended for the characterisation of the ore from the American Bonanza deposit. Some details are also given with each test, or in the subsequent explanation.

		T4-Type	Other Types	CDN$
1a.	Sample Preparation	+	-	$2,000
1b.	Sample Preparation	-	+	2,000
2.	Head Assay; generally Au, ICP	+	+	400
3.	Grinding (Bond Work Index)	+	-	500
4.	Specific Gravity and Bulk Density	+	-	500
5.	Mineralogy; 3 sample per ore type	+	+	5,000
6a.	Gravity Concentration at 2 grinds	+	-	3,000
6b.	Gravity Concentration at 2 grinds	-	+	4,000
7a.	Bottle-Roll Leach; 6 including 2 CIL	+	-	5,000
7b.	Bottle-Roll Leach; 2 for each ore type	-	+	4,800
8a.	Bucket Leach; 6 sizes with screen analysis	+	-	6,600
8b.	Bucket Leach; 4 sizes	-	+	6,400
9.	Column Leach; 1 test with screen analysis	+	-	9,000
10a.	Flotation; 6 scoping tests	+	-	2,800
10b.	Flotation; 2 tests per ore type	-	+	3,200
11.	Cyanide Destruction; 2 tests	+	-	3,000
12.	Settling Tests; 2 tests	+	-	1,500
13a.	Environmental Tests	+	-	3,000
13b.	Environmental Tests	-	+	2,000
14a.	Supervision and Evaluation of Results	+	-	7,700
14b.	Supervision and Evaluation of Results	-	+	2,600

Total – T4 – Type Material Only	50,000
Total – All Tests as Listed	75,000

Comments regarding the above mentioned test program:

1. Although the T4-type material is considered to be the priority for the basic characterisation program, the other types [specifically T1, T2, T3A and T3B] are included should the geological program indicate that it may be impractical to separate these types from the T4 material in the deposit during mining. However, the testing of the other types may become optional, or could be deferred to another phase of the development of the project.

2. The sample preparation would depend on the amount of sample delivered to the laboratory, and the condition of the samples delivered.

3. Head assays are only considered to be for gold and the 30-element ICP suite. However, additional analyses may be required, eg silver, iron, arsenic, copper, organic carbon, etc, depending on the nature and objective of that particular test.

4. A mineralogical evaluation of the various samples, including associations and liberation sizes, will assist in the overall understanding of the various ore samples being tested.

5. The bucket leach tests for the T4-type material includes a size fraction analysis on both the feed as well as the leach residue to determine the extraction per size fraction. This analysis is also extended to the column test should this test be conducted.

6. The column test duration is anticipated to be 100 days. However, depending on the results obtained from the bottle-roll tests, and the on-going analysis of the column test results, this duration may be revised.

7. Basic, open-cycle, scoping flotation tests are envisaged at this stage of the testing program. No cleaner flotation stages, or locked-cycle tests have been considered at this stage. Should the results indicate that further work is required, another testing study will be initiated at that time.

8. Some tests may be conducted on products or tailings of a previous test. For example, the gravity concentration tailings may be cyanided to determine the combined effect of gravity concentration followed by cyanide extraction.

9. The cyanide destruction tests and the environmental tests may be deferred until a process selection has been made.

10. No costs have been included for oxidative pre-treatment and recovery processes such as biological leaching, or pressure leaching, etc. Diagnostic leaching tests have also been excluded at this stage. Should the need arise, these tests could be incorporated into this recommended program, or a subsequent phase of the project.