KEEWATIN ENGINEERING INC.

Mineral Exploration and Mining Consultants

825481

OLIVER GOLD PROJECT

PRELIMINARY FEASIBILITY STUDY

MARCH 1989

OLIVER GOLD PROJECT

PRELIMINARY FEASIBILITY STUDY

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SUMMARY AND CONCLUSIONS

1. An ore reserve inventory has been calculated which is approximately 1.5 - 2.0 million, tons grading about 0.13 Au equivalent. The reserve is in the indicated and inferred category. Within the indicated category a high grade zone exists which measures 438,000 tons @ 0.168 Au and 1.78 Ag (ie. 0.19 Au equivalent). The above reserves were diluted by 15% and erratics cut to double the average. It is the high grade zone that is of fundamental interest in this study.

2. It is felt that a further high grade zone will be realized within the inferred category.

   A further 1 - 2 million tons at grades similar to those already obtained is a reasonable expectation. This translates into a total potential at 3 - 4 million tons at 0.13 Au equivalent containing about 1 - 1.4 million tons of 0.19 Au equivalent.

   For the purpose of this study 0.15 Au equivalent tonnage was utilized beyond the 438,000 tons.

   The additional potential exists to the northwest of the Fairview property and also to the east at the Brown Bear adit and the Morningstar Mine.

3. The mine's resources are primarily an underground resource as approximately 95% of the vein structure is beyond an acceptable open pit strip ratio. However the economics of open pit material is very good and could possibly provide the special boost to aid the underground material into a debt free situation. The estimate for open pit potential is 150,000 tons which could generate an operating profit of about $3,000,000 without the addition of sustaining capital.

   Although the economics of open pitting are excellent, the key is to use the open pit material to pay for the long range underground future.

4. The calculated operating costs, capital costs and grades are seen to closely represent the mine model as oalculated. In fact, some capital and operating savings could be realized along with grade improvement in the longer term (ie from year 6 - 10). However, for the purpose of this study, the prudent approach was to utilize some conservatism.

5. The financial analysis confirms that the project is very vulnerable to the price of gold and has marginal economics

below $350 U.S. gold. The project has good economics above $400 U.S. gold price.

6. The correct approach to mining and milling at Oliver is to develop the easiest ore and the highest grade ore as soon as possible such that the resource in the ground pays the way for overall property development. This means developing the open pit and shipping the ore to the Dankoe mill, and utilizing the operating profit to develop the high grade ore below 6 level. When finances allow a mill would be constructed at Oliver. This type of strategy is the least risk approach for the Oliver property.

SECTION 1

INTRODUCTION AND TERMS OF REFERENCE

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INTRODUCTION AND TERMS OF REFERENCE

The Oliver Gold Project, owned by Valhalla Gold Corporation of Vancouver, B.C., consists of a proposed gold facility located near Oliver, B.C. (See Figure 1-1).

Keewatin Engineering Inc. was requested to prepare a mining and economic study for the Oliver Gold Project in February 1989. Various alternatives and concepts were evaluated in the course of this study in accordance with the objectives objectives of Valhalla. The study objectives were as follows:

- Develop mineable reserves (underground and surface).
- Define economic open pit ore and calculate the approximate strip ratio.
- Define an economic underground mining opportunity.
- Develop an approximate milling strategy, general arrangement, and operating plan for the operation.
- Prepare capital and operating costs for financial analysis of the feasibility of the project.
- Prepare an evaluation of the project to attract potential joint venture partners to the project.
- Create an internal understanding of the project, the project economics, and risks for the purpose of defining future strategy and expenditures.
- Acquire necessary technical information to supplement the Stage 1 permit application.

SECTION 2

SUMMARY

SECTION 2

SUMMARY

2.1 GENERAL

The Oliver Gold project consists of a large group of mining claims located near Oliver, B.C., in an area well-serviced by roads and electrical power. These claims have been worked intermittently since the last century and were assembled into a group by Valhalla Gold Corporation. Subsequently the properties were extensively drilled and various testwork programs carried out by its subsidary companies; Oliver Gold Corporation, Loki Gold Corporation, and Thor Gold Corporation.

2.2 GEOLOGY

Keewatin Engineering has reviewed the exploration data and incorporated this information into a manual underground and open pit design. The drill data was analyzed on vertical and longitudinal sections. The geological reserves were developed from these sections, and are summarized in Table 4-2-C. They show some 1,864,023 tons with an average gold/silver equivalent grade of 0.123 oz/ton.

2.3 MINING

Various alternative underground designs and production scenarios were reviewed during the course of this study. It was decided to evaluate the project based on development of a decline from a point near 6 level portal.

The mining rate was set at 105,000 tons/year to provide an annual production of 18,000 oz gold. Several small open pits with limiting stripping ratios have been developed to acquire waste material to build the starter tailings dams and provide initial mill feed.

2.4 PROCESS

A 300 TPD concentrator utilizing conventional flotation process, to produce a bulk sulphide flotation concentrate, has been utilized in this study.

2.5 SERVICE AND ANCILLARIES

The relatively close proximity to Oliver, B.C. and low manpower requirements indicated the use of trailers and pre-engineered structures for the administration/dry and assay buildings.

Water supply is an important factor for the Oliver Gold Project due to the high evaporation and closed water rights of the area. A negative water gain from precipitation is expected overall, this will be supplemented by pumping water for the continuous operation. In addition, 60,000-gallons of tankage have been provided for site fire protection and potable water.

2.6 ENVIRONMENATAL

Generally, all environmental aspects will have to be included in the Stage 1 Report and no problems, aside from cost and particular government concerns, are evident in this area.

2.7 PROJECT EXECUTION AND SCHEDULE

The current schedule objective is to commence mill site construction and begin to mine the surface reserves by open pit methods. Production of gold would commence in year one, building to the projected annual mill rate of 105,000 tons/year. This schedule is considered reasonable and readily attainable.

2.8 CAPITAL AND OPERATING COSTS

The projected capital cost for the complete facility, including tailings dams, process facilites, support facilites, and contingency, is $7,545,680. It must be noted that no proportion of the capital cost is very high, and that the overall project capital cost could possibly be reduced during competitive bidding on these facilities. Operating costs, including mining, processing, and administration, are estimated to be $53.71/ton ore (including pre-production mining).

2.9 FINANCIAL ANALYSIS

Nine (9) case studies were developed using various $(US)/oz gold and expansionary production rates. The base case (worst case), utilizing 438,800 tons of reserves, yield an NPV of $448,000 at a 10% discount rate, and a rate of return of 13% with a gold price of $350/oz U.S.

SECTION 3

PROJECT DESCRIPTION AND CRITERIA

SECTION 3

PROJECT DESCRIPTION AND CRITERIA

3.1 LOCATION, ACCESS, AND SERVICES

The Oliver Gold Project is located on the west side of the Okanagan Valley about 22 miles south of Penticton, British Columbia, and 4 miles northwest of Oliver, British Columbia (See Figure 1-1). The property lies on map-sheept NTS 82-E/4 E in the Osoyoos Mining Division at 49 degrees 12′ North latitude and 119 degrees 38′ West longitude.

Access is partly by paved road from Oliver and partly by an all-weather gravel road which is currently used as a backway route to Cawston and Keremeos. The topography is best described as low rolling hills with steep slopes. The lowest elevation on the property is 2,200 feet, at the southeast end of the belt and from here, gradually rises to over 4,800 feet at the northwest boundary of the Crown granted claims, and then down to 2,500 feet at the northwest property boundary near Blind Creek. The terrain is moderately wooded with a variety of coniferous trees and is a popular area for hunting, fishing, four-wheel driving, and cattle grazing during the summer months.

General services to support the proposed mining operation are available nearby at Oliver and Penticton, and any materials not available locally may be readily obtained from Vancouver, B.C. A power transmission line crosses the property.

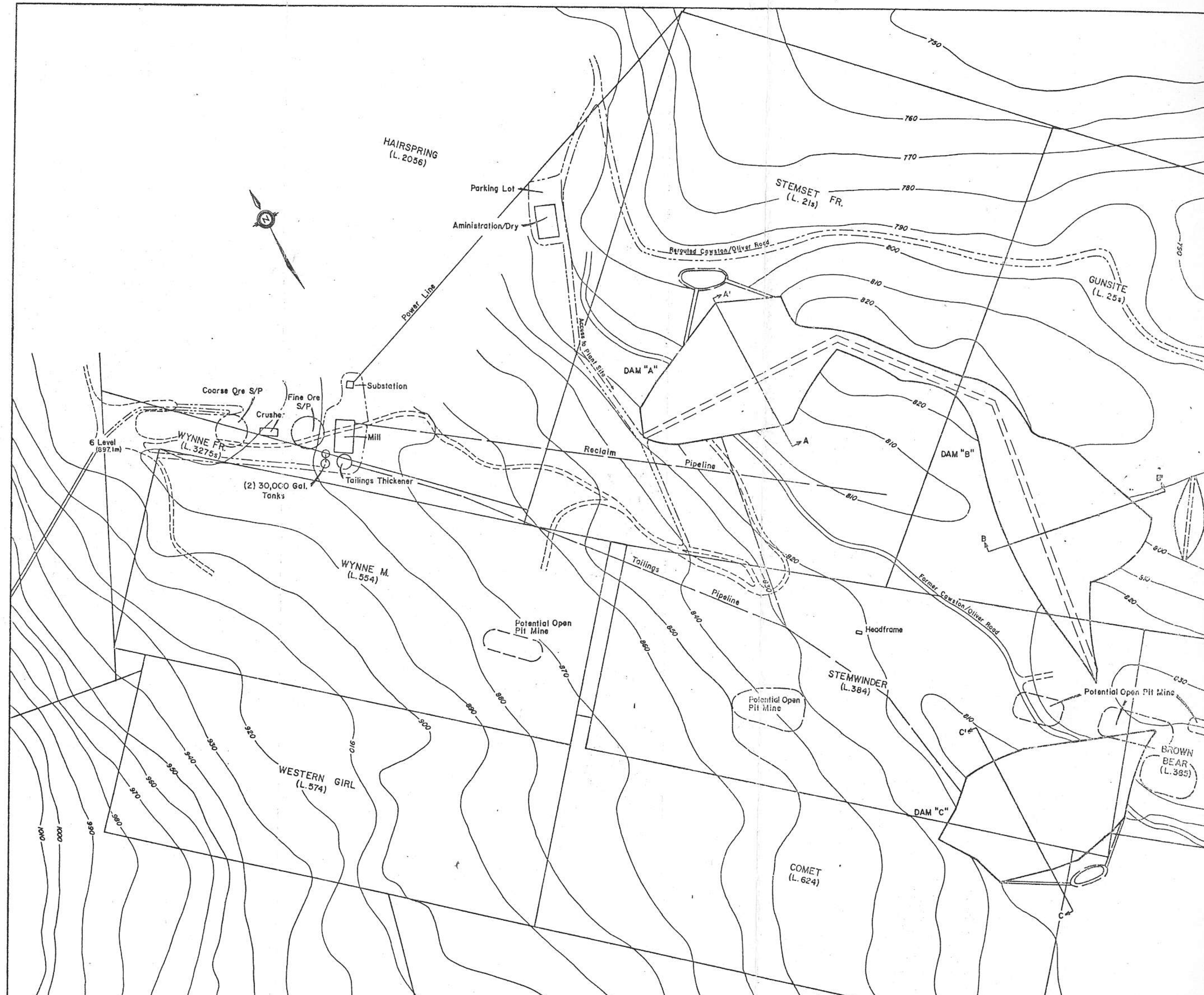
With the long history of mining in the Oliver area, there is an adequate work force available locally for the proposed operation.

3.2 EXPLORATION AND OWNERSHIP HISTORY

Previous mining on the property dates back to 1896 and continued intermittently to as late as 1961. During that period 485,000 tons graded 0.112 oz/ton gold and 1.4 oz/ton silver were produced at the Fairview Mine (lots 574, 1085, 1086, 1087, 1978, 2055), 28,000 tons at 0.170 oz/ton gold and 1.9 oz/ton silver came from the Stemwinder (lot 384), and 8,300 tons grading 0.560 oz/ton gold and 1.27 oz/ton silver at the Morningstar (lot 443). In addition, 10,000-20,000 tons of up to 0.3 oz/ton gold equivalent has been removed from the Susie Mine (lot 1917).

Recent exploration has concentrated on the area between the Brown Bear Adit (lot 385) to the east through to the northwest end of the old Fairview mine workings on lot 1087, a horizontal distance of 6,900 feet. This work, which has concentrated on defining the overall grade of the veins as well as identifying higher grade shoots, has included both diamond and reverse circulation drilling as well as extensive underground rehabilitation work.

Numerous other targets exist on the property including the Morningstar and Susie Mines. It is anticipated these targets will be the focus of future exploration in order to define additional reserves and extend the mine life.

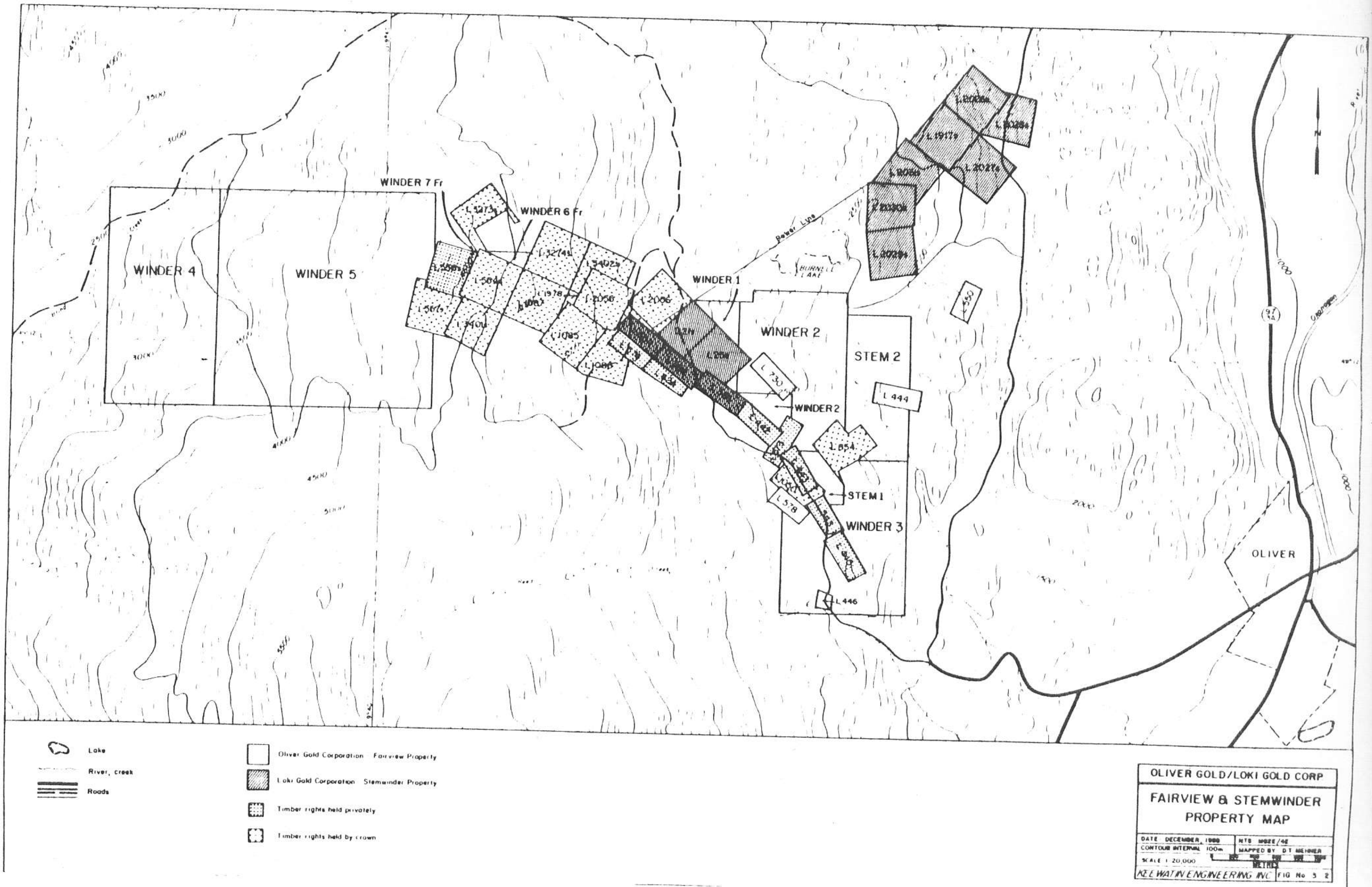


OLIVER GOLD CORPORATION

OLIVER GOLD PROJECT

GENERAL SITE PLAN

DATE: FEBRUARY, 1989	DRAWN BY: B. GRAFF
SCALE: 1:2000	PROJECT No.:
KEEWATIN ENGINEERING INC.	FIG. No. 3-1



WINDER 4
WINDER 5
WINDER 7 Fr
WINDER 6 Fr
WINDER 1
WINDER 2
WINDER 3
STEM 1
STEM 2
OLIVER
L 444
L 446
L 854
L 578
Lake
River, creek
Roads
Oliver Gold Corporation   Fairview Property
Loki Gold Corporation   Stemwinder Property
Timber rights held privately
Timber rights held by crown
OLIVER GOLD/LOKI GOLD CORP
FAIRVIEW & STEMWINDER
PROPERTY MAP
CONTOUR INTERVAL 100m
MAPPED BY D T MEHNER
SCALE 1 20,000
METRES
KEEWATIN ENGINEERING INC
FIG No 3 2

Figure 3-2

TABLE 3-1

CLAIMS COMPRISING THE PRIME INTEREST AREA

NAME	LOT NO.		AREA (Ha).
Agricola	2027S		20.90*
August	1050		5.20
Banker	2013S		17.54*
Black Diamond	578		8.33
Brown Bear	385		8.36
Buller	554S		20.22
Chatty	3273S		14.52
Comet	624		6.27
Eureka	3401S		18.55
Evening Star	543		7.69*
Fairview	556S		16.80
Federal	2030S		19.09*
Flora	1086		14.37
Gunsite	255		18.13*
Grey Gables	2026S		20.87*
Hairspring	2056		18.49*
Haligonian	557S		16.31
John Fr.	3402S		12.33
Manton Fr.	1978		1.62
Morning Star	443		8.36
Ness	3274S		20.90
Oakville	2029S		20.45*
Ocean Wave	854		14.65
Ontario	573		7.19
Oro Basante	2055		18.17*
Rattler	445		8.35
Silver Crown	442		8.36*
Stemset	215		14.97*
Stemwinder	384		8.36
Susie	1917		20.90*
Treo Hermands	2028S		14.50*
Virginia	1087		20.64
Western Girl	574		6.50
Western Hill	1085		19.44
Wynn Fr.	3275S		1.61
Wynn M.	544		7.80
		TOTAL	486.64

*THESE LOTS DO NOT INCLUDE SURFACE RIGHTS (See Figure 3-2)

TABLE 3-1 (cont.)

RECORDED CLAIMS

CLAIM	UNITS	RECORD NUMBER	RECORD DATE	DUE DATE
Winder 1	2	1253	Oct. 6, 1980	Oct. 6,1995
Winder 2	1	1254	Oct.6, 1980	Oct. 6, 1995
Winder 3	6	1255	Oct. 6, 1980	Oct. 6, 1995
Winder 2	6	1304	Dec. 17, 1980	Dec. 17,1995
Winder 4	8	1369	March 23, 1981	March 23, 1995
Winder 5	16	1370	March 23, 1981	March 23, 1995
Winder 6 Fr.	1	1371	March 23, 1981	March 23, 1995
Winder 7 Fr.	1	1372	March 23, 1981	March 23, 1995
Stem 1	1	1508	Feb. 25, 1982	Feb. 25,1995
Stem 2	3	1509	Feb. 25, 1982	Feb. 25,1995

TOTAL UNITS 45 (See Figure 3-2)

3.3 PROPERTY LAND STATUS

The project property consists of 36 crown grants and 10 recorded claims (45 units) covering an area of 1586 ha. The property is located in the Osoyoos Mining Division.

3.4 PROJECT DESIGN CRITERIA

The major design criteria established for this feasibility study are summarized below.

Mining

Underground/Surface Owner operation	ore delivered to primary crusher and/or ROM stockpile
Schedule	5 days/week (mining) @ 2 shifts/day 7 days/week (milling) @ 3 shifts/day (350 days/year)

Ore Stockpile Capacity	5,000 tons
Crushing	
Equipment	jaw and cone crusher
Product size	3/8"
Availability	95 %
Crushed Ore Stockpile	1,600 Tons
Ore Production Rate	300 tons/day or 105,000 tons/year
Process Plan	
Grinding	Final product size 45% - 200 mesh
Flotation	Feed density - 40% solids

Estimated Workforce:	Operational	37
	Staff	15
	Housing	Oliver, Penticton, Osoyoos

SECTION 4

GEOLOGY

SECTION 4

GEOLOGY

4.1 REGIONAL GEOLOGY

The Oliver Gold Project straddles a narrow northwesterly trending belt of Kobau Group metasediments which separate two large intrusive bodies, the Oliver granite to the northeast and the Fairview granodiorite to the southwest.

The Kobau Group metasediments consist of a complex assemblage of quartzites, schists, marble, and greenstones which are pre-Pennsylvanian in age and are possibly Upper Mississippian. They have undergone at least two and possibly three phases of folding.

Tertiary dykes and sills of andesite to rhyolite composition occur throughout the belt.

Auriferous quartz veins occur in all lithologies but are thickest and most continuous where they occur in the quartzites. Some significant veining does occur in intrusive bodies.

Tertiary faults cross-cut all lithologies including the quartz veins (See Figures 4-1 and 4-2).

4.2 GEOLOGY OF THE OLIVER GOLD PROJECT

The Fairview Property is underlain by a NW-SE trending sequence of quartzites overlain by a greenstone assemblage of chlorite schists with minor interbedded amphibolites and quartzites. On top of this to the north lies an assemblage of greenstones and minor quartzites that have been altered to gneisses. A series of intermediate to felsic sills parallel to foliation occur throughout the lower quartzite unit, late non-foliated tertiary basalt to andesite dykes cuts all units.

The stratigraphy is tightly squeezed and strongly foliated at 100-130 degrees between the Oliver granite to the north and the Fairview granodiorite to the south. Dips are to the NE at 50-65 degrees.

Mineralization is confined to a quartz vein system which parallels foliation and has been traced over 3 miles.

This veining consists of two dominant veins often with a third or fourth present. They occur in the lower quartzite sequence, usually within 60 metres of the Fairview granodiorite contact. Individual veins reach up to 15 meters thick and pinch and swell both along strike and down dip.

Gold and silver values occur in a portion of the vein that contains up to 2% sulphides including pyrite, sphalerite, galena, and chalcopyrite. Strong fracturing parallel to foliation with graphite, sericite, chlorite and biotite filling fractures accompanies the mineralized zones.

Within the sulphide enriched areas, ore shoots up to 82 metres long and 1.8 metres wide grading 0.302 oz/ton Au and 4.87 oz/ton Ag have been identified.

Past production from the entire Fairview camp which includes the Fairview, Stemwinder and Morningstar Mines totalled 521,300 tons at 0.122 oz/ton Au. (See Table 4.1).

Figure 4-1 shows the lithologic units, which are described below:

1. MONASHEE GROUP - Layered gneuss (paragneuss); minor schist, ampjhibolite, quartzite, marble and pegmatite.

2. CHAPPERON GROUP - chlorite schist, quartzite.

3. OLD DAVE INTRUSIONS - serpentinized ultrabasic rocks.

4. KOBAU GROUP - quartzite, schist, greenstone.

6. BLIND CREEK FORMATION - limestone, limy argillite.

8. BARSLOW FORMATION - argillite.

10. SHOEMAKER FORMATION - chert, some tuff and greenstone.

14a. JURASSIC - pyroxenite.

14b. JURASSIC - hornblendite.

15. NELSON PLUTONIC ROCKS - grandiorite, quartz diorite, diorite, granite, quartz monzonite, syerite, monozonite.

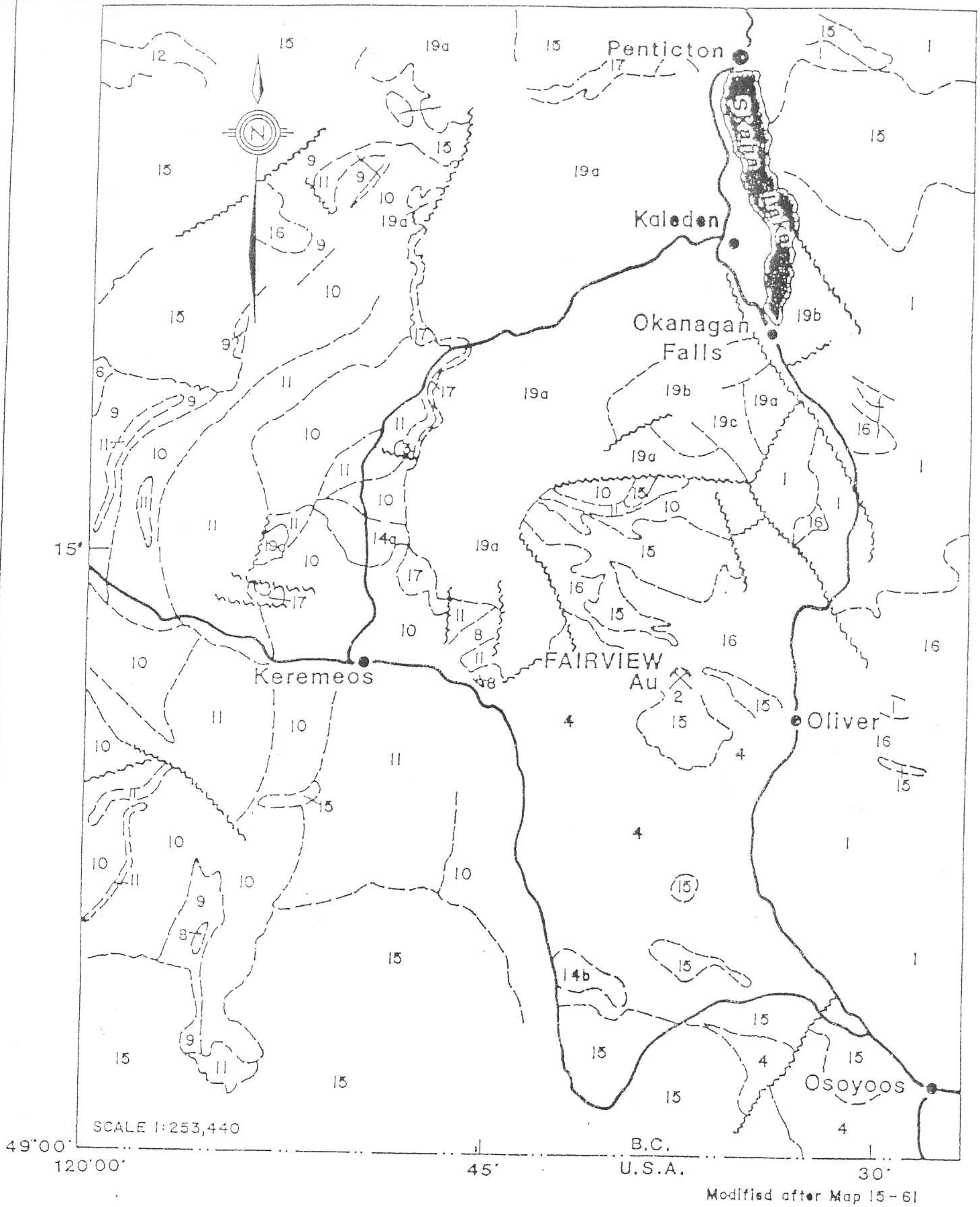
16. VALHALLA PLUTONIC ROCKS - granite, granodiorite.

17. PALEOCENE OR EOCENE - congolmerate, snadstone, shale, tuff.

19a. EOCENE OR OLIGOCENE - andesite, trachyteflows, and agglomerate.

19b. EOCENE OR OLIGOCENE - conglomerate, sandstone, shale, tuff, minor agglomerate, and breccia.

19c. EOCENCE OR OLIGOCENE - andersite and trachyte.



REGIONAL GEOLOGY
SOUTH OKANAGAN VALLEY

Figure 4-1

PROPERTY GEOLOGY
OLIVER GOLD PROJECT

Figure 4-2

TABLE 4-1

SUMMARY OF PAST PRODUCTION

		TONS	GRADE
Fairview	Pre-Cominco	120,000	0.17 oz/ton Au
	Cominco	365,000	0.093 oz/ton Au 1.4 oz/ton Ag
		485,000	0.112 oz/ton Au
Stemwinder		28,000	0.17 oz/ton Au 1.9 oz/ton Ag
Morning Star		8,300	0.56 oz/ton Au 1.27 oz/ton Ag
		521,300	0.122 oz/ton Au 1.0 oz/ton Ag

Plus 10,000 - 20,000 tons @ 0.3 oz/ton gold equivalent from the Susie Mine.

Cominco introduced grade control for gold in 1955 which resulted in a grade of 0.12 being produced. If this practice had been in effect for the 10 years previous to 1955, average gold production might have been at a grade of 0.12. If one combined this with the pre-Cominco production, a grade of approximately 0.13 Au per ton would results.

4.2.1 Mineralization

Gold and silver values in the Fairview quartz veins are closely associated with the presence of galena with or without chalcopyrite, sphalerite, or pyrite. Where only pyrite exists, gold values are generally <0.05 oz/ton.

4.3 GEOLOGICAL ORE RESERVES

4.3.1 General

Ore reserves as prepared by the mine geologist are:

	Tons	oz Au	oz Ag
Indicated	1,159,486	0.107	1.17
Inferred	704,537	0.107	1.02
Total	1,864,023	0.107	1.11

The above figures contain 15% dilution at 0.017 oz Au and 0.17 oz Ag. High assays have been cut to 2 times average. Included in the indicated block is 438,000 tons of 0.19 oz/ton Au and Ag equivalent. It is this tonnage and grade which is addressed in this report, and which is referred to as "high grade".

The high grade blocks are located in three generally parallel veins ranging from a few feet to 150 feet apart. The hangingwall vein contains six (6) blocks over a strike length of 2,000 feet. The main vein contains six (6) blocks along a length of 5,000 feet, and the footwall vein has two (2) blocks along a length of 1,500 feet.

Of the 438,000 tons, 29,000 tons may be mined as open pit and the remaining 409,000 tons by underground methods.

Dilution:

Dilution has been calculated on a basis of one (1) foot on the hangingwall of the stope, and 1/2 foot on the footwall of the stope, over an average zone width approaching ten (10) feet. Dilution grade was estimated at 0.017 oz Au and 0.17 oz Ag.

Cutting:

Cutting was done by reducing high assays to 2 times the average grade.

4.3.2 Statement of Reserves

A recent calculation of the gold-silver mineral inventory at Oliver has indicated that over the Oliver Gold claims and the Loki claims the following reserves exist:

Indicated	1,159,486 tons
Inferred	704,537 tons

Within the indicated reserves an enriched or higher grade zone exists which was calculated to be 438,000 tons.

The grades of the above reserves were calculated for various cutting standards.

It was initially decided to accept a cutting standard which cut erractics to four times the average and were then re-averaged. This indicated the following reserves:

Indicated = 1,159,486 ton @ 0.124 Au
1.40 Ag

Inferred = 704,537 tons @ 0.126 Au
1.34 Ag

The higher grade zone within the indicated category was calculated to be 438,000 tons @ 0.194 Au, 2.21 Ag

The above grades and tonnages are also diluted by 15% with material grading 0.017 Au and 0.17 Ag.

A review of the reserves was done by Mr. B.E. Spencer, P.Eng. He estimated that the high grade zone was considerably larger from a tonnage point of view but at less grade. His calculation indicates that a high grade zone of 740,000 tons of 0.160 oz Au per ton exists, which is an uncut and undiluted tonnage. With the addition of a silver estimate at 2.0 oz/ton Ag, a cut and diluted estimate would be:

851,000 tons @ 0.16 Au equivalent cut and diluted.

Although this is a considerable improvement in tonnage, it is also a marked lessening in grade.

On the basis of Mr. Spencer's estimate, it was decided to accept a more conservative calculation of the reserves. The accepted calculation is now based on cutting to two times the average which indicates the following:

Indicated reserves = 1,159,986 tons @ 0.107 Au
1.17 Ag

Inferred reserves = 704,537 tons @ 0.107 Au
1.02 Ag

The high grade zone within the indicated reserves is calculated to be:

438,000 tons @ 0.168 Au
1.78 Ag

The Au equivalent is $0.168 + \frac{1.78}{70} = 0.193$ Au equivalent

For the purpose of this mining and economic study, it was decided to exploit the high grade zone of 438,000 tons @ 0.19 Au equivalent/ton. The rationale for this is as follows:

i The best indicator of attainable grade in the district is the past production of 120,000 tons of ore grading 0.17 ounces per ton gold. On the basis of gold alone the grade represents a cut and diluted grade. On the basis of traditional gold values at Oliver, it can be estimated that silver values would give at least two one hundredths in grade. Consequently the 120,000 tons of ore likely contained 0.19 ounces per ton gold equivalent on a cut and diluted basis.

ii The tonnage utilized at the 0.19 Au equivalent grade is within the higher grade tonnage estimated by B.E. Spencer. It is likely that within the inferred category of ore, plus the indicated category, a tonnage of plus 400,000 tons of 0.19 Au/ton can be realized.

Further cases have been considered to demonstrate to the property potential. The grades utilized beyond the high grade portion are calculated to be 0.15 Au equivalent.

4.3.3 Fairview Ore Reserves

The following are summaries of reserves at Fairview shown for uncut and cut from 2 to 5x average. B.E. Spencer suggested on February 9, 1989 that cutting should be done in a fashion that 90% of the values are retained and 10% are discounted. After doing a histogram, it was determined; the 90% percentile for Au is about 0.350 oz/ton, or about 2.2 times the average (which is 0.160 oz/ton).

The 90% percentile for Ag is about 4.0 oz/ton or 2.5 x average. This would indicate cutting to between 2 and 3 times mine average or for convenience sake, say 3x average.

Table 4-2a
FAIRVIEW PROJECT
UNCUT TOTAL RESERVE ESTIMATE - FEBRUARY, 1989

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.134/1.54	145,245 @ 0.145/1.60	57,382 @ 0.200/2.60
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.136/1.88	80,188 @ 0.118/1.72	74,596 @ 0.209/2.93
Footwall Vein	28,274 @ 0.179/1.52	17,182 @ 0.154/1.09	4,340 @ 0.573/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.125/1.02	66,908 @ 0.119/1.09	21,212 @ 0.266/2.12
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.150/0.83	32,927 @ 0.385/0.68	38,607 @ 0.186/1.05
Main Vein	135,429 @ 0.145/1.68	62,939 @ 0.216/1.33	52,049 @ 0.217/3.14
Footwall Vein	339,381 @ 0.128/1.67	199,483 @ 0.130/1.80	104,690 @ 0.202/2.94
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.810/1.78	7,769 @ 0.381/2.15	27,913 @ 1.036/1.94
TOTAL	1,008,249 @ 0.160/1.59	612,641 @ 0.157/1.54	380,789 @ 0.272/2.60
15% dilution @ 0.017/0.17 =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.141/1.40	704,537 @ 0.139/1.36	437,907 @ 0.239/2.28

TOTAL 1,864,023 @ 0.140/1.38 UNCUT

Table 4-2b
FAIRVIEW PROJECT
AVERAGE VEIN WIDTHS

	TOTAL VOLUME (m^3)	TOTAL AREA (m^2)	AVERAGE THICKNESS (m)
NORTHWEST FAIRVIEW MINE			
Indicated	73,131.6	18,714	3.91
Inferred	19,644.1	9,652	2.04
BELOW 6 LEVEL			
Indicated - Main Vein	44,089.4	9,063	4.86
Higher Grade - Main Vein	25,536.7	9,063	2.82
Indicated - Footwall Vein	5,708.3	3,228	1.77
Higher Grade - Footwall Vein	1,485.6	1,117	1.33
SOUTHEAST FAIRVIEW			
Indicated - Main Vein	16,250.3	4,066	4.00
Higher Grade - Main Vein	7,261.3	4,066	1.79
STEMWINDER SHAFT			
Indicated - Hanging Wall Vein	17,529.0	7,448	2.35
Higher Grade - Hanging Wall Vein	13,217.0	7,448	1.77
Indicated - Main Vein	46,362.0	19,738	2.35
Higher Grade - Main Vein	17,818.0	5,772	3.09
Indicated - Footwall Vein	116,182.7	37,830	3.07
Higher Grade - Footwall Vein	35,839.3	15,796	2.27
BROWN BEAR			
Indicated - Hanging Wall Vein	9,555.7	7,665	1.25
Higher Grade - Hanging Wall Vein	9,555.7	7,665	1.25
TOTAL PROJECT AVERAGES (Indicated Blocks Only)			
Main Vein	106,701.7	32,867	3.25
Footwall Vein	195,022.6	59,772	3.26
Hanging Wall Vein	27,084.7	15,113	1.79
All Ore	328,809.0	107,752	3.05
All Higher Grade Ore	130,357.7	60,579	2.15

Table 4-2c

FAIRVIEW PROJECT

SUMMARY CUT 2 x AVERAGE

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.130/1.45	145,245 @ 0.138/1.48	57,382 @ 0.189/2.11
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.130/1.67	80,188 @ 0.110/1.57	74,596 @ 0.188/2.52
Footwall Vein	28,274 @ 0.140/1.52	17,182 @ 0.122/1.09	4,340 @ 0.320/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.086/0.59	66,908 @ 0.091/0.70	21,212 @ 0.193/1.18
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.105/0.65	32,927 @ 0.123/0.70	38,607 @ 0.128/0.81
Main Vein	135,429 @ 0.141/1.38	62,939 @ 0.128/0.80	52,049 @ 0.206/2.36
Footwall Vein	339,381 @ 0.120/1.39	199,483 @ 0.124/1.12	104,690 @ 0.188/2.14
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.217/1.79	7,769 @ 0.275/2.19	27,913 @ 0.250/1.64
TOTAL	**1,008,249 @ 0.120/1.32**	612,641 @ 0.121/1.15	380,789 @ 0.191/2.02
15% dilution =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.107/1.17	704,537 @ 0.107/1.02	437,907 @ 0.168/1.78

TOTAL 1,864,023 @ 0.107/1.11 CUT @ 2 x Average

Au equivalent = 0.123 oz/ton

Table 4-2d

FAIRVIEW PROJECT
SUMMARY CUT 3 x AVERAGE

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.134/1.53	145,245 @ 0.145/1.58	57,382 @ 0.200/2.59
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.130/1.67	80,188 @ 0.110/1.57	74,596 @ 0.188/2.52
Footwall Vein	28,274 @ 0.140/1.52	17,182 @ 0.122/1.09	4,340 @ 0.320/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.086/0.59	66,908 @ 0.091/0.70	21,212 @ 0.193/1.18
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.105/0.65	32,927 @ 0.123/0.70	38,607 @ 0.128/0.81
Main Vein	135,429 @ 0.141/1.38	62,939 @ 0.128/0.80	52,049 @ 0.206/2.36
Footwall Vein	339,381 @ 0.120/1.39	199,483 @ 0.124/1.12	104,690 @ 0.188/2.14
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.217/1.79	7,769 @ 0.275/2.19	27,913 @ 0.250/1.64
TOTAL	1,008,249 @ 0.129/1.40	612,641 @ 0.126/1.20	380,789 @ 0.193/2.09
15% dilution =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.114/1.24	704,537 @ 0.112/1.07	437,907 @ 0.170/1.84

TOTAL 1,864,023 @ 0.113/1.18 CUT @ 3 x Average

Au equivalent = 0.130 oz/ton

Table 4-2e

FAIRVIEW PROJECT
SUMMARY CUT 4 x AVERAGE

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.134/1.54	145,245 @ 0.145/1.60	57,382 @ 0.200/2.60
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.136/1.88	80,188 @ 0.118/1.72	74,596 @ 0.209/2.93
Footwall Vein	28,274 @ 0.179/1.52	17,182 @ 0.154/1.09	4,340 @ 0.573/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.118/0.93	66,908 @ 0.115/0.93	21,212 @ 0.252/1.94
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.140/0.73	32,927 @ 0.199/0.62	38,607 @ 0.172/0.89
Main Vein	135,429 @ 0.145/1.68	62,939 @ 0.172/1.33	52,049 @ 0.217/3.14
Footwall Vein	339,381 @ 0.127/1.65	199,483 @ 0.130/1.80	104,690 @ 0.202/2.78
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.292/1.96	7,769 @ 0.380/2.19	27,913 @ 0.348/1.78
TOTAL	1,008,249 @ 0.140/1.58	612,641 @ 0.142/1.52	380,789 @ 0.220/2.52
15% dilution =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.124/1.40	704,537 @ 0.126/1.34	437,907 @ 0.194/2.21

TOTAL 1,864,023 @ 0.125/1.38 CUT @ 4 x Average

Au equivalent = 0.145 oz/ton

Table 4-2f
FAIRVIEW PROJECT
SUMMARY CUT 5 x AVERAGE

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.134/1.54	145,245 @ 0.145/1.60	57,382 @ 0.200/2.60
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.136/1.88	80,188 @ 0.118/1.72	74,596 @ 0.209/2.93
Footwall Vein	28,274 @ 0.179/1.52	17,182 @ 0.154/1.09	4,340 @ 0.573/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.125/1.02	66,908 @ 0.119/1.09	21,212 @ 0.266/2.12
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.146/0.77	32,927 @ 0.230/0.65	38,607 @ 0.180/0.93
Main Vein	135,429 @ 0.145/1.68	62,939 @ 0.172/1.33	52,049 @ 0.217/3.14
Footwall Vein	339,381 @ 0.127/1.67	199,483 @ 0.130/1.80	104,690 @ 0.202/2.94
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.329/1.96	7,769 @ 0.392/2.19	27,913 @ 0.396/1.78
TOTAL	1,008,249 @ 0.142/1.60	612,641 @ 0.144/1.54	380,789 @ 0.225/2.57
15% dilution =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.126/1.41	704,537 @ 0.127/1.36	437,907 @ 0.198/2.26

TOTAL 1,864,023 @ 0.126/1.39 CUT @ 5 x Average

Au equivalent = 0.146 oz/ton

This gives total cut and diluted reserves of 1,864,023 @ 0.113/1.18 using 15% dilution and waste rock grading 0.017 oz/ton Au/0.17 oz/ton Ag.

B.E. Spencer also suggested at the same February 9, 1989 meeting that cutting to 4x average is most common based on his experience. Doing that gives 1,864,023 @ 0.125/1.38 fully cut and diluted. The higher grade from indicated ore blocks is 437,907 tons at 0.194/2.21 cut and diluted. Note that this figures is based on cutting to 0.017 Au and 0.17 Ag. This cutting is likely too severe for the higher grade zones.

Also, higher grade zones account for 38% of indicated ore blocks. Assuming about 38% of inferred reserves should be higher grade as well, we would anticipate a further 267,700 tons or a total of 705,631 tons grading 0.194/2.21 or about 0.226 oz/ton Au equivalent.

Average vein width is 10 feet.

Note total tonnage potential easily is in the 3 million ton range and reasonably, higher grade ore should be around 1 million tons.

4.3.4 Geological Ore Reserve

Method of Determination

Ore reserves for the Hangingwall, Main Vein and Footwall Vein systems between the Brown Bear Adit and N.W. end of the Fairview Mine were calculated using drill hole intercepts, surface and trench rock chip sampling and detailed underground sampling of the Brown Bear and Fairview workings. Assay results from old Stemwinder Mine maps were also used.

To calculate the reserves, all data was plotted on 1:500 scale cross-sections at 50 foot intervals over the area of interest. Underground results were averaged over the length and width of obvious ore zones and treated as a single point or drill hole intercept within the enclosing ore block.

True vein and mineralized zone thicknesses, along with elevation of intersections and dip of veins, were taken from cross-sections. This data was plotted on 1:1000 scale longitudinal sections that are projected in the plane of the vein and which was taken to be -60° to the N.E. Long sections were constructed for each of the three vein systems.

Parameters used in Blocking Out Ore

Reserves were calculated using a combination of a 0.06 oz/ton Au cut off and minimum mining width of 5 feet. Ore blocks were constructed on longitudinal maps with areas of influence being extended ½ way to the next intersection or up to 82 feet. Block shapes were determined by assuming ore zones have either a flat or NW plunge.

Block assay results were classed as indicated ore. Adjacent blocks which contain no assay data but are situated along the projected strike or plunge of indicated ore blocks were classed as inferred. Ore blocks based on anomalously high assay intersections where no other high values were observed in nearly holes or workings were also classed as inferred.

Ore blocks outlined on Cominco and Fairview Mine maps for the area above 6 levels, but not including those at the far north-west end of 3 level, were included as indicated reserves.

A complete set of tables showing uncut ore reserves broken down by area and vein accompany this report.

Ore Reserve Cutting

Mine average was taken as the average of uncut and undiluted indicated reserves only. The values used were 0.160 oz/ton Au and 1.58 oz/ton Ag. Subsequent re-evaluation of uncut reserves has slightly altered the values to 0.160 oz/ton Au and 1.59 oz/ton Ag.

To facilitate the process of cutting anomalously high values all individual assays used to determine the grade of ore blocks (aside from those used to determine the grade in drifts) and were tabulated. This involved 207 Au assays and 203 Ag assays.

Drift grades were treated as a single assay.

Reserve grades were then re-calculated cutting assays 2, 3, 4 and 5 times average. The following table shows the percentage of uncut, original assays used in each case:

GRADE CUT TO	UNCUT % of Assays Included in Reserve	
3x Average	94	
4x Average	95	GOLD
5x Average	96	
3x Average	95	
4x Average	98	SILVER
5x Average	99	

Assuming that cutting to the 95% percentile is acceptable, gold values are cut ti 4 times average and silver values to 3 times average.

Tables showing uncut values at 2, 3 4 and 5 times average accompany this report.

Dilution

Ore reserves occur as 4 distinct styles within the quartz vein system. These include:

Type 1: where only the hanging wall portion of the vein is mineralized

Type 2: where only the footwall portion of the vein is mineralized.

Type 3: where a portion within the centre the vein is mineralized.

Type 4: where the entire vein width is mineralized.

Grades of waste material for each of the 4 types were calculated by averaging the adjacent 1/2 foot of footwall and 1 foot hangingwall material. Anomalous values were reduced to 3 times average. The results are:

TYPE	WASTE GRADE oz/ton Au	oz/ton Ag
1	0.022	0.19
2	0.015	0.18
3	0.034	0.32
4	0.009	0.09
Combined Average	0.017	0.17

Average vein thickness was determined by dividing the total volume of each zone by the measured area.

Vein thicknesses were calculated for each vein. The project average is 10 feet true thickness.

The actual amount of dilution is based on examining existing conditions in stopes and drifts in the Fairview Mine. Aside from those places where major post-mineral faulting occurs, ravelling of the back is minimal or non-existent.

Mica lined fractures common within the mineralized portions of the veins, are parallel to the vein and foliation within the country rock. These fractures act as a natural parting and appear to have been useful in following the vein country rock contact. Based on the sharpness with which this contact has been followed in past complied with the strong belief the ore zones can be followed visually, it is anticipated dilution should not exceed 1 foot on the hangingwall contact and 6 to 8 inches on the footwall. With a 10 foot wide zone this translates into about 15% dilution. The grade is 0.017 oz/ton Au and 0.17 oz/ton Ag.

SECTION 5

MINING

SECTION 5

MINING

5.1 OPEN PIT DESIGN

Several small open pits have been designed for the pre-production stage of the project to recover a total of approximately 29,000 tons of ore at an average gold/silver grade equivalent of .190 oz/ton. The pit outlines are shown on Dwg. 3-1, they include limiting strip ratio pits in the Stemwinder and Brown Bear ore zones. The pits will be mined during pre-production and the total planned production of 29,000 tons ore mined will be stockpiled for milling in the first two (2) quarters after mill commissioning. To release the ore tonnage, some 178,000 tons of waste must be mined. This waste will be used in dam construction. A summary of pit reserves is shown in Table 5-1.

TABLE 5-1

OLIVER GOLD PROJECT

PIT RESERVES

	ORE (tons)	WASTE (tons)
Indicated	13,642	-
Inferred	15,358	-
Total	29,000 @ 0.19 Au/Ag	178,000

5.2 SURFACE MINING METHOD

Mining will be done by conventional methods using proven mining equipment. All material, with the exception of surface soils, will be drilled and blasted. All blasted material will be loaded and hauled with diesel-powered equipment.

5.3 UNDERGROUND MINING

Development considerations have been given to underground access and mining methods.

5.3.1 Primary Development

It is proposed that the main entrance to mine development be by a decline from a point near the existing 6 level portal. This decline will cross the quartzite structure in the hanging wall side to establish a new 7 level and intersect the main vein. At this point it may be driven as a level available to mine a main high grade block below 6 level, and also continue to provide suitable development in the direction of the Stemwinder area to the southeast, or to continue to depth to the northwest.

Following is a brief summary of other access possibilities, which have been rejected in favour of the decline from the # 6 level portal areas.

Stemwinder Shaft - This existing vertical two (2) compartment shaft is in the order of 400 feet deep and according to one inspection, appears to be plugged with mud at a point some 50 feet below the collar. The compartments are small, about 4.4′ x 4.5′ in cross section. This possibility was rejected on the basis of location, size, cost of rehabilitation, and lack of flexibility.

Decline - Near the vertical shaft is an incline from surface some 300 feet long at 45 degrees which connects to the Stemwinder 3 level. This incline is in the order of 9′ x 18′ and could be extended to depth as an inclined shaft. However, on the 45 degree angle, it would continue out into the hanging wall, which is unsuitable. While it would be possible to steepen the incline, this was considered to be undesirable. For the above reasons, as well as its location near one end of the general mine belt, this alternative also was rejected.

Decline - A minus 15% decline from the Stemwinder area was considered and was rejected mostly on the basis of location.

The decline selected is generally in the area of what is presently considered the "centre of gravity" of the underground reserves, and in addition, the location is best suited to develop additional ore in the direction of a northwest ore plunge which is considered a good possibility.

Because of the wide spread distribution of ore blocks, primary development footage will be high resulting in high primary development costs.

The longitudinal section (see Dwg 5-1) illustrates a possible type of development. It is expected to do as much development as possible in the vein. Where ore zones occur, additional primary development may be required to provide for stope production and still maintain decline travel requirements.

While it is proposed at this time to generally develop the mine by trackless methods, the northwest part of the Fairview mine area is partially mined out by track development and this will be continued to mine out two (2) blocks, one immediately above 3 level, and one immediately below 3 level. This will require some drift extension and drift rehabilitation.

5.3.2 Stope Development and Mining

Pre-production work might take 10 to 12 months including required stope development and undercutting, however stoping could start in the last 3 or 4 months to provide a surface stockpile. In addition, the open pit production could be done in the early part of the pre-production development period and could therefore provide mill feed for an early mill start up.

Pre-production work consists essentially of preparatory work in the old underground track mining areas, and the sinking of a decline from a point near the present 6 level portal.

Track type work will consist of an extension to No. 3 level, rehabilitation work, ventilation raise, and stope development.

The decline will be about 750 feet long, at -15% grade to establish a new trackless 7 level immediately below a major ore block. Box holes and chutes will be such that ore can be loaded directly into trucks.

Additional details relative to mining are provided in the capital and operating cost sections.

Equipment requirements for underground and surface facilities are shown separately under "Capital Cost Summary" Table 9-1.

5.3.3 Pre-production Stoping

For the last few months of the pre-production period, stoping may be done in order to supply broken muck for start up. This will also provide the mine with an opportunity to develop efficient routines.

With shrinkage stoping about 35% of the broken muck will be removed as stoping progresses, and will be stockpiled on surface. It is estimated this will amount to about 16,000 tons. This, with development muck, will provide about 24,000 tons ore on surface. Including 29,000 tons from the open pit there will be about 53,000 tons available for milling, and in addition, 29,000 tons broken underground.

5.3.4 Operating Costs

Operating costs have been estimated on a "tight" basis. The Mine Engineer will be expected to do the necessary planning. The

Mine Manager will function also as Mine Superintendent.

Productivities in ideal shrinkage stopes, ie, of reasonable vein width and greater than 60 degree dip, may normally be expected at 35 - 40 tons per man shift. Because dips are expected to vary, with some below 60 degrees, a stope mining productivity of 35 tons per man shift has been used. Costs for supplies and services are based on factors developed from analysis of cost data from similar operations.

Year One Operating Cost Estimate:

New mill start-up is usually fraught with problems which have to be ironed out. In the following cost estimate for year one it is estimated that first quarter throughput will be about 60% of normal, and unit-costs increased by 66%. In the second quarter tonnage milled may be about 75% of normal, at a unit cost of 33% above normal. Third and fourth quarters should be normal. Operating cost for the open pit is $20.83 and for underground is normal, $43.41.

PERIOD	TONNAGE	UNIT COST	TOTAL COST
1st Quarter	16,000 Open Pit	34.58	553,280
2nd Quarter	13,000 Open Pit	27.70	360,100
	7,000 U/G	57.74	404,180
3rd Quarter	26,000	43.41	1,128,660
4th Quarter	26,000	43.41	1,128,660
Total	88,000	40.62	3,574,880

5.3.5 Annual Underground Production Activity

Normal annual work activity is estimated as follows:

Decline, including pockets	2,100	feet
Level development	1,300	feet
Stope development	1,200	feet
Stope mining	89,000	tons
Ore from development	16,000	tons
Tons to mill	105,000	tons
Tramming - Ore haulage	89,000	tons
Diamond drilling	14,000	feet

5.3.6 Underground Mining Methods

A method of mining will be employed which will provide the best opportunity to minimize dilution. Shrinkage stoping and open stoping provide the means for supervisory personnel and the miners to visually decide where to drill and blast and where not to drill and blast. Open stoping is usually necessary where vein dips are not steep enough for shrinkage stoping. It is more costly due to the need to help gravity by scraping, but does allow the opportunity to some extent to choose pillar locations in lower grade material.

It is estimated that 4 stopes will be required to supply the mill. This will provide about 450 tons per day on a 5 day week. Of these, 2 or 3 may be good shrinkage stopes with a vein dip of 60 degrees or more. The remainder may be modified shrinkage stopes which may require help in scraping, or even open stopes depending on vein dip.
As mining progresses in shrinkage stopes, only about 35% of the ground broken is available immediately for the mill, the remainder being required in the stope to work off. When all drilling and blasting in the stope is complete, all muck in the stope is available for the mill.

The accompanying longitudinal section (see Dwg. 5-1) shows the distribution of mineralized zones in the 3 vein systems. The higher grade zones with which this report is concerned are shown in solid colours. There are 16 separate higher grade zones, 6 in the hanging wall vein distributed along a strike length of 2,000 feet; 8 in the main vein along a 5,000 foot strike length, and 2 in the footwall vein distributed along a 1,500 foot strike length.

The longitudinal section shows the types of decline development anticipated. This development will be in the vein as much as possible. It is not very practical to illustrate stope development, but quantity has been estimated on the basis of about 75 tons for each foot of development.

5.3.7 Grade Control

Cominco introduced grade control for gold in 1955 and improved gold grade as a result. Distribution of gold in the Fairview veins does not favour any particular horizon and the higher grade zone may not be parallel to the foot or hanging wall. However, the gold is invariably associated with sulphides such as galena and it is reported that these zones can be readily recognized.

SECTION 6

PROCESS PLANT AND METALLURGY

SECTION 6

PROCESS PLANT AND METALLURGY

6.1 GENERAL METALLURGY

6.1.1 Introduction

A review of metallurgical process options and preparation of a financial study for a 300 tpd concentrator for the Oliver Gold Corporation was developed by G. Hawthorne and is covered in detail (see Appendix III).

6.1.2 Mineralogy/Petrography

Sulphide mineralization appears to be of two ages and three styles. The oldest sulphides are disseminated pyrite grains which occur in quartzites, schists, altered sills, and quartz veins.

The youngest sulphides include galena, chalcopyrite, sphalerite and rare pyrrhotite. These sulphides are fracture controlled with most occurring along S1 fractures in quartz veins. A very small percentage also occur along S2 fractures.

In places, irregular pods up to 8 inches across of massive pyrite or galena can be found.

For the most part, the best galena-chalcopyrite-sphalerite mineralization and highest gold and silver values occur in the hanging wall parts of the veins, although significant values have been obtained throughout the vein. Gold values are also better where the vein has well-developed S1 fractures lined with sericite-biotite-chlorite-graphite and, of course, sulphides. Where the vein is massive, sulphide content and gold plus silver values are low.

Thin and polished section studies by Jim M. McLeod indicate gold and silver entered the vein system along S1 fractures in the fluids that produced galena, sphalerite and chalcopyrite. These fluids, which replace earlier formed pyrite, may be syndeformation.

Age of mineralization is not clear, but initial work suggests a sequence involving:

a) Emplacement of Oliver granite into volcanic/sedimentary pile in late Jurassic producing local penetrative foliation in stratigraphy and contact metamorphic aureole;

b) Emplacement of Fairview granodiorite in Cretaceous resulting in strong squeezing of stratigraphy between the Oliver granite to the north, producing the well-developed regional foliation and small scale isoclinal folds;

c) Shearing along the upper contact of the Fairview granodiorite provided room for quartz vein deposition;

d) Continued movement along the shear zone during late stages of Fairview granodiorite emplacement resulted in mobilization and redeposition of factures in the vein. Some of this same shearing may account for the "poddy" or lensy nature the vein now exhibits.

e) Tertiary faults have cut the stratigraphy offsetting the mineralized quartz vein.

6.2 REVIEW OF METALLURGICAL TESTWORK

Six test samples were provided by Oliver Gold for initial assaying and possible compositing, as follows:

SAMPLE	AU OZ/T	AG OZ/T
M-1	.076	.68
M-2	.190	1.30
M-3	.248	.53
M-4	.125	.89
M-5	.046	.42
M-6	.087	.73
Average	.129	.76

Note that the ratio of silver to gold is quite variable.

Sample M-4, was used in subsequent testing since it was thought to be representative of the grade of the deposit as it was known at that time.

6.3 PROCESS DESCRIPTION

Bulk sulphide flotation with 1 stage of cleaning to produce a saleable concentrate.

6.3.1 Process Flowsheet

Crushing/Milling

The crushing and grinding circuits will perform well with a conventional jaw and cone crusher and a single stage ball mill in closed circuit with a cyclone.

Flotation Concentration

The two flotation tests which have been performed to date indicate that from a technical perspective, bulk sulphide flotation concentration will result in:

1) ratios of concentration which will exceed 100:1.

2) gold recovery in the high 80's at a feed grade of .12 oz/t Au.

3) high grade concentrate which will contain several 10's of oz/t Au and an estimated 70% pyrite, 12% galena, 6% chalcopyrite with the balance being silica.

4) no identified deliterious constituents would be in the concentrate.

As good as these results have been, the testing suggests that improved technical performance is achievable with straighe cyanidation.

The anticipated plant flotation metallurgy is as follows:

PRODUCT	WT %	ASSAY OZ/T		DISTRIBUTION %	
		Au	Ag	Au	Ag
Flotation conc.	0.6	22.5	283	90	85
Tailings	99.4	0.015	0.30	10	15
Feed	100.0	.15	2	100	100

This metallurgy has not been confirmed in laboratory testing, but will need to be if flotation is a serious process option.

SECTION 7

SERVICE AND ANCILLARY FACILITIES

SECTION 7

SERVICE AND ANCILLARY FACILITIES

7.1 INTRODUCTION

The relatively short travel distance (4 miles) to Oliver and low manpower requirements for the project dictate the use of trailers and portable structures for the ancillary buildings. The site plan, Figure 3-1 shows all ancillaries and services required for the Oliver Gold Project. These facilities will include an administration office/dry, assay lab, mill/crusher complex, first aid station, as well a firewater tanks and mill supply storage area. The mine shop will be constructed underground and therefore has not been included here.

7.2 SITE AND ACCESS ROADS

The present access road will require some improvement and upgrading but is useable at present. Once the tailings dam construction begins part of the Cawston road must be rerouted around the tailings disposal area. The main control point for entrance to the plant site will be north of the proposed tailings area (See Figure 3-1).

7.3 ADMINISTRATION BUILDING

The administration building will provide office and workspace for approximately 6 administrative, production, and engineering staff for the Oliver Gold Project. As noted, the office will be located near the mill/crusher site. Adjacent parking will be provided for approximately 10 vehicles to accommodate operating and mining personnel as well as office staff.

7.4 ASSAY LABORATORY

The assay laboratory will provide space for sample preparation, wet assay, fire assay, and metallurgical testing. A staff of two will work in this area, providing assaying for metallurgical and grade control, as well as limited environmental monitoring.

7.5 FIRE PROTECTION

Two (2) 30,000 gallon firewater tanks will be adjacent to the office and plant. The tanks will have a small reserve for potable water as well. The pipelines will be buried to feed the fire hydrants located at the plantsite and office. The firewater tank will provide sufficient hydrostatic pressure to support all firefighting needs.

7.6 WATER SUPPLY AND DISTRIBUTION

7.6.1 Design Criteria

Water will be supplied to the mine site for processing and for potable use. The largest requirement will be to replace losses of water due, to evaporation in the tailings pond. Some water will be gained from precipitation over the tailings area and some water will be contained in the ore from the mine. The quantity of water will vary with climatic conditions and with the status of processing.

7.6.2 Water Balance

Water balance must be calculated on the basis of the existing data, available data on climatic conditions in the project area, and estimates of the evaporation losses on the tailings pond.

7.6.3 Fresh Water Supply System

It is understood from Southern Interior Regional Water Management Branch that water rights are currently available only on the spring above the Fairview ground and that arrangements can be made to purchase rights from other holders within the project area. It is also understood that the Stemwinder Shaft located about 450 meters from the proposed plant site can supply a flow of fresh water. It is proposed, therefore, to install a make-up water system that will transfer flows from the spring, shaft and other water wells to the 60,000 storage capacity at the plant site or directly to the milling operation. For this system, pumps would be installed and operated to supply a flow through a 3 inch diameter buried pipeline to the plant site.

7.6.4 Water Storage

Some storage is required in the circulation system to accommodate variations of flows into and out of the system. Such variations include runoff from rainfall, snow melt, and evaporation. The design for the system includes storage of 60,000 gallons in two (2) tanks by the mill in the tailings impoundment area. Together with the water supply and utilization of some of the flood impoundment space for surge storage, adequate control over variations of flow into and out of the plant can be provided.

7.6.5 Water Distribution Systems

Most of the fresh water supplied to the plant will flow directly into the milling circuits. A small flow will be tapped from the line to a booster pump, which will lift water to storage tanks located by the plant site. Most of the capacity of this storage tank will be reserved for fire fighting; a small volume at the top of the tank will be for potable water. The potable water from the fresh water storage tank will be chlorinated and stored in a small adjacent tank. Separate piping systems will be used to distribute fire water and potable water around the plant site.

Use of a tailings thickener at the plant site will reduce loss of water through evaporation on the tailings site and minimize fresh water make-up for the milling circuits.

7.6.6 Sewage

Sewage from the plant facilities will flow to a 1,000 gallon septic tank and then into a percolation field.

7.7 ELECTRICAL POWER SUPPLY AND DISTRIBUTION

7.7.1 Power Supply

Electric power for this project will be supplied by the West Kootenay Power Co. from an existing 13,000 V transmission line in the vicinity of the mine site. This source will be able to provide the necessary power requirements. The estimated maximum demand for the project is 2 MW. It is calculated that 1.5 mi of 13 KV powerline between the current 3 phase supply point and mine will be required.

7.7.2 Main Substation

The main substation will comprise of 13KV, pole-mounted switchgear, a 4 MVA 13-.55KV outdoor transformer and a set of 550 V outdoor switchgear, all within a fenced enclosure. The 550 V switchgear should include a main circuit breaker and several feeder circuit breakers.

7.7.3 Power Distribution

The process/crushing plant will be supplied by a direct buried 550 V feeder from the main substation to the process plant motor control center. The underground power will be supplied by a direct 550 V feeder to the #6 level portal from the main transformer.

The ancillary buildings will be serviced at 220/110 V by a direct buried feeder from the main substation.

SECTION 8

ENVIRONMENTAL AND WASTE MANAGEMENT (TAILINGS)

SECTION 8

ENVIRONMENTAL AND WASTE MANAGEMENT (TAILINGS)

8.1 TAILINGS PRODUCTION

It is proposed that up to 105,000 tons of ore be processed annually, which averages 300 tons/day based on 350 production days a year. Existing reserves total ten (10) years of production and an estimated tailings of 1,800,000 tons, the tailings disposal scheme allows for 2,000,000 tons of storage capacity. The processing involves the flotation of the ore ground to 70% minus 200 mesh resulting in a tailings discharge comprising 60% solids after thickening.

The following parameters have been assumed for tailings storage in the impoundment:

Tailings Production Rate	300 t/d (105,000 t/y)
Tailings Slurry Solids Content	60%
Tailings Specific Gravity	2.65
Tailings Dry Density	1.52
Tailings Minus No. 200 Mesh (slimes)	70%
Ultimate Storage Capacity	2,000,000 t

8.2 SITE SELECTION AND DISPOSAL ALTERNATES

8.2.1 Site Alternatives

By topographic inspection, two distinct sites for the proposed tailings impoundment were identified within a 1/2 mi radius of the #6 portal, both sites are located east of the portal. The search was not confined to this area, but it provided containment opportunities as good as any in neighbouring watersheds with close proximity to the mine being an additional advantage.

The two sites were rated on the following basis:

1. Local topography, particularly its containment characteristics as expressed by the ratios of pond volumes and surface areas versus dam sizes and fill materials required.

2. Ultimate size and cost of the dam plus associated works.

3. Proximity to plant, site and the ore body. The possibility of gravity flow in the tailings line was considered a plus.

4. Accessibility and no clearing required.

5. Size of the catchment behind the impoundment.

6. Estimated foundation conditions, especially competency and permeability.

7. Extent of seepage control measures as related to the length of the dams and possible leakage.

8. Visual impact as dictated by the size and location of the dam.

9. Land ownership status.

For comparison, each dam was sized for conventional disposal behind a till fill starter dyke.

From almost every perspective, one tailings impoundment site was clearly the best; it lies approximately 1/2 mi west of the mill and is formed behind the dams spanning a prominent knoll and natural steep topography. This preferred site will be the subject of further study to optimize the centre line of the dam and to examine the necessary requirements for construction.

8.2.2 Disposal Alternatives

Conventional tailings disposal, by spigotting cycloned tailings behind a dam constructed on centreline or downstream configuration, is the disposal method that was considered. This method is a proven method, ideally suited to the topographic and climatic conditions at the site. Initially, a starter dam can be constructed of local borrow materials (ie., glacial till) with subsequent lifts constructed from the mine waste and from the coarse tailings fraction. The design and construction of the tailings dam can readily take into account any seismic loading.

Based on the above, a conventional tailings disposal system was selected for the Oliver Project. In addition to being a proven system, it is also the most flexible and favourable for the conditions at the site, both during operation and following mine closure.

8.3 SITE GEOTECHNICAL CONSIDERATIONS FOR TAILINGS AREA

A site geotechnical evaluation based on detailed field reconnaissance, test pitting, surveying and photogrammetric mapping, field and laboratory testing, and assessment of engineering geology and hydrogeology conditions of the selected tailings site must be completed before final designs are approved.

8.3.1 Tailings Site Physiography

The impoundment would be formed by three dams located on a relatively flat area where it widens to about 200m at the proposed ultimate dam crest elevation of 828 m. The dams will form an approximately 430 x 200 m pond with an area of about 8.6 ha.

Site topography is illustrated in plan on Dwg. 3-1. Topography within the central portion of the basin is generally flat to rolling. The flanks of the impoundment are generally well drained.

8.4 PROPOSED DISPOSAL METHOD

8.4.1 General Layout

Drawing 3-1 provides a general layout of the proposed tailings impoundment at its ultimate capacity plus the associated facilities.

A ditch will be constructed along the toe of the ultimate embankments to intercept shallow seepage which will be channelled into small collection ponds downstream of the dams. Water, or supernatant will be returned to the tailings impoundment for pumping back to the mill.

Wells will also be installed below the small collection ponds to monitor groundwater quality.

8.4.2 Dam Design and Construction

The proposed tailings dam design concept is illustrated in Figure 8-1 and consists of two (2) initial starter dams which would subsequently be raised in increments to final elevation by downstream construction techniques. The tailings dam is sized and located to provide an ultimate tailings impoundment capacity of 1,800,000 tons. A crest elevation of 828 m has been selected to provide 2 m of freeboard above the maximum height of tailings. The dam is generally located between one knoll and the steep topography on the west which form natural abutments. Location of the centerline has been selected to make optimum use of topography to minimize dam size.

The initial starter dam would be constructed to an elevation of 815 m and would provide sufficient tailings impoundment capacity for a minimum 5 years of production. These dams will be constructed of homogeneous compacted earthfill embankment with a downstream filtered drainage blanket, and with an upstream slope of 2:1, a minimum crest width of 5 m and a downstream slope of 2.0:1. The foundation for the starter dam would initially be prepared by stripping any organic material down to competent morainal soils. An upstream cuttoff trench would be excavated into the basal till or bedrock and routed into one of the collection ponds for pumping back to the mill.

The bulk of the starter dam would be constructed from borrow material within the proposed tailings impoundment area and waste from the small open pits. Drainage blanket and filter materials would be obtained from outside borrow sources.

The dam would be raised in increments to provide increased impoundment capacity, as required. Initially, the drainage blanket and filter zones would be extended downstream. Glacial till would then be compacted on the downstream face of the dam at a slope not exceeding 2:1. A minimum 5 m crest width would be maintained at all times. Borrow materials for the dyke would be obtained from within the ultimate pond area, above the tailings level or outside the perimeter of the pond. This procedure would be repeated as necessary until the final dam crest is achieved. Ultimately, the downstream toe of the dam would key into a toe drain constructed from granular borrow (see Figure 8-1).

It is currently planned that the main body of the dam would be constructed of coarse tailings at an upstream slope of 2.0:1.0 and a downstream slope of 3.0:1.0. This method of construction would begin after the initial starter dams, with a top elevation of 815m, are constructed using borrow materials and run of mine waste. However, this depends on the results of additional laboratory testing regarding tailings gradation and acid generating potential of the coarse fraction of the tailings.

8.4.3 Depth Versus Capacity and Filling Rate Characteristics

The depth versus area and capacity curves for the proposed tailings site is shown in Figure 8-2. These are based on the need to store 1,800,000 tons of tailings and on the assumption listed in Section 8.4.2 for the starter dam. The schedule shows that a 2.5 metre raise will be required on the main embankment (815m elevation) after year 5, followed by a 2.5 metre raise until completion after 10 years of operation.

8.4.4 Tailings Pipework and Deposition

Tailings will be piped to the impoundment in heavy-walled, butt fusion welded, high density polyethylene pipes (HDPE) of nominal diameter 75 mm. The line will be laid on grade maintaining a constant downward slope which will allow gravity flow throughout the life of the pond. A ditch or berm will direct any accidental spillage towards the tailings impoundment on sections of the route which do not naturally drain towards the pond.

The tailings will be deposited into the pond from a number of valved discharge points in a header running along the crest of the dams. The coarse sand will be cycloned to the downstream side and the slimes spiggotted to the upstream side after initial increments are constructed.

8.4.5 Water Reclaim and Treatment

Tailing supernatant, including precipitation falling on the impoundment area will be continually pumped to the mill as process make-up water.

It is estimated that a negative water balance will result in this project, so all water will be needed for mill requirements and must be recycled to the plant from the tailings pond.

8.4.6 Seepage Interception Trenches and Water Quality Ponds

While the tailings impoundment is being operated, seepage interception trenches will be maintained immediately downslope of the dams. These trenches will collect seepage from the drainage blanket and some of the seepage through the dam foundation. The total seepage from the impoundment would be intercepted in these trenches. Intercepted seepage would be directed to a water quality pond, which would also receive decant water from the tailings pond and runoff from the downstream face of the dam.

The water quality ponds, which are lined, will be sized to provide 24 hours of retention for influent water to the pond. These ponds will be situated so that groundwater flows intercepted in the seepage control trenches can be directed into this retention pond (see Dwg. 3-1).

Treatment in the water quality ponds is not considered to be necessary; however, the ponds will be designed with sufficient pumping capacity to be available to recycle the flow back to the tailings pond, if necessary.

8.4.7 Instrumentation

Piezometers will be installed within and under the tailings dams to monitor pore pressures, and downstream of the dams to monitor the quality of groundwater seepage. Three profiles through the dams will be instrumented with piezometers. One of the instrumented profiles will be positioned at the lowest point in the drainage basin. The other two profiles will be located about one-third to one-half the distance between the centre profile and each of the abutments.

Electrical piezometers will be installed at each of the monitoring locations within the dam. Use of electrical piezometers will allow automatic or remote data acquisition, if desired. To ensure adequate data is collected, some redundancy in the monitoring network will be provided. This will involve installing pneumatic piezometers at all the piezometer locations along the center instrumentation profile, and at some locations on the other two profiles. As proposed, all piezometer installations can be completed in two phases; one coincidental with construction of the starter dam, and another when the downstream addition has reached a specified elevation.

Groundwater quality monitoring will require that three holes be drilled downstream of the dam. These holes will be drilled 15 m into bedrock, and standpipe piezometers will be installed at the bottom of the hole and at the base of the glacial till. Groundwater from these piezometers, seepage from the dam drainage blanket and flow into the seepage interception trench will be sampled on a regular basis.

To measure settlement and long-term movement of the dams, a series of movement monitoring points (i.e., survey hubs) will be installed on the tailings dam.

8.5 TAILINGS SITE OPERATION

During all phases of operation, tailings from the mill will be cycloned and spiggoted from the dam. Initially, deposition will take place from points along the lower portion of the upstream face of the starter dam. The tailings will naturally segregate after being discharged, with coarser particles settling out and being deposited nearest to the discharge points on the dam. Initially, the small size of the pond area will result in a relatively rapid increase in the pond level. With time, the rate of rise of the pond will decrease, the elevation of the discharge points will be raised, and the length over which discharge takes place will increase (i.e., as the pond width increases). It will be necessary to vary the discharge locations throughout the pond area to make optimum use of the impoundment.

Raising the starter dam will take place immediately after mill start-up and will continue in increments until final filling and abandonment. A minimum freeboard of 1 m, in addition to that required to retain the 24-hr, 200-year flood, will always be maintained on the dam. Throughout the operational life of the pond, tailings depositions will take place as described above.

8.6 TAILINGS AREA SEEPAGE

Seepage through the foundation and under the proposed tailings dams must be estimated using a two-dimensional finite-element model, and a design section drawn perpendicular to the centerline of the proposed dams. Seepage through the dams can be estimated with flow net calculations. Parameters which must be used in the model include hydraulic conductivity, and hydraulic heads at boundaries. Hydraulic conductivity values for the hydrogeologic units present are determined from various field and laboratory tests to be performed during a preliminary hydrogeological study of the mine area and during the geotechnical investigation of the tailings impoundment site. Hydraulic heads applied to boundaries on the finite-element mesh are based on the existing ground surface and the water table elevation, and on the proposed water elevation to be maintained in the pond, both during mine production and following mine shutdown.

8.7 ABANDONMENT PLAN

Following completion of tailings placement, the tailings impoundment will be reclaimed in such a manner that oxygen entry into the tailings is minimized. The abandonment plan must be designed around this criteria, at present no indications say that the tailings are potentially acid generating. One alternative considered to be a practicable method of preventing oxygen entry into the tailings in an abandonment situation is to maintain a soil cover on the tailings.

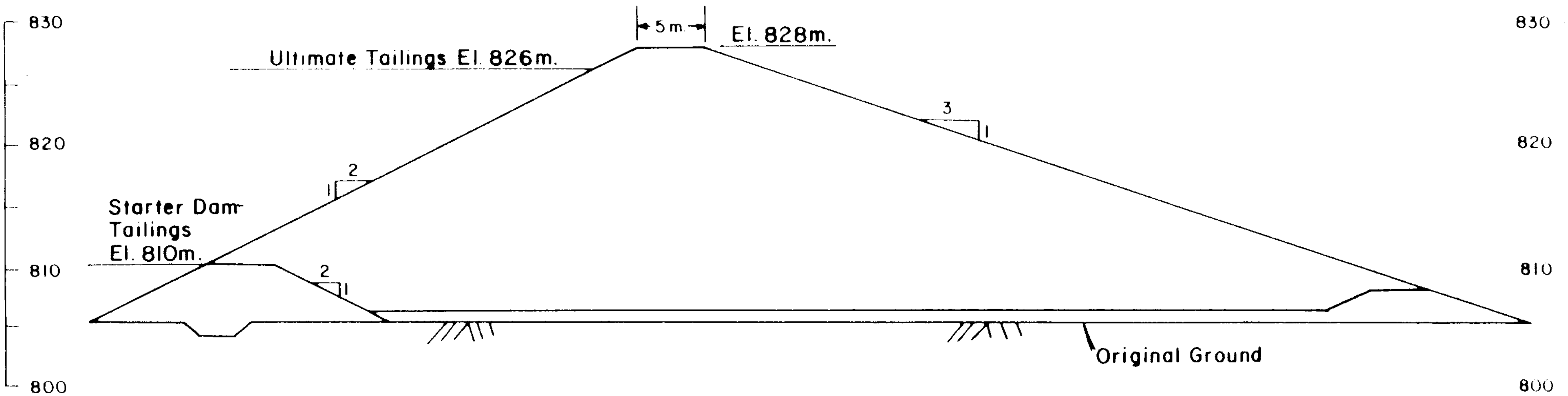
Following decommissioning of the tailings impoundment, a permanent spillway would be constructed.

All exposed slopes on the dam, plus any natural slopes disturbed during construction and operation of the impoundment, will be revegetated. Once the vegetation is established and suspended sediments in surface drainage from reclaimed areas during runoff periods approach natural levels, the water quality pond downstream of the dam will be decommissioned.

Sampling of the groundwater and surface water monitoring network downstream of the tailings impoundment will continue on a seasonal basis. This seasonal monitoring will continue until it can be demonstrated that the impact of the abandoned tailings impoundment upon the receiving environment is at a sufficiently low level to warrant relaxation of the monitoring frequency to occasional spot checks.

8.8 RECLAMATION

Reclamation will be completed as per government requirements.



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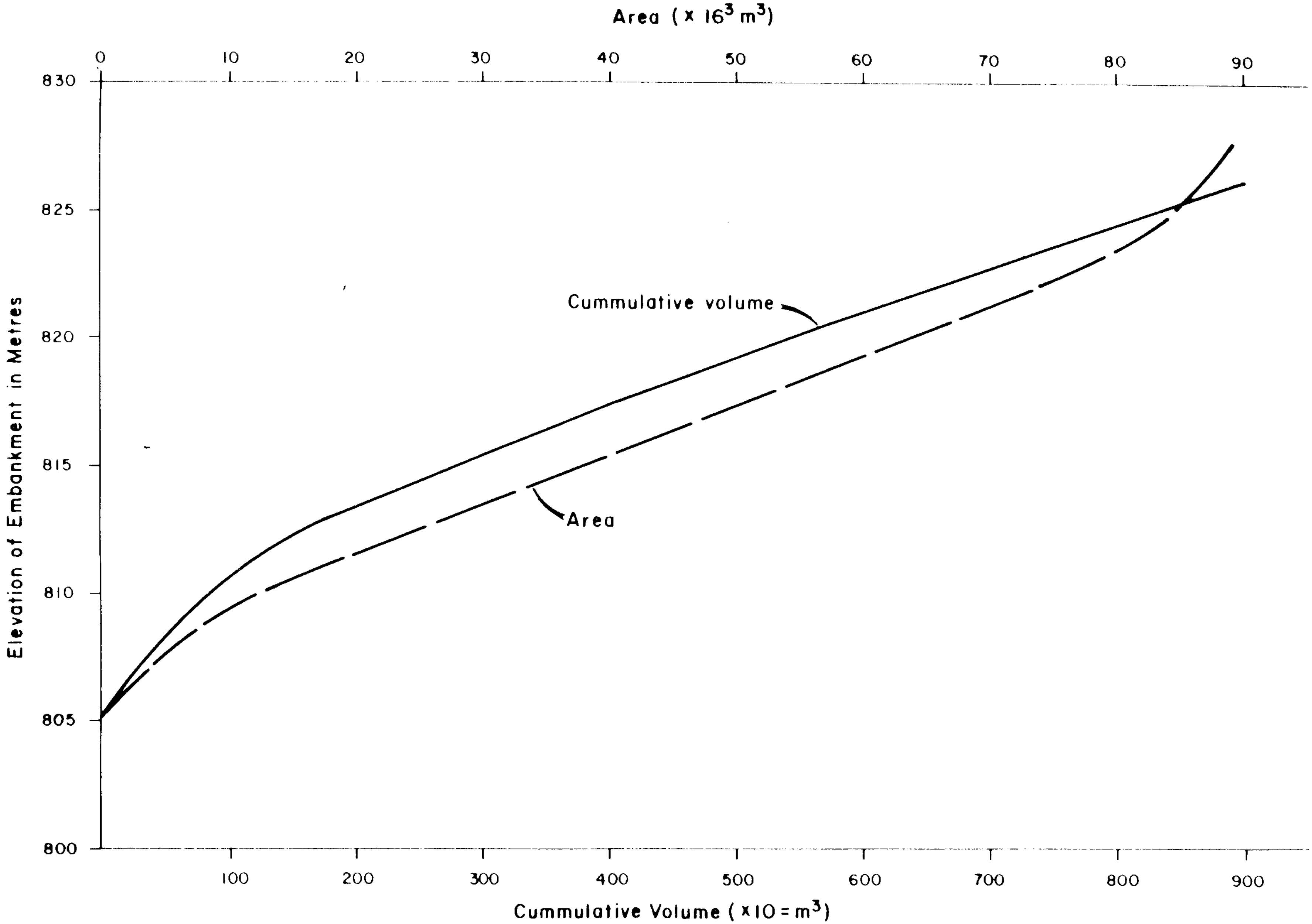
GENERALIZED CROSS - SECTION

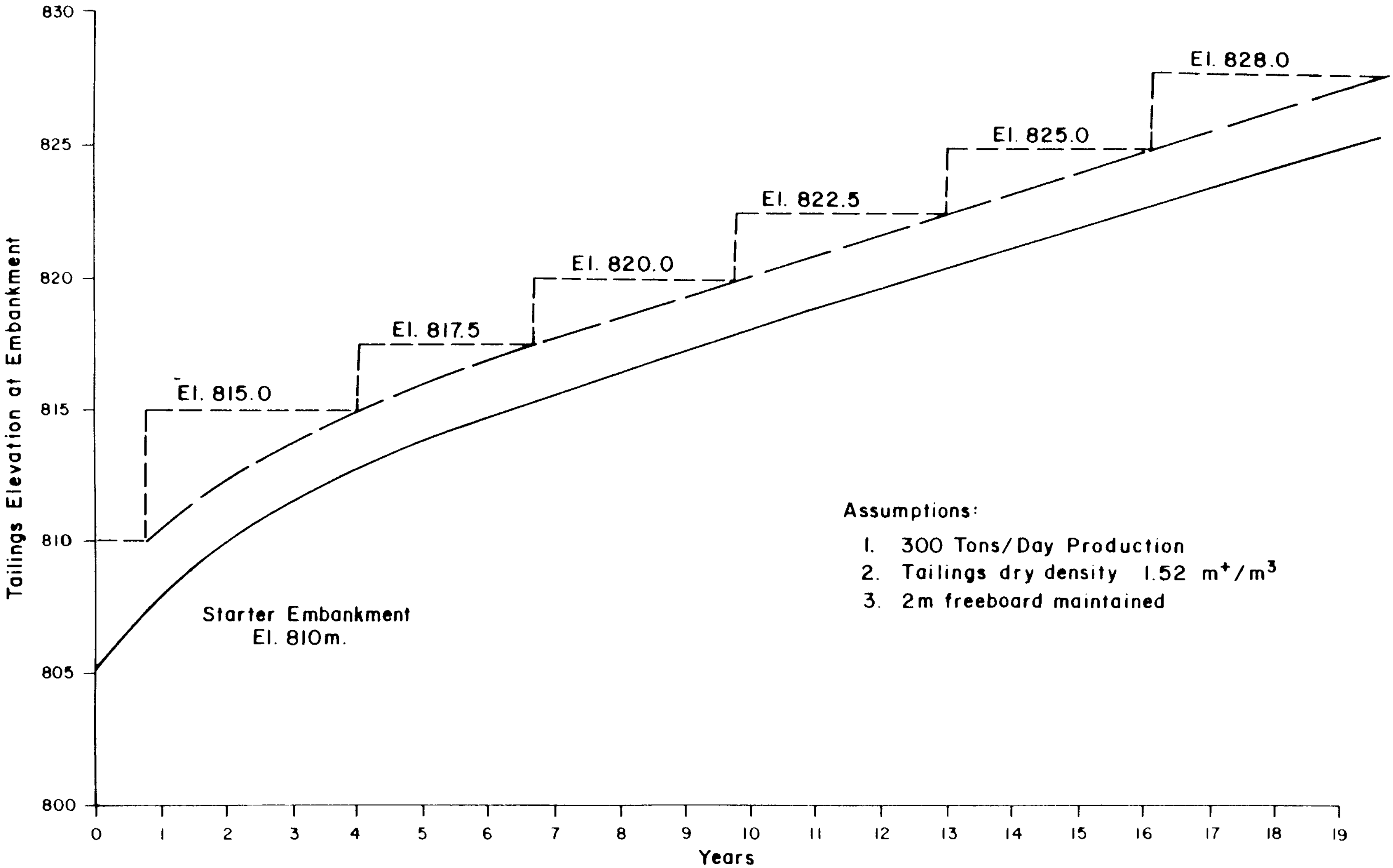
Figure 8-1

KEEWATIN ENGINEERING INC.



DEPTH VS AREA AND CAPACITY CURVE

Figure 8-2



TAILINGS FILLING AND CONSTRUCTION SCHEDULE

Figure 8-3

SECTION 9

CAPITAL COSTS

TABLE 9-1

KEEWATIN ENGINEERING INC.
CAPITAL COST ESTIMATE
SUMMARY BY CODE

CODE	DESCRIPTION	TOTAL
100	Site Preparation & Service	780,000
200	Crushing Plant	242,250
300	Concentrator	1,393,750
400	Underground Equipment & Supplies	1,086,000
500	Underground Rehabilitation & Development	1,892,000
600	Construction Indirects	1,349,000
700	Contingency 12%	802,680
		$7,545,680

TABLE 9-2

CAPITAL COST ESTIMATED
AREA 100-SITE PREPARATION & SERVICES

AREA	DESCRIPTION	TOTAL
100-10	Upgrade roads and yard	50,000
-11	Reroute Cawston Road	25,000
100-20	13KV Right of way, clear & grub	37,500
-21	13KV Power line, include tap (2.5km)	85,000
-22	13,000/600 V Substation	70,000
-23	Supply & install 3MVA XFMR	60,000
-24	Site Distribution	50,000
-25	Site & underground communication	7,500
100-30	Tailing pipeline & reclaim	25,000
-32	Water quality ponds	25,000
100-40	Water well drilling	50,000
-41	Pipe, pumps & valves	50,000
-42	Watertank, supply & install	100,000
-43	Septic tanks & sewage	20,000
100-50	Assay lab & equipment	75,000
-52	Mine office	25,000
-53	Mine dry	25,000
		$780,000

AREA 200-CRUSHING PLANT

AREA	DESCRIPTION	TOTAL
200-10	Site preparation	2,500
-11	Foundations	39,000
-12	Buildings	5,000
200-20	Coarse ore hopper & gallery	20,000
-21	Coarse ore feeder	6,000
-22	15" x 24" jaw crusher	25,000
-23	Conveyors (150' @ $200/ft)	30,000
-24	Tramp metal magnet	6,000
-25	30" cone crusher	40,000
-26	Dust collector	10,000
-27	Fine ore hopper & gallery	20,000
200-50	Crusher electrical - supply	10,000
-51	Crusher electrical - install	7,500
200-60	Crusher piping - supply	2,500
-61	Crusher piping - install	3,750
200-70	Crusher Mechanical - install	15,000
		$242,250

TABLE 9-2 (cont.)
CAPITAL COST ESTIMATED
AREA 300-CONCENTRATOR

AREA	DESCRIPTION	TOTAL
300-10	Site preparation	47,500
-11	Foundations (Incl. Tailing Thick.)	156,000
-12	Buildings	125,000
300-20	Ball mill feed conveyor	5,000
-21	Ball mill - 300 HP	150,000
-22	Inital ball charge (25 tons @ $700/	17,500
-23	Two cyclone feed pumps	4,500
-24	10" cyclone	3,000
-25	200KV stand by generator	5,000
300-30	Floation cells (* denver #21 Sub A)	16,000
-31	Concentrate pumps	5,000
-32	Tailings pumps	5,000
-33	Reagent feeders	2,000
-34	Flotation air blower	3,000
300-40	10' diameter thickener	10,000
-41	6" x 4 disc filter	15,000
-42	Vacuum pump, receiver & piping	8,000
-43	Tailings Thickener	80,000
300-50	Electrical - supply	190,000
-51	Electrical - install	142,500
300-60	Piping - supply	47,500
-61	Piping - install	71,250
300-70	Mechanical - install	285,000
		$1,393,750

AREA 400-UNDERGROUND EQUIPMENT & SUPPLIES

AREA	DESCRIPTION	TOTAL
400-10	Shop facility	30,000
-12	Shop tools (Grinder, welder, etc.)	30,000
400-20	Compressors (2 - 1200 CRM)	50,000
-22	Air, water lines, power mag. etc.	25,000
-23	Vent fans	30,000
-24	Pumps (Sump)	15,000
-25	Electrical supplies, etc.	40,000
-26	Lamps and racks (4)	10,000
400-30	St 5 Scooptrams (2)	300,000
-31	Undergound trucks 20t (2)	300,000
-34	Drill jumbo (1)	150,000
-36	Mancha trammer (1)	15,000
-37	V-cars (6)	12,000
-38	Mucking machine (1)	15,000
400-40	Jacklegs & stopers (15)	37,000
-41	Slushers - 15 HP (2)	10,000
-42	Slushers - 50 HP (1)	15,000
-43	Scrapers 36 inch (2)	2,000
		$1,086,000

TABLE 9-2 (cont.)
CAPITAL COST ESTIMATED
AREA 500-REHABILITATION & DEVELOPMENT

AREA	DESCRIPTION	TOTAL
500	3 - Level	
-10	Drift (track) 300' @ 250	75,000
-12	Rehabilitation 500' @ 35	32,000
-13	Chutes 15' @ 1500	23,000
-14	Chutes 600' @ 160	96,000
-15	Ventilation raise 400' @ 200	80,000
500	5 - Level	
-22	Rehabiliation 400' @ 35	14,000
-25	Muck raise 400' @ 200	80,000
-14	Misc. development 200' @ 160	32,000
500	6 - Level	
-32	Rehabiliation 2000' @ 40	80,000
-35	Muck raise 250' @ 200	50,000
500	7 - Level	
-40	Decline 9' x 13' 760' @ 450	342,000
-41	Scoop Drift 9' x 11" 600'@ 400	240,000
-42	Drawpoint dev. 600' @ 200	120,000
-43	Misc. chutes	20,000
-44	Stope undercut 850' @ 160	136,000
-45	Vent raise to elev 360' @ 200	72,000
-46	Stope Dev. 1500' @ 160	240,000
-47	Stope undercut 2 1000' @ 160	160,000
		$1,892,000

AREA 600-CONSTRUCTION INDIRECTS

AREA	DESCRIPTION	TOTAL
600-10	Construction management	65,000
600-20	Engineering - Structural	30,000
-21	- Electrical	40,000
-22	- Process	15,000
-23	- Geotechnical	35,000
600-30	Purchase & expediting	50,000
600-40	Freight	24,000
600-50	Oliver Gold Operating Head Office	15,000
600-60	Taxes	75,000
600-75	Working capital (mining & milling)	1,000,000
		$1,349,000
	Total Capital Direct Cost	$6,743,000
700	Contingency 12%	$802,680
	Grand Capital Direct Cost	$7,545,680

TABLE 9-3

MINE CAPITAL COSTS

Capital costs are related to mine rehabilitation, new primary and stope development, equipment requirements, and pre-production stoping.

Pre-production Rehabilitation and Development

No. 3 Level - existing level

WORK ITEM	QUANTITY	UNIT COST	COST
Drift	300'	$ 250	$ 75,000
Rehabilitation	900'	35	32,000
Chutes	15'	1,500	23,000
Chutes development	600'	160	96,000
Vent. raise	400'	200	80,000
			$306,000

No. 5 Level - existing level

Rehabilitation	400'	$ 35	$ 14,000
Muck Raise	400'	200	80,000
Mix related dev.	200'	160	32,000
			$126,000

No. 6 Level - existing level

Rehabilitation	2,000'	$ 40	$ 80,000
Muck Raise to 5 Level	250'	200	50,000
			$130,000

No. 7 - New level to be established plus Stope Development

Decline 9' x 13'	760'	$ 450	$342,000
Scoopdrift 9' x 11'	600'	400	240,000
Drawpoint dev.	600'	200	120,000
Stope Undercut	850'	160	136,000
Vent. & Access to 6 Level	360'	200	72,000
Misc. Dev. & Chute			20,000
Stope Dev.	1,500'	160	240,000
Stope Undercut	1,000'	160	160,000
			$1,330,000

Total Preproduction Rehabilition and Development $1,892,000

SECTION 10

OPERATING COSTS

SECTION 10

OPERATING COSTS

10.1 GENERAL

Average project operating costs/ton are summarized in Table 10-1. For the purpose of analysis the costs have been divided into mining, processing, site overhead, and head office overhead; administration and general expenses are included in the mining costs. The total average costs per ton of ore milled is calculated to be $53.71/ton.

10.2 MINING COST

Mining costs have been based on an estimate for mining from past experiences. The unit cost is $33.50/ton.

10.3 PROCESSING AND GENERAL COSTS

Project staffing and manning (see Table 10-2) have been calculated based on a variable hour work year. Operational continuity will allow stable staffing and scheduling.

Maintenance and operating supplies (see Table 10-3) are based on historical and vendor factors for maintenance costs as a percent of the equipment capital.

Power costs (see Table-10-4) include milling, crushing, and flotation only. The underground power costs and requirements are included in mining operating costs.

Tables 10-5, 10-6, and 10-7 summarize the mill/crusher operating and labour costs.

The organization chart (see Table 10-8), gives a general overview of manpower requirements for the Oliver Gold Project.

Table 10-9, 10-10, and 10-11 summarize the mine operating and labour costs. The staff labour rates are summarized on Table 10-12. Local overhead costs estimates appear on Table 10-13.

TABLE 10-1

OPERATING COST SUMMARY
Valhalla Gold Corporation - Oliver Gold Project

	$/Au	$/Ton (300 t/d)
Mining cost	$3,517,000	$33.50
Milling costs	1,081,200	10.30
Site overhead	865,200	8.24
Sub Total	$5,462,200	$52.04
Head Office Overhead	175,300	1.67
Total	$5,637,500	$53.71

TABLE 10-2

PERSONNEL AND ORGANIZATION

Manpower requirements would be as follows

	Staff	General Roll	Total
Mine	7	27	34
Mill	3	10	13
Local Overhead	5	0	5
Total	15	37	52

A productivity of about 6 tons per manshift is indicated. The organization chart is shown on Table 10-8.

TABLE 10-3

MILL/CRUSHER MAINTENANCE AND OPERATING SUPPLY COSTS

	$/sdt	$/month	$/year
Grinding Steel	.95	8,312.50	99,750
Liners Incl Crusher	.10	875.00	10,500
Reagents - Flotation	.25	2,187.50	26,250
Assay supplies	.20	1,750.00	21,100
Misc. Operating supplies	.30	2,625.00	31,500
Misc. Maintenance supplies	.50	4,375.00	52,500
Total	2.30	20,125.00	241,500

TABLE 10-4

POWER SUPPLY COSTS

	$/sdt	$/month	$/year
Milling/Crushing	1.20	10,500.00	126,000
Flotation & Con Dewatering	.23	2,012.50	24,150
Total	1.43	12,510.50	150,120

TABLE 10-5

MILL/CRUSHER LABOUR COSTS

POSITION	BASE RATE	30% LOADING	No. REQ'D	$/YEAR	$/MONTH	$/SDT
Mill Superintendent	67,700	20,140	1	87,040	7,330	0.83
Mill/Surface Foreman	57,700	17,300	1	75,000	6.250	0.72
Assayer	40,000	12,000	1	52,000	4,330	0.49
Mill Operator	37,030	11,110	8	385,120	32,090	3.67
Labourer	26,000	8,000	1	34,000	2,830	0.32
Millright	43,200	12,960	1	56,160	4,680	0.54
				690,120	57,510	6.57

TABLE 10-6

TOTAL MILL/CRUSHER OPERATING COSTS

	$/sdt	$/month	$/year
Labour	6.57	57,510	690,120
Maintenance & Operating	2.30	20,125	241,500
Power	1.43	12,510	150,120
Total	10.30	90,145	1,081,740

TABLE 10-7

GENERAL ROLL (MILL) LABOUR COSTS

POSTION	BASE RATE	30% LOADING	LOADED SALARY	NO. RQD	ANNUAL COST
Mill Operator	37,030	11,110	48,140	8	385,120
Millwright	43,200	12,960	56,160	1	56,160
Labourer	26,000	8,000	34,000	1	34,000
					$475,280

TABLE 10-8

ORGANIZATION CHART

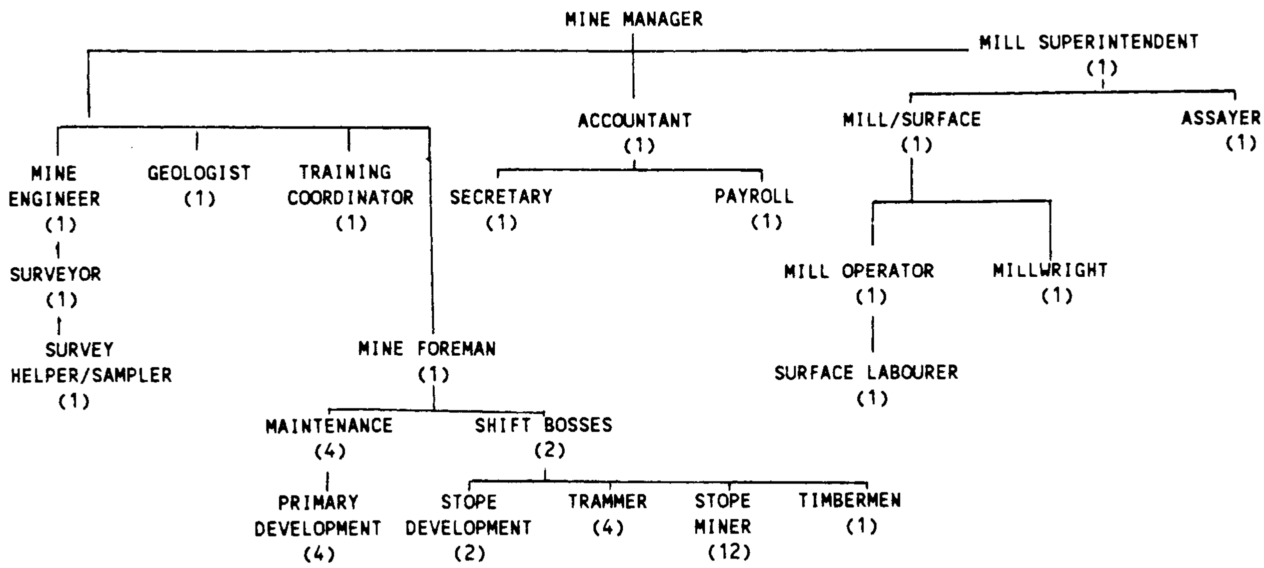


TABLE 10-9

GENERAL ROLL (MINE) LABOUR COSTS

	Base Rate $		35% Loading on 40 Hour Base Rate	Bonus on Base Rate For 40 Hour		Total Loaded		Labour Cost $
JOB	/hour	/40 hour	$	%	$	/40 hour	/hour	/8 hour shift
Development Miner	18	720	252	100	720	1,692	42.30	338.40
Stoper Miner	18	720	252	100	576	1,548	38.70	300.60
Raise Miner	18	720	252	100	720	1,692	42.30	338.40
Timberman	18	720	252	30	216	1,188	29.70	287.60
Trammer	15	600	210	50	300	1,110	27.75	222.00
Maintenance	21	840	294	0	0	1,184	28.85	226.80
Sampler	14	560	196	0	0	756	18.90	151.00

TABLE 10-10

ESTIMATE OF MINE OPERATING COSTS

ACTIVITY	ACTIVITY LABOUR COST	SUPPLIES SERVICES FACTOR	SUPPLIES SERVICES COST	ACTIVITY TOTAL COST	ACTIVITY LEVEL FT/TONS	DIRECT UNIT ($)
Decline	$202,800	45	$91,260	$204,060	2,100	140.30
Primary Development	109,850	45	49,433	159,283	1,300	122,50
Stope Development	135,000	20	27,040	162,240	1,200	135.20
Stope Mining	788,330	22	173,433	961,763	89,000	10.81
Timbering	52,360	20	10,472	62,832	0	0.00
Ore Haulage	158,064	30	47,419	205,483	89,000	2.31
Maintenance	272,400	20	54,400	326,880	0	0.00
Sampling	37,750	20	7,550	45,300	0	0.00
Diamond Drilling			280,000	14,000		20.00
			$2,497,841			

STAFF LABOUR

Mine Foreman	$ 83,000
Mine Engineer	65,000
Shift Bosses (2)	144,000
Geologist	60,000
Surveyor	47,000
Sampler/Survey Helper	34,000
	$ 433,000

Total Direct Mine Labour and Supplies	2,930,841
General Mine Services and Supplies @ 20%	586,168
	$3,517,009

APPENDIX 10-11

MINE LABOUR COST ESTIMATE

Activity	Activity Level (Ft/yr)	(Tons/yr)	Labour Productivity (FT/Ms)	(Tons/Ms)	Labour Usage (Ms/yr)	Unit Labour ($/Ms)	Activity Labour ($/Yr)
Decline Level	2,100		3.5		600	338	202,800
Primary Dev. (1 level)	1,300		4.0		325	338	109,850
Stope Development	1,200		3.0		400	338	135,200
Stope Mining		89,000		35	2,543	310	788,330
Timbering					220	238	52,360
Tramming							
Ore Haulage	89,000			125	712	222	158,064
Maintenance Sampling					1,200	227	272,400

*Note: 16,000 tons of ore assumed to come from development.

TABLE 10-12

STAFF LABOUR COSTS
($/YEAR)

POSITION	BASIC SALARY	30% LOADING	LOADED SALARY	No. REQ'D	ANNUAL COST
Mine Manager	88,000	26,000	114,000	1	114,000
Mine Foreman	64,000	19,000	83,000	1	83,000
Mine Shift Boss	55,000	17,000	72,000	2	144,000
Mill Super.	68,000	20,000	88,000	1	88,000
Mine Engineer	50,000	15,000	65,000	1	65,000
Mine Geologist	46,000	14,000	60,000	1	60,000
Accountant	50,000	15,000	65,000	1	65,000
Mill Surface Foreman	57,700	17,300	75,000	1	75,000
Training Coord.	39,000	12,000	51,000	1	51,000
Surveyor	36,000	11,000	47,000	1	47,000
Secretary	31,000	9,000	40,000	1	40,000
Assayer	40,000	12,000	52,000	1	52,000
Payroll Clerk	30,000	9,000	39,000	1	39,000
Sampler/Survey Helper	26,000	8,000	34,000	1	34,000
TOTAL					$957,000

TABLE 10-13

LOCAL OVERHEAD COST ESTIMATE

		Annual Cost
Labour - General Roll		Nil
- Staff Salaries	- Mine Manager	$114,000
	- Accountant	65,000
	- Payroll Clerk	39,000
	- Secretary	40,000
	- Training Coordinator	51,000
		$309,000
Service and Supplies - Labour cost x 1.8		556,200
Total Local Overhead		$865,200

SECTION 11

PROJECT PLAN

SECTION 11

PROJECT PLAN

11.1 GENERAL

Oliver Gold Corp. will coordinate and oversee the activities of the engineering and construction management and provide the overall project management

The Engineering requirements will be provided by a mix of Oliver Gold Personnel and Consulting firms. Each group will be selected for its competency in the required discipline as well as its competitive position.

The site preparation, site roads and underground development will be done in house as Oliver Gold personnel have expertise in this work.

Oliver Gold will provide the open pit and underground planning and administer the development contracts. This will insure optimum methods, dump schemes and set operating standards. This is required in order to establish the tight operating procedures and provide a successful start-up of the mine and its interrelated activities.

The process and its flow sheet will be done by Gary W. Hawthorn who has done the metallurgical testing and process engineering to date.

The regulatory environmental requirements will by necessity have to utilize a firm specialized in that field.

Because of the Project's close proximity to Oliver, Penticton and Osoyoos, B.C. a construction camp will not be required. There are sufficient competent local contractors, such that it should not be necessary to bring large numbers of tradesmen into the area to complete the work. In this regard construction overhead cost should be minimal thus insuring reasonable costs.

The construction work will be tendered "open shop" and contracts awarded will contain a clause that holds the contractors responsible for the actions of their employees in order to eliminate disruptions to the Project. Purchase contracts will further state that manufacture goods delivered to the site may or may not bear a union label.

11.2 Construction

The moderate dry climate of the south Okanagan will enable construction to proceed at anytime during the year.

The construction of the site and mill should be completed within five months. Concrete can be obtained from local ready mix suppliers and a healthy competitive environment exists in the area.

Early construction of the powerline will enable a reliable economical source of construction power as well as a hard wire route for project communications.

Underground development will likely start at the same time as site, mill and facilities so the U.G. muck will be available within six months after start-up. Open pit mining can start within one month of mill completion as its low ratio will provide ore quickly. Sufficient tailings dam will be constructed of waste such that initial impoundment will be completed. After mill start-up the open pit mining and tailings dam construction can continue simultaneous with mill run in.

11.3 COMMISSIONING AND SCHEDULE

Mine and Mill management will be brought on early to head their respective developments and insure a smooth transition from construction through operation. During the Oliver Gold Project the interaction of the Pit, underground and plant construction is critical for cash flow control and ore supply. The Project schedule is shown in Figure 11-1

PROJECT SCHEDULE

Figure 11-1

```
                      |     5 mo. Duration    |     6 mo. to 100% Cap.    |

Project Construction  *****************************

Open Pit Mining                                    ************** 1425 yd3/D

Open Pit Milling                                      ////////////////////////

Dev. Muck Milling                                                            ////////

U.G. Development                ++++++++++++++++++++++++++++++++++++++++++++++++++

                                                                                     ////////////////////////////////////////
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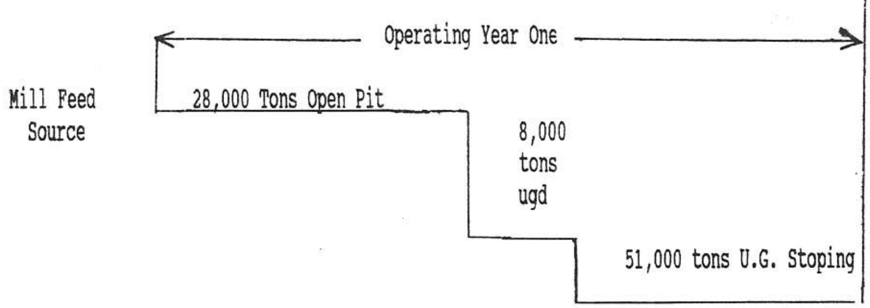

SECTION 12

FINANCIAL ANALYSIS

SECTION 12

FINANCIAL ANALYSIS

12.0 EVALUATION OF VARIOUS ECONOMIC CASES

Case 1

5 year case, utilizes only the better grade until year 5. In year 5 the grade drops to 0.15 Au equivalent when the 0.19 Au equivalent is completed. The case is run for $350, $400 and $450 U.S. gold prices. The $350 U.S./ price is seen to be the worst case scenario, and gives a 13% IRR.

With this case the debt is paid off and potential future ore is available, for which only the operating costs would have to be met.

The very good operating profit in year 1 is due to the open pit situation.

Case 2

Utilizes average grade ore beyond year 5. Mining and milling costs decrease due to efficiencies. The IRR drops compared to Case 1. This indicates the value of grade in the early years. A marginal operating profit can be made at a 0.15 Au equivalent grade based on operating costs alone.

Case 3

Assumes an expansion to 700 tons per day in year 6. The additional capital in year 5 is $3,000,000. The IRR does not indicate a reason to expand. However this could change with the addition of better grades.

In summary of all cases the open pit material is very dominant. This is because the operating cost of mining open pit ore is about $15 - $20 less than underground with little or no capital associated.

An economic evaluation of the open pit ore to the limit of the potential indicates that at $400 U.S. gold an IRR of 37% could be realized at the end of year 5.

Case 1a
5 Year Mine Life
$350 U.S. Gold Price

FAIRVIEW/STEMWINDER OLIVER, BC	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Stemwinder Open Pit		29000	0				29,000
Stemwinder Ore		0	39000	105000	105000	105000	354,000
Fairview Ore		59000	66000				125,000
Total Stockpile		88000	105000	105000	105000	105000	508,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	
Ore Milled		88000	105000	105000	105000	105000	508,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	84,317
Gold Price ($US)		$350	$350	$350	$350	$350	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$6,275	$7,487	$7,487	$7,487	$6,423	$35,159
less 3.5% NSR		($72)	($97)	($262)	($262)	($225)	($919)
Gross Revenue		$6,202	$7,390	$7,225	$7,225	$6,198	$34,241
Operating Expense:							
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$20,793
Open Pit		$604	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$5,232
Contingency 10.00%		$407	$564	$564	$564	$564	$2,663
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$29,293
Operating Profit	$0	$1,724	$1,186	$1,022	$1,022	($5)	$4,948
Non-Cash Deductions							
UCC	($9,585)	$9,585	$7,189	$5,392	$4,044	$3,022	2266
MIN UCC/OP PROFIT		$1,724	$1,186	$1,022	$1,022	($5)	$4,948
25% OF UCC		$2,396	$1,797	$1,348	$1,011	$756	$7,308
CLASS 28 CCA		$2,396	$1,797	$1,348	$1,022	$756	$7,318
TOTAL EXPENSES	($9,585)	$6,875	$8,001	$7,551	$7,225	$6,959	$36,611
Federal Taxable Inc	($9,585)	($673)	($611)	($326)	$0	($761)	($2,371)
Plus Loss Carry Forward Created		($673)	($611)	($326)	$0	($761)	($2,371)
less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0
Loss Carry Forward Balance		$673	$1,284	$1,610	$1,610	$2,371	[illegible]
Net Taxable Inc.		$0	$0	$0	$0	$0	$0
TAXES PROVINCIAL (14%)	$0	$0	$0	$0	$0	$0	$0
FEDERAL (28.84%)	$0	$0	$0	$0	$0	$0	$0
BC MRT (17.5%)							$0
NET INCOME	($9,585)	$0	$0	$0	$0	$0	$0
FAIRVIEW PROJECT	CASH FLOWS						
NET INCOME		$0	$0	$0	$0	$0	$0
ADD DEPRECIATION		$2,396	$1,797	$1,348	$1,022	$756	$7,318
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)				$3,000	($4,585)
CASH FLOW	($3,500)	($1,689)	$1,797	$1,348	$1,022	$3,756	$2,733
CUMULATIVE CASH FLOW	($3,500)	($5,189)	($3,392)	($2,044)	($1,022)	$2,733	

DISC RATE	NPV
5.00%	$1,399
10.00%	$448
15.00%	($237)
20.00%	($731)
IRR	13.08%

Ca: ˉb
5 Year Mine Life
$400 U.S. Gold Price

FAIRVIEW/STEMWINDER
OLIVER, BC

	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Stemwinder Open Pit		29000	0				29,000
Stemwinder Ore		0	39000	105000	105000	105000	354,000
Fairview Ore		59000	66000				125,000
Total Stockpile		88000	105000	105000	105000	105000	508,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	
Ore Milled		88000	105000	105000	105000	105000	508,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	84,317
Gold Price ($US)		$400	$400	$400	$400	$400	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$7,171	$8,557	$8,557	$8,557	$7,341	$40,182
less 3.5% NSR		($83)	($111)	($299)	($299)	($257)	($1,050)
Gross Revenue		$7,089	$8,445	$8,257	$8,257	$7,084	$39,132
Operating Expense:							
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$20,793
Open Pit		$604	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$5,232
Contingency 10.00%		$407	$564	$564	$564	$564	$2,663
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$29,293
Operating Profit	$0	$2,610	$2,242	$2,054	$2,054	$880	$9,839
Non-Cash Deductions							
UCC	($9,585)	$9,585	$6,975	$4,733	$2,680	$626	
MIN UCC/OP PROFIT		$2,610	$2,242	$2,054	$2,054	$626	$9,585
25% OF UCC		$2,396	$1,744	$1,183	$670	$157	$6,150
CLASS 28 CCA		$2,610	$2,242	$2,054	$2,054	$626	$9,585
TOTAL EXPENSES	($9,585)	$7,089	$8,445	$8,257	$8,257	$6,830	$38,878
Federal Taxable Inc	($9,585)	$0	$0	$0	$0	$254	$254
Plus Loss Carry Forward Created		$0	$0	$0	$0	$0	$0
less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0
Loss Carry Forward Balance		$0	$0	$0	$0	$0	$0
Net Taxable Inc.		$0	$0	$0	$0	$254	$254
TAXES PROVINCIAL (14%)	$0	$0	$0	$0	$0	$36	$36
FEDERAL (28.84%)	$0	$0	$0	$0	$0	$73	$73
BC MRT (17.5%)							$0
NET INCOME	($9,585)	$0	$0	$0	$0	$145	$145

FAIRVIEW PROJECT	CASH FLOWS						
NET INCOME		$0	$0	$0	$0	$145	$145
ADD DEPRECIATION		$2,610	$2,242	$2,054	$2,054	$626	$9,585
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)				$3,000	($4,585)
CASH FLOW	($3,500)	($1,475)	$2,242	$2,054	$2,054	$3,771	$5,145
CUMULATIVE CASH FLOW	($3,500)	($4,975)	($2,733)	($680)	$1,374	$5,145	

DISC RATE	NPV
5.00%	$3,378
10.00%	$2,090
15.00%	$1,141
20.00%	$435
IRR	24.00%

Case 1

5 Year Mine Plan
$450 U.S. Gold Price

FAIRVIEW/STEMWINDER OLIVER, BC	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Stemwinder Open Pit		29000	0				29,000
Stemwinder Ore		0	39000	105000	105000	105000	354,000
Fairview Ore		59000	66000				125,000
Total Stockpile		88000	105000	105000	105000	105000	508,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	
Ore Milled		88000	105000	105000	105000	105000	508,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	84,317
Gold Price ($US)		$450	$450	$450	$450	$450	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$8,068	$9,626	$9,626	$9,626	$8,258	$45,205
less 3.5% NSR		($93)	($125)	($337)	($337)	($289)	($1,181)
Gross Revenue		$7,975	$9,501	$9,289	$9,289	$7,969	$44,024
Operating Expense:							
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$20,793
Open Pit		$604	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$5,232
Contingency 10.00%		$407	$564	$564	$564	$564	$2,663
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$29,293
Operating Profit	$0	$3,496	$3,298	$3,086	$3,086	$1,766	$14,731
Non-Cash Deductions							
UCC	($9,585)	$9,585	$6,089	$2,792	$0	$0	
MIN UCC/OP PROFIT		$3,496	$3,298	$2,792	$0	$0	$9,585
25% OF UCC		$2,396	$1,522	$698	$0	$0	$4,616
CLASS 28 CCA		$3,496	$3,298	$2,792	$0	$0	$9,585
TOTAL EXPENSES	($9,585)	$7,975	$9,501	$8,995	$6,204	$6,204	$38,878
Federal Taxable Inc	($9,585)	$0	$0	$294	$3,086	$1,766	$5,146
Plus Loss Carry Forward Created		$0	$0	$0	$0	$0	$0
less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0
Loss Carry Forward Balance		$0	$0	$0	$0	$0	$0
Net Taxable Inc.		$0	$0	$294	$3,086	$1,766	$5,146
TAXES PROVINCIAL (14%)	$0	$0	$0	$41	$432	$247	$720
FEDERAL (28.84%)	$0	$0	$0	$85	$890	$509	$1,484
BC MRT (17.5%)							$0
NET INCOME	($9,585)	$0	$0	$168	$1,764	$1,009	$2,941

FAIRVIEW PROJECT	CASH FLOWS						
NET INCOME		$0	$0	$168	$1,764	$1,009	$2,941
ADD DEPRECIATION		$3,496	$3,298	$2,792	$0	$0	$9,585
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)				$3,000	($4,585)
CASH FLOW	($3,500)	($589)	$3,298	$2,960	$1,764	$4,009	$7,941
CUMULATIVE CASH FLOW	($3,500)	($4,089)	($792)	$2,168	$3,932	$7,941	

DISC RATE	NPV
5.00%	$5,790
10.00%	$4,189
15.00%	$2,982
20.00%	$2,061
IRR	40.54%

Case 2a
10 Year Mine Life
$350 U.S. Gold Price

FAIRVIEW/STEMWINDER
OLIVER, BC

	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
Stemwinder Open Pit		29000	0									
Stemwinder Ore		0	39000	105000	105000	105000	52500	52500	52500	52500	52500	616,500
Fairview Ore		59000	66000				52500	52500	52500	52500	52500	387,500
Total Stockpile		88000	105000	105000	105000	105000	105000	105000	105000	105000	105000	1,033,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	0.15	0.15	0.15	0.15	0.15	
Ore Milled		88000	105000	105000	105000	105000	105000	105000	105000	105000	105000	1,033,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	$37.50	$37.50	$37.50	$37.50	$37.50	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	$7.50	$7.50	$7.50	$7.50	$7.50	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	14,175	14,175	14,175	14,175	14,175	155,192
Gold Price ($US)		$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$6,275	$7,487	$7,487	$7,487	$6,423	$5,911	$5,911	$5,911	$5,911	$5,911	$64,713
less 3.5% NSR		($72)	($97)	($262)	($262)	($225)	($103)	($103)	($103)	($103)	($103)	($1,352)
Gross Revenue		$6,202	$7,390	$7,225	$7,225	$6,198	$5,807	$5,807	$5,807	$5,807	$5,807	$63,362
Operating Expense:												
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$3,938	$3,938	$3,938	$3,938	$3,938	$40,481
Open Pit		$604	$0	$0	$0	$0	$0	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$788	$788	$788	$788	$788	$9,170
Contingency 10.00%		$407	$564	$564	$564	$564	$473	$473	$473	$473	$473	$5,025
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$5,198	$5,198	$5,198	$5,198	$5,198	$55,280
Operating Profit	$0	$1,724	$1,186	$1,022	$1,022	($5)	$610	$610	$610	$610	$610	$8,081
Non-Cash Deductions												
UCC	($9,585)	$9,585	$7,189	$5,392	$4,044	$3,022	$2,267	$1,657	$1,047	$437	$0	
MIN UCC/OP PROFIT		$1,724	$1,186	$1,022	$1,022	($5)	$610	$610	$610	$437	$0	
25% OF UCC		$2,396	$1,797	$1,348	$1,011	$756	$567	$414	$262	$109	$0	
CLASS 28 CCA		$2,396	$1,797	$1,348	$1,022	$756	$610	$610	$610	$437	$0	$9,585
TOTAL EXPENSES	($9,585)	$6,875	$8,001	$7,551	$7,225	$6,959	$5,807	$5,807	$5,807	$5,634	$5,198	$64,865
Federal Taxable Inc	($9,585)	($673)	($611)	($326)	$0	($761)	$0	$0	$0	$173	$610	($1,504)
Plus Loss Carry Forward Created		($673)	($611)	($326)	$0	($761)	$0	$0	$0	$0	$0	
less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0	$0	$0	($173)	($610)	
Loss Carry Forward Balance		$673	$1,284	$1,610	$1,610	$2,371	$2,371	$2,371	$2,371	$2,198	$1,588	
Net Taxable Inc.		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
TAXES PROVINCIAL (14%)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FEDERAL (28.84%)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BC MRT (17.5%)												$0
NET INCOME	($9,585)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FAIRVIEW PROJECT	CASH FLOWS											
NET INCOME		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ADD DEPRECIATION		$2,396	$1,797	$1,348	$1,022	$756	$610	$610	$610	$437	$0	$9,585
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)									$1,000	($6,585)
CASH FLOW	($3,500)	($1,689)	$1,797	$1,348	$1,022	$756	$610	$610	$610	$437	$1,000	$3,000
CUMULATIVE CASH FLOW	($3,500)	($5,189)	($3,392)	($2,044)	($1,022)	($267)	$343	$953	$1,563	$2,000	$3,000	

DISC RATE	NPV
5.00%	$1,253
10.00%	$129
15.00%	($609)
20.00%	($1,100)
IRR	10.74%

Case
10 Year Mine Life
$400 U.S. Gold Price

FAIRVIEW/STEMWINDER OLIVER, BC	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
Stemwinder Open Pit		29000	0									
Stemwinder Ore		0	39000	105000	105000	105000	52500	52500	52500	52500	52500	616,500
Fairview Ore		59000	66000				52500	52500	52500	52500	52500	387,500
Total Stockpile		88000	105000	105000	105000	105000	105000	105000	105000	105000	105000	1,033,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	0.15	0.15	0.15	0.15	0.15	
Ore Milled		88000	105000	105000	105000	105000	105000	105000	105000	105000	105000	1,033,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	$37.50	$37.50	$37.50	$37.50	$37.50	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	$7.50	$7.50	$7.50	$7.50	$7.50	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	14,175	14,175	14,175	14,175	14,175	155,192
Gold Price ($US)		$400	$400	$400	$400	$400	$400	$400	$400	$400	$400	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$7,171	$8,557	$8,557	$8,557	$7,341	$6,755	$6,755	$6,755	$6,755	$6,755	$73,958
less 3.5% NSR		($83)	($111)	($299)	($299)	($257)	($118)	($118)	($118)	($118)	($118)	($1,545)
Gross Revenue		$7,089	$8,445	$8,257	$8,257	$7,084	$6,637	$6,637	$6,637	$6,637	$6,637	$72,413
Operating Expense:												
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$3,938	$3,938	$3,938	$3,938	$3,938	$40,481
Open Pit		$604	$0	$0	$0	$0	$0	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$788	$788	$788	$788	$788	$9,170
Contingency 10.00%		$407	$564	$564	$564	$564	$473	$473	$473	$473	$473	$5,025
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$5,198	$5,198	$5,198	$5,198	$5,198	$55,280
Operating Profit	$0	$2,610	$2,242	$2,054	$2,054	$880	$1,440	$1,440	$1,440	$1,440	$1,440	$17,133
Non-Cash Deductions												
UCC	($9,585)	$9,585	$6,975	$4,733	$2,680	$626	$0	$0	$0	$0	$0	
MIN UCC/OP PROFIT		$2,610	$2,242	$2,054	$2,054	$626	$0	$0	$0	$0	$0	
25% OF UCC		$2,396	$1,744	$1,183	$670	$157	$0	$0	$0	$0	$0	
CLASS 28 CCA		$2,610	$2,242	$2,054	$2,054	$626	$0	$0	$0	$0	$0	$9,585
TOTAL EXPENSES	($9,585)	$7,089	$8,445	$8,257	$8,257	$6,830	$5,198	$5,198	$5,198	$5,198	$5,198	$64,865
Federal Taxable Inc	($9,585)	$0	$0	$0	$0	$254	$1,440	$1,440	$1,440	$1,440	$1,440	$7,548
Plus Loss Carry Forward Created		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Loss Carry Forward Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Net Taxable Inc.		$0	$0	$0	$0	$254	$1,440	$1,440	$1,440	$1,440	$1,440	
TAXES PROVINCIAL (14%)	$0	$0	$0	$0	$0	$36	$202	$202	$202	$202	$202	$1,043
FEDERAL (28.84%)	$0	$0	$0	$0	$0	$73	$415	$415	$415	$415	$415	$2,149
BC MRT (17.5%)												$0
NET INCOME	($9,585)	$0	$0	$0	$0	$145	$823	$823	$823	$823	$823	($3,192)

FAIRVIEW PROJECT	CASH FLOWS											
NET INCOME		$0	$0	$0	$0	$145	$823	$823	$823	$823	$823	($3,192)
ADD DEPRECIATION		$2,610	$2,242	$2,054	$2,054	$626	$0	$0	$0	$0	$0	$9,585
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)									$1,000	($6,585)
CASH FLOW	($3,500)	($1,475)	$2,242	$2,054	$2,054	$771	$823	$823	$823	$823	$1,823	$7,259
CUMULATIVE CASH FLOW	($3,500)	($4,975)	($2,733)	($680)	$1,374	$2,145	$2,968	$3,791	$4,614	$5,437	$7,259	

DISC RATE	NPV
5.00%	$4,382
10.00%	$2,508
15.00%	$1,251
20.00%	$389
IRR	23.02%

Cas[illegible]

10 Year Mine Life

$450 U.S. Gold Price

FAIRVIEW/STEMWINDER OLIVER, BC	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
Stemwinder Open Pit		29000	0									
Stemwinder Ore		0	39000	105000	105000	105000	52500	52500	52500	52500	52500	616,500
Fairview Ore		59000	66000				52500	52500	52500	52500	52500	387,500
Total Stockpile		88000	105000	105000	105000	105000	105000	105000	105000	105000	105000	1,033,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	0.15	0.15	0.15	0.15	0.15	
Ore Milled		88000	105000	105000	105000	105000	105000	105000	105000	105000	105000	1,033,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	$37.50	$37.50	$37.50	$37.50	$37.50	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	$7.50	$7.50	$7.50	$7.50	$7.50	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	14,175	14,175	14,175	14,175	14,175	155,192
Gold Price ($US)		$450	$450	$450	$450	$450	$450	$450	$450	$450	$450	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$8,068	$9,626	$9,626	$9,626	$8,258	$7,600	$7,600	$7,600	$7,600	$7,600	$83,203
less 3.5% NSR		($93)	($125)	($337)	($337)	($289)	($133)	($133)	($133)	($133)	($133)	($1,738)
Gross Revenue		$7,975	$9,501	$9,289	$9,289	$7,969	$7,467	$7,467	$7,467	$7,467	$7,467	$81,465
Operating Expense:												
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$3,938	$3,938	$3,938	$3,938	$3,938	$40,481
Open Pit		$604	$0	$0	$0	$0	$0	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$788	$788	$788	$788	$788	$9,170
Contingency 10.00%		$407	$564	$564	$564	$564	$473	$473	$473	$473	$473	$5,025
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$5,198	$5,198	$5,198	$5,198	$5,198	$55,280
Operating Profit	$0	$3,496	$3,298	$3,086	$3,086	$1,766	$2,269	$2,269	$2,269	$2,269	$2,269	$26,185
Non-Cash Deductions												
UCC	($9,585)	$9,585	$6,089	$2,792	$0	$0	$0	$0	$0	$0	$0	
MIN UCC/OP PROFIT		$3,496	$3,298	$2,792	$0	$0	$0	$0	$0	$0	$0	
25% OF UCC		$2,396	$1,522	$698	$0	$0	$0	$0	$0	$0	$0	
CLASS 28 CCA		$3,496	$3,298	$2,792	$0	$0	$0	$0	$0	$0	$0	$9,585
TOTAL EXPENSES	($9,585)	$7,975	$9,501	$8,995	$6,204	$6,204	$5,198	$5,198	$5,198	$5,198	$5,198	$64,865
Federal Taxable Inc	($9,585)	$0	$0	$294	$3,086	$1,766	$2,269	$2,269	$2,269	$2,269	$2,269	$16,600
Plus Loss Carry Forward Created		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Loss Carry Forward Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Net Taxable Inc.		$0	$0	$294	$3,086	$1,766	$2,269	$2,269	$2,269	$2,269	$2,269	
TAXES PROVINCIAL (14%)	$0	$0	$0	$41	$432	$247	$318	$318	$318	$318	$318	$2,309
FEDERAL (28.84%)	$0	$0	$0	$85	$890	$509	$654	$654	$654	$654	$654	$4,756
BC MRT (17.5%)												$0
NET INCOME	($9,585)	$0	$0	$168	$1,764	$1,009	$1,297	$1,297	$1,297	$1,297	$1,297	$9,535
FAIRVIEW PROJECT	CASH FLOWS											
NET INCOME		$0	$0	$168	$1,764	$1,009	$1,297	$1,297	$1,297	$1,297	$1,297	$9,535
ADD DEPRECIATION		$3,496	$3,298	$2,792	$0	$0	$0	$0	$0	$0	$0	$9,585
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)									$1,000	($6,585)
CASH FLOW	($3,500)	($589)	$3,298	$2,960	$1,764	$1,009	$1,297	$1,297	$1,297	$1,297	$2,297	$12,535
CUMULATIVE CASH FLOW	($3,500)	($4,089)	($792)	$2,168	$3,932	$4,941	$6,238	$7,535	$8,832	$10,129	$12,427	

DISC RATE	NPV
5.00%	$8,326
10.00%	$5,621
15.00%	$3,779
20.00%	$2,490

CA 3a

10 Year Expansion Case

$350 U.S. Gold Price

FAIRVIEW/STEMWINDER
OLIVER, BC

	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
Stemwinder Open Pit		29000	0									
Stemwinder Ore		0	39000	105000	105000	105000	122500	122500	122500	122500	122500	966,500
Fairview Ore		59000	66000				122500	122500	122500	122500	122500	737,500
Total Stockpile		88000	105000	105000	105000	105000	245000	245000	245000	245000	245000	1,733,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	0.15	0.15	0.15	0.15	0.15	
Ore Milled		88000	105000	105000	105000	105000	245000	245000	245000	245000	245000	1,733,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	$37.50	$37.50	$37.50	$37.50	$37.50	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	$7.50	$7.50	$7.50	$7.50	$7.50	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	33,075	33,075	33,075	33,075	33,075	249,692
Gold Price ($US)		$350	$350	$350	$350	$350	$350	$350	$350	$350	$350	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$6,275	$7,487	$7,487	$7,487	$6,423	$13,792	$13,792	$13,792	$13,792	$13,792	$104,119
less 3.5% NSR		($72)	($97)	($262)	($262)	($225)	($241)	($241)	($241)	($241)	($241)	($2,032)
Gross Revenue		$6,202	$7,390	$7,225	$7,225	$6,198	$13,551	$13,551	$13,551	$13,551	$13,551	$102,086
Operating Expense:												
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$9,188	$9,188	$9,188	$9,188	$9,188	$66,731
Open Pit		$604	$0	$0	$0	$0	$0	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$1,838	$1,838	$1,838	$1,838	$1,838	$14,420
Contingency 10.00%		$407	$564	$564	$564	$564	$1,103	$1,103	$1,103	$1,103	$1,103	$8,175
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$12,128	$12,128	$12,128	$12,128	$12,128	$89,930
Operating Profit	$0	$1,724	$1,186	$1,022	$1,022	($5)	$1,423	$1,423	$1,423	$1,423	$1,423	$12,156
Non-Cash Deductions												
UCC	($9,585)	$9,585	$7,189	$5,392	$4,044	$6,022	$4,517	$3,094	$1,670	$247	$0	
MIN UCC/OP PROFIT		$1,724	$1,186	$1,022	$1,022	($5)	$1,423	$1,423	$1,423	$247	$0	
25% OF UCC		$2,396	$1,797	$1,348	$1,011	$1,506	$1,129	$773	$418	$62	$0	
CLASS 28 CCA		$2,396	$1,797	$1,348	$1,022	$1,506	$1,423	$1,423	$1,423	$247	$0	$12,585
TOTAL EXPENSES	($9,585)	$6,875	$8,001	$7,551	$7,225	$7,709	$13,551	$13,551	$13,551	$12,375	$12,128	$102,515
Federal Taxable Inc	($9,585)	($673)	($611)	($326)	$0	($1,511)	$0	$0	$0	$1,176	$1,423	($429)
Plus Loss Carry Forward Created		($673)	($611)	($326)	$0	($1,511)	$0	$0	$0	$0	$0	
less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0	$0	$0	($1,176)	($1,423)	
Loss Carry Forward Balance		$673	$1,284	$1,610	$1,610	$3,121	$3,121	$3,121	$3,121	$1,945	$522	
Net Taxable Inc.		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
TAXES PROVINCIAL (14%)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
FEDERAL (28.84%)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
BC MRT (17.5%)												$0
NET INCOME	($9,585)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

FAIRVIEW PROJECT	CASH FLOWS											
NET INCOME		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
ADD DEPRECIATION		$2,396	$1,797	$1,348	$1,022	$1,506	$1,423	$1,423	$1,423	$247	$0	$12,585
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)				($3,000)					$1,000	($9,585)
CASH FLOW	($3,500)	($1,689)	$1,797	$1,348	$1,022	($1,494)	$1,423	$1,423	$1,423	$247	$1,000	$3,000
CUMULATIVE CASH FLOW	($3,500)	($5,189)	($3,392)	($2,044)	($1,022)	($2,517)	($1,094)	$330	$1,753	$2,000	$3,000	

DISC RATE	NPV
5.00%	$1,110
10.00%	($72)
15.00%	($825)
20.00%	($1,311)
IRR	9.62%

Case 3b
10 Year Expansion Case
$400 U.S. Gold Price

FAIRVIEW/STEMWINDER OLIVER, BC	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
Stemwinder Open Pit		29000	0									
Stemwinder Ore		0	39000	105000	105000	105000	122500	122500	122500	122500	122500	966,500
Fairview Ore		59000	66000				122500	122500	122500	122500	122500	737,500
Total Stockpile		88000	105000	105000	105000	105000	245000	245000	245000	245000	245000	1,733,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	0.15	0.15	0.15	0.15	0.15	
Ore Milled		88000	105000	105000	105000	105000	245000	245000	245000	245000	245000	1,733,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	$37.50	$37.50	$37.50	$37.50	$37.50	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	$7.50	$7.50	$7.50	$7.50	$7.50	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	33,075	33,075	33,075	33,075	33,075	249,692
Gold Price ($US)		$400	$400	$400	$400	$400	$400	$400	$400	$400	$400	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$7,171	$8,557	$8,557	$8,557	$7,341	$15,762	$15,762	$15,762	$15,762	$15,762	$118,993
less 3.5% NSR		($83)	($111)	($299)	($299)	($257)	($276)	($276)	($276)	($276)	($276)	($2,323)
Gross Revenue		$7,089	$8,445	$8,257	$8,257	$7,084	$15,486	$15,486	$15,486	$15,486	$15,486	$116,670
Operating Expense:												
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$9,188	$9,188	$9,188	$9,188	$9,188	$66,731
Open Pit		$604	$0	$0	$0	$0	$0	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$1,838	$1,838	$1,838	$1,838	$1,838	$14,420
Contingency 10.00%		$407	$564	$564	$564	$564	$1,103	$1,103	$1,103	$1,103	$1,103	$8,175
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$12,128	$12,128	$12,128	$12,128	$12,128	$89,930
Operating Profit	$0	$2,610	$2,242	$2,054	$2,054	$880	$3,359	$3,359	$3,359	$3,359	$3,359	$26,740
Non-Cash Deductions												
UCC	($9,585)	$9,585	$6,975	$4,733	$2,680	$3,626	$2,720	$0	$0	$0	$0	
MIN UCC/OP PROFIT		$2,610	$2,242	$2,054	$2,054	$880	$2,720	$0	$0	$0	$0	
25% OF UCC		$2,396	$1,744	$1,183	$670	$907	$680	$0	$0	$0	$0	
CLASS 28 CCA		$2,610	$2,242	$2,054	$2,054	$907	$2,720	$0	$0	$0	$0	$12,585
TOTAL EXPENSES	($9,585)	$7,089	$8,445	$8,257	$8,257	$7,110	$14,847	$12,128	$12,128	$12,128	$12,128	$102,515
Federal Taxable Inc	($9,585)	$0	$0	$0	$0	($26)	$639	$3,359	$3,359	$3,359	$3,359	$14,155
Plus Loss Carry Forward Created		$0	$0	$0	$0	($26)	$0	$0	$0	$0	$0	
Less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	($26)	$0	$0	$0	$0	
Loss Carry Forward Balance		$0	$0	$0	$0	$26	$0	$0	$0	$0	$0	
Net Taxable Inc.		$0	$0	$0	$0	$0	$613	$3,359	$3,359	$3,359	$3,359	
TAXES PROVINCIAL (14%)	$0	$0	$0	$0	$0	$0	$86	$470	$470	$470	$470	$1,967
FEDERAL (28.84%)	$0	$0	$0	$0	$0	$0	$177	$969	$969	$969	$969	$4,052
BC MRT (17.5%)												$0
NET INCOME	($9,585)	$0	$0	$0	$0	$0	$350	$1,920	$1,920	$1,920	$1,920	($6,018)
FAIRVIEW PROJECT	CASH FLOWS											
NET INCOME		$0	$0	$0	$0	$0	$350	$1,920	$1,920	$1,920	$1,920	($6,018)
ADD DEPRECIATION		$2,610	$2,242	$2,054	$2,054	$907	$2,720	$0	$0	$0	$0	$12,585
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)				($3,000)					$1,000	($9,585)
CASH FLOW	($3,500)	($1,475)	$2,242	$2,054	$2,054	($2,093)	$3,070	$1,920	$1,920	$1,920	$2,920	$11,030
CUMULATIVE CASH FLOW	($3,500)	($4,975)	($2,733)	($680)	$1,374	($720)	$2,350	$4,270	$6,190	$8,110	$11,030	

DISC RATE	NPV
5.00%	$6,606
10.00%	$3,828
15.00%	$2,035
20.00%	$849

Case 3c
10 Year Expansion Plan
$450 U.S. Gold Price

FAIRVIEW/STEMWINDER OLIVER, BC	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10	TOTAL
Stemwinder Open Pit		29000	0									
Stemwinder Ore		0	39000	105000	105000	105000	122500	122500	122500	122500	122500	966,500
Fairview Ore		59000	66000				122500	122500	122500	122500	122500	737,500
Total Stockpile		88000	105000	105000	105000	105000	245000	245000	245000	245000	245000	1,733,000
Ore Grade		0.19	0.19	0.19	0.19	0.163	0.15	0.15	0.15	0.15	0.15	
Ore Milled		88000	105000	105000	105000	105000	245000	245000	245000	245000	245000	1,733,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	$37.50	$37.50	$37.50	$37.50	$37.50	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	$20.83	
Mill Cost per Ton		$10.30	$10.30	$10.30	$10.30	$10.30	$7.50	$7.50	$7.50	$7.50	$7.50	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		15,048	17,955	17,955	17,955	15,404	33,075	33,075	33,075	33,075	33,075	249,692
Gold Price ($US)		$450	$450	$450	$450	$450	$450	$450	$450	$450	$450	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$8,068	$9,626	$9,626	$9,626	$8,258	$17,732	$17,732	$17,732	$17,732	$17,732	$133,867
less 3.5% NSR		($93)	($125)	($337)	($337)	($289)	($310)	($310)	($310)	($310)	($310)	($2,613)
Gross Revenue		$7,975	$9,501	$9,289	$9,289	$7,969	$17,422	$17,422	$17,422	$17,422	$17,422	$131,254
Operating Expense:												
Underground	$0	$2,561	$4,558	$4,558	$4,558	$4,558	$9,188	$9,188	$9,188	$9,188	$9,188	$66,731
Open Pit		$604	$0	$0	$0	$0	$0	$0	$0	$0	$0	$604
Milling		$906	$1,082	$1,082	$1,082	$1,082	$1,838	$1,838	$1,838	$1,838	$1,838	$14,420
Contingency 10.00%		$407	$564	$564	$564	$564	$1,103	$1,103	$1,103	$1,103	$1,103	$8,175
Cash Costs	$0	$4,479	$6,204	$6,204	$6,204	$6,204	$12,128	$12,128	$12,128	$12,128	$12,128	$89,930
Operating Profit	$0	$3,496	$3,298	$3,086	$3,086	$1,766	$5,295	$5,295	$5,295	$5,295	$5,295	$41,324
Non-Cash Deductions												
UCC	($9,585)	$9,585	$6,089	$2,792	$0	$3,000	$1,234	$0	$0	$0	$0	
MIN UCC/OP PROFIT		$3,496	$3,298	$2,792	$0	$1,766	$1,234	$0	$0	$0	$0	
25% OF UCC		$2,396	$1,522	$698	$0	$750	$309	$0	$0	$0	$0	
CLASS 28 CCA		$3,496	$3,298	$2,792	$0	$1,766	$1,234	$0	$0	$0	$0	$12,585
TOTAL EXPENSES	($9,585)	$7,975	$9,501	$8,995	$6,204	$7,969	$13,362	$12,128	$12,128	$12,128	$12,128	$102,515
Federal Taxable Inc	($9,585)	$0	$0	$294	$3,086	$0	$4,060	$5,295	$5,295	$5,295	$5,295	$28,739
Plus Loss Carry Forward Created		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Loss Carry Forward Balance		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Net Taxable Inc.		$0	$0	$294	$3,086	$0	$4,060	$5,295	$5,295	$5,295	$5,295	
TAXES PROVINCIAL (14%)	$0	$0	$0	$41	$432	$0	$568	$741	$741	$741	$741	$4,007
FEDERAL (28.84%)	$0	$0	$0	$85	$890	$0	$1,171	$1,527	$1,527	$1,527	$1,527	$8,254
BC MRT (17.5%)												$0
NET INCOME	($9,585)	$0	$0	$168	$1,764	$0	$2,321	$3,026	$3,026	$3,026	$3,026	($12,260)
FAIRVIEW PROJECT	CASH FLOWS											
NET INCOME		$0	$0	$168	$1,764	$0	$2,321	$3,026	$3,026	$3,026	$3,026	($12,260)
ADD DEPRECIATION		$3,496	$3,298	$2,792	$0	$1,766	$1,234	$0	$0	$0	$0	$12,585
LESS CAPITAL EXPENDITURE	($3,500)	($4,085)				($3,000)					$1,000	($9,585)
CASH FLOW	($3,500)	($589)	$3,298	$2,960	$1,764	($1,234)	$3,555	$3,026	$3,026	$3,026	$4,026	$19,359
CUMULATIVE CASH FLOW	($3,500)	($4,089)	($792)	$2,168	$3,932	$2,698	$6,253	$9,279	$12,306	$15,332	$19,359	

DISC RATE	NPV
5.00%	$12,615
10.00%	$8,327
15.00%	$5,515
20.00%	$3,619

OPEN PIT AT 150,000 T

FAIRVIEW/STEMWINDER OLIVER, BC	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Stemwinder Open Pit		75000	75000				150,000
Stemwinder Ore		0	0	105000	105000	105000	315,000
Fairview Ore		0	0				0
Total Stockpile		75000	75000	105000	105000	105000	465,000
Ore Grade		0.19	0.19	0.19	0.19	0.19	
Ore Milled		75000	75000	105000	105000	105000	465,000
UG Cost per Ton		$43.41	$43.41	$43.41	$43.41	$43.41	
Pit Cost per Ton		$20.83	$20.73	$20.83	$20.83	$20.83	
Mill Cost per Ton		$35.00	$35.00	$10.30	$10.30	$10.30	
Recovery Rate		90.00%	90.00%	90.00%	90.00%	90.00%	
Recovered Gold		12,825	12,825	17,955	17,955	17,955	79,515
Gold Price ($US)		$400	$400	$400	$400	$400	
US EXCHANGE		$1.191	$1.191	$1.191	$1.191	$1.191	
REVENUES: (000's)	$0	$6,112	$6,112	$8,557	$8,557	$8,557	$37,894
less 3.5% NSR		($214)	($214)	($299)	($299)	($299)	($1,326)
Gross Revenue		$5,898	$5,898	$8,257	$8,257	$8,257	$36,567
Operating Expense:							
Underground	$0	$0	$0	$4,558	$4,558	$4,558	$13,674
Open Pit		$1,562	$1,555	$0	$0	$0	$3,117
Milling		$2,625	$2,625	$1,082	$1,082	$1,082	$8,495
Contingency 10.00%		$419	$418	$564	$564	$564	$2,529
Cash Costs	$0	$4,606	$4,598	$6,204	$6,204	$6,204	$27,814
Operating Profit	$0	$1,292	$1,300	$2,054	$2,054	$2,054	$8,753
Non-Cash Deductions							
UCC	($2,000)	$2,000	$8,293	$6,220	$4,166	$2,112	
MIN UCC/OP PROFIT		$1,292	$1,300	$2,054	$2,054	$2,054	$8,753
25% OF UCC		$500	$2,073	$1,555	$1,042	$528	$5,698
CLASS 28 CCA		$1,292	$2,073	$2,054	$2,054	$2,054	$9,526
TOTAL EXPENSES	($2,000)	$5,898	$6,671	$8,257	$8,257	$8,257	$37,340
Federal Taxable Inc	($2,000)	$0	($773)	$0	$0	$0	($773)
Plus Loss Carry Forward Created		$0	($773)	$0	$0	$0	($773)
less Loss Carry Forward Claimed		$0	$0	$0	$0	$0	$0
Loss Carry Forward Balance		$0	$773	$773	$773	$773	
Net Taxable Inc.		$0	$0	$0	$0	$0	$0
TAXES PROVINCIAL (14%)	$0	$0	$0	$0	$0	$0	$0
FEDERAL (28.84%)	$0	$0	$0	$0	$0	$0	$0
BC MRT (17.5%)							$0
NET INCOME	($2,000)	$0	($773)	$0	$0	$0	($773)
FAIRVIEW PROJECT	CASH FLOWS						
NET INCOME		$0	($773)	$0	$0	$0	($773)
ADD DEPRECIATION		$1,292	$2,073	$2,054	$2,054	$2,054	$9,526
LESS CAPITAL EXPENDITURE			($7,585)			$3,000	($4,585)
CASH FLOW	$0	$1,292	($6,285)	$2,054	$2,054	$5,054	$4,168
CUMULATIVE CASH FLOW	$0	$1,292	($4,993)	($2,939)	($885)	$4,168	

DISC RATE	NPV
5.00%	$2,813
10.00%	$1,876
15.00%	$1,225
20.00%	$768
IRR	37.78%

SECTION 13

DRAWINGS

NW
SE
Metres above Sea Level
FAIRVIEW MINE
PAST PRODUCTION: 120,000 tons @ 0.170 oz/t, Au (Pre-Cominco)
365,000 tons @ 0.090 oz/t, Au; 1.4 oz/t, Ag (Cominco)
485,000 tons @ 0.11 oz/t, Au; 1.2 oz/t, Ag
Raises to surface
Surface profile is trace of vein system on surface and does not represent true relationship to underground workings.
Possible type of stope development
Drift extension
Fan
Existing 3 Level
3 LEVEL
Stoped Out
Existing 5 Level
5 LEVEL
Existing 6 Level
6 LEVEL
Rehabilitation required
Decline can be extended into this area.
Possible primary type development (not shown on plan)
STEMWINDER MINE
PAST PRODUCTION: 28,000 tons @ 0.170 oz/t, Au
STEMWINDER SHAFT
DECLINE
Stoped Out
1 LEVEL
2 LEVEL
2 LEVEL FAULT
BROWN BEAR ADIT
END OF MORNINGSTAR TUNNEL
MORNING STAR
VIRGINIA (L.1087)
MANTON Fr. (L.1978)
WESTERN HILL (L.1085)
FLORA (L.1086)
WESTERN GIRL (L.574)
TENAS Fr. (L.6501)
STEMWINDER (L.384)
BROWN BEAR (L.385)
SILVER CROWN (L.442)
ONTARIO (L.573)
SECTION 9435
6 Level
-15% decline
Drill Sites
SECTION A-A
LONG SECTION IN PLANE OF VEIN SYSTEM
DIP -60° TO N.E.
SW
NE
FOOTWALL VEIN
MAIN VEIN
HANGINGWALL VEIN
FAULT
STEMWINDER
LEGEND
SURFACE SAMPLE
INDICATED ORE
INFERRED ORE
SECTION 9435
MINE SECTIONS
Plant Site
6 LEVEL PORTAL
6 LEVEL ADIT
DECLINE
Rehabilitate 6 Level
5 Level
5 LEVEL PORTAL
3 LEVEL PORTAL
Extra 300'
STEMWINDER DECLINE
BROWN BEAR PORTAL
MORNINGSTAR
MINE SECTION
0 50 100 250 m.
NOTE: Higher grade zones are indicated in solid colouring on Long Section.
Ore Zone Outline - Hangingwall Vein
Ore Zone Outline - Main Vein
Ore Zone Outline - Footwall Vein
THE VALHALLA GOLD GROUP CORPORATION
DRAWING No. 5-1

APPENDIX I

ORE RESERVES

KEEWATIN ENGINEERING INC.
Mineral Exploration and Mining Consultants

DATE: February 19, 1989

TO: Larry Nagy

FROM: Don Barker

SUBJECT: Oliver Property Results

The attached is D. Mehners reserves. I wish to choose the 4x average case.

Reserves are thus:

1,864,023 @ 0.125 Au/1.38 Ag fully diluted and cut to 4x average.

Au Eq = 0.145 oz ton

This includes 437,907 @ 0.194 Au/2/21 Ag dilated and cut to 4 x average.

Au Eq = 0.226

Please review and pass comment.

DJB/hr

FAIRVIEW PROJECT
UNCUT TOTAL RESERVE ESTIMATE - FEBRUARY, 1989

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.134/1.54	145,245 @ 0.145/1.60	57,382 @ 0.200/2.60
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.136/1.88	80,188 @ 0.118/1.72	74,596 @ 0.209/2.93
Footwall Vein	28,274 @ 0.179/1.52	17,182 @ 0.154/1.09	4,340 @ 0.573/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.125/1.02	66,908 @ 0.119/1.09	21,212 @ 0.266/2.12
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.150/0.83	32,927 @ 0.385/0.68	38,607 @ 0.186/1.05
Main Vein	135,429 @ 0.145/1.68	62,939 @ 0.216/1.33	52,049 @ 0.217/3.14
Footwall Vein -	339,381 @ 0.128/1.67	199,483 @ 0.130/1.80	104,690 @ 0.202/2.94
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.810/1.78	7,769 @ 0.381/2.15	27,913 @ 1.036/1.94
TOTAL	1,008,249 @ 0.160/1.59	612,641 @ 0.157/1.54	380,789 @ 0.272/2.60
15% dilution @ 0.017/0.17 =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.141/1.40	704,537 @ 0.139/1.36	437,907 @ 0.239/2.28

TOTAL 1,864,023 @ 0.140/1.38 UNCUT

FAIRVIEW PROJECT
AVERAGE VEIN WIDTHS

	TOTAL VOLUME (m^3)	TOTAL AREA (m^2)	AVERAGE THICKNESS (m)
NORTHWEST FAIRVIEW MINE			
Indicated	73,131.6	18,714	3.91
Inferred	19,644.1	9,652	2.04
BELOW 6 LEVEL			
Indicated - Main Vein	44,089.4	9,063	4.86
Higher Grade - Main Vein	25,536.7	9,063	2.82
Indicated - Footwall Vein	5,708.3	3,228	1.77
Higher Grade - Footwall Vein	1,485.6	1,117	1.33
SOUTHEAST FAIRVIEW			
Indicated - Main Vein	16,250.3	4,066	4.00
Higher Grade - Main Vein	7,261.3	4,066	1.79
STEMWINDER SHAFT			
Indicated - Hanging Wall Vein	17,529.0	7,448	2.35
Higher Grade - Hanging Wall Vein	13,217.0	7,448	1.77
Indicated - Main Vein	46,362.0	19,738	2.35
Higher Grade - Main Vein	17,818.0	5,772	3.09
Indicated - Footwall Vein	116,182.7	37,830	3.07
Higher Grade - Footwall Vein	35,839.3	15,796	2.27
BROWN BEAR			
Indicated - Hanging Wall Vein	9,555.7	7,665	1.25
Higher Grade - Hanging Wall Vein	9,555.7	7,665	1.25
TOTAL PROJECT AVERAGES (Indicated Blocks Only)			
Main Vein	106,701.7	32,867	3.25
Footwall Vein	195,022.6	59,772	3.26
Hanging Wall Vein	27,084.7	15,113	1.79
All Ore	328,809.0	107,752	3.05
All Higher Grade Ore	130,357.7	60,579	2.15

FAIRVIEW PROJECT
SUMMARY CUT 2 x AVERAGE

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.130/1.45	145,245 @ 0.138/1.48	57,382 @ 0.189/2.11
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.130/1.67	80,188 @ 0.110/1.57	74,596 @ 0.188/2.52
Footwall Vein	28,274 @ 0.140/1.52	17,182 @ 0.122/1.09	4,340 @ 0.320/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.086/0.59	66,908 @ 0.091/0.70	21,212 @ 0.193/1.18
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.105/0.65	32,927 @ 0.123/0.70	38,607 @ 0.128/0.81
Main Vein	135,429 @ 0.141/1.38	62,939 @ 0.128/0.80	52,049 @ 0.206/2.36
Footwall Vein	339,381 @ 0.120/1.39	199,483 @ 0.124/1.12	104,690 @ 0.188/2.14
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.217/1.79	7,769 @ 0.275/2.19	27,913 @ 0.250/1.64
TOTAL	1,008,249 @ 0.120/1.32	612,641 @ 0.121/1.15	380,789 @ 0.191/2.02
15% dilution =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.107/1.17	704,537 @ 0.107/1.02	437,907 @ 0.168/1.78

TOTAL 1,864,023 @ 0.107/1.11 CUT @ 2 x Average

Au equivalent = 0.123 oz/ton

FAIRVIEW PROJECT
SUMMARY CUT 3 x AVERAGE

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.134/1.53	145,245 @ 0.145/1.58	57,382 @ 0.200/2.59
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.130/1.67	80,188 @ 0.110/1.57	74,596 @ 0.188/2.52
Footwall Vein	28,274 @ 0.140/1.52	17,182 @ 0.122/1.09	4,340 @ 0.320/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.086/0.59	66,908 @ 0.091/0.70	21,212 @ 0.193/1.18
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.105/0.65	32,927 @ 0.123/0.70	38,607 @ 0.128/0.81
Main Vein	135,429 @ 0.141/1.38	62,939 @ 0.128/0.80	52,049 @ 0.206/2.36
Footwall Vein	339,381 @ 0.120/1.39	199,483 @ 0.124/1.12	104,690 @ 0.188/2.14
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.217/1.79	7,769 @ 0.275/2.19	27,913 @ 0.250/1.64
TOTAL	1,008,249 @ 0.129/1.40	612,641 @ 0.126/1.20	380,789 @ 0.193/2.09
15% dilution =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.114/1.24	704,537 @ 0.112/1.07	437,907 @ 0.170/1.84

TOTAL 1,864,023 @ 0.113/1.18 CUT @ 3 x Average

Au equivalent = 0.130 oz/ton

FAIRVIEW PROJECT
SUMMARY CUT 4 x AVERAGE

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.134/1.54	145,245 @ 0.145/1.60	57,382 @ 0.200/2.60
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.136/1.88	80,188 @ 0.118/1.72	74,596 @ 0.209/2.93
Footwall Vein	28,274 @ 0.179/1.52	17,182 @ 0.154/1.09	4,340 @ 0.573/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.118/0.93	66,908 @ 0.115/0.93	21,212 @ 0.252/1.94
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.140/0.73	32,927 @ 0.199/0.62	38,607 @ 0.172/0.89
Main Vein	135,429 @ 0.145/1.68	62,939 @ 0.172/1.33	52,049 @ 0.217/3.14
Footwall Vein	339,381 @ 0.127/1.65	199,483 @ 0.130/1.80	104,690 @ 0.202/2.78
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.292/1.96	7,769 @ 0.380/2.19	27,913 @ 0.348/1.78
TOTAL	1,008,249 @ 0.140/1.58	612,641 @ 0.142/1.52	380,789 @ 0.220/2.52
15% dilution =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.124/1.40	704,537 @ 0.126/1.34	437,907 @ 0.194/2.21

TOTAL 1,864,023 @ 0.125/1.38 CUT @ 4 x Average

Au equivalent = 0.145 oz/ton

FAIRVIEW PROJECT
SUMMARY CUT 5 x AVERAGE

	INDICATED	INFERRED	HIGHER GRADE
NW FAIRVIEW MINE			
Main Vein	241,375 @ 0.134/1.54	145,245 @ 0.145/1.60	57,382 @ 0.200/2.60
BELOW 6 LEVEL			
Main Vein	128,790 @ 0.136/1.88	80,188 @ 0.118/1.72	74,596 @ 0.209/2.93
Footwall Vein	28,274 @ 0.179/1.52	17,182 @ 0.154/1.09	4,340 @ 0.573/2.50
SOUTHWEST FAIRVIEW			
Main Vein	47,469 @ 0.125/1.02	66,908 @ 0.119/1.09	21,212 @ 0.266/2.12
STEMWINDER MINE AREA			
Hanging Wall	51,205 @ 0.146/0.77	32,927 @ 0.230/0.65	38,607 @ 0.180/0.93
Main Vein	135,429 @ 0.145/1.68	62,939 @ 0.172/1.33	52,049 @ 0.217/3.14
Footwall Vein	339,381 @ 0.127/1.67	199,483 @ 0.130/1.80	104,690 @ 0.202/2.94
BROWN BEAR AREA			
Hanging Wall	36,326 @ 0.329/1.96	7,769 @ 0.392/2.19	27,913 @ 0.396/1.78
TOTAL	1,008,249 @ 0.142/1.60	612,641 @ 0.144/1.54	380,789 @ 0.225/2.57
15% dilution =	151,237 @ 0.017/0.17	91,896 @ 0.017/0.17	57,118 @ 0.017/0.17
	1,159,486 @ 0.126/1.41	704,537 @ 0.127/1.36	437,907 @ 0.198/2.26

TOTAL 1,864,023 @ 0.126/1.39 CUT @ 5 x Average

Au equivalent = 0.146 oz/ton

BELOW 6 LEVEL AT FAIRVIEW MINE - FOOTWALL VEIN

Block	Tons	Grade Cut to 2 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 3 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 4 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 5 x Avg.	Total oz Au	Total oz Ag
INDICATED													
FF1	6,092	0.079/1.00	481.3	6,092.0	0.079/1.00	481.3	6,092.0	0.079/1.00	481.3	6,092.0	0.079/1.00	481.3	6,092.0
FF2	4,340	0.320/2.50	1,388.8	10,850.0	0.480/2.50	2,083.2	10,850.0	0.573/2.50	2,486.8	10,850.0	0.573/2.50	2,486.8	10,850.0
FF3	6,242	0.140/1.29	873.9	8,052.2	0.140/1.29	873.9	8,052.2	0.140/1.29	873.9	8,052.2	0.140/1.29	873.9	8,052.2
FF4	5,600	0.100/1.40	560.0	7,840.0	0.100/1.40	560.0	7,840.0	0.100/1.40	560.0	7,840.0	0.100/1.40	560.0	7,840.0
FF5	6,000	0.110/1.70	660.0	10,200.0	0.110/1.70	660.0	10,200.0	0.110/1.70	660.0	10,200.0	0.110/1.70	660.0	10,200.0
	28,274	0.140/1.52	3,964.0	43,034.2	0.165/1.52	4,658.4	43,034.2	0.179/1.52	5,062.0	43,034.2	0.179/1.52	5,062.0	43,034.2
INFERRED													
FFP1	4,651	0.079/1.00	367.4	4,651.0	0.079/1.00	367.4	4,651.0	0.079/1.00	367.4	4,651.0	0.079/1.00	367.4	4,651.0
FFP2	2,172	0.320/2.50	695.0	5,430.0	0.480/2.50	1,042.6	5,430.0	0.573/2.50	1,244.6	5,430.0	0.573/2.50	1,244.6	5,430.0
FFP3	2,361	0.140/1.29	330.5	3,045.7	0.140/1.29	330.5	3,045.7	0.140/1.29	330.5	3,045.7	0.140/1.29	330.5	3,045.7
FFP4	2,694	0.140/1.29	377.2	3,475.3	0.140/1.29	377.2	3,475.3	0.140/1.29	377.2	3,475.3	0.140/1.29	377.2	3,475.3
FFP5	5,304	0.062/0.40	328.8	2,121.6	0.062/0.40	328.8	2,121.6	0.062/0.40	328.8	2,121.6	0.062/0.40	328.8	2,121.6
	17,182	0.122/1.09	2,098.9	18,723.6	0.142/1.09	2,446.5	18,723.6	0.154/1.09	2,648.5	18,723.6	0.154/1.09	2,648.5	18,723.6
HIGHER GRADE													
FF2	4,340	0.320/2.50	1,388.8	10,850.0	0.480/2.50	2,083.2	10,850.0	0.573/2.50	2,486.8	10,850.0	0.573/2.50	2,486.8	10,850.0

BELOW 6 LEVEL AT FAIRVIEW MINE - MAIN VEIN

Block	Tons	Grade Cut to 2 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 3 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 4 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 5 x Avg.	Total oz Au	Total oz Ag
INDICATED													
FM13	20,229	0.121/1.78	2,447.7	36,007.6	0.121/1.78	2,447.7	36,007.6	0.121/1.79	2,447.7	36,209.9	0.121/1.79	2,447.7	36,209.9
FM14	18,813	0.111/1.51	2,088.2	28,407.6	0.111/1.69	2,088.2	31,794.0	0.111/1.68	2,088.2	31,605.8	0.111/1.68	2,088.2	31,605.8
FM14	7,926	0.198/2.81	1,569.3	22,272.1	0.222/3.41	1,759.6	27,027.7	0.222/3.71	1,759.6	29,405.5	0.222/3.71	1,759.6	29,405.5
FM15	51,957	0.157/1.90	8,157.2	98,718.3	0.169/2.08	8,780.7	108,070.6	0.169/2.08	8,780.7	108,070.6	0.169/2.08	8,780.7	108,070.6
FM16	29,865	0.083/1.00	2,478.8	29,865.0	0.083/1.23	2,478.8	36,734.0	0.083/1.25	2,478.8	37,331.3	0.083/1.25	2,478.8	37,331.3
	128,790	0.130/1.67	16,741.2	215,270.6	0.136/1.86	17,555.0	239,633.9	0.136/1.88	17,555.0	242,623.1	0.136/1.88	17,555.0	242,623.1
INFERRED													
FMP6	37,091	0.121/1.78	4,488.0	66,022.0	0.121/1.79	4,488.0	66,392.9	0.121/1.79	4,488.0	66,392.9	0.121/1.79	4,488.0	66,392.9
FMP7	6,548	0.111/1.51	726.8	9,887.5	0.111/1.69	726.8	11,066.1	0.111/1.68	726.8	11,000.6	0.111/1.68	726.8	11,000.6
FMP7	2,758	0.198/2.81	108.1	7,750.0	0.222/3.41	612.3	9,404.8	0.222/3.71	612.3	10,232.2	0.222/3.71	612.3	10,232.2
FMP8	9,451	0.157/1.90	1,483.8	17,956.9	0.169/2.08	1,597.2	19,658.1	0.169/2.08	1,597.2	19,658.1	0.169/2.08	1,597.2	19,658.1
FMP9	24,340	0.083/1.00	2,020.2	24,340.0	0.083/1.25	2,020.2	30,425.0	0.083/1.25	2,020.2	30,425.0	0.083/1.25	2,020.2	30,425.0
	80,188	0.110/1.57	8,826.9	125,956.4	0.188/1.71	9,444.5	136,946.9	0.118/1.72	9,444.5	137,708.8	0.118/1.72	9,444.5	137,708.8
HIGHER GRADE													
FM13	13,051	0.121/2.38	1,579.2	31,061.4	0.164/2.40	2,140.4	31,322.4	0.164/2.40	2,140.4	31,322.4	0.164/2.40	2,140.4	31,322.4
FM14	6,674	0.232/3.03	1,548.4	20,222.2	0.232/3.54	1,548.4	23,626.0	0.232/3.54	1,548.4	23,626.0	0.232/3.54	1,548.4	23,626.0
FM14	7,926	0.198/2.81	1,569.3	22,272.1	0.222/3.41	1,759.6	27,027.7	0.222/3.71	1,759.6	29,405.5	0.222/3.71	1,759.6	29,405.5
FM15	34,705	0.214/2.56	7,426.9	88,844.8	0.214/2.80	7,426.9	97,174.0	0.239/2.90	8,294.5	100,644.5	0.239/2.90	8,294.5	100,644.5
FM16	12,240	0.153/2.08	1,872.7	25,459.2	0.153/2.67	1,872.7	32,680.8	0.153/2.67	1,872.7	33,415.2	0.153/2.67	1,872.7	33,415.2
	74,596	0.188/2.52	13,996.5	187,859.7	0.198/2.84	14,748.0	211,830.9	0.209/2.93	15,615.6	218,413.6	0.209/2.93	15,615.6	218,413.6

BROWN BEAR ADIT - HANGING WALL VEIN

Block	Tons	Grade Cut to 2 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 3 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 4 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 5 x Avg.	Total oz Au	Total oz Ag
INDICATED													
BH1	5,573	0.294/0.86	1,638.5	4,792.8	0.399/0.86	2,223.6	4,792.8	0.505/0.86	2,814.4	4,792.8	0.610/0.86	3,399.5	4,792.8
BH2	18,403	0.108/1.89	1,987.5	34,781.7	0.108/2.16	1,987.5	39,750.5	0.108/1.89	1,987.5	39,750.5	0.108/1.89	1,987.5	39,750.5
BH3	4,353	0.320/1.69	1,393.0	7,356.6	0.480/1.93	2,089.4	8,401.3	0.640/1.93	2,785.9	8,401.3	0.800/1.93	3,482.4	8,401.3
BH4	453	0.320/0.67	145.0	303.5	0.480/0.67	217.4	303.5	0.640/0.67	289.9	303.5	0.800/0.67	362.4	303.5
BH5	7,544	0.272/2.37	2,730.9	17,879.3	0.362/2.37	2,730.9	17,879.3	0.362/2.37	2,730.9	17,879.3	0.362/2.37	2,730.9	17,879.3
	36,326	0.217/1.79	7,894.9	65,113.9	0.255/1.96	9,248.8	71,127.4	0.292/1.96	10,608.6	71,127.4	0.329/1.96	11,962.7	71,127.4
INFERRED													
BHP1	951	0.294/0.86	279.6	817.9	0.399/0.86	379.4	817.9	0.505/0.86	480.3	817.9	0.610/0.86	580.1	817.9
BHP2	6,818	0.272/2.37	1,854.5	16,158.7	0.362/2.37	2,468.1	16,158.7	0.362/2.37	2,468.1	16,158.7	0.362/2.37	2,468.1	16,158.7
	7,769	0.275/2.19	2,134.1	16,976.6	0.367/2.19	2,847.5	16,976.6	0.380/2.19	2,948.4	16,976.6	0.392/2.19	3,048.2	16,976.6
HIGHER GRADE													
BH1	5,573	0.294/0.86	1,638.5	4,792.8	0.399/0.86	2,223.6	4,792.8	0.505/0.86	2,814.4	4,792.8	0.610/0.86	3,399.5	4,792.8
BH2	9,990	0.108/1.56	1,078.9	15,584.4	0.108/1.82	1,078.9	18,181.8	0.108/1.82	1,078.9	18,181.8	0.108/1.82	1,078.9	18,181.8
BH3	4,353	0.320/1.69	1,393.0	7,356.6	0.480/1.93	2,089.4	8,401.3	0.640/1.93	2,785.9	8,401.3	0.800/1.93	3,482.4	8,401.3
BH4	453	0.320/0.67	145.0	303.5	0.480/0.67	217.4	303.5	0.640/0.67	289.9	303.5	0.800/0.67	362.4	303.5
BH5	7,544	0.272/2.37	2,730.9	17,879.3	0.362/2.37	2,730.9	17,879.3	0.362/2.37	2,730.9	17,879.3	0.362/2.37	2,730.9	17,879.3
	27,913	0.250/1.64	6,986.3	45,916.6	0.299/1.78	8,340.2	49,558.7	0.348/1.78	9,700.0	49,558.7	0.396/1.78	11,054.1	49,558.7

NW END OF FAIRVIEW MINE - MAIN VEIN

Block	Tons	Grade Cut to 2 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 3 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 4 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 5 x Avg.	Total oz Au	Total oz Ag
INDICATED													
FM1	11,613	0.077/0.93	894.2	10,800.1	0.078/1.08	905.8	12,542.0	0.078/1.08	905.8	12,542.0	0.078/1.08	905.8	12,542.0
FM2	17,572	0.171/2.62	3,004.8	46,038.6	0.171/3.01	3,004.8	52,891.7	0.171/3.01	3,004.8	52,891.7	0.171/3.01	3,004.8	52,891.7
FM3	23,057	0.131/1.29	3,020.5	29,743.5	0.138/1.33	3,181.9	30,665.8	0.138/1.33	3,181.9	30,665.8	0.138/1.33	3,181.9	30,665.8
FM4	44,029	0.165/1.35	7,264.8	59,439.2	0.180/1.35	7,925.2	59,439.2	0.180/1.35	7,925.2	59,439.2	0.180/1.35	7,925.2	59,439.2
FM5	16,006	0.108/1.40	1,728.6	22,408.4	0.108/1.40	1,728.6	22,408.4	0.108/1.40	1,728.6	22,408.4	0.108/1.40	1,728.6	22,408.4
FM6	666	0.100/0.98	66.6	652.7	0.100/0.98	66.6	652.7	0.100/0.98	66.6	652.7	0.100/0.98	66.6	652.7
FM7	35,544	0.135/1.60	4,798.4	56,870.4	0.135/1.60	4,798.4	56,870.4	0.135/1.60	4,798.4	56,870.4	0.135/1.60	4,798.4	56,870.4
FM8	15,650	0.177/2.08	2,770.1	32,552.0	0.186/2.70	2,910.9	42,255.0	0.186/2.86	2,910.9	44,759.0	0.186/2.86	2,910.9	44,759.0
FM9	49,488	0.090/0.90	4,453.9	44,539.2	0.090/0.90	4,453.9	44,539.2	0.090/0.90	4,453.9	44,539.2	0.090/0.90	4,453.9	44,539.2
FM10	15,000	0.110/1.60	1,650.0	24,000.0	0.110/1.60	1,650.0	24,000.0	0.110/1.60	1,650.0	24,000.0	0.110/1.60	1,650.0	24,000.0
FM11	6,000	0.140/2.00	840.0	12,000.0	0.140/2.00	840.0	12,000.0	0.140/2.00	840.0	12,000.0	0.140/2.00	840.0	12,000.0
FM12	6,750	0.130/1.50	877.5	10,125.0	0.130/1.50	877.5	10,125.0	0.130/1.50	877.5	10,125.0	0.130/1.50	877.5	10,125.0
	241,375	0.130/1.45	31,369.4	349,169.1	0.134/1.53	32,343.6	368,389.4	0.134/1.45	32,343.6	370,893.4	0.134/1.45	32,343.6	370,893.4
INFERRED													
FMP1	8,183	0.077/0.93	630.1	7,610.2	0.078/1.08	638.3	8,837.6	0.078/1.08	638.3	8,837.6	0.078/1.08	638.3	8,837.6
FMP2	18,557	0.171/2.08	3,173.2	38,598.6	0.186/2.70	3,451.6	50,103.9	0.186/2.86	3,451.6	53,073.0	0.186/2.86	3,451.6	53,073.0
FMP3	22,625	0.131/1.29	2,963.9	29,186.3	0.138/1.33	3,122.3	30,091.3	0.138/1.33	3,122.3	30,091.3	0.138/1.33	3,122.3	30,091.3
FMP4	71,945	0.149/1.48	10,719.8	106,478.6	0.156/1.48	11,223.4	106,478.6	0.156/1.48	11,223.4	106,478.6	0.156/1.48	11,223.4	106,478.6
FMP5	23,935	0.108/1.40	2,585.0	33,509.0	0.108/1.40	2,585.0	33,509.0	0.108/1.40	2,585.0	33,509.0	0.108/1.40	2,585.0	33,509.0
	145,245	0.138/1.48	20,072.0	215,382.7	0.145/1.58	21,020.6	229,020.4	0.145/1.60	21,020.6	231,989.5	0.145/1.60	21,020.6	231,989.5
HIGHER GRADE													
FM2	17,572	0.171/2.08	3,004.8	36,549.8	0.171/3.01	3,004.8	52,891.7	0.171/3.01	3,004.8	52,891.7	0.171/3.01	3,004.8	52,891.7
FM3	8,978	0.197/2.30	1,768.7	20,649.4	0.211/2.47	1,894.4	22,175.7	0.211/2.47	1,894.4	22,175.7	0.211/2.47	1,894.4	22,175.7
FM4	15,182	0.216/2.06	3,279.3	31,274.9	0.241/2.06	3,658.9	31,274.9	0.241/2.06	3,658.9	31,274.9	0.241/2.06	3,658.9	31,274.9
FM8	15,650	0.177/2.08	2,770.1	32,552.0	0.186/2.70	2,910.9	42,255.0	0.186/2.86	2,910.9	44,759.0	0.186/2.86	2,910.9	44,759.0
	57,382	0.189/2.11	10,822.9	121,026.1	0.200/2.59	11,469.0	148,597.3	0.200/2.60	11,469.0	151,101.3	0.200/2.60	11,469.0	151,101.3

SOUTHEAST FAIRVIEW MINE - MAIN VEIN

Block	Tons	Grade Cut to 2 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 3 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 4 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 5 x Avg.	Total oz Au	Total oz Ag
INDICATED													
FM17	34,269	0.052/0.53	1,782.0	18,162.6	0.071/0.71	2,433.1	24,331.0	0.089/0.89	3,050.0	30,499.4	0.098/1.01	3,358.4	34,611.7
FM18	7,756	0.234/0.56	1,814.9	4,343.4	0.266/0.56	2,063.1	4,343.4	0.266/0.56	2,063.1	4,343.4	0.266/0.56	2,063.1	4,343.4
FM19	5,444	0.089/0.99	484.5	5,389.6	0.093/1.35	506.3	5,389.6	0.089/0.99	506.3	9,254.8	0.093/1.70	506.3	9,254.
	47,469	0.086/0.59	4,081.4	27,895.6	0.105/0.72	5,002.5	34,064.0	0.118/0.93	5,619.4	44,097.6	0.125/1.02	5,927.8	48,209.9
INFERRED													
FMP10	14,689	0.052/0.53	763.8	7,785.2	0.071/0.71	1,042.9	10,429.2	0.089/0.89	1,307.3	13,073.2	0.098/1.01	1,439.5	14,835.9
FMP11	32,074	0.094/0.66	3,015.0	21,168.8	0.111/0.81	3,560.2	25,979.9	0.121/0.96	3,881.0	30,791.0	0.126/1.03	4,041.3	33,036.2
FMP12	6,474	0.088/0.96	569.7	6,215.0	0.088/0.96	569.7	6,215.0	0.088/0.96	569.7	6,215.0	0.088/0.96	569.7	6,215.0
FMP13	13,671	0.129/0.87	1,763.6	11,893.8	0.141/1.13	1,927.6	11,893.8	0.141/1.13	1,927.6	11,893.8	0.141/1.38	1,927.6	18,866.0
	66,908	0.091/0.70	6,112.1	47,062.8	0.106/0.81	7,100.4	54,517.9	0.115/0.93	7,685.6	61,973.0	0.119/1.09	7,978.1	72,953.1
HIGHER GRADE													
FM17	11,423	0.141/1.45	1,610.6	16,563.4	0.195/1.98	2,227.5	22,617.5	0.248/2.51	2,832.9	28,671.7	0.275/2.84	3,141.3	32,441.3
FM18	7,756	0.266/0.56	2,063.1	4,343.4	0.266/0.56	2,063.1	4,343.4	0.266/0.56	2,063.1	4,343.4	0.266/0.56	2,063.1	4,343.4
FM19	2,033	0.204/2.07	414.7	4,208.3	0.216/3.02	439.1	6,139.7	0.216/3.97	439.1	8,071.0	0.216/3.99	439.1	8,111.7
	21,212	0.193/1.18	4,088.4	25,115.1	0.223/1.56	4,729.7	33,100.6	0.252/1.94	5,335.1	41,086.1	0.266/2.12	5,643.5	44,896.4

STEMWINDER SHAFT AREA - FOOTWALL VEIN

Block	Tons	Grade Cut to 2 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 3 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 4 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 5 x Avg.	Total oz Au	Total oz Ag
INDICATED													
SF1	20,386	0.115/1.30	2,344.4	26,501.8	0.115/1.30	2,344.4	26,501.8	0.115/1.30	2,344.4	26,501.8	0.115/1.30	2,344.4	26,501.8
SF2	24,473	0.097/1.49	2,373.9	36,464.8	0.097/1.49	2,373.9	36,464.8	0.097/1.49	2,373.9	36,464.8	0.097/1.49	2,373.9	36,464.8
SF3	54,878	0.188/2.13	10,317.1	116,890.1	0.188/2.67	10,317.1	146,524.3	0.188/2.67	10,317.1	146,524.3	0.188/2.67	10,317.1	146,524.3
SF4	43,078	0.122/1.34	5,255.5	57,724.5	0.130/1.65	5,600.1	71,078.7	0.130/1.65	5,600.1	71,078.7	0.130/1.65	5,600.1	71,078.7
SF5	42,138	0.114/1.57	4,803.7	66,156.7	0.114/1.57	4,803.7	66,156.7	0.114/1.57	4,803.7	66,156.7	0.114/1.57	4,803.7	66,156.7
SF6	21,423	0.086/0.60	1,842.4	12,853.8	0.086/0.60	1,842.4	12,853.8	0.086/0.60	1,842.4	12,853.8	0.086/0.60	1,842.4	12,853.8
SF7	16,021	0.153/1.58	2,451.2	25,313.2	0.175/2.33	2,803.7	37,328.9	0.175/3.01	2,803.7	48,223.2	0.175/3.01	2,803.7	48,223.2
SF8	38,217	0.066/0.83	2,522.3	31,720.1	0.072/1.05	2,751.6	40,127.9	0.072/1.22	2,751.6	46,624.7	0.072/1.22	2,751.6	46,624.7
SF9	3,209	0.257/3.16	824.7	10,140.4	0.257/4.10	824.7	13,156.9	0.257/4.10	824.7	13,156.9	0.257/4.10	824.7	13,156.9
SF10	40,803	0.087/0.65	3,549.9	26,522.0	0.087/0.65	3,549.9	26,522.0	0.087/0.65	3,549.9	26,522.0	0.087/0.65	3,549.9	26,522.0
SF11	12,870	0.174/1.65	2,239.4	21,235.5	0.206/1.65	2,651.2	21,235.5	0.267/1.22	3,436.3	15,701.4	0.267/1.65	3,436.3	21,235.5
SF12	16,498	0.111/1.93	1,831.3	31,841.1	0.111/2.63	1,831.3	43,389.7	0.111/2.63	1,831.3	43,389.7	0.111/2.63	1,831.3	43,389.7
SF13	5,387	0.100/1.43	538.7	7,703.4	0.100/1.43	538.7	7,703.4	0.100/1.43	538.7	7,703.4	0.100/1.43	538.7	7,703.4
	339,381	0.120/1.39	40,894.5	471,067.4	0.124/1.62	42,232.7	549,044.4	0.127/1.65	43,017.8	560,901.4	0.127/1.67	43,017.8	566,435.5
INFERRED													
SFP1	14,585	0.115/1.30	1,677.3	18,960.5	0.115/1.30	1,677.3	18,960.5	0.115/1.30	1,677.3	18,960.5	0.115/1.30	1,677.3	18,960.5
SFP2	9,299	0.097/1.49	902.0	13,855.5	0.097/1.49	902.0	13,855.5	0.097/1.49	902.0	13,855.5	0.097/1.49	902.0	13,855.5
SFP3	31,285	0.188/2.13	5.881.6	6,637.1	0.188/2.67	5,881.6	83,531.0	0.188/2.67	5,881.6	83,531.0	0.188/2.67	5,881.6	83,531.0
SFP4	57,077	0.122/1.34	6,963.4	76,483.2	0.130/1.65	7,420.0	94,177.1	0.130/1.65	7,420.0	94,177.1	0.130/1.65	7,420.0	94,177.1
SFP4	4,351	0.104/1.18	452.5	5,134.2	0.104/1.18	452.5	5,134.2	0.104/1.18	452.5	5,134.2	0.104/1.18	452.5	5,134.2
SFP5	20,318	0.114/1.57	2,316.3	31,899.3	0.114/1.57	2,316.3	31,899.3	0.114/1.57	2,316.3	31,899.3	0.114/1.57	2,316.3	31,899.3
SFP6	14,825	0.127/1.67	1,882.8	24,757.8	0.127/1.67	1,882.8	24,757.8	0.127/1.67	1,882.8	24,757.8	0.127/1.67	1,882.8	24,757.8
SFP7	6,937	0.086/0.60	596.6	4,162.2	0.086/0.60	596.6	4,162.2	0.086/0.60	596.6	4,162.2	0.086/0.60	596.6	4,162.2
SFP8	11,262	0.153/1.58	1,723.1	11,794.0	0.175/2.33	1,970.9	26,240.5	0.175/3.01	1,970.9	33,898.6	0.175/3.01	1,970.9	33,898.6
SFP9	22,187	0.066/0.83	1,464.3	18,415.2	0.072/1.05	1,597.5	23,296.4	0.072/1.22	1,597.5	27,068.1	0.072/1.22	1,597.5	27,068.1
SFP10	3,209	0.257/3.16	824.7	10,140.4	0.257/4.10	824.7	13,156.9	0.257/4.10	824.7	13,156.9	0.257/4.10	824.7	13,156.9
SFP11	4,148	0.106/1.49	439.7	6,180.5	0.106/1.82	439.7	7,549.4	0.106/1.82	439.7	7,549.4	0.106/1.82	439.7	7,549.4
	199,483	0.124/1.12	25,124.3	228,419.9	0.130/1.74	25,961.9	346,720.8	0.130/1.80	25,961.9	358,150.6	0.130/1.80	25,961.9	358,150.6
HIGHER GRADE													
SF3	28,421	0.286/3.16	8,128.4	89,810.4	0.286/4.00	8,128.4	114,820.8	0.286/4.00	8,128.4	114,820.8	0.286/4.00	8,128.4	114,820.8
SF4	23,170	0.174/1.86	4,031.6	43,096.2	0.189/2.44	4,379.1	56,534.8	0.189/2.44	4,379.1	56,534.8	0.189/2.44	4,379.1	56,534.8
SF5	26,400	0.144/1.57	3,009.6	41,448.0	0.134/1.86	3,537.6	49,104.0	0.134/1.86	3,537.6	49,104.0	0.134/1.86	3,537.6	49,104.0
SF7	16,021	0.153/1.58	2,451.2	25,313.2	0.175/2.33	2,803.7	37,328.9	0.175/3.01	2,803.7	48,223.2	0.175/3.01	2,803.7	48,223.2
SF8	10,678	0.192/2.32	2,050.2	24,773.0	0.211/3.08	2,253.1	32,888.2	0.211/3.66	2,253.1	39,081.5	0.211/3.66	2,253.1	39,081.5
	104,690	0.188/2.14	19,671.0	224,440.8	0.202/2.78	21,101.9	290,676.7	0.202/2.94	21,101.9	307,764.3	0.202/2.94	21,101.9	307,764.3

STEMWINDER SHAFT AREA - HANGING WALL VEIN

Block	Tons	Grade Cut to 2 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 3 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 4 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 5 x Avg.	Total oz Au	Total oz Ag
SH1	7,908	0.107/1.17	846.2	9,252.4	0.107/1.17	846.2	9,252.4	0.107/1.17	846.2	9,252.4	0.107/1.17	846.2	9,252.4
SH2	2,312	0.200/2.50	462.4	5,780.0	0.200/2.50	462.4	5,780.0	0.200/2.50	462.4	5,780.0	0.200/2.50	462.4	5,780.0
SH3	33,209	0.103/0.51	3,420.5	16,936.6	0.131/0.57	4,350.4	18,929.1	0.154/0.64	5,114.2	21,253.8	0.163/0.70	5,413.1	23,246.3
SH4	7,776	0.085/0.17	661.0	1,321.9	0.096/0.17	746.5	1,321.9	0.096/0.17	746.5	1,321.9	0.096/0.17	746.5	1,321.9
	51,205	0.105/0.65	5,390.1	33,290.9	0.125/0.69	6,405.5	35,283.4	0.140/0.73	7,169.3	37,608.1	0.146/0.77	7,468.2	39,600.6
INFERRED													
SHP1	5,443	0.107/1.17	582.4	6,368.3	0.107/1.17	582.4	6,368.3	0.107/1.17	582.4	6,368.3	0.107/1.17	582.4	6,368.3
SHP2	11,583	0.161/0.43	1,864.9	4,980.7	0.238/0.43	2,756.8	4,980.7	0.314/0.43	3,637.1	4,980.7	0.391/0.43	4,529.0	4,980.7
SHP3	6,041	0.103/0.51	622.2	3,080.9	0.131/0.57	791.4	3,443.4	0.154/0.64	930.3	3,866.2	0.163/0.70	984.7	4,228.7
SHP4	4,835	0.103/0.51	498.0	2,465.9	0.131/0.57	633.4	2,756.0	0.154/0.64	744.6	3,094.4	0.163/0.70	788.1	3,384.5
SHP5	5,025	0.096/1.21	482.4	6,080.3	0.117/0.41	587.9	2,060.3	0.131/0.45	658.3	2,261.3	0.136/0.49	683.4	2,462.3
	32,927	0.123/0.70	4,049.9	22,976.1	0.163/0.60	5,351.9	19,608.7	0.199/0.62	6,552.7	20,570.9	0.230/0.65	7,567.6	21,424.5
HIGHER GRADE													
SH1	6,801	0.125/1.40	850.1	9,521.4	0.125/1.40	850.1	9,521.4	0.125/1.40	850.1	9,521.4	0.125/1.40	850.1	9,521.4
SH2	2,312	0.200/2.50	462.4	5,780.0	0.200/2.50	462.4	5,780.0	0.200/2.50	462.4	5,780.0	0.200/2.50	462.4	5,780.0
SH3	25,430	0.118/0.58	3,000.7	14,749.4	0.153/0.64	3,890.8	16,275.2	0.182/0.70	4,628.3	17,801.0	0.194/0.76	4,933.4	19,326.8
SH4	4,064	0.150/0.29	609.6	1,178.6	0.169/0.29	686.8	1,178.6	0.169/0.29	686.8	1,178.6	0.169/0.29	686.8	1,178.6
	38,607	0.128/0.81	4,922.8	31,229.4	0.153/0.85	5,890.1	32,755.2	0.172/0.89	6,627.6	34,281.0	0.180/0.93	6,932.7	35,806.8

STEMWINDER SHAFT AREA - MAIN VEIN

Block	Tons	Grade Cut to 2 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 3 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 4 x Avg.	Total oz Au	Total oz Ag	Grade Cut to 5 x Avg.	Total oz Au	Total oz Ag
INDICATED													
SM1	17,340	0.101/1.06	1,751.3	18,380.4	0.101/1.06	1,751.3	18,380.4	0.101/1.06	1,751.3	18,380.4	0.101/1.06	1,751.3	18,380.4
SM2	8,711	0.117/0.74	1,019.2	6,446.1	0.117/0.74	1,019.2	6,446.1	0.117/0.74	1,019.2	6,446.1	0.117/0.74	1,019.2	6,446.1
SM3	37,689	0.207/2.73	7,801.6	102,891.0	0.222/3.64	8,367.0	137,188.0	0.222/3.81	8,367.0	143,595.1	0.222/3.81	8,367.0	143,595.1
SM4	20,274	0.114/0.31	2,311.2	6,284.9	0.115/0.31	2,331.5	6,284.9	0.115/0.31	2,331.5	6,284.9	0.115/0.31	2,331.5	6,284.9
SM5	27,899	0.122/0.98	3,403.7	27,341.0	0.122/0.98	3,403.7	27,341.0	0.122/0.98	3,403.7	27,341.0	0.122/0.98	3,403.7	27,341.0
SM6	6,345	0.220/2.70	1,395.9	17,131.5	0.220/2.70	1,395.9	17,131.5	0.220/2.70	1,395.9	17,131.5	0.220/2.70	1,395.9	17,131.5
SM7	11,968	0.085/0.52	1,017.3	6,223.4	0.085/0.52	1,017.3	6,223.4	0.085/0.52	1,017.3	6,223.4	0.085/0.52	1,017.3	6,223.4
SM8	5,203	0.080/0.48	416.2	2,497.4	0.080/0.48	416.2	2,497.4	0.080/0.48	416.2	2,497.4	0.080/0.48	416.2	2,497.4
	135,429	0.141/1.38	19,116.4	187,195.7	0.145/1.64	19,702.1	221,492.7	0.145/1.68	19,702.1	227,899.8	0.145/1.68	19,702.1	227,899.8
INFERRED													
SMP1	4,164	0.101/1.06	420.6	4,413.8	0.101/1.06	420.6	4,413.8	0.101/1.06	420.6	4,413.8	0.101/1.06	420.6	4,413.8
SMP2	4,626	0.101/1.06	467.2	4,903.6	0.101/1.06	467.2	4,903.6	0.101/1.06	467.2	4,903.6	0.101/1.06	467.2	4,903.6
SMP3	4,355	0.117/0.74	509.5	3,222.7	0.117/0.74	509.5	3,222.7	0.117/0.74	509.5	3,222.7	0.117/0.74	509.5	3,222.7
SMP4	4,636	0.117/0.74	542.4	3,430.6	0.117/0.74	542.4	3,430.6	0.117/0.74	542.4	3,430.6	0.117/0.74	542.4	3,430.6
SMP5	11,802	0.122/0.98	1,439.8	11,566.0	0.222/3.81	2,620.0	44,965.6	0.222/3.81	2,620.0	44,965.6	0.222/3.81	2,620.0	44,965.6
SMP6	13,252	0.114/0.31	1,510.7	4,108.1	0.115/0.31	1,524.0	4,108.1	0.115/0.31	1,524.0	4,108.1	0.115/0.31	1,524.0	4,108.1
SMP7	8,978	0.146/1.51	1,310.8	13,556.8	0.146/1.51	1,310.8	13,556.8	0.146/1.51	1,310.8	13,556.8	0.146/1.51	1,310.8	13,556.8
SMP8	1,738	0.085/0.52	147.7	903.8	0.085/0.52	147.7	903.8	0.085/0.52	147.7	903.8	0.085/0.52	147.7	903.8
SMP9	3,420	0.080/0.48	273.6	1,641.6	0.080/0.48	273.6	1,641.6	0.080/0.48	273.6	1,641.6	0.080/0.48	273.6	1,641.6
SMP10	2,176	0.320/0.84	696.3	1,827.8	0.480/0.84	1,044.5	1,827.8	0.640/0.84	1,392.6	1,827.8	0.800/0.84	1,740.8	1,827.8
SMP11	3,792	0.192/0.26	728.1	985.9	0.239/0.26	906.3	985.9	0.287/0.26	1,088.3	985.9	0.334/0.26	1,266.5	985.9
	62,939	0.128/0.80	8,046.7	50,560.7	0.155/1.33	9,766.6	83,960.3	0.164/1.33	10,296.7	83,960.3	0.172/1.33	10,823.1	83,960.3
HIGHER GRADE													
SM3	37,689	0.207/2.73	7,801.6	102,891.0	0.222/3.81	8,367.0	143,595.1	0.222/3.81	8,367.0	143,595.1	0.222/3.81	8,367.0	143,595.1
SM4	8,015	0.187/0.35	1,498.8	2,805.3	0.190/0.35	1,522.9	2,805.3	0.190/0.35	1,522.9	2,805.3	0.190/0.35	1,522.9	2,805.3
SM6	6,345	0.222/2.70	1,395.9	17,131.5	0.220/2.70	1,395.9	17,131.5	0.220/2.70	1,395.9	17,131.5	0.220/2.70	1,395.9	17,131.5
	52,049	0.206/2.36	10,696.3	122,827.8	0.217/3.14	11,285.8	163,531.9	0.217/3.14	11,285.8	163,531.9	0.217/3.14	11,285.8	163,531.9

NW END OF FAIRVIEW - MAIN VEIN

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation ~
FM1	1,893	2.10	3,975.3	2.65	10,535	11,613	0.078/1.08	905.8	12,542.0	
FM2	3,166	1.90	6,015.4	2.65	15,941	17,572	0.171/3.01	3,004.8	52,891.7	
FM3	1,397	5.65	7,893.1	2.65	20,917	23,057	0.138/1.33	3,181.9	30,665.8	{1.90 @ 0.171/3.01} {7.25 @ 0.180/1.35} 5.65m @ 0.138/1.33 {7.80 @ 0.090/0.90}
FM4	2,079	7.25	15,072.8	2.65	39,943	44,029	0.180/1.35	7,925.2	59,439.2	
FM5	3,321	1.65	5,479.7	2.65	14,521	16,006	0.108/1.40	1,728.6	22,408.4	
FM6	155	1.47	227.9	2.65	604	666	0.100/0.98	66.6	652.7	
FM7	1,521	8.00	12,168.0	2.65	32,245	35,544	0.135/1.60	4,798.4	56,870.4	
FM8	3,010	1.78	5,357.8	2.65	14,198	15,650	0.186/2.86	2,910.9	44,759.0	{0.99 @ 0.385/5.67} {2.30 @ 0.110/1.60} {1.82 @ 0.302/4.87} 1.78m @ 0.186/2.86 {2.00 @ 0.070/1.10}
FM9	2,172	7.80	16,941.6	2.65	44,895	49,488	0.090/0.90	4,453.9	44,539.2	
FM10						15,000	0.110/1.60	1,650.0	24,000.0	
FM11		-				6,000	0.140/2.00	840.0	12,000.0	
FM12						6,750	0.130/1.50	877.5	10,125.0	
			TOTALS			241,375	0.134/1.45	32,343.6	370,893.4	

INFERRED

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation ~
FMP1	1,334	2.10	2,801.4	2.65	7,424	8,183	0.078/1.08	638.3	8,837.6	
FMP2	3,569	1.78	6,352.8	2.65	16,835	18,557	0.186/2.86	3,451.6	53,073.0	
FMP3	993	7.80	7,745.4	2.65	20,525	22,625	0.138/1.33	3,122.3	30,091.3	
FMP4	3,228	7.63	24,629.6	2.65	65,268	71,945	0.156/1.48	11,223.4	106,478.6	{7.25 @ 0.180/1.35} 7.63m @ 0.156/1.48 {8.00 @ 0.135/1.60}
FMP5	4,966	1.65	8,193.9	2.65	21,714	23,935	0.108/1.40	2,585.0	33,509.0	
			TOTALS			145,245	0.145/1.60	21,020.6	231,989.5	

HIGHER GRADE

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation ~
FM2	3,166	1.90	6,015.4	2.65	15,941	17,572	0.171/3.01	3,004.8	52,891.7	
FM3	1,397	2.20	3,073.4	2.65	8,145	8,978	0.211/2.47	1,894.4	22,175.7	{1.90 @ 0.171/3.01} 2.20 @ 0.211/2.47 {2.50 @ 0.241/2.06}
FM4	2,079	2.50	5,197.5	2.65	13,773	15,182	0.241/2.06	3,658.9	31,274.9	
FM8	3,010	1.78	5,357.8	2.65	14,198	15,650	0.186/2.86	2,910.9	44,759.0	
			TOTALS			57,382	0.200/2.60	11,469.0	151,101.3	

BELOW 6 LEVEL AT FAIRVIEW - MAIN VEIN

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation
INDICATED										
FM13	1,117	6.20	6,925.4	2.65	18,352	20,229	0.121/1.79	2,447.7	36,209.9	
FM14	1,428	4.51	6,440.3	2.65	17,067	18,813	0.111/1.68	2,088.2	31,605.8	
FM14	1,428	1.90	2,713.2	2.65	7,190	7,916	0.222/3.71	1,759.6	29,405.5	
FM15	3,414	5.21	17,786.9	2.65	47,135	51,957	0.169/2.08	8,780.7	108,070.6	{1.84 @ 0.420/2.50} {6.50 @ 0.126/1.84} Avg. 5.21 @ 0.169/2.08 {7.30 @ 0.143/2.18}
FM16	1,676	6.10	10,223.6	2.65	27,093	19,865	0.083/1.25	2,478.8	37,331.3	
			TOTALS			128,790	0.136/1.88	17,555.0	242,623.1	
INFERRED										
FMP6	2,048	6.20	12,697.6	2.65	33,649	37,091	0.121/1.79	4,488.0	66,392.9	
FMP7	497	4.51	2,241.5	2.65	5,940	6,548	0.111/1.68	726.8	11,000.6	
FMP7	497	1.9	944.3	2.65	2,502	2,758	0.222/3.71	612.3	10,232.2	
FMP8	621	5.21	3,235.4	2.65	8,574	9,451	0.169/2.08	1,597.2	19,658.1	
FMP9	1,366	6.10	8,332.6	2.65	22,081	24,340	0.083/1.25	2,020.2	30,425.0	
			TOTALS			80,188	0.118/1.72	9,444.5	137,708.8	
HIGHER GRADE (INDICATED)										
FM13	1,117	4.0	4,468.0	2.65	11,840	13,051	0.164/2.40	2,140.4	31,322.4	
FM14	1,428	1.6	2,284.8	2.65	6,055	6,674	0.232/3.54	1,548.4	23,626.0	
FM14	1,428	1.9	2,713.2	2.65	7,190	7,926	0.222/3.71	1,759.6	29,405.5	
FM15	3,414	3.48	11,880.7	2.65	31,484	34,705	0.239/2.90	8,294.5	100,644.5	{1.84 @ 0.420/2.50} {4.00 @ 0.195/2.79} Avg. 3.48 @ 0.239/2.90 {2.70 @ 0.229/3.53}
FM16	1,676	2.50	4,190.0	2.65	11,104	12,240	0.153/2.73	1,872.7	33,415.2	
			TOTALS			74,596	0.209/2.93	15,615.6	218,413.6	

COMBINED:
INDICATED
INFERRED

INCLUDES

BELOW 6 LEVEL AT FAIRVIEW MINE - FOOTWALL VEIN

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation
INDICATED										
FF1	528	3.95	2,085.6	2.65	5,527	6,092	0.079/1.00	481.3	6,092.0	
FF2	1,117	1.33	1,485.6	2.65	3,937	4,340	0.573/2.50	2,486.8	10,850.0	
FF3	1,583	1.35	2,137.1	2.65	5,663	6,242	0.140/1.29	873.9	8,052.2	
FF4						5,600	0.100/1.40	560.0	7,840.0	
FF5						6,000	0.110/1.70	660.0	10,200.0	
				TOTALS		28,274	0.179/1.52	5,062.0	43,034.2	
INFERRED										
FFP1	403	3.95	1,591.9	2.65	4,219	4,651	0.079/1.00	367.4	4,651.0	
FFP2	559	1.33	743.5	2.65	1,970	2,172	0.573/2.50	1,244.6	5,430.0	
FFP3	807	1.35	808.4	2.65	2,142	2,361	0.140/1.29	330.5	3,045.7	
FFP4	683	1.35	922.1	2.65	2,444	2,694	0.140/1.29	377.2	3,475.3	
FFP5	807	2.25	1,815.8	2.65	4,812	5,304	0.062/0.40	328.8	2,121.6	
				TOTALS		17,182	0.154/1.09	2,648.5	18,723.6	
HIGHER GRADE										
FF2	1,117	1.33	1,485.6	2.65	3,937	4,340	0.573/2.50	2,486.8	10,850.0	

SOUTHEAST FAIRVIEW - MAIN VEIN

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation
INDICATED										
FM17	1,738	6.75	11,731.5	2.65	31,089.0	34,269	0.098/1.01	3,358.4	34,611.7	
FM18	1,831	1.45	2,655.0	2.65	7,036.0	7,756	0.266/0.56	2,063.1	4,343.4	
FM19	497	3.75	1,863.8	2.65	4,939.1	5,444	0.093/1.70	506.3	9,254.8	
				TOTALS		47,469	0.125/1.02	5,927.8	48,209.9	
INFERRED										
FMP10	745	6.75	5,028.8	2.65	13,326.0	14,689	0.098/1.01	1,439.5	14,835.9	{6.75 @ 0.098/1.01}
FMP11	3,600	3.05	10,980.0	2.65	29,097.0	32,074	0.126/1.03	4,041.3	33,036.2	{1.45 @ 0.266/0.56} {1.40 @ 0.088/0.96} 3.05m @ 0.126/1.03
FMP12	1,583	1.40	2,216.2	2.65	5,873.0	6,474	0.088/0.96	569.7	6,215.0	{2.60 @ 0.141/1.38}
FMP13	1,800	2.60	4,680.0	2.65	12,402.0	13,671	0.141/1.38	1,927.6	18,866.0	{1.45 @ 0.266/0.56} {3.75 @ 0.093/1.70} 2.60m @ 0.141/1.38
				TOTALS		66,908	0.119/1.09	7,978.1	72,953.1	
HIGHER GRADE										
FM17	1,738	2.25	3,910.5	2.65	10,363.0	11,423	0.275/2.84	3,141.3	32,441.3	
FM18	1,831	1.45	2,655.0	2.65	7,035.8	7,756	0.266/0.56	2,063.1	4,343.4	
FM19	497	1.40	695.8	2.65	1,844.0	2,033	0.216/3.99	439.1	8,111.7	
				TOTALS		21,212	0.266/2.12	5,643.5	44,896.4	

STEMWINDER SHAFT AREA - HANGING WALL VEIN

Block	Area (m²)	Thickness (m)	Volume (m³)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation
INDICATED										
SH1	1,893	1.43	2,707.0	2.65	7,174	7,908	0.107/1.17	846.2	9,252.4	{1.35 @ 0.099/0.94} {1.50 @ 0.114/1.37} 1.43m @ 0.107/1.17
SH2	931	0.85	791.4	2.65	2,097	2,312	0.200/2.50	462.4	5,780.0	
SH3	3,414	3.33	11,368.6	2.65	30,127	33,209	0.170/0.78	5,645.5	25,903.0	{2.40 @ 0.120/2.04} {4.60 @ 0.132/0.27} 3.33m @ 0.170/0.78 {3.00 @ 0.268/0.55}
SH4	1,210	2.20	2,662.0	2.65	7,054	7,776	0.096/0.17	746.5	1,321.9	{3.10 @ 0.083/0.11} {1.30 @ 0.128/0.30} 2.20m @ 0.096/0.17
				TOTALS		51,205	0.150/0.83	7,700.6	42,257.3	
INFERRED										
SHP1	1,303	1.43	1,863.3	2.65	4,938	5,443	0.107/1.17	582.4	6,368.3	
SHP2	2,203	1.80	3,965.4	2.65	10,508	11,583	0.824/0.43	9,544.4	4,980.7	
SHP3	621	3.33	2,067.9	2.65	5,480	6,041	0.170/0.78	1,027.0	4,712.0	
SHP4	497	3.33	1,655.0	2.65	4,386	4,835	0.170/0.78	822.0	3,771.3	
SHP5	621	2.77	1,720.2	2.65	4,559	5,025	0.141/0.54	708.5	2,713.5	{3.33 @ 0.170/0.78} {2.20 @ 0.096/0.17} 2.77m @ 0.141/0.54
				TOTALS		32,927	0.385/0.68	12,684.3	22,545.8	
HIGHER GRADE										
SH1	1,893	1.23	2,328.4	2.65	6,170	6,801	0.125/1.40	850.1	9,521.4	{1.35 @ 0.099/0.94} {1.10 @ 0.157/1.96} 1.23m @ 0.125/1.40
SH3	3,414	2.55	8,705.7	2.65	23,070	25,430	0.203/0.95	5,162.3	24,158.5	{1.85 @ 0.146/2.58} {2.80 @ 0.172/0.29} 2.55m @ 0.203/0.95 {3.00 @ 0.268/0.55}
SH4	1,210	1.15	1,391.5	2.65	3,687	4,064	0.169/0.29	686.8	1,178.6	{1.30 @ 0.128/0.30} {1.00 @ 0.222/0.28} 1.15m @ 0.169/0.29
SH2	931	0.85	791.4	2.65	2,097	2,312	0.200/2.50	462.4	5,780.0	
				TOTALS		38,607	0.186/1.05	7,161.6	40,638.5	

STEMWINDER SHAFT AREA - MAIN VEIN

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation
SM1	2,328	2.55	5,936.4	2.65	15,731	17,340	0.101/1.06	1,751.3	18,380.4	
SM2	1,924	1.55	2,982.2	2.65	7,903	8,711	0.117/0.74	1,019.2	6,446.1	
SM3	3,072	4.20	12,902.4	2.65	34,191	37,689	0.222/3.81	8,367.0	143,595.1	
SM4	1,614	4.30	6,940.2	2.65	18,392	20,274	0.115/0.31	2,331.5	6,284.9	
SM5	6,921	1.38	9,551.0	2.65	25,310	27,899	0.122/0.98	3,403.7	27,341.0	{1.35 @ 0.140/0.50} {1.60 @ 0.091/0.50} 1.38m @ 0.122/0.98 {1.20 @ 0.144/2.15}
SM6	1,086	2.00	2,172.0	2.65	5,756	6,345	0.220/2.70	1,395.9	17,131.5	
SM7	1,707	2.40	4,096.8	2.65	10,857	11,968	0.085/0.52	1,017.3	6,223.4	
SM8	1,086	1.64	1,781.0	2.65	4,720	5,203	0.080/0.48	416.2	2,497.4	
				TOTALS		135,429	0.145/1.68	19,702.1	227,899.8	
INFERRED										
SMP1	559	2.55	1,425.5	2.65	3,778	4,164	0.101/1.06	420.6	4,413.8	
SMP2	621	2.55	1,583.6	2.65	4,197	4,626	0.101/1.06	467.2	4,903.6	
SMP3	962	1.55	1,491.1	2.65	3,951	4,355	0.117/0.74	509.5	3,222.7	
SMP4	1,024	1.55	1,587.2	2.65	4,206	4,636	0.117/0.74	542.4	3,430.6	
SMP5	962	4.20	4,040.4	2.65	10,707	11,802	0.222/3.81	2,620.0	44,965.6	
SMP6	1,055	4.30	4,536.5	2.65	12,022	13,252	0.115/0.31	1,524.0	4,108.1	
SMP7	1,397	2.20	3,073.4	2.65	8,145	8,978	0.146/1.51	1,310.8	13,556.8	{2.40 @ 0.085/0.52} {2.00 @ 0.220/2.70} 2.20m @ 0.146/1.51
SMP8	248	2.40	595.2	2.65	1,577	1,738	0.085/0.52	147.7	903.8	
SMP9	714	1.64	1,171.0	2.65	3,103	3,420	0.080/0.48	273.6	1,641.6	
SMP10	745	1.00	745.0	2.65	1,974	2,176	1.331/0.56	2,896.3	1,218.6	
SMP11	590	2.20	1,298.0	2.65	3,440	3,792	0.384/0.26	1,456.1	985.9	
				TOTALS		62,939	0.193/1.32	12,168.2	83,351.1	
HIGHER GRADE										
SM3	3,072	4.20	12,902.4	2.65	34,191	37,689	0.222/3.81	8,367.0	143,595.1	
SM4	1,614	1.70	2,743.8	2.65	7,271	8,015	0.190/0.35	1,522.9	2,805.3	
SM6	1,086	2.00	2,172.0	2.65	5,756	6,345	0.220/2.70	1,395.9	17,131.5	
				TOTALS		52,049	0.217/3.14	11,285.8	163,531.9	

STEMWINDER SHAFT AREA - FOOTWALL VEIN

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation	
INDICATED											
SF1	4,034	1.73	6,978.8	2.65	18,494.0	20,386	0.115/1.30	2,344.4	26,501.8	{0.90 @ 0.154/1.98} {2.55 @ 0.101/1.06}	1.73m @ 0.115/1.30
SF2	3,103	2.70	8,378.1	2.65	22,202.0	24,473	0.097/1.49	2,373.9	36,464.8		
SF3	3,538	5.31	18,786.8	2.65	49,785.0	54,878	0.188/2.67	10,317.1	146,524.3		
SF4	3,724	3.96	14,747.0	2.65	39,080.0	43,078	0.130/1.65	5,600.1	71,078.7		
SF5	3,476	4.15	14,425.4	2.65	38,227.0	42,138	0.114/1.57	4,803.7	66,156.7		
SF6	4,314	1.70	7,333.8	2.65	19,435.0	21,423	0.086/0.60	1,842.4	12,853.8		
SF7	3,134	1.75	5,484.5	2.65	14,534.0	16,021	0.175/3.01	2,803.7	48,223.2		
SF8	1,924	6.80	13,083.2	2.65	34,670.0	38,217	0.072/1.22	2,751.6	46,624.7		
SF9	931	1.18	1,098.6	2.65	2,911.0	3,209	0.257/4.10	824.7	13,156.9		
SF10	3,848	3.63	13,968.2	2.65	37,016.0	40,803	0.087/0.65	3,549.9	26,522.0	{4.75 @ 0.090/0.20} {2.50 @ 0.080/1.50}	3.36m @ 0.087/0.65
SF11	1,614	2.73	4,406.2	2.65	11,676.0	12,870	0.296/1.65	3,809.5	21,235.5	{2.20 @ 0.190/2.29} {3.25 @ 0.368/1.22}	2.73m @ 0.296/1.65
SF12	2,824	2.00	5,648.0	2.65	14,967.0	16,498	0.111/2.63	1,831.3	43,389.7		
SF13	1,366	1.35	1,844.1	2.65	4,887.0	5,387	0.100/1.43	538.7	7,703.4	{1.20 @ 0.104/1.47} {1.49 @ 0.096/1.39}	1.35m @ 0.100/1.43
				TOTALS		339,381	0.128/1.67	43,391.0	566,435.5		
INFERRED											
SFP1	2,886	1.73	4,992.8	2.65	13,231.0	14,585	0.115/1.30	1,677.3	18,960.5		
SFP2	1,179	2.70	3,183.3	2.65	8,436.0	9,299	0.097/1.49	902.0	13,855.5		
SFP3	2,017	5.31	10,710.3	2.65	28,382.0	31,285	0.188/2.67	5,881.6	83,531.0		
SFP4	1,862	3.96	19,539.8	2.65	51,780.0	57,077	0.130/1.65	7,420.0	94,177.1		
SFP4	1,862	0.80	1,489.6	2.65	3,947.0	4,351	0.104/1.18	452.5	5,134.2		
SFP5	1,676	4.15	6,955.4	2.65	18,432.0	20,318	0.114/1.57	2,316.3	31,899.3		
SFP6	2,328	2.18	5,075.0	2.65	13,449.0	14,825	0.127/1.67	1,882.8	24,757.8	{4.15 @ 0.114/1.57} {1.60 @ 0.174/2.19} {0.80 @ 0.104/1.18}	2.18m @ 0.127/1.67
SFP7	1,397	1.70	2,374.9	2.65	6,293.0	6,937	0.086/0.60	596.6	4,162.2		
SFP8	2,203	1.75	3,855.3	2.65	10,217.0	11,262	0.175/3.01	1,970.9	33,898.6		

Block	Area (m^3)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg.Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation
INFERRED,continued										
SFP9	1,117	6.80	7,595.6	2.65	20,128.0	22,187	0.072/1.22	1,597.5	27,068.1	
SFP10	931	1.18	1,098.6	2.65	2,911.0	3,209	0.257/4.10	824.7	13,156.9	
										{2.00 @ 0.111/2.63}
SFP11	993	1.43	1,420.0	2.65	3,763.0	4,148	0.106/1.82	439.7	7,549.4	{0.95 @ 0.104/0.65} 1.43m @ 0.106/1.82
				TOTALS		199,483	0.130/1.80	25,961.9	358,150.6	{1.35 @ 0.100/1.43}
HIGHER GRADE										
SF3	3,538	2.75	9,729.5	2.65	25,783.0	28,421	0.286/4.00	8,128.4	114,820.8	
SF4	3,724	2.13	7,932.1	2.65	21,020.1	23,170	0.189/2.44	4,379.1	56,534.8	
SF5	3,476	2.60	9,037.6	2.65	23,950.0	26,400	0.134/1.86	3,537.6	49,104.0	
SF7	3,134	1.75	5,484.5	2.65	14,534.0	16,021	0.175/3.01	2,803.7	48,223.2	
SF8	1,924	1.90	3,655.6	2.65	9,687.0	10,678	0.211/3.66	2,253.1	39,081.5	
				TOTALS		104,690	0.202/2.94	21,101.9	307,764.3	

BROWN BEAR DRIFT AREA - HANGING WALL VEIN

Block	Area (m^2)	Thickness (m)	Volume (m^3)	x SG 2.65	Tonnes	Tons (x 1.1023)	Avg. Grade oz/ton Au/Ag	tons x oz/ton Au	tons x oz/ton Ag	Average Grade and/or Thickness Calculation
INDICATED										
BH1	1,272	1.50	1,908.0	2.65	5,056	5,573	0.515/0.57	2,870.1	3,176.6	
BH2	1,800	3.50	6,300.0	2.65	16,695	18,403	0.108/1.89	1,987.5	34,781.7	
BH3	745	2.00	1,490.0	2.65	3,949	4,353	4.670/1.93	20,328.5	8,401.3	
BH4	310	0.50	155.0	2.65	411	453	3.330/0.67	1,508.5	303.5	{0.50 @ 0.446/0.40}
BH5	3,538	0.73	2,582.7	2.65	6,844	7,544	0.362/2.37	2,730.9	17,879.3	0.73m @ 0.362/2.37
				TOTALS		36,326	0.810/1.78	29,425.5	64,542.4	{0.95 @ 0.318/3.40}
INFERRED										
BHP1	217	1.50	325.5	2.65	863	951	0.515/0.57	489.8	542.1	
BHP2	3,197	0.73	2,333.8	2.65	6,185	6,818	0.362/2.37	2,468.1	16,158.7	
				TOTALS		7,769	0.381/2.15	2,957.9	16,700.8	
HIGHER GRADE										
BH1	1,272	1.50	1,908.0	2.65	5,056	5,573	0.515/0.57	2,870.1	3,176.6	
BH2	1,800	1.90	3,420.0	2.65	9,063	9,990	0.148/2.43	1,478.5	24,275.7	
BH3	745	2.00	1,490.0	2.65	3,949	4,353	4.670/1.93	20,328.5	8,401.3	
BH4	310	0.50	155.0	2.65	411	453	3.330/0.67	1,508.5	303.5	
BH5	3,538	0.73	2,582.7	2.65	6,844	7,544	0.362/2.37	2,730.9	17,879.3	
				TOTALS		27,913	1.036/1.94	28,916.5	54,036.4	

APPENDIX II

B.E. SPENCER REPORT

B.E. Spencer Engineering Ltd.

CONSULTING GEOLOGICAL ENGINEER

February 23, 1989

Mr. Donald Barker, President
Oliver Gold Corporation
#800-900 West Hastings St.
Vancouver, B.C.

Dear Mr. Barker:

As you requested I have reviewed the ore reserve estimates of the Company's Fairview Project as recently compiled by Mr. D. Mehner. My comments are tabulated below:

(1) There are not, at present, a sufficient number of samples to estimate the grade of the deposit with the confidence level necessary for a production decision. The best indication of the deposit grade is the previous production of 120,000 tons of 0.17 ounces gold per ton.

The density of sampling for indicated reserve estimates averages 13,000 tons per sample and commonly exceeds 25,000 tons per sample. No reliable estimate of the grade is possible on this basis. The best method of acquiring additional samples and upgrading the confidence level is to drift on the vein.

1110 - 625 HOWE STREET, VANCOUVER, B.C. V6C 2T6 TELEPHONE (604) 688-0415

(2) No method of calculating the reserve estimate can overcome the fundamental deficiency of inadequate sample density.

The traditional method of calculating a volume of influence for each sample and assigning the sample grade to this volume or tonnage may distort the grade estimate even further in the present situation. This is possible because the mineralized portion of the vein varies from 0.9 to over 6 metres and the area of influence varies due to the inconsistent drill hole spacing. I have revised the reserve estimate on the assumption that the grade of the vein is independent of the vein thickness and the area of influence of each sample.

(3) The possibility, as recognized by D. Mehner, of a northwest plunge to the ore zones enhances the confidence level of reserve estimates and opens up exploration possibilities which may expand reserves significantly. This is illustrated by the mineralized portion of the Stemwinder veins which appear to be localized at the intersection of the vein with a fault structure. The trace of the vein and fault define the plunge. With the exception of several keel-like zones where mineralized intersections occur some 100 metres below the fault-vein trace, the mineralization is limited to some 30 metres distance from the trace. This control provides the basis for transferring certain inferred blocks in Mehner's estimate to the drill indicated category in the revised estimates.

(4) Gold deposits generally have a log-normal distribution of values. The usual statistical methods of determining the average value of a deposit therefore do not work because of exaggerated impact of high grade assays. At producing mines these values are cut, based on production experience, to some threshold value or often cut to the uncut average. To determine a suitable value to cut to at the exploration stage one useful technique is to determine at which value 90% to 95% of the samples occur. Samples in excess of this value are then cut to this grade to normalize the reserve estimate. With the exception of a zone in the Brown Bear area this method has been applied to Mehner's estimates with no significant change to the reserve grade (ie. erratic values do not constitute a sample problem). The Brown Bear drift area block (36,000 tons @ 0.810) is based on five samples, three of which are above the out-off value and for these reasons this block is not included in the revised indicated reserve category.

(5) In the course of reviewing the reserves several other observations were made which you may wish to consider in future calculations. These are:

a) A few samples are less than minable width and should be expanded to this width prior to calculating block tonnages and grades.

b) It is likely that some sub-ore sections will occur within ore blocks and samples reflecting this should be included in reserve estimates. Without more data internal waste sections should not be excluded nor should reserve blocks have irregular or scalloped outlines.

c) Dilution, in part, can be expected to vary with the vein width and as this changes considerably a variable dilution factor should be used on subsequent, more refined reserve estimates.

d) On many of the sections drilled there is only one hole per section and some sections are at 100 metre intervals apart or greater. This can create difficulties in correlation of the veins and establishing the dip length of the mineralization. Closer spaced drilling is recommended at the exploration - development stage.

(6) A revised calculation of indicated reserves is tabulated below, which is based on the following criteria:

a) Isolated blocks based on one or two drill holes have been deleted.

b) Stope pillars and minor stope extensions have been deleted.

c) "Keel"-type zones or extensions which to date are based on information on one section only, have been deleted. There are three such areas and these may be a source of ore at a future date. These zones may be localized by a secondary fracture system with limited lateral extent (ie. crosscutting fractures).

d) The Brown Bear high grade zone has been deleted for reasons previously outlined.

e) Inferred reserves peripheral to large indicated reserves have, where appropriate, been re-classified as indicated, based on a northwest plunge of the zones.

f) Estimates of reserve grade have been modified on the basis previously mentioned.

g) The "high grade" estimate is based on reducing wide mineralized vein widths - those in excess of 4 metres - to higher grade narrower widths. A very important feature of the vein is the reported visual relationship between fracture density and sulphide content versus contained gold. This feature is essential if selective mining is to be successful. The confidence level in the "high grade" estimates is enhanced by this vein characteristic.

Summary of Drill Indicated Reserves (Uncut & Undiluted)

Area	Tons	Au/opt	or	Tons	Au/opt
Fairview N.W.					
Main Vein #1	340,000	.125		220,000	.142
Main Vein #2	30,000	.186	or	30,000	.186
Below 6 Level	210,000	.140		110,000	.205
Stemwinder Shaft Area					
Main V	110,000	.146		110,000	.146
F.W.	370,000	.131		270,000	.159
TOTAL	1,060,000	.134		740,000	.160

CONCLUSIONS AND RECOMMENDATIONS:

Previous production on the Fairview Project property totalled 120,000 of 0.17 ounces gold per ton. Recent exploration work here has indicated that, with selective mining, an additional 740,000 tons of similar grade mineralization could be available for mining. Contingent on confirming a N.W. plunge to the mineralized zones an additional presently inferred tonnage of some 750,000 tons may also be developed to the 800 metre elevation.

Additional sampling is required to confirm the grade and tonnage estimate of the indicated reserves. This will require drifting and raising on the mineralized veins. An underground exploration programme is warranted to further evaluate the reserve potential, assuming this is the critical factor in the overall economic evaluation of the project.

Yours very truly,

B.E. SPENCER ENGINEERING LTD.

Bruce E. Spencer, P. Eng.

BES:jz

APPENDIX III

METALLURGICAL REPORT

GARY W. HAWTHORN
CONSULTING MINERAL PROCESSING ENGINEER
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OLIVER GOLD CORPORATION

800-900 W HASTINGS ST

VANCOUVER, B.C.

TECHNICAL AND FINANCIAL REVIEW FOR 300 TPD CONCENTRATOR

OLIVER GOLD

PROPERTY

OLIVER, B.C.

G.HAWTHORN P.ENG

FEBRUARY 28, 1989

INDEX

1.0 INTRODUCTION

The writer has been retained by Oliver Gold Corporation to provide a review of metallurgical process options and to prepare a financial study for a 300 ton per day concentrator.

Ideally, the concentrator would have capability of being economically expanded to 500 to 1,000 tons per day if future increases in the mineral inventory justify such a decision.

The writer has performed laboratory testing on samples which have ben provided by Oliver Gold, but has not visited the site.

2.0 MINERALOGY

This property was previously mined by Cominco Ltd as a source of silica flux for the Trail smelter operation. The contained gold and the low sulphide mineral content made this material attractive, in part because the gold would have been recovered to considerable extent in the smelter.

The writer did not have any microscopy performed on the metallurgical products, but chemical analysis suggest that the following metallic sulphide minerals are likely present: pyrite, with lesser galena and chalcopyrite. Even these are very minor, since a bulk sulphide cleaner flotation concentrate is anticipated to contain less than 1 % of the original feed weight.

There appears to be essentially no antimony or arsenic minerals.

3.0 METALLURGICAL REVIEW

Six samples were provided by Oliver Gold for initial assaying and possible compositing, as follows:

Sample	Au oz/t	Ag oz/t
M-1	.076	.68
M-2	.190	1.30
M-3	.248	.53
M-4	.125	.89
M-5	.046	.42
M-6	.087	.73
Average	.129	.76

Note that the ratio of silver to gold is quite variable.

Sample M-4, only was used in subsequent testing since it was thought to be representative of the grade of the deposit as it was known at that time.

3.1 Gravity Concentration

No gravity concentration testing has been performed to date. However, the next test should contain a panning stage ahead of either flotation or cyanidation to determine the potential for the inclusion of this process.

3.2 Flotation Concentration

The two flotation tests which have been performed to date indicate that from a technical perspective, bulk sulpide flotation concentration will result in:

(1) Ratios of concentration which will exceed 100:1.

(2) Gold recovery in the high 80's at a feed grade of .12 oz/t Au.

(3) High grade concentrate which will contain several 10's of oz/t Au and an estimated 70 % pyrite, 12 % galena, 6 % chalcopyrite with the balance being silica.

(4) No identified deliterious constituents in the concentrate.

The anticipated plant flotation metallurgy is as follows:

Product	Wt %	Assays oz/t.		Distribution %	
		Au	Ag	Au	Ag
Flotation conc	0.6	22.5	283	90	85
Tailing	99.4	0.015	0.30	10	15
Feed	100.0	.15	2	100	100

This metallurgy has not been confirmed in laboratory testing, but will need to be if flotation is a serious process option.

3.3 Cyanidation

Straight cyanidation tests have indicated that the material responds well to cyanidation after grinding.

The optimum grind requirement has not been determined, but a single test performed at a coarse 50 % - 200 mesh resulted in a 96 % Au and 75 % Ag recovery in 24 hr.

No optimization testing has yet been done, but the following characteristics appear to apply:

APPENDIX IV

MORNING STAR

This report deals essentially with the old Fairview property and the Stemwinder mine. The Morning star adjoins the Stemwinder at the latter's south east border and is part of the Oliver Gold Corporation option. It has an inviting potential to contribute to Oliver Gold and for this reason the following is re-produced from H.G. Barker's report of February 1987.

In the various files and records inspected, very little was found regarding this mine, which is part of the Fairview option from Cominco, and on the same mineralized belt. Production of 8307 tons of 0.56 oz. per ton of gold and 1.25 ounces of silver was achieved. A plan in the Cominco files shows rather impressive assays in 2 stopes above the 101 level, many greater than one ounce. A section through a raise connecting levels shows a dip from 202 to 102 levels at 62 degrees and from 102 to surface at 50 degrees.

F. B. Amon of Cominco states that there are six quartz veins on the Morning Star near the workings, and east-raking shoots occur in each where they pair into a strong shear.

Six shallow diamond drill holes were completed in 1961 by Cominco in the Morning Star area. The drilling failed to intersect the higher grade shoots mined at the turn of the century. Veins varied from 6 to 20 feet in thickness. The main vein is a fault fissure with a strike of N. 40 degrees and a dip of 30 degrees to 60 degrees N.E. The mineralization is evidently associated with a dacite porphyry dyke.

The mine was entered by a shaft sunk 220 feet, from which two levels were driven.

(1) Cyanide consumption will likely be less than 1.0 kg/t.

(2) Lime consumption will not likely exceed 1 kg/t.

(3) The leaching of Au will be essentially completed within 24 hr.

(4) Ag leaching will likely require more than 24 hr for technical completion. Typically, Ag cyanidation requires more than 72 hr, although the testing to date suggests that this may not be required in this case.

(5) Attempts to cyanide under heap leaching comminution conditions were "unsuccessful" with a Au recovery of 65 %. Ag recovery was 24 % in 1 day and 59 % in 3 days.

4.0 PROCESS FLOWSHEET OPTIONS

4.1 Metallurgical Flowsheet

From a technical perspective, there appears to be three potential flowsheet options. These include:

(1) Bulk sulphide flotation with 1 stage of cleaning to produce a saleable concentrate.

(2) As above, but cyanide leach the flotation concentrate to produce bullion.

(3) Straight cyanidation of ore after a relatively coarse grind.

All of the above have technical merit, and all need to be subjected to a financial study to determine the most cost effective process flowsheet.

4.2 Process Flowsheet

The crushing and grinding circuits will perform well with a conventional jaw + cone crusher and a single stage ball mill in closed circuit with a cyclone.

The rock types indicate that autogenous grinding is a technical option which may merit additional investigation as the development of the property progresses.

Because of the relatively high silver content in the deposit, the proposed cyanidation circuit options are of the Merrill Crowe type. Carbon cyanidation plants for gold recovery tend to be less expensive from a capital and operating perspective, but in this case the anticipated 3 tons of carbon which would have to be processed daily tend to make this option less attractive.

5.0 DESIGN CRITERIA

Production Criteria	Metric	English
Annual processing rate	95,000 dmt	105,000 sdt
Monthly " "	7,950 "	8,750 "
Daily " "	273 "	300 "
Annual operating time	95 %	
Coarse ore stockpile		
Capacity / live	45 dmt	50 sdt
Bulk density	1.8 dmt/ cu m	116 # / cu ft
Crushing		
Mine ore passing	300 mm	12 "
Ore moisture	3 %	
Crushing rate	45 mtd/hr	50 tph
Crushing schedule	6 hr / day / 7 days / week	
Crushed product size - P80	7,000 micron	3/8"
Fine Ore Storage		
Capacity / live	360 dmt	400 sdt
/ total	1,440 "	1,600. "
Grinding		
Final product size - P80	175 micron	45 % - 200 mesh
Ball mill WI - est	17.6 kwh/t	16.0 kwh/t
Ore SG	2.7	
Flotation		
Feed density	40 % solids w/w	
Residence time		
Rougher	30 minutes	
Cleaner	30 minutes	
Concentrate Dewatering		
Thickener area	5 sq ft / tpd	
Filter area	5 " "	
Vacuum pump capacity	3 cfm / sq ft	
Cyanidation - straight cyanidation		
Contact time	24 hr	
Reagent consumption - per unit of ore		
- NaCN	1 kg/t	2 #/t
- Lime	1 kg/t	2 #/t

Cyanidation - concentrate cyanidation

Contact time	48 hr	
Reagent consumption - per unit of ore		
- NaCN	0.5 kg/t	1.0 #/t
- Lime	0.3 kg/t	0.6 #/t

Tailing Disposal

Flotation tailing density	40 %	solids	w/w
Tailing thickener underflow	60	"	"
" terminal density	75 %	"	"

6.0 PLANT METALLURGY

The metallurgical response of the ore to the three process flowsheet options is as shown below:

FLOTATION - SELL FLOTATION CONCENTRATE

Product	Wt %	Assays oz/t		Distribution %	
		Au	Ag	Au	Ag
Flotation conc	0.67	22.5	235	90	85
Tailing	99.33	0.017	0.27	10	15
Feed	100.00	.168	1.78	100	100

FLOTATION - LEACH FLOTATION CONCENTRATE

Product	Wt %	Assays oz/t		Distribution %	
		Au	Ag	Au	Ag
Bullion	-	-	-	86.4	64
Tailing	100.0	0.026	0.64	15.6	36
Feed	100.0	.168	1.78	100	100

STRAIGHT CYANIDATION

Product	Wt %	Assays oz/t		Distribution %	
		Au	Ag	Au	Ag
Bullion	-	-	-	96	75
Tailing	100.0	0.007	0.45	4	25
Feed	100.0	.168	1.78	100	100

7.0 ENVIRONMENTAL

7.1 Acid Generation Potential

No acid generation potential testing has been performed on any of the various products which may be stored or disposed of on site. The low sulphide content suggests that any acid generation potential will be slight, but it may sufficient to require attention in the operation and abandonment of stockpiles and disposal areas.

7.2 Cyanide Destruction

Because the area is quite arid, it is quite likely that there will be a need to supply water to the overall procesing circuit.

If this is the case, every attempt should be made to locate the mill and the tailing pond so that the tailing pond can be considered to be part of the procesing flowsheet. This is particularly important if the straight cyanidation option proves to be the most economical, since in an area where there is a net evaporative loss it may not be necessary to provide any cyanide destruction.

This, ultimately will need to be decided based upon some or all of:

(1) site topography

(2) quality of natural sealing provided by the soil which underlies the tailing area

(3) site drainage

(4) environmental mandates

(5) political and emotional expediency

If cyanide destruction is required, even without performing any testing, it can be concluded that at least one of the industrially acceptable cyanide destruction techniques will be effective.

8.0 SITE SERVICES

8.1 Access

An existing secondary road from Oliver to Cawston will need to be rerouted since it traverses the area which will encompass the tailing pond and the proposed open pit.

Some additional site roadwork will be required to facilitate access between site functions.

8.2 Power Supply

It is anticipated that the 1.5 - 2.0 mw site power requirement will be supplied from the hydro grid. This will require the installation of approximately 2 km of transmission line and a metering substation.

8.3 Tailing Disposal

The proposed tailing disposal pond will be located within .5 km of the concentrator site and below it in elevation. It is intended to thicken the plant tailing and send this product to the pond, at 60 % solids, via a 2 " gravity fed polyethylene line.

The use of a tailing thickener is appropriate since the area is very arid, and the use of a surface supplied makeup water supply cannot be assured.

8.4 Water Supply

Due to the very low precipitation in this area and the high demand which agriculture has place upon the limited water supply, the process flowsheet has been configured to minimize the dependancy upon makeup water.

The mill tailing will be thickened to prove a high density, at 60 % solids, tailing pond feed, and will maximize the recycle of water.

It is anticipated that the tailing pond will not provide a source of reclaim water, in which case an external supply of 33 USGPM will be required from another undefined source.

A modest, less than 10 gpm water supply will be required as well for domestic services.

8.5 Administrative Services

The site administrative office, assay office, and dry facilities will be located adjacent to the millsite to minimize the cost of services.

It is planned to locate the office in an office trailer and the dry in a wash trailer.

The assay office will be constructed inside a surplus insulated van which will contain the sample preparation and fire assay equipment.

8.6 Sewage Treatment

A single septic field will be constructed in the millsite / administrative site area for the disposal of domestic sewage.

9.0 CAPITAL COST

The capital cost of the three process flowheet options has been summarized below. This data will need to be incorporated into the project prefeasibilty study to determine the most cost effective flowsheet.

It has been assumed that in all cases, the crushing and grinding circuits would be identical and only the recovery circuits would differ.

9.1 Summary

9.1.1 Flotation - Sell Flotation Concentrate

Processing Plant

Item	$
Site preparation	50,000
Foundations	208,500
Buildings - includes installation	130,000
Equipment - crushing	157,000
" - milling	180,000
" - flotation	31,000
" - dewatering	33,000
" - tailing thickener	80,000
Electrical equipment & supplies	200,000
Pumping and piping equipment	50,000
Installation - mechanical	300,000
" " - electrical	150,000
" " - piping	75,000
Sub total - Processing plant	1,644,500

Site Services

Relocate Oliver - Cawston road	25,000
Site roads	50,000
Power supply & distribution	302,500
Tailing disposal	50,000
Water supply	200,000
Assay office	75,000
Admin. office	25,000
Wash trailer	25,000
Sewage treatment	20,000
Site communications	7,500
Sub total - Site services	780,000

Indirects

Item	$
Construction management	65,000
Engineering - structural	30,000
" " - electrical	40,000
" " - process	15,000
" - geotechnical	35,000
Procurement and Expediting	50,000
Freight	24,000
Taxes (6 % on $ 1,000,000)	60,000
Administration - Oliver Gold head office	15,000
Total indirects	319,000
Total	2,743,500

9.1.2 Flotation - Leach Flotation Concentrate

Processing Plant

Item	$
Site preparation	50,000
Foundations	208,500
Buildings - includes installation	130,000
Equipment - crushing	157,000
" - milling	180,000
" - flotation	31,000
" - tailing thickener	80,000
" - conc cyanidation	78,000
" - cyanide destruction	26,000
Electrical equipment & supplies	200,000
Pumping and piping equipment	50,000
Installation - mechanical	300,000
" " - electrical	150,000
" " - piping	75,000
Sub total - Processing plant	1,715,500

Site Services

Relocate Oliver - Cawston road	25,000
Site roads	50,000
Power supply & distribution	302,500
Tailing disposal	50,000
Water supply	200,000
Assay office	75,000
Admin. office	25,000
Wash trailer	25,000
Sewage treatment	20,000
Site communications	7,500
Sub total - Site services	780,000

Indirects

Item	$
Construction management	65,000
Engineering - structural	30,000
" " - electrical	40,000
" " - process	15,000
" - geotechnical	35,000
Procurement and expediting	50,000
Freight	24,000
Taxes (6 % on $ 1,000,000)	60,000
Administration - Oliver Gold head office	15,000
Total indirects	319,000
Total	2,814,000

9.1.3 Straight Cyanidation

Processing Plant

Item	$
Site preparation	50,000
Foundations	233,500
Buildings - includes installation	130,000
Equipment - crushing	157,000
" - milling	180,000
" - cyanidation	362,000
" - cyanide destruction	26,000
Electrical equipment & supplies	250,000
Pumping and piping equipment	50,000
Installation - mechanical	300,000
" " - electrical	200,000
" " - piping	75,000
Sub total - Processing plant	2,013,500

Site Services

Relocate Oliver - Cawston road	25,000
Site roads	50,000
Power supply & distribution	302,500
Tailing disposal	50,000
Water supply	200,000
Assay office	75,000
Admin. office	25,000
Wash trailer	25,000
Sewage treatment	20,000
Site communications	7,500
Sub total - Site services	780,000

Indirects

Item	$
Construction management	65,000
Engineering - structural	30,000
" " - electrical	40,000
" " - process	15,000
" - geotechnical	35,000
Procurement and expediting	50,000
Freight	24,000
Taxes (6 % on $ 1,000,000)	60,000
Administration - Oliver Gold head office	15,000
Total indirects	319,000
Total	3,112,500

9.2 Millsite Preparation

For purposes of this study, it is assumed that the milling plant will be located adjacent to the mine and it will be sited on competent load bearing rock to minimize both the cost of excavation and foundation construction.

The cost allowance for the site preparation assumes an apparent shallow overburden of less than 2 meters and 1,000 cu m of rock removal to provide the required "level" building sites.

A thorough site investigation, by a qualified Geotechnical Engineer, will be required if a production decision is made.

9.3 Foundation

The site selection and preparation is intended to maximize the contact with competent load bearing rock for both building and equipment support.

For purposes of this study, it is estimated that the quantity of concrete will be 1.5 cu ft / sq ft of building, with a further allowance of 100 cu yd for the ball mill and other mass footings which would be keyed to competent rock.

The cost of concrete delivered to site is estimated to be $ 135 / cu yd, and the estimated cost in place is $ 500 / cu yd. This price includes: forming, reinforcing, placing, and finishing.

Item	sq ft	cu yd concrete	$
Concentrator bldg	5,000	272	138,500
Outside slab (1)	1,620	90	45,000
Mass foundations		100	50,000
Tailing thickener (2)		40	20,000

Notes: (1) Straight cyanidation only.
(2) Flotation options only.

9.4 Building

Although the site is located in a dry area, ocassionally the winter temperature will decrease to - 20 deg C.

The majority of the wet portion of the plant equipment will therefore be located indoors. Exceptions to this will include the leaching tanks for the straight cyanidation option. The concentrate cyanidation circuit would be located indoors.

Both the coarse and fine ore will be contained in uncovered stockpiles. A second nominal 5,000 ton uncovered stockpile of crushed fine ore will be maintained to buffer against possible extended cold periods in which the crushing plant would not operate.

The crushing plant enclosure need be nothing more elaborate than a construction office trailer which will house both the operator and the electrical switchgear.

The concentrator will be nominally 50' X 100.

The estimated cost of the erected mill building, exclusive of foundations, but complete with insulation and galvanized cladding is $ 25.00 / sq ft.

Item	sq ft	$
Crushing bldg.	300	5,000
Concentrator bldg	5,000	125,000
Total	5,300	130,000

9.5 Plant Equipment

9.5.1 Crushing

Item	$
Coarse ore hopper and gallery	20,000
Coarse ore feeder	6,000
15" X 24 " jaw crusher	25,000
4 - belt conveyors (150' @ $ 200 / ft)	30,000
Tramp metal magnet	6,000
3' cone crusher	40,000
Dust collector	10,000
Fine ore feed hopper and gallery	20,000
Sub total	157,000

9.5.2 Concentration

Grinding

Ball mill feed conveyor	5,000
Ball mill - 300 HP	150,000
Initial grinding ball charge - 25 tons @ $ 700	17,500
2 - cyclone feed pumps	4,500
2 - 10" cyclones	3,000
Sub total	180,000

Flotation

Flotation machine - 8 cells Denver # 21 Sub-A	16,000
2 - concentrate pumps	5,000
2 - tailing pumps	5,000
Reagent feeders	2,000
Flotation air blower	3,000
Sub total	31,000

Dewatering

10 ' dia thickener	10,000
6" X 4 disc filter	15,000
Vacuum pump, receiver, & piping for above	8,000
Sub total	33,000
Total - concentration	483,000

9.5.3 Cyanidation

Straight Cyanidation

5 - 16'X16' leaching tanks and agitators	250,000
pumps - slurry, water, blower	20,000
2 - 8'X12'vacuum drum filters	40,000
Merrill Crowe circuit	40,000
refinery equipment	12,000
Sub total	362,000

Concentrate Cyanidation

6 - 4'X4' leaching tanks and agitators	25,000
pumps - slurry, water, blower	8,000
tailing filter - tilting tray & vacuum pump	8,000
Merrill Crowe circuit	25,000
refinery equipment	12,000
Sub total	78,000

9.5.4 Cyanide Destruction

1 - 5'X5' cyanide destruction tank & agitator	10,000
reagent mixing and feeding equipment	8,000
process control equipment	8,000
Sub total	26,000

10.0 OPERATING COST

Data: Labour rates (loaded)

Superintendent	-	$ 7,300 / month
Foreman	-	6,250 / "
Assayer	-	4,300 / "
Operators	-	4,010 / "
Trades	-	4,680 / "

Feed rate: 300 sdt / day
8,750 sdt / month

10.1.1 Flotation - Sell Flotation Concentrate Option

Item	$/sdt	$/month
Labour		
- Superintendent		7,300
- Foreman		6,250
- Assayer		4,300
- Operators - 4 shifts @ 2 operators / shift		32,080
" - Day shift labourer		2,830
- Maintenance - 1 millwright		4,680
Sub total	6.56	57,440
Supplies		
- Grinding steel	.95	
- Liners	.10	
- Reagents		
- Flotation	.25	
- Assay supplies	.20	
- Misc. operating supplies	.30	
- Misc. maint supplies	.50	
Sub total	2.30	20,125
Power		
- Milling (3)	1.20	
- Flotation & conc dewatering (4)	.23	
Sub total	1.43	12,513
Total	10.29	90,078

10.1.2 Flotation - Leach Flotation Concentrate Option

Item	$/sdt	$/month
Labour		
- Superintendent		7,300
- Foreman		6,250
- Assayer		4,300
- Operators - 4 shifts @ 2 operators / shift		32,080
" - Day shift labourer		2,830
- Maintenance - 1 millwright		4,680
Sub total	6.56	57,440
Supplies		
- Grinding steel	.95	
- Liners	.10	
- Reagents		
- Flotation	.25	
- Cyanidation - Lime	.05	
" - NaCN (2)	.95	
- Cyanide destruction	.50	
- Assay supplies	.20	
- Misc. operating supplies	.30	
- Misc. maint supplies	.50	
Sub total	3.80	33,250
Power		
- Milling (3)	1.20	
- Flotation (4)	.23	
- Conc cyanidation (6)	.06	
Sub total	1.49	13,038
Total	11.85	102,100

10.1.3 Straight Cyanidation Option

Item	$/sdt	$/month
Labour		
- Superintendent		7,300
- Foreman		6,250
- Assayer		4,300
- Operators - 4 shifts @ 2 operators / shift		32,080
" - Day shift - 2		5,660
- Maintenance - 1 millwright		4,680
Sub total	6.89	60,270
Supplies		
- Grinding steel	.95	
- Liners	.10	
- Reagents		
- Cyanidation - Lime (1)	.12	
" - NaCN (2)	3.18	
- Cyanide destruction	2.00	
- Assay supplies	.20	
- Misc. operating supplies	.30	
- Misc. maint supplies	.50	
Sub total	7.35	64,313
Power		
- Crushing & grinding (3)	1.20	
- Cyanidation (5)	.60	
Sub total	1.80	15,750
Total	16.04	140,333

1Notes: (1) Lime - 1 kg/t @ $ 150 / mt
(2) Cyanide - 1 kg/t @ $ 3.50 / kg
(3) Power - 24 kwh/sdt @ $.05/kwh
(4) " - 4.5 " "
(5) " - 11.9 " "
(6) " - 1.2 " "
(7) Lime - .5 kg/t @ $ 150 / mt
(8) Cyanide - .3 kg/t @ $ 3.50 / kg

11.0 MARKETING

The marketing of flotation concentrate from this operation would appear to be uncomplicated, although a detailed chemical analysis will be required to insure that the product does not contain harmfull trace elements which could be cause for rejection at the smelter. The base metal content of the concentrate is sufficiently low that any revenue derived from marketing the flotation concentrate will be less than $ 0.40 / ton of ore.

Because of the delayed payment schedule which occurs when selling flotation concentrates, the financial analysis should allow for an operating capital cost of 2 months beyond the base of 1.5 months for the straight cyanidation option.

The marketing of bullion from the cyanidation option is uncomplicated and will achieve full payout within 7 working days.

12.0 FINANCIAL

The three process flowsheet options have been subjected to a financial analysis to aid in the determination of the most suitable milling configuration.

In summary, the results are as shown below:

Option	(1)	(2)	(3)
Sales revenue	67.73	69.04	77.15
Less: Mill operating	10.29	11.85	16.04
" " capital (4)	5.49	5.63	6.23
Net	51.95	51.56	54.88

Notes: (1) - Flotation - sell flotation concentrate.
(2) - " - leach " " .
(3) - Straight cyanidation.
(4) - total capital / 500,000 tons of known" reserves.

This data indicates that the (3) option is preferred, with an advantage of $ 2.92 / sdt compared to (1).

The validity of this conclusion will need to be determined by performing laboratory testing on a sample of feed which duplicates the anticipated feed grade of .168 oz/t Au and 1.78 oz/t Ag.

Data: (1) Gold price - $ US 350 / oz @ 1.22 exchange = $ C 427/oz.

(2) Silver price - $ US 5.50 / oz @ 1.22 exch = 4 C 6.20/oz.

(3) Payments - Bullion : 99 % of contained metal.

(4) " - Flotation conc - see Appendix A.

13.0 SCHEDULE

It is estimated that, providing an estimated $ 100,000 is spent on site investigations and general flowsheet and arrangement drawings prior to commiting on production, the construction could be completed in 5 months, providing winter did not create delays.

14.0 CONCLUSIONS

In summary, the following data has been derived for the three process options which are considered to be technically feasible.

Option	Capital Cost	Operating Cost	Recovery	
	$	$/sdt	Au	Ag
Flotation				
-sell flot conc	2,743,500	10.29	90.0	85.0
-cyanide flot conc	2,814,000	11.85	86.4	64.0
Straight cyanidation	3,112,500	16.04	96.0	75.0

The data which is contained in section 12 indicates that the straight cyanidation option is the most favourable.

This conclusion will need to be evaluated further in the laboratory, since the metallurgical forecasts have been based upon the results of testing on a sample which graded .125 oz/t Au. In all likelyhood, the forecast which will be derived from testing .167 oz/t Au feed will increase the flotation recovery to a greater extent than the straight cyanidation recovery, and will tend to shrink the gap between these options.

If the comparison between the various options, based upon testing of a normal feed grade sample, validates the enclosed data, the conclusion would be to recommend the selection of the straight cyanidation option. Until this testing has been performed, the preferred flowsheet will need to remain open.

15.0 RECOMMENDATIONS

Additional laboratory bench scale testing will be required to determine:

(1) the optimum processing conditions.

(2) the final design criteria for the most favourable option.

(3) the effect of the higher feed grade on metallurgical products. (Note that the laboratory testing was performed on a sample which graded .125 oz/t Au and .85 oz/t Ag).

(4) the possible role of gravity concentration in the process flowsheet.

G.Hawthorn P.Eng February 28, 1989.

(g-0006)

NET SMELTER RETURN CALCULATION :NSR-1 **February 27,1989**

Client: Oliver Gold Project: Oliver

Plant Metallurgy:

Product	Wt %	Assay - oz/t Au	Assay - oz/t Ag		Distribution % Au	Distribution % Ag		
Flot conc	0.67	22.5	235		90	85		
Tailing	99.33	.017	.27		10	15		
Feed	100.0	.168	1.78		100	100		

Concentrate Analysis:

Element	Assay
Au	22.5 oz/t
Ag	235
Cu	-
Pb	10 %
Zn	-
Fe	34 "
As	.02 "
Sb	<.01 "
Cd	.05 "
S	40 "
Insol	5 "
Alumina	
Lime	
Magnesia	
Total	

Moisture - 10.0 %

Schedule:

CALCULATIONS

Metal Prices:

Exchange Rate: $ US / $ C = 1.32

Metal	Price		Pay - $ C
Au	350 X 1.22 X .98	=	418.46 / oz
Ag	5.50 X 1.22 X .97	=	6.51 / oz
Pb	.34 X 1.22 - (.12 + .055)	=	.250 / #

Payables:

Metal	Contained			Paid For	$C/SDT
Au	22.5 oz	X .95	=	21.38	8,944.58
Ag	235 oz	X .95	=	223.25	1,453.36
Pb	10 X 20 X .92		=	184 #	46.00
Sub Total - Payables					10,443.94

Deductions:

Basic Treatment	162.00
C.P.Index	-
Labour	-
Fe (34 X $ 2.05)	69.70
S (40 - 20) X $ 4.00	80.00
As + Sb	-
Alumina	-
Moisture (10 - 8) X $ .40	0.80
Sub Total - Deductions	312.50
NSR - FOB smelter	10,131.44
Less: Freight ($ 20 / ton / .90)	22.22
NSR - FOB minesite	10,109.22
NSR - FOB minesite per ton of mill feed	67.73

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APPENDIX IV