PRELIMINARY ASSESSMENT

MORRISON/HEARNE HILL PROJECT

Morrison Deposit

Pacific Booker Minerals Inc.

Volume 1

Prepared

By

Beacon Hill Consultants (1988) Ltd.

August 1, 2004

VOLUME 1

TABLE OF CONTENTS

SECTION 1.0

SUMMARY

1.1 CONCLUSIONS

It can be concluded from the results of this Preliminary Assessment that there is potential for a viable open pit mining operation at the Morrison/Hearne Hill Project.

Three production rates, 20,000 t/d (Case A), 25,000 t/d (Case B) and 30,000 t/d (Case C), have been investigated to determine the most economic alternative on which the proposed development of the Morrison deposit should proceed.

The results of the evaluation indicate;

- that Cases B and C give better economic results than Case A;
- that Cases B and C give similar economic results;
- Case B can be developed at a lower capital cost than Case C
- Case B mining schedule is more practical than Case C.

It is thus concluded that **Case B** is the production model on which further development of the Morrison property should proceed. As a result, the general body of this report describes Case B, while data on the other two cases are included in the Appendices

The evaluation of **Case B** clearly indicates that based upon a capital expenditure of **$175.2 million,** an average operating cost **$6.07/t,** a copper price of **US$1.10/lb** and a gold price of **US$385/oz** the project generates an after tax Internal Rate of Return (IRR) of **14.69%** and a Net Present Value (NPV) of **$186.4 million** undiscounted and **$80.8 million** discounted 5%. Payback of initial capital can be achieved in **5.6 years**. The mineral resources established in this study are **86,892,000 tonnes** grading **0.450% Cu and 0.257 gAu/t.** Waste to be produced during open pit mining has been estimated at **125,256,700 tonnes** with a waste to ore ratio of **1.44.** Contained within this waste is material that would be placed on a low grade stockpile and, subject to prevailing metal prices, processed after the foregoing mineral resource was depleted. This low grade stockpile consists of **28,152,000 tonnes** with a grade of **0.278% Cu** and **0.123 gAu/t**.

The **Case B** sensitivities for gold selling price, mining grade, capital cost, operating cost and copper selling price are summarized in the table below and shown pictorially in the graphs following. These show that the project is robust.

Note: The mineral resource of 86,892,094 grading 0.450% Cu and 0.257 gAu/t includes, measured resources of 55,643,752 grading 0.465% Cu and 0.257 gAu/t, indicated resources of 30,002,067 grading 0.428% Cu and 0.257 gAu/t and inferred resources of 1,246,275 grading 0.36% Cu and 0.262 gAu/t.

MORRISON/HEARNE HILL PROJECT
MORRISON DEPOSIT
PRELIMINARY ASSESSMENT
Case B 9.125 MTPY (25000TPD)
Financial Analysis
$(000)s

Resource Tonnes (000)s **115,041** **YEAR** **Aug. 1,2004**

Description	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Production Tonnes/year					3,421,875	9,125,000	9,125,000	9,125,000	9,125,000	9,125,000	9,125,000	9,125,000	9,125,000	9,125,000	9,125,000	9,125,000	9,125,000	2,119,013		**115,040,888**
Cu Grade %					0.46%	0.45%	0.49%	0.47%	0.49%	0.43%	0.41%	0.43%	0.43%	0.45%	0.31%	0.28%	0.28%	0.28%		**0.40%**
Cu Recovery					88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%	88%		**88%**
Au Grade g/t					0.22	0.25	0.26	0.25	0.29	0.23	0.20	0.24	0.29	0.31	0.15	0.12	0.12	0.12		**0.22**
Au Recovery					**70%**	**70%**	**70%**	**70%**	**70%**	**70%**	**70%**	**70%**	**70%**	**70%**	**70%**	**70%**	**70%**	**70%**		**70%**
Conc. Tonnes					49,546	128,535	139,837	134,156	139,475	122,355	118,700	123,481	122,554	129,105	89,749	79,669	79,669	18,501		**1,475,333**
Gross Revenue					$40,321	$108,276	$116,823	$111,578	$119,142	$102,535	$96,872	$104,319	$108,496	$114,899	$73,416	$63,854	$63,854	$14,828		**$1,239,214**
Operating Costs					($22,787)	($56,621)	($65,016)	($67,338)	($60,600)	($65,949)	($73,226)	($61,329)	($53,579)	($52,473)	($38,419)	($36,079)	($36,079)	($8,378)		**($697,874)**
Income Tax					($199)	($902)	($950)	($2,866)	($13,466)	($6,368)	($2,118)	($9,368)	($15,855)	($19,180)	($8,848)	($7,298)	($8,714)	($550)		**($96,681)**
Revenue Before Capital Exp.					**$17,335**	**$50,753**	**$50,857**	**$41,374**	**$45,076**	**$30,219**	**$21,528**	**$33,622**	**$39,062**	**$43,246**	**$26,149**	**$20,477**	**$19,061**	**$5,900**		**$444,658**
Capital Expenditures																				
- Development/Constructio	$1,925	$3,812	$46,887	$34,988																**$87,611**
- On-Going Capital						$275	$12,439	$275	$12,439	$275	$12,439	$275	$12,439	$275	$550	$275	$275	$275	$2,200	**$54,704**
Working Capital Change					$9,437													($9,437)		
Loan Repayment						$40,000	$30,000	$30,000	$15,900											**$115,900**
Salvage																				
Total Capital	$1,925	$3,812	$46,887	$34,988	$9,437	$40,275	$42,439	$30,275	$28,339	$275	$12,439	$275	$12,439	$275	$550	$275	$275	($9,162)	$2,200	**$258,216**
Net Cashflow	**($1,925)**	**($3,812)**	**($46,887)**	**($34,988)**	**$7,898**	**$10,478**	**$8,418**	**$11,099**	**$16,737**	**$29,944**	**$9,090**	**$33,347**	**$26,624**	**$42,971**	**$25,599**	**$20,202**	**$18,786**	**$15,062**	**($2,200)**	**$186,442**
Discounted NCF 5%	**($1,925)**	**($3,630)**	**($42,528)**	**($30,224)**	**$6,498**	**$8,210**	**$6,282**	**$7,888**	**$11,329**	**$19,302**	**$5,580**	**$19,497**	**$14,825**	**$22,788**	**$12,929**	**$9,718**	**$8,606**	**$6,571**	**($914)**	**$80,802**
Discounted NCF 8%	**($1,925)**	**($3,529)**	**($40,198)**	**($27,775)**	**$5,805**	**$7,131**	**$5,305**	**$6,476**	**$9,043**	**$14,979**	**$4,210**	**$14,302**	**$10,573**	**$15,800**	**$8,716**	**$6,369**	**$5,483**	**$4,071**	**($551)**	**$44,285**
Discounted NCF 10%	**($1,925)**	**($3,465)**	**($38,749)**	**($26,287)**	**$5,394**	**$6,506**	**$4,752**	**$5,695**	**$7,808**	**$12,699**	**$3,504**	**$11,688**	**$8,483**	**$12,447**	**$6,741**	**$4,836**	**$4,088**	**$2,980**	**($396)**	**$26,801**
Rate of Return	**14.69%**																			

Payback ***5.59*** ***years***

Notes: ***Concentrate first full production year*** **128,535** **tonnes**

1. Metal Prices US $ Cu/lb **$1.10** **Au/oz** **$385.00** **3. All funds are in Canadian $ except where noted.** **5. Taxes are approximate.**

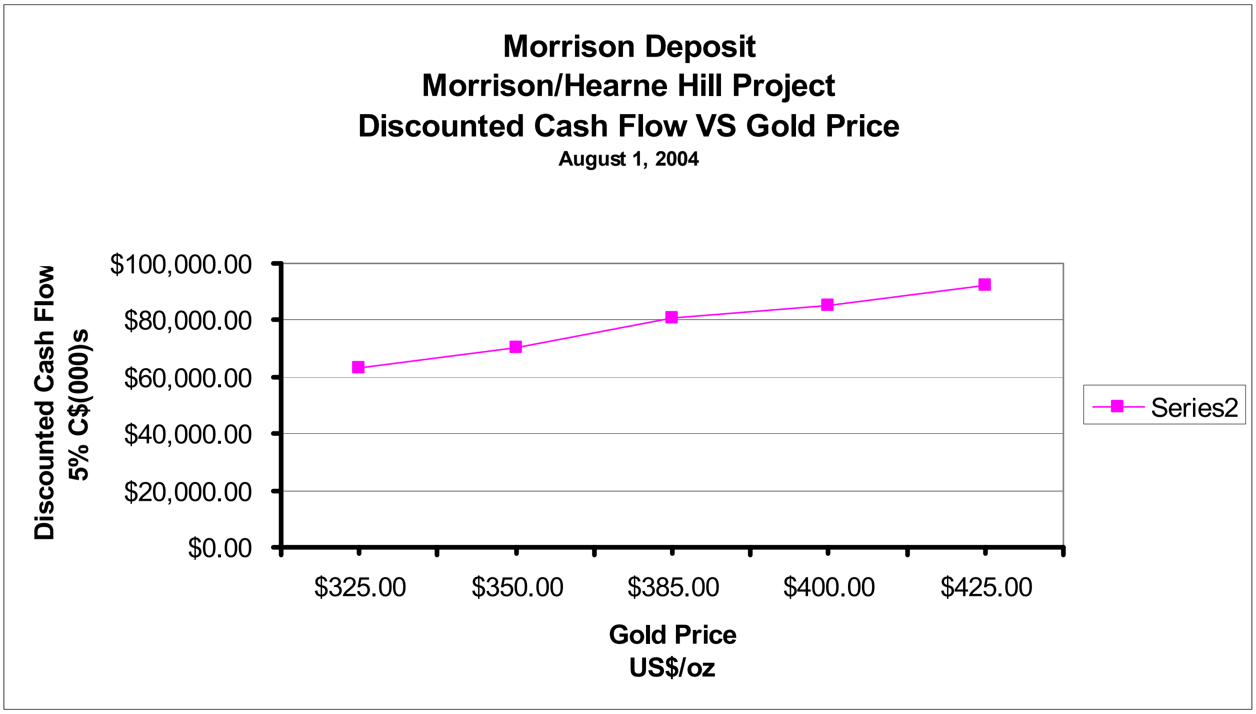
2. Capital requirements based on 50% equity. **4. Exchange rate US$ 1.35** ***NSR/tonne*** ***$10.77***

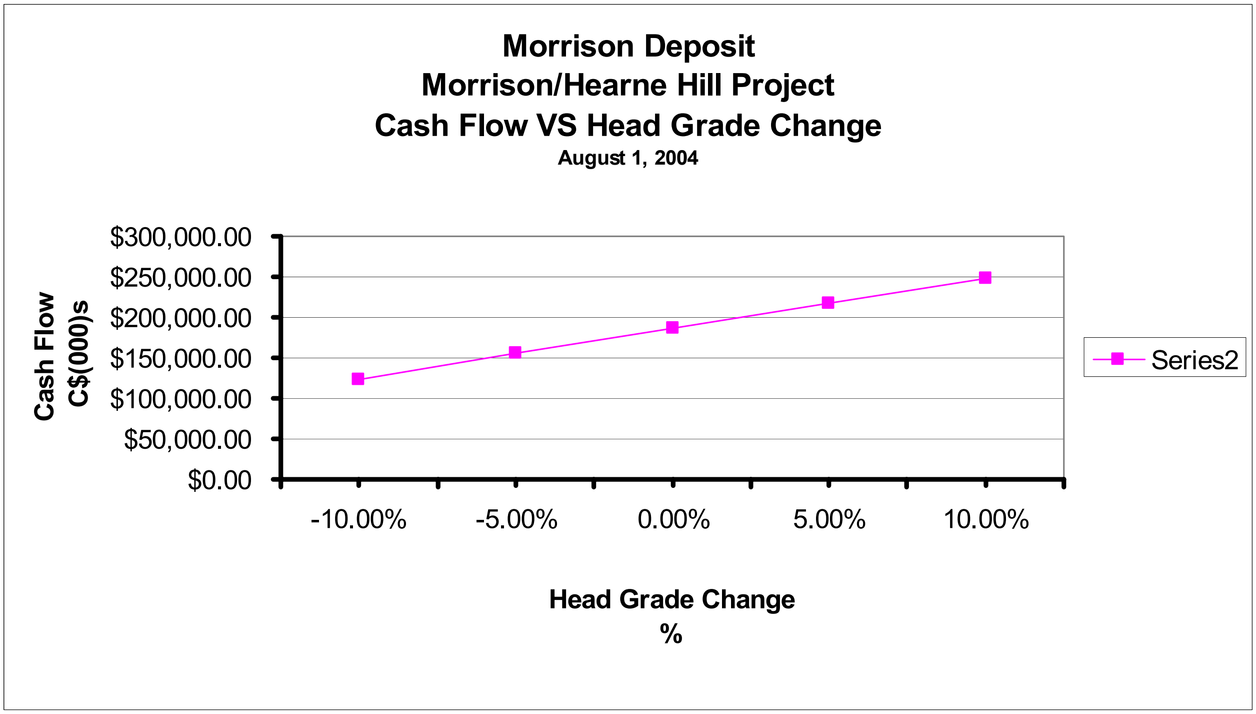
Case B
PRELIMINARY ASSESSMENT
25000t/d
SENSITIVITY ANALYSIS

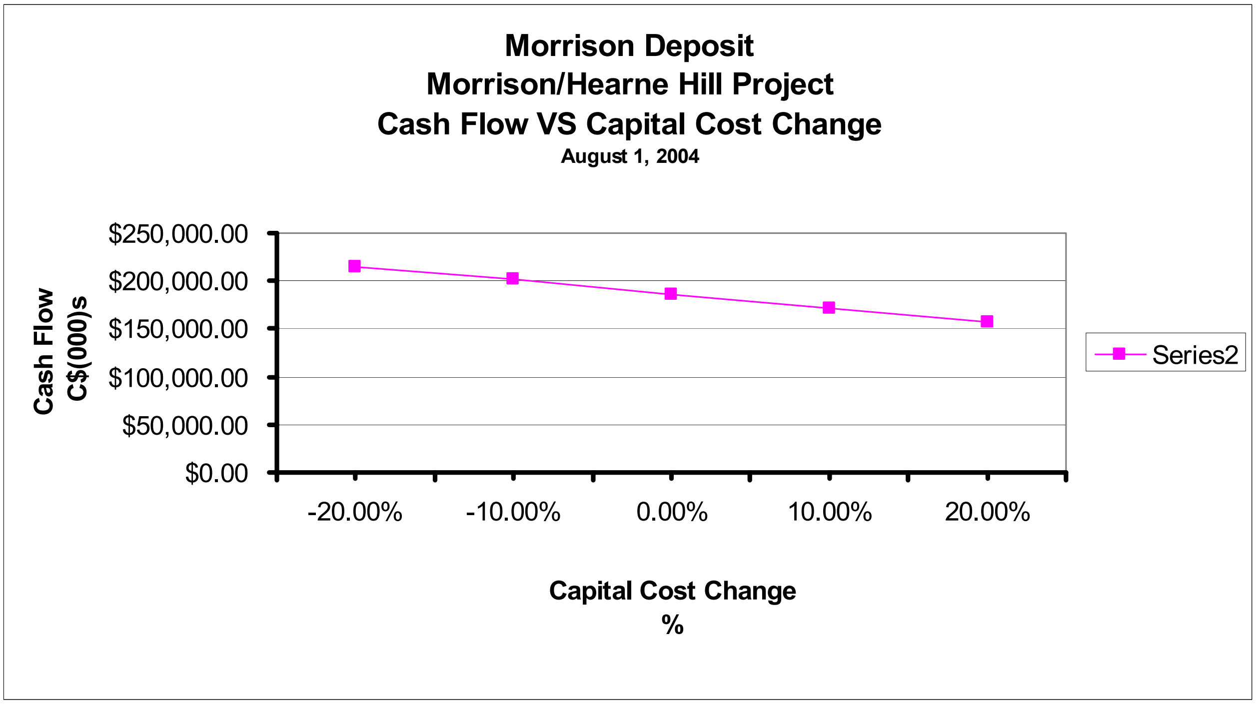
UPDATED AS OF **01-Aug-04**

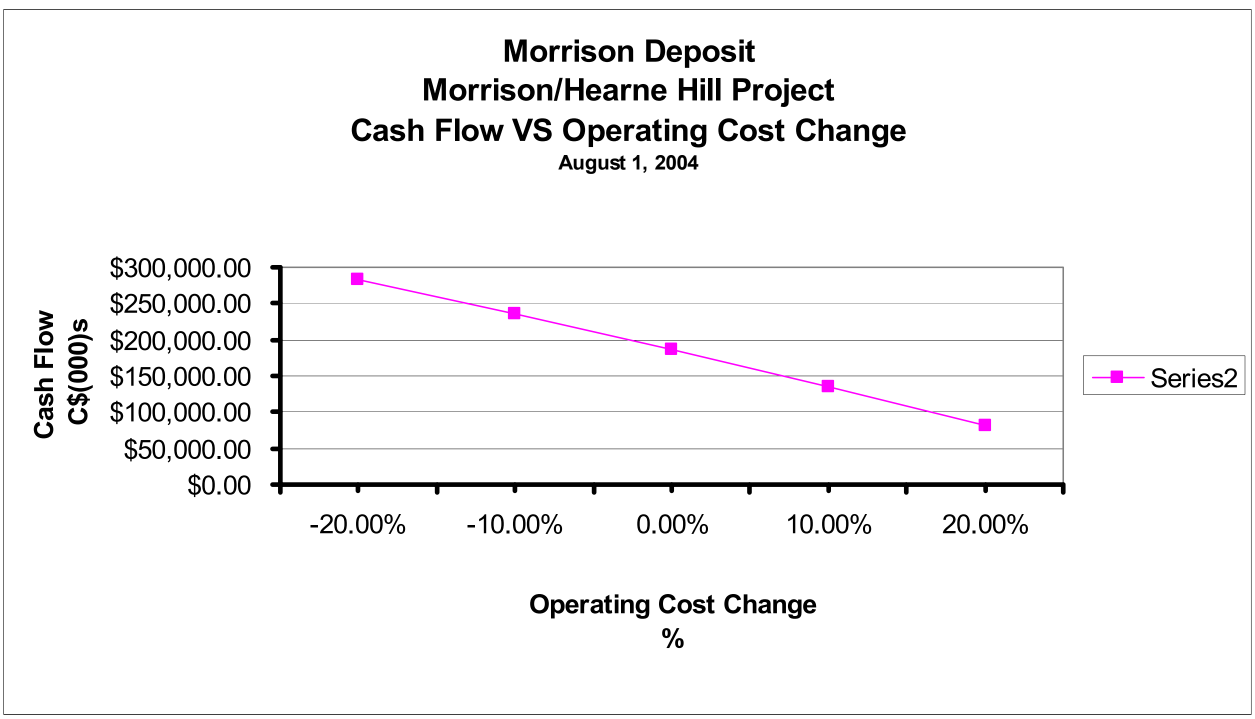
Case	Description of Sensitivity	NPV Dis.0%	NPV Dis.5%	NPV Dis.8%	IRR
		US$(000)s	US$(000)s	US$(000)s	%
CASE 1	**Base Case**	**$186,442**	**$80,802**	**$44,285**	**14.69%**
CASE2	Gold Price -US$325/oz	$159,104	$63,189	$30,437	12.66%
CASE3	Gold Price -US$350/oz	$170,495	$70,556	$36,244	13.51%
CASE 1	**Base Case**	**$186,442**	**$80,802**	**$44,285**	**14.69%**
CASE4	Gold Price -US$400/oz	$193,277	$85,183	$47,720	15.18%
CASE5	Gold Price -US$425/oz	$204,668	$92,485	$53,443	16.01%
CASE6	Grade -10%	$123,370	$37,958	$9,714	9.50%
CASE7	Grade -5%	$154,906	$59,489	$27,135	12.10%
CASE 1	**Base Case**	**$186,442**	**$80,802**	**$44,285**	**14.69%**
CASE8	Grade +5%	$217,946	$101,924	$61,203	17.23%
CASE9	Grade +10%	$248,410	$122,227	$77,402	19.61%
CASE10	Capital Cost -20%	$214,239	$104,241	$65,467	19.36%
CASE11	Capital Cost -10%	$201,177	$92,976	$55,190	16.88%
CASE 1	**Base Case**	**$186,442**	**$80,802**	**$44,285**	**14.69%**
CASE12	Capital Cost +10%	$171,982	$68,482	$33,106	12.69%
CASE13	Capital Cost +20%	$157,502	$55,765	$21,399	10.85%
CASE14	Operating Cost -20%	$282,565	$140,757	$90,667	21.00%
CASE15	Operating Cost -10%	$235,925	$111,622	$68,119	17.99%
CASE 1	**Base Case**	**$186,442**	**$80,802**	**$44,285**	**14.69%**
CASE16	Operating Cost +10%	$134,433	$48,454	$19,269	11.05%
CASE17	Operating Cost +20%	$81,631	$15,435	($6,373)	7.08%
CASE18	Copper Price $0.90/lb	$33,881	($20,457)	($36,528)	2.73%
CASE19	Copper Price $1.00/lb	$112,256	$32,857	$6,486	9.06%
CASE 1	**Base Case**	**$186,442**	**$80,802**	**$44,285**	**14.69%**
CASE20	Copper Price $1.20/lb	$258,886	$127,063	$80,481	19.79%
CASE21	Copper Price $1.30/lb	$329,383	$171,907	$115,487	24.45%
CASE22	Exchange rate C$1.54:US$1	$287,581	$145,315	$94,720	21.70%
CASE23	Exchange rate C$1.43:US$1	$229,047	$108,071	$65,648	17.74%
CASE 1	**Base Case**	**$186,442**	**$80,802**	**$44,285**	**14.69%**
CASE24	Exchange rate C$1.25:US$1	$129,252	$44,062	$15,440	10.22%
CASE25	Exchange rate C$1.18:US$1	$86,152	$16,932	($5,492)	7.22%

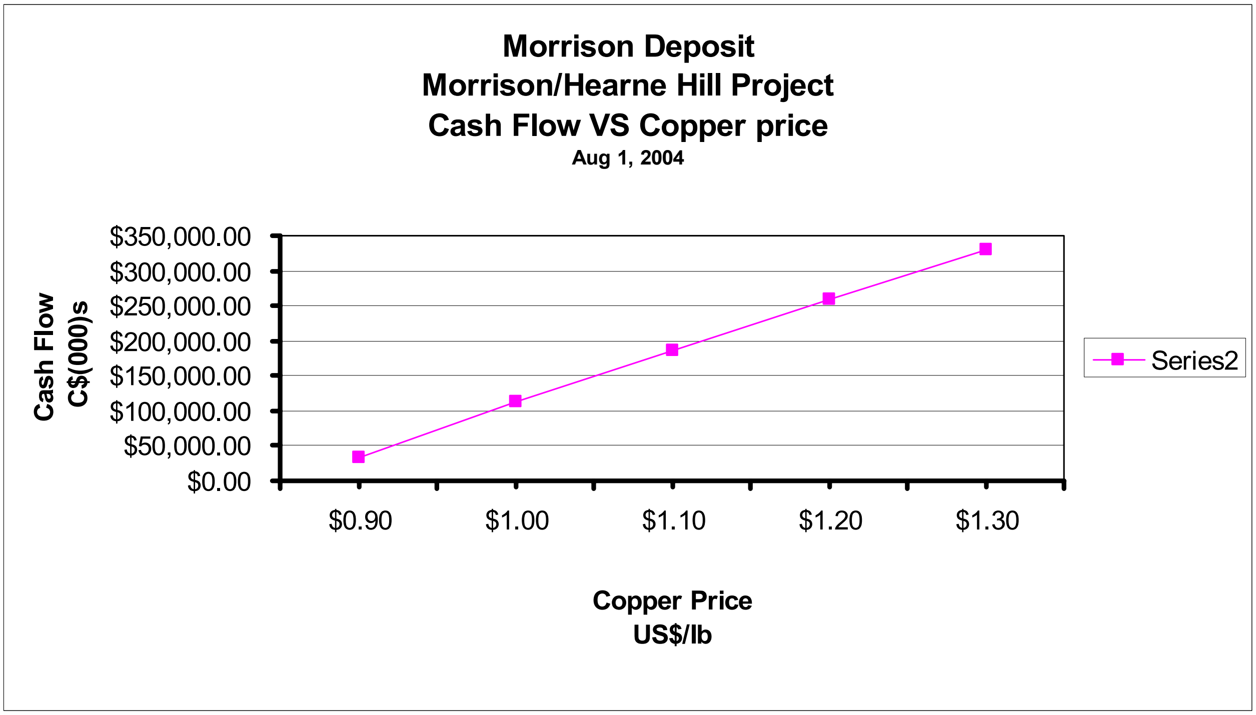
Sensitivity Graphs

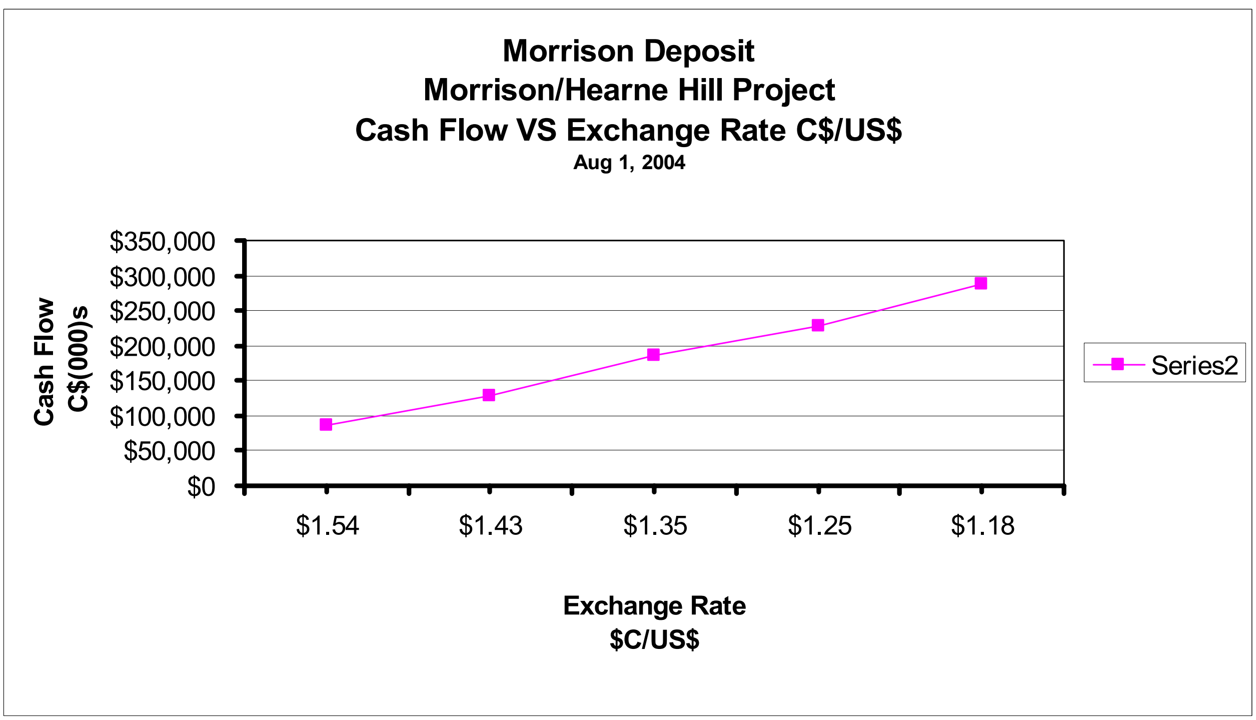





Morrison Deposit
Morrison/Hearne Hill Project
Cash Flow VS Capital Cost Change
August 1, 2004
Cash Flow
C$(000)s
$250,000.00
$200,000.00
$150,000.00
$100,000.00
$50,000.00
$0.00
-20.00%
-10.00%
0.00%
10.00%
20.00%
Series2
Capital Cost Change
%


Morrison Deposit
Morrison/Hearne Hill Project
Cash Flow VS Operating Cost Change
August 1, 2004
Cash Flow
C$(000)s
$300,000.00
$250,000.00
$200,000.00
$150,000.00
$100,000.00
$50,000.00
$0.00
-20.00%
-10.00%
0.00%
10.00%
20.00%
Series2
Operating Cost Change
%


Morrison Deposit
Morrison/Hearne Hill Project
Cash Flow VS Copper price
Aug 1, 2004
Cash Flow C$(000)s
$350,000.00
$300,000.00
$250,000.00
$200,000.00
$150,000.00
$100,000.00
$50,000.00
$0.00
$0.90
$1.00
$1.10
$1.20
$1.30
Copper Price US$/lb
Series2


Morrison Deposit
Morrison/Hearne Hill Project
Cash Flow VS Exchange Rate C$/US$
Aug 1, 2004
Cash Flow C$(000)s
$350,000
$300,000
$250,000
$200,000
$150,000
$100,000
$50,000
$0
$1.54
$1.43
$1.35
$1.25
$1.18
Exchange Rate C/US
Series2

1.2 RECOMMENDATIONS

It is recommended that further development of the Morrison/Hearne Hill property proceed as soon as is feasible.

The recommended next phase consists of a program to take the project to full feasibility. It is further recommended that the study should be completed in two phases with an interim pre-feasibility report prepared as stage 1 and stage 2 being the final feasibility to a level acceptable for bank financing. The studies would encompass investigations and data compilation on which an Environmental Impact Assessment could be completed.

In order to meet the work schedule outlined in this study it is recommended that the field work, consisting of diamond drilling, geotechnical evaluation, ARD classification, tailing characteristics, metallurgical testwork, waste disposal site evaluation and condemnation drilling, be completed in the fall of 2004 prior to on set of winter.

1.3 PROPOSED PLAN FOR FURTHER DEVELOPMENT

The work plan to complete a full feasibility study on the Morrison/Hearne Hill is outlined below with the estimated cost summarized in Section 1.4.

The study is expected to commence during the third quarter of 2004 and be completed by the end of the first quarter, 2006.

The proposed feasibility program is fully described in Appendices and will consist of;

- A drill program, the main objective of which is to complete delineation and geotechnical drilling at Morrison. Total amount of drilling is expected to be 3300m. This program will also include test pit excavations, drilling for the waste disposal area and condemnation drilling.
- Investigations to determine the geotechnical criteria for open pit wall design, the waste disposal area and for building foundation design.
- Update the mineral resource estimates based upon he additional drilling data and classify the resources as Measured, Indicated and Inferred according to NI 43-101 Guidelines.
- Determine the pit reserves based upon the resource model and a series of pit optimization studies to determine the reserve which will provide the maximum net value (or cash flow). The studies will be based upon pit design data and economic criteria.
- Develop all the criteria for the mine plan, including, but not limited to, open pit design, production rate, haulage system, and equipment selection.

- Complete metallurgical testwork on the various ore types to determine optimum recoveries and provide the data for process plant design.
- Design a waste disposal system that will provide sufficient capacity to deposit the waste rock and tailings expected to be produced during the life of the mine such that the facilities are secure and environmentally sound.
- Complete all environmental studies to allow for permitting of the project in conjunction with the prevailing regulations and in cooperation with the regulators. This will include fish habitat, water quantity and quality, wildlife, air quality, acid rock drainage and hydrological studies.
- Develop an EIA for permitting.
- Develop and design a power supply system from the existing electrical grid system, design all the electrical distribution system including instrumentation, monitoring, control systems and communication.
- Design all the infrastructure requirements, including but not limited to, roads, maintenance shops, warehouse, offices, explosives magazines and fuel and oil storage systems.
- Prepare a concentrate marketing study.
- Estimate the capital and operating costs for the various aspects of the project and determine the costs to deliver and treat the concentrates produced by the process plant.
- Complete a financial analysis of the project, including sensitivity studies.
- Complete an interim report and a final feasibility at a level of confidence such that it can be used for bank financing of the project.
- Complete a socio-economic study to evaluate the effect of the project on the local communities.
- Liaise with all levels of government throughout the study period to ensure that everyone is aware of the project criteria and that any governmental concerns are dealt with as soon as they arise.
- Set up a public consultation process that meets the needs of the local communities, all levels of government and complies with the relevant regulations. It should be noted that the project criteria may change from time to time as a result of community input.
- Obtain the permits for the project.

1.4 ESTIMATED COST OF THE WORK PROGRAM

Table 1.1
Proposed Work Program
Cost Estimate

SUMMARY

Description	Cost
Owner's Cost	$240,000
Project Management	$180,000
Drilling	$540,000
Geotechnical	$333,000
Resource Estimate	$33,800
Mine Plan	$132,000
Metallurgy/Process Plant	$504,200
Environmental Baseline Studies	$992,000
KP Engineering and Environmental Services	$1,349,900
Power	$75,000
Infrastructure	$120,000
Financial Analysis	$30,000
Socio-Economic Studies	$150,000
Government Liaison	$50,000
Public Consultation	$100,000
Marketing	$150,000
Project Disbursements	$300,000
Sub-total	$5,279,900
10% Contingency	$528,000
Total	**$5,807,900**

1.5 SCHEDULE

The schedule for the next phase of development is based upon financing being in place by September 1, 2004. This will allow for the on-site drilling and investigations to be completed prior to the on set of winter. The schedule has been based upon certain environmental baseline studies being started in the second and third quarters of 2004 and continuing through 2005. The availability of metallurgical samples from the proposed drilling, samples for ARD evaluation, samples for tailing characterization and site geotechnical data are also critical, so that design can continue during the winter of 2004/5.

The schedule indicates that the prefeasibility report would be available towards the end of the second quarter 2005, with the feasibility study complete by February 2006. The EIA report would be complete at the same time as the feasibility report, allowing for the government review and project financing to run concurrently. The government review is expected to take 255 days, after which it is expected that the appropriate permits could be applied for and that project financing would be completed. Once the project financing is obtained and a construction decision is made by Pacific Booker, it is estimated that it would take 18 months to construct the facilities. A commissioning period of two months allows for the project to be fully producing at the end of the third quarter 2008.

The Proposed Work Program schedule is shown on Figure 1-1.

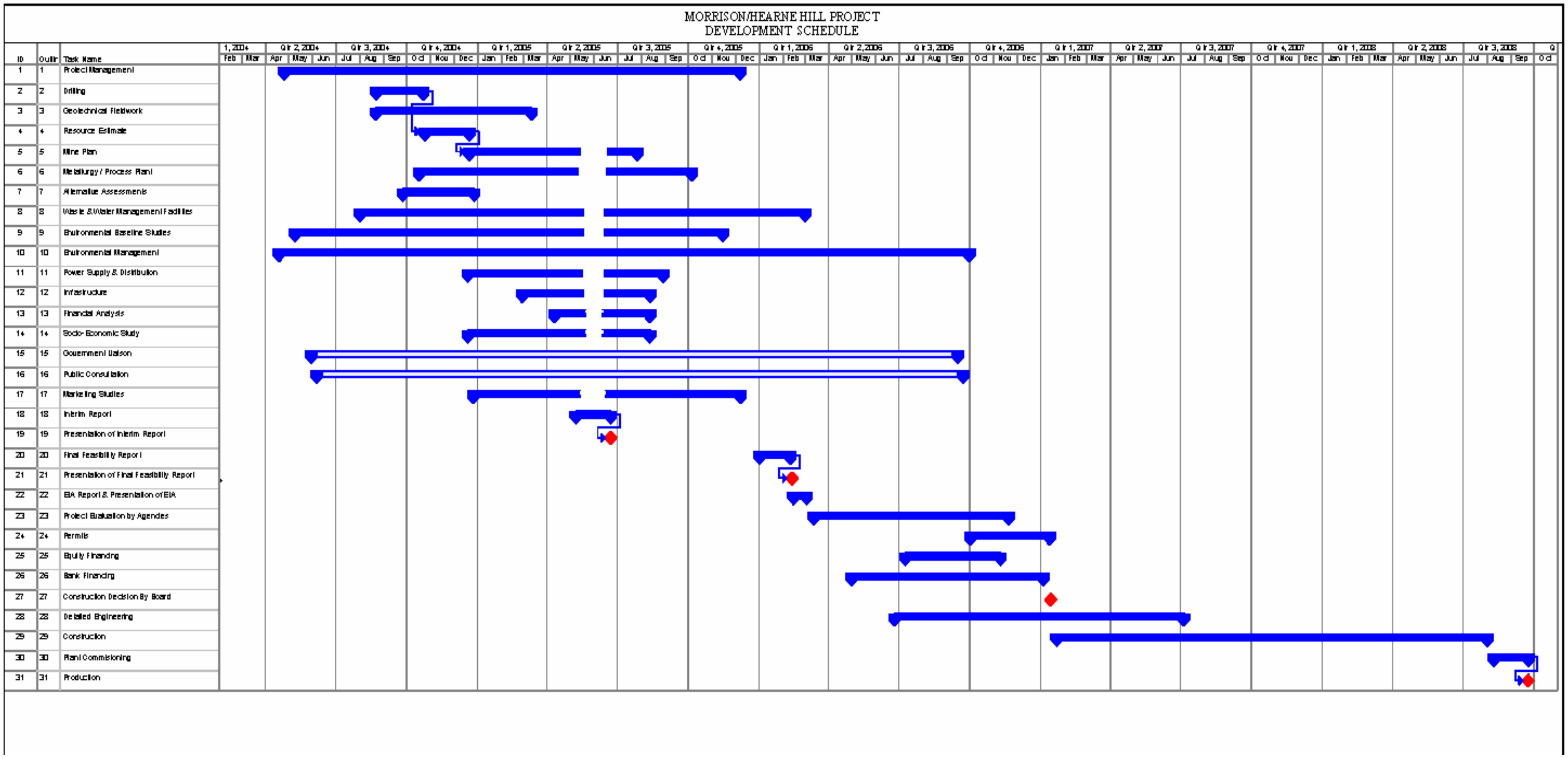

MORRISON/HEARNE HILL PROJECT
DEVELOPMENT SCHEDULE
ID
Outline
Task Name
1 1 Project Management
2 2 Drilling
3 3 Geotechnical Fieldwork
4 4 Resource Estimate
5 5 Mine Plan
6 6 Metallurgy / Process Plant
7 7 Alternative Assessments
8 8 Waste & Water Management Facilities
9 9 Environmental Baseline Studies
10 10 Environmental Management
11 11 Power Supply & Distribution
12 12 Infrastructure
13 13 Financial Analysis
14 14 Socio-Economic Study
15 15 Government Liaison
16 16 Public Consultation
17 17 Marketing Studies
18 18 Interim Report
19 19 Presentation of Interim Report
20 20 Final Feasibility Report
21 21 Presentation of Final Feasibility Report
22 22 EIA Report & Presentation of EIA
23 23 Project Evaluation by Agencies
24 24 Permits
25 25 Equity Financing
26 26 Bank Financing
27 27 Construction Decision By Board
28 28 Detailed Engineering
29 29 Construction
30 30 Plant Commissioning
31 31 Production

Figure 1-1

1.6 PROJECT RISK

The Preliminary Assessment of the Morrison/Hearne Hill project has defined the overall parameters on which the project could be developed. These parameters may change as additional information is derived which could enhance or downgrade the project financial results. There are inherent risks in any mining plan and the following is intended to evaluate those risks;

- The main risk to any mining project is the quality of the resource estimate, i.e., is the resource likely to decrease in quantity or is the grade likely to be less than that estimated? There have been at least two other similar porphyry deposits mined in the Granisle area, the Bell and Granisle. In both the Bell and Granisle operations the projected grade based upon drilling was achieved in practice and mill recoveries were improved upon as mining progressed. The resource estimate for Morrison has been determined from sufficient drill holes to establish a high level of confidence in the quantity and estimated mining grade for the deposit. It is expected that the mining grade will be achieved in practice at the Morrison mine. Thus the resource risk is seen as very low for this deposit.

- The present resource estimate classifies the majority of the resource, some 97%, in the measured and indicated categories. The resource has not been classified as a reserve at this time since a higher level of detail of technical and economic factors is required under 43-101 regulations, before this can be done. When this higher level of detail is completed the resource would be converted into proven and probable reserve. It not expected that the quantity and grade of the resource will change when designated as a reserve. Thus the risk of changes in quantity and grade for this deposit are seen as very low.

- The overall plan for development has been designed to take into account the environmental concerns within the project area. Morrison Lake is a salmon spawning area and of considerable importance to the fisheries in the immediate area and downstream. The Morrison open pit, waste disposal area, infrastructure, water management and associated facilities have been, and will continue to be, designed to ensure minimal and acceptable effect on the environment. Based on the work completed to date, and discussions held with regulatory authorities, there does not appear to be any impediments to receiving the permits for the project to move ahead in to a construction stage once the feasibility study is complete, subject to the environmental investigations being carried out as described within this study. The risk of non-approval of the project by the regulators is seen as low.

- The town of Granisle and the surrounding district are areas of high unemployment and somewhat depressed at this time. It is a well known mining area with a rich history of mining. Mining is quite acceptable in the area and the local peoples are very keen to see employment opportunities develop, particularly in mining due to the higher incomes that are usually seen in the mining sector. The municipal and provincial governments are also encouraging development in the area. Thus the risk of opposition to the project by local residents is considered to be very low.

- There a number of First Nations' bands in the area. Meetings have been held with the various bands and there is every indication that the development of the mine would be welcome in the area. A number of First Nation peoples have been employed and continue to be employed on the present development activities at the Morrison/Hearne Hill project. Thus the risk of opposition to the project by First Nation peoples is considered low.

- The results of the work for the Preliminary Assessment have indicated that the estimated capital and operating costs are in line with similar operating mines and estimates derived by others for similar proposed operations. Thus it is reasonable to say that the costs estimated in this report can be expected to be achieved. Significant changes in the capital and operating cost above that estimated is not expected and thus the risk here is considered medium to low.

- Metal prices are always difficult to forecast. The base case financial analysis for this project has been based on metal prices of US$1.10/lb copper and $385/oz gold. Prices at the time of writing this report are US$1.25/lb and $390/oz Gold. The project breaks even at about US$0.90/lb copper. The risk factor is very difficult to assess for metal price fluctuations and there will be fluctuations in metal prices throughout the life of the operation. It is fair to say that the demand for copper is high at present and the demand is expected to remain high for the foreseeable future as countries such as China and India build their infrastructure and middle class society. Considering these factors together with the forecast demand for concentrate in the world it can be expected that the prices used for the base case economics are likely to be achieved.

- Currency exchange rates. The exchange rate between currencies has been fluctuating over the last 18 months. The Canadian $ has appreciated against the US$ while at the same time the metal prices have appreciated in US$ currency. The balance overall has clearly been an appreciation in metal prices in Canadian currency. The forecast for the exchange rates is that the relationship between the Canadian $ and metal prices is expected to be advantageous to metal producers in Canada. The risk of lower metal prices in Canadian $ terms is seen as medium to low.

1.7 PROPERTY POTENTIAL

The following was extracted from a report prepared by E.T. Kimura, P.Geo. Consulting Geologist dated 1 January, 2002.

Pacific Booker, in addition to the Morrison deposit, owns the Hearne Hill Property which lies adjacent to the Morrison in the Babine Lake area of central British Columbia. An exploration program was completed during the period from May 1993 to October 1997. The main objectives for the project were to determine if additional high grade copper-gold breccia pipes and potential higher grade zones could be defined within the Hearne Hill copper porphyry deposit.

The exploration programs were successful in discovering and defining a second well-mineralized copper-gold breccia pipe within the larger lower grade copper porphyry system. This breccia pipe referred to as the Peter Bland Zone was discovered after the uncovering of well-mineralized float boulders in trenches upslope from the Chapman Zone, and which, in turn, directed the follow-up diamond drilling in the general area northeast and upslope from the float train. Preliminary resource estimates were calculated at the 0.40% Cu cut-off grade by geostatistical methods for the Peter Bland Zone and the adjacent and previously-known Chapman Zone as follows:

Table 1-2
Hearne Hill Resource

Classification	Zone	Tonnes	% Cu	gAu/t
Indicated	Peter Bland	2,342,000	0.660	0.217
	Chapman	474,000	1.074	0.256
Total Indicated		2,816,000	0.730	0.224
Inferred	Peter Bland	226,000	0.568	0.245
	Chapman	22,000	0.682	0.160
Total Inferred		248,000	0.578	0.237

Note: Resources listed above do not meet the requirements of the 43-101 regulations and are shown for information purposes only.

The resources are based on geochemical methods of analyses for the core samples. By incorporating 622 re-analyses of gold content by fire assay method into the database, the resources for the combined two zones were calculated at the 0.40% Cu cut-off grade as 2,880,000 tonnes at 0.723% Cu and 0.233 gAu/t in the indicated classification, and 355,000 tonnes at 0.537% Cu and 0.210 gAu/t in the inferred classification. A significant component of the exploration programs consisted of drilling 142 holes totaling 33,493 m. A large proportion of this drilling was focused on defining the two breccia zones and exploring geochemical anomalies as potential breccia pipe targets. Additional drilling was allocated to exploring the larger porphyry system, the results of which have effectively confirmed sub-marginal copper and gold grades for the stockwork type of mineralization.

Further work is required at the property to further enhance the data.

No work is planned by Pacific Booker at this time but several programs should be considered and planned to advance the Hearne Hill project to the next stage of economic evaluation.

These are:

- Systematically re-analyze the reject core samples from drill holes in and around the breccia pipes for gold by fire assay, and copper for copper sulphide content particularly in the oxidized zone.

- Obtain down-hole surveys for diamond drill holes within and immediately around the two breccia pipes.
- Verify data and re-compile geologic database for drill holes related to the two breccia pipes.
- Develop geologic model for resource evaluation.
- Conduct bench-scale metallurgical tests for the oxidized mineralization, sulphide breccia mineralization and mineralized wallrock.
- Develop a mining concept for the breccia pipes. Is it feasible from an economic and practical perspective to mine the near-vertical pipes from a lower-level underground access drift or decline system?

Note: The Hearne Hill deposit is not included in the evaluation of the Morrison/Hearne Hill project and is included here for information purposes only to indicate that the property has potential for other deposits to be delineated. There is no indication at present that the Hearne Hill deposit has any potential for economic viability.

The following Figures, 1-2, 1-3, 1-4 and 1-5 shown below describe the geology and work done to date on the Hearne Hill deposit.

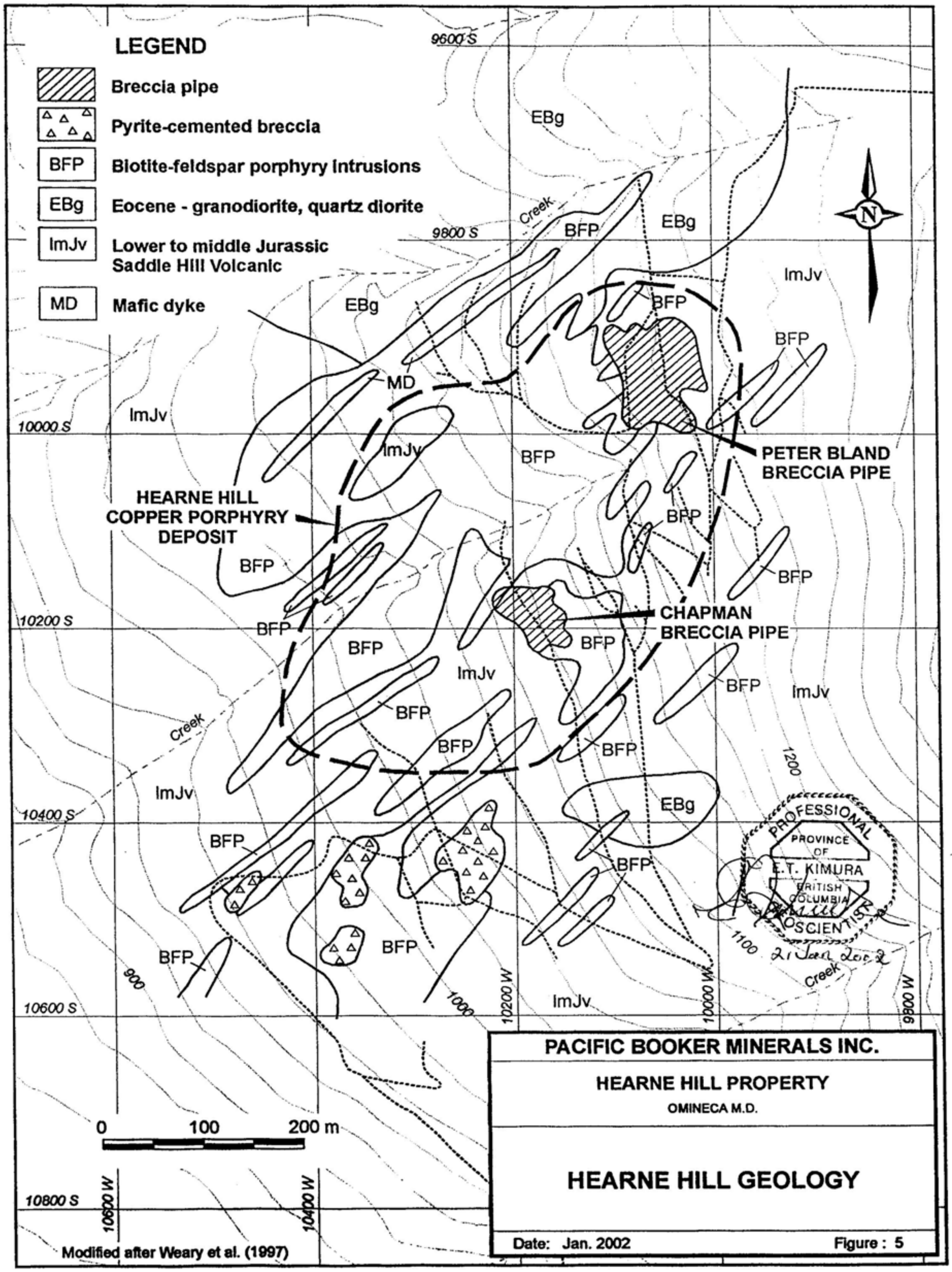

LEGEND
Breccia pipe
Pyrite-cemented breccia
BFP Biotite-feldspar porphyry intrusions
EBg Eocene - granodiorite, quartz diorite
ImJv Lower to middle Jurassic Saddle Hill Volcanic
MD Mafic dyke
9600 S
9800 S
10000 S
10200 S
10400 S
10600 S
10800 S
10600 W
10400 W
10200 W
10000 W
9800 W
Creek
PETER BLAND BRECCIA PIPE
HEARNE HILL COPPER PORPHYRY DEPOSIT
CHAPMAN BRECCIA PIPE
0 100 200 m
Modified after Weary et al. (1997)
PROFESSIONAL PROVINCE OF E.T. KIMURA BRITISH COLUMBIA GEOSCIENTIST
PACIFIC BOOKER MINERALS INC.
HEARNE HILL PROPERTY
OMINECA M.D.
HEARNE HILL GEOLOGY
Date: Jan. 2002
Figure : 5

Figure 1-2

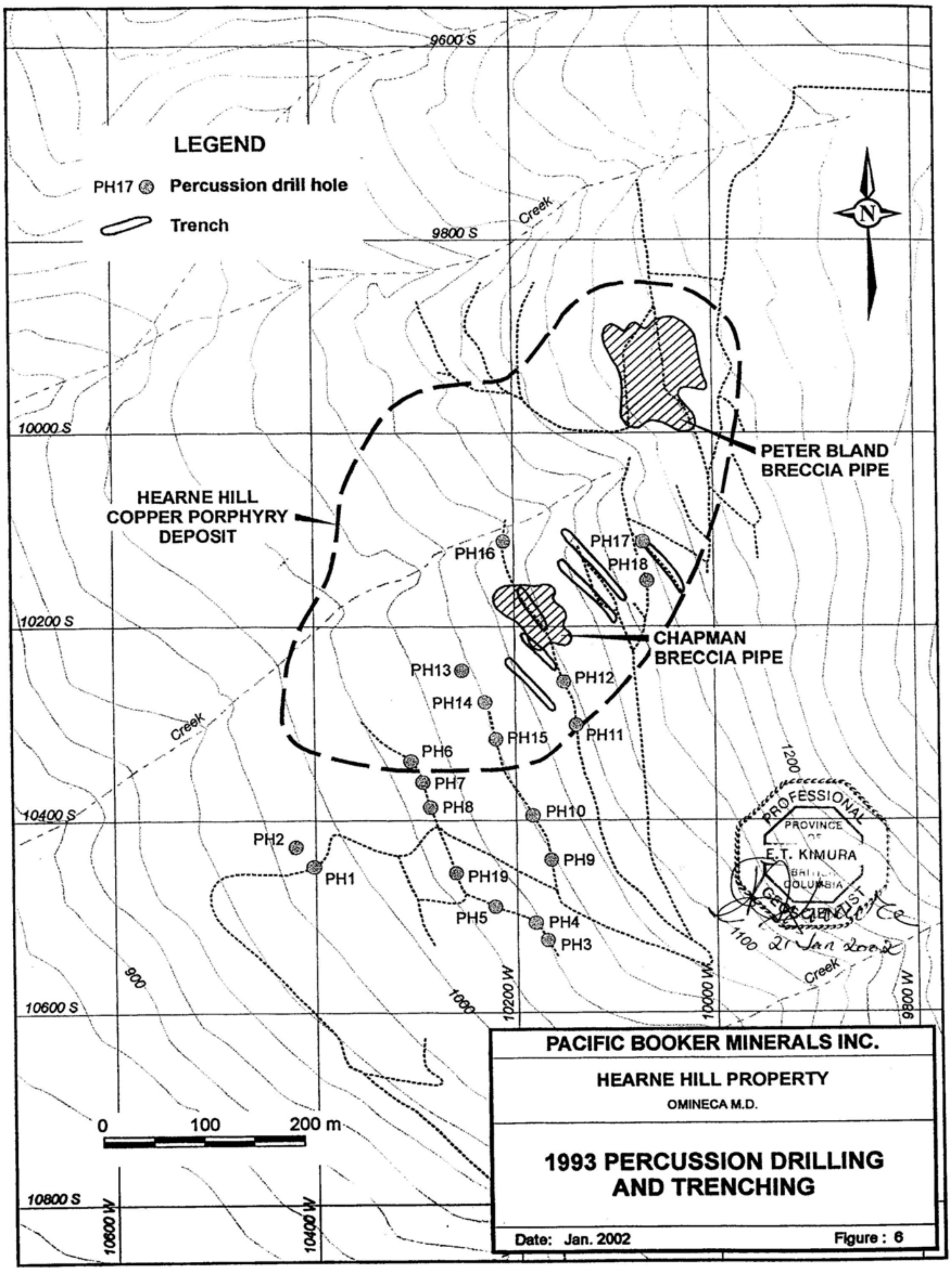

LEGEND
PH17 Percussion drill hole
Trench
9600 S
9800 S
10000 S
10200 S
10400 S
10600 S
10800 S
Creek
HEARNE HILL
COPPER PORPHYRY
DEPOSIT
PETER BLAND
BRECCIA PIPE
CHAPMAN
BRECCIA PIPE
PH1
PH2
PH3
PH4
PH5
PH6
PH7
PH8
PH9
PH10
PH11
PH12
PH13
PH14
PH15
PH16
PH17
PH18
PH19
900
1000
1100
1200
10600 W
10400 W
10200 W
10000 W
9800 W
0 100 200 m
PROFESSIONAL
PROVINCE
E.T. KIMURA
BRITISH
COLUMBIA
GEOSCIENTIST
21 Jan 2002
PACIFIC BOOKER MINERALS INC.
HEARNE HILL PROPERTY
OMINECA M.D.
1993 PERCUSSION DRILLING
AND TRENCHING
Date: Jan. 2002
Figure : 6

Figure 1-3

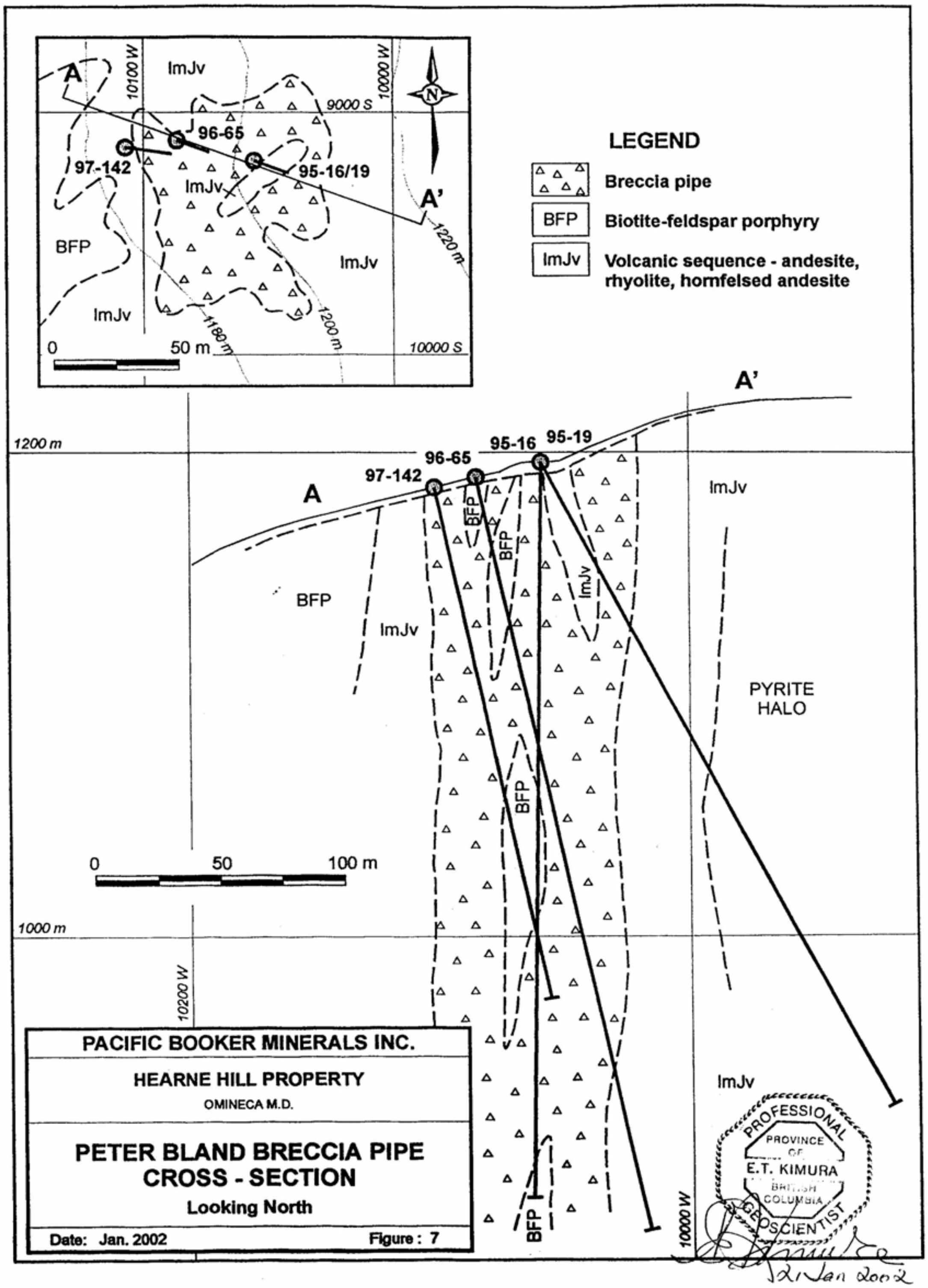
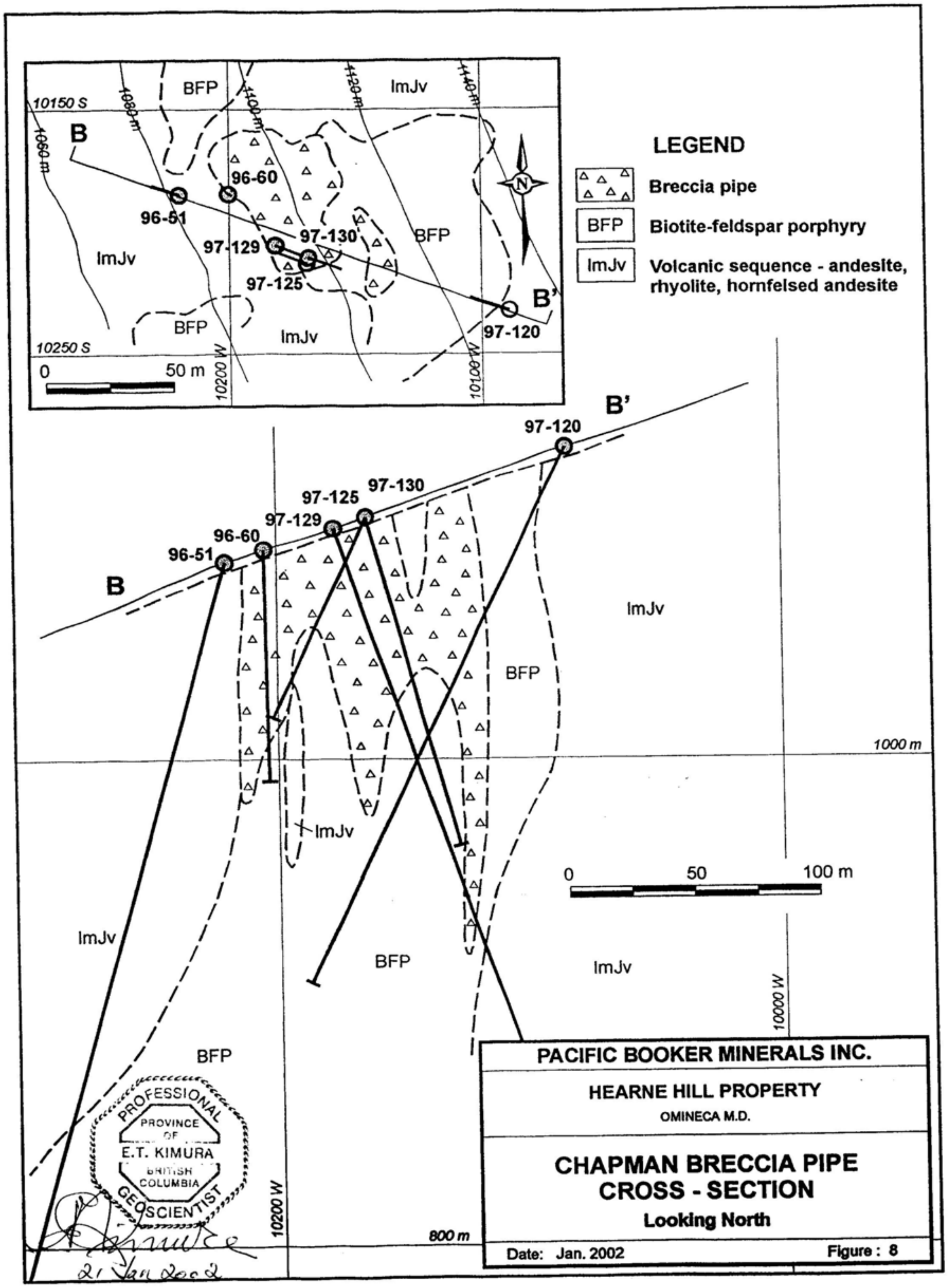

A
A'
10100 W
10000 W
9000 S
ImJv
96-65
97-142
95-16/19
BFP
1220 m
1200 m
1180 m
0
50 m
10000 S
LEGEND
Breccia pipe
BFP
Biotite-feldspar porphyry
ImJv
Volcanic sequence - andesite, rhyolite, hornfelsed andesite
1200 m
95-16
95-19
96-65
97-142
PYRITE HALO
0
50
100 m
1000 m
10200 W
10000 W
PACIFIC BOOKER MINERALS INC.
HEARNE HILL PROPERTY
OMINECA M.D.
PETER BLAND BRECCIA PIPE
CROSS - SECTION
Looking North
Date: Jan. 2002
Figure : 7
PROFESSIONAL
PROVINCE OF
E.T. KIMURA
BRITISH COLUMBIA
GEOSCIENTIST
21 Jan 2002

Figure 1-4



LEGEND
Breccia pipe
BFP Biotite-feldspar porphyry
lmJv Volcanic sequence - andesite, rhyolite, hornfelsed andesite
10150 S
10250 S
0 50 m
10200 W
10100 W
B
B'
96-51
96-60
97-129
97-125
97-130
97-120
BFP
lmJv
1000 m
800 m
10000 W
0 50 100 m
PACIFIC BOOKER MINERALS INC.
HEARNE HILL PROPERTY
OMINECA M.D.
CHAPMAN BRECCIA PIPE
CROSS - SECTION
Looking North
Date: Jan. 2002
Figure : 8
PROFESSIONAL
PROVINCE OF BRITISH COLUMBIA
E.T. KIMURA
GEOSCIENTIST
21 Jan 2002

Figure 1-5

1.8 REPORT OVERVIEW

1.8.1 Purpose of Study

This Preliminary Assessment has been completed to determine the most appropriate mining plan on which to develop the Morrison deposit at the Morrison/Hearne Hill property. The study includes a financial analysis which has been used to compare alternatives and indicate the appropriate option for further development. The study has incorporated inferred resources into the mineral resources estimate and thus the study is not intended to imply that the Morrison deposit is viable but that it is potentially a viable project. Viability of the project is subject to further work programs being completed and positive results being obtained from those programs. It should be noted that further work in the form of a feasibility study is required to determine the viability of the Morrison/Hearne Hill Project.

This Preliminary Assessment has used measured, indicated and inferred resources to evaluate the alternatives. This study does not meet the requirements of a pre-feasibility report in that it includes inferred resources that are considered too speculative to have economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary assessment will be realized.

1.8.2 Location

The Morrison property is located on Crown Land 65 km northeast of Smithers and 35 km north of the village of Granisle within the traditional territory of the Lake Babine Nation. It is situated within the forest management area of Canadian Forest Products Ltd. (Canfor). Refer to Figures 1-6, 1-7, 1-8, 1-9 and 1-10 which display the Location Map, the Regional Location Map, the Local Location Map, the Morrison Deposit Map and the Photo Overview respectively. The property elevation ranges from 737 metres above sea level at Morrison Lake to 890 metres at the top of the ridge southeast of the deposit. Topography can be characterized as undulating and rolling plateaus rising steeply to the east to a ridge dominated by Hearne Hill at an elevation of 1350 metres.

The property is on the east side of the southern end of Morrison Lake. It is accessed from the highway that turns north off Highway 16 at Topley to Michelle Bay, then by an all-season barge (which can transport up to 10 fully loaded logging trucks) across Babine Lake from where a main haulage logging road network extends to both Pacific Booker’s camp and the Morrison deposit.

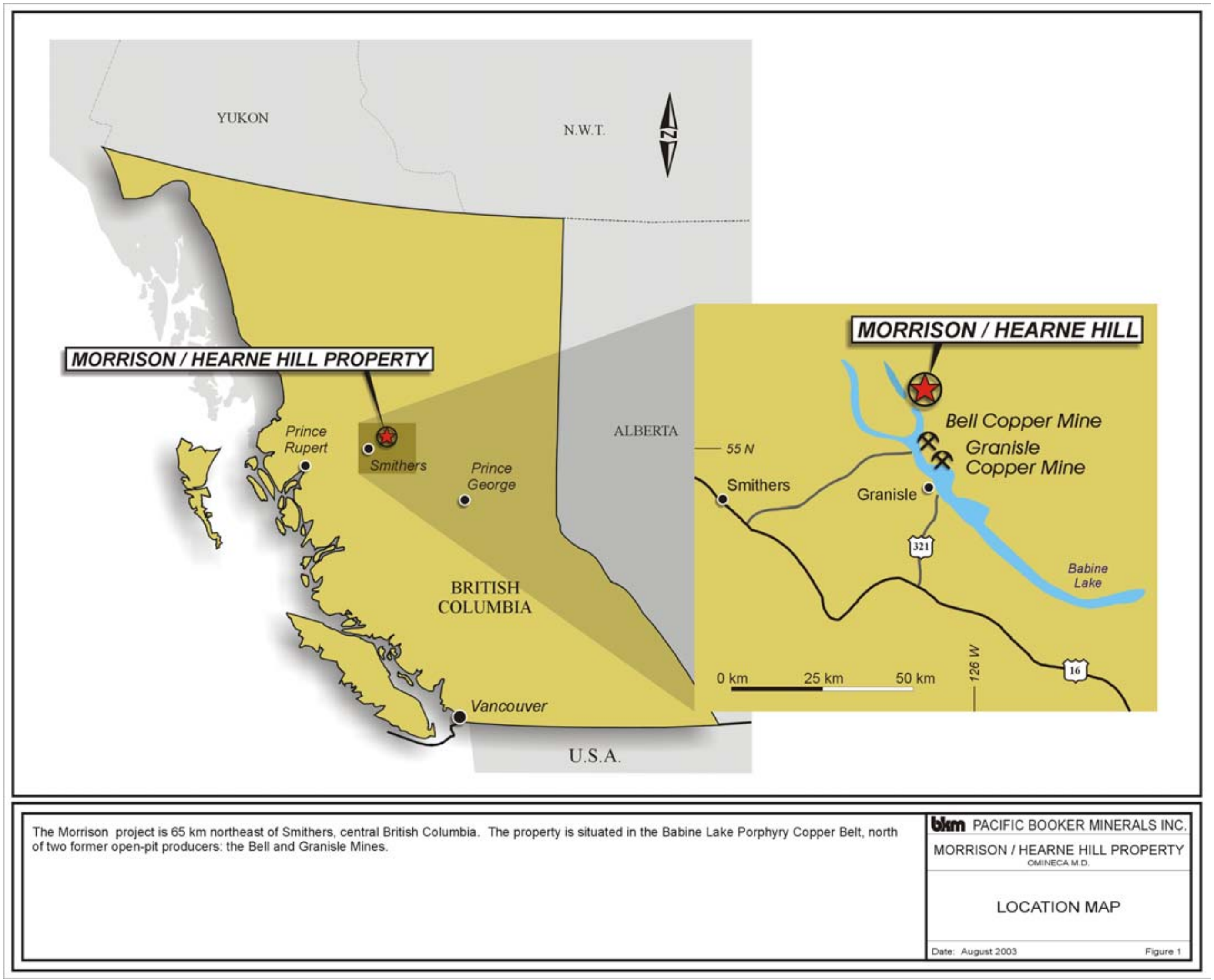

YUKON
N.W.T.
N
MORRISON / HEARNE HILL PROPERTY
Prince Rupert
Smithers
Prince George
ALBERTA
BRITISH COLUMBIA
Vancouver
U.S.A.
MORRISON / HEARNE HILL
Bell Copper Mine
Granisle Copper Mine
55 N
Smithers
Granisle
321
Babine Lake
0 km
25 km
50 km
126 W
16
The Morrison project is 65 km northeast of Smithers, central British Columbia. The property is situated in the Babine Lake Porphyry Copper Belt, north of two former open-pit producers: the Bell and Granisle Mines.
bkm PACIFIC BOOKER MINERALS INC.
MORRISON / HEARNE HILL PROPERTY
OMINECA M.D.
LOCATION MAP
Date: August 2003
Figure 1

Figure 1-6

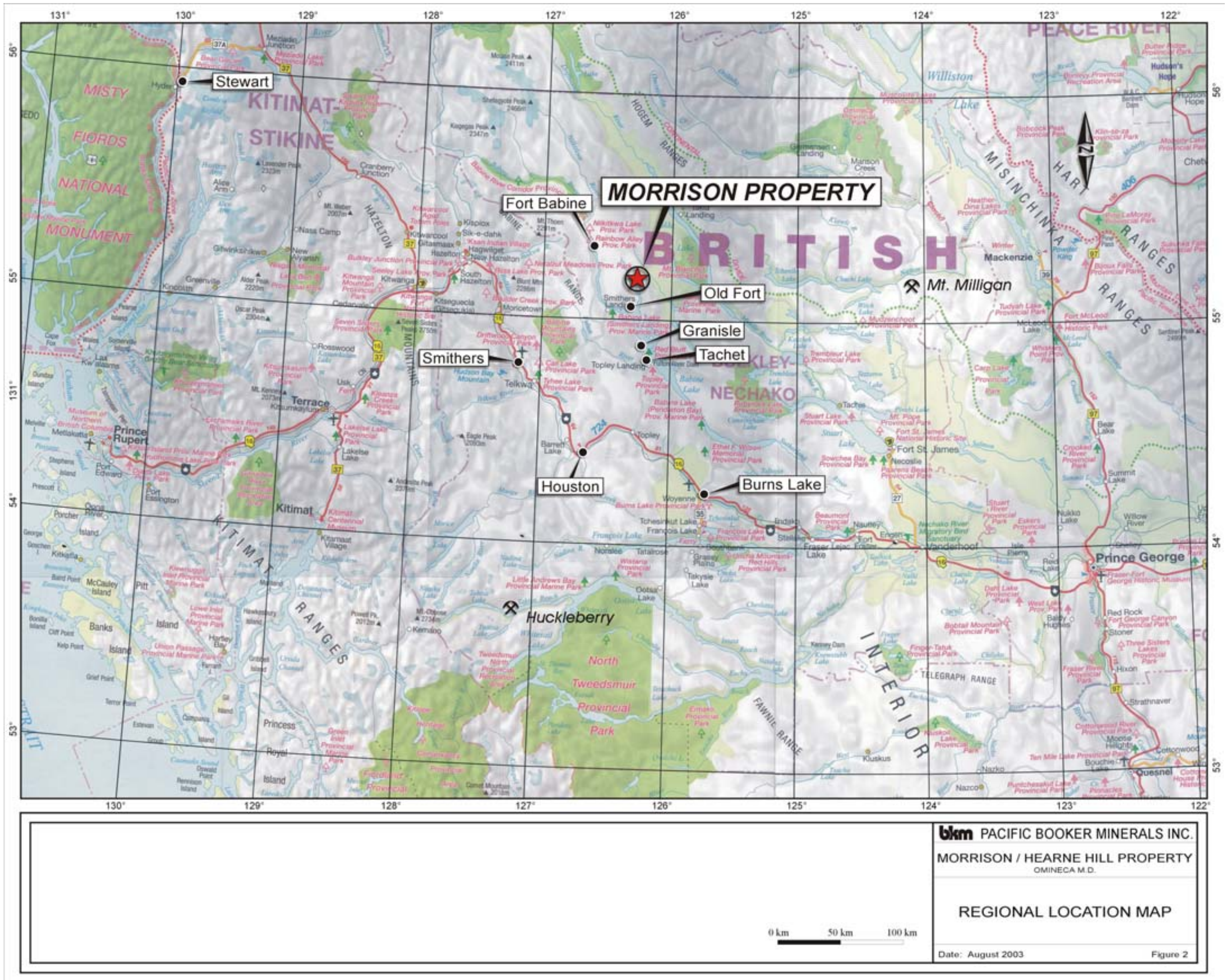

MORRISON PROPERTY
Stewart
Fort Babine
Old Fort
Granisle
Tachet
Smithers
Houston
Burns Lake
Mt. Milligan
Huckleberry
Prince George
BRITISH
PACIFIC BOOKER MINERALS INC.
MORRISON / HEARNE HILL PROPERTY
OMINECA M.D.
REGIONAL LOCATION MAP
Date: August 2003
Figure 2
0 km
50 km
100 km

Figure 1-7

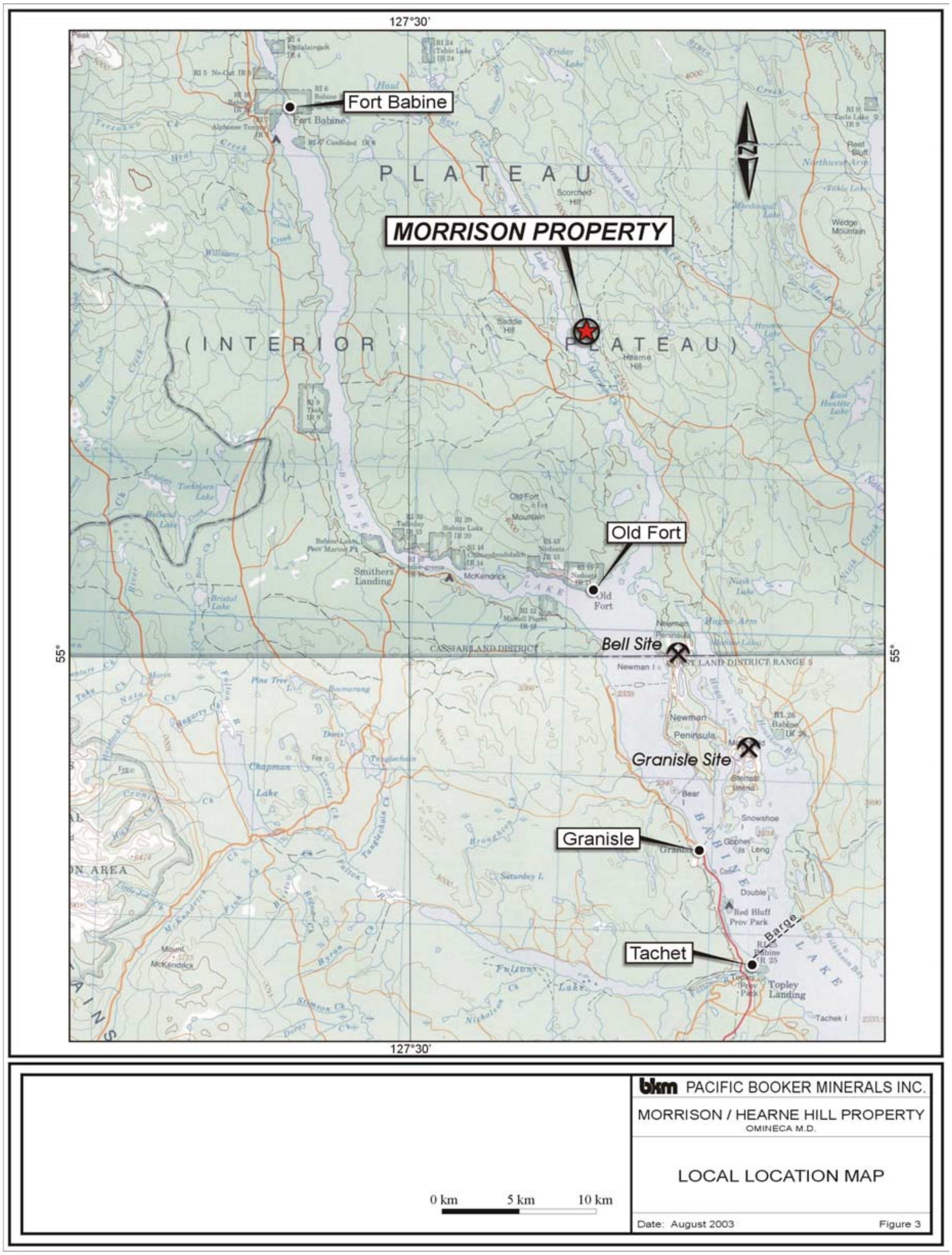

127°30'
Fort Babine
PLATEAU
MORRISON PROPERTY
(INTERIOR PLATEAU)
Scorched Hill
Saddle Hill
Hearne Hill
Old Fort
Smithers Landing
McKendrick
Bell Site
CASSIAR LAND DISTRICT
Newman Peninsula
Granisle Site
Granisle
Tachet
Barge
Topley Landing
BABINE LAKE
55°
127°30'
bkm PACIFIC BOOKER MINERALS INC.
MORRISON / HEARNE HILL PROPERTY
OMINECA M.D.
LOCAL LOCATION MAP
0 km
5 km
10 km
Date: August 2003
Figure 3

Figure 1-8

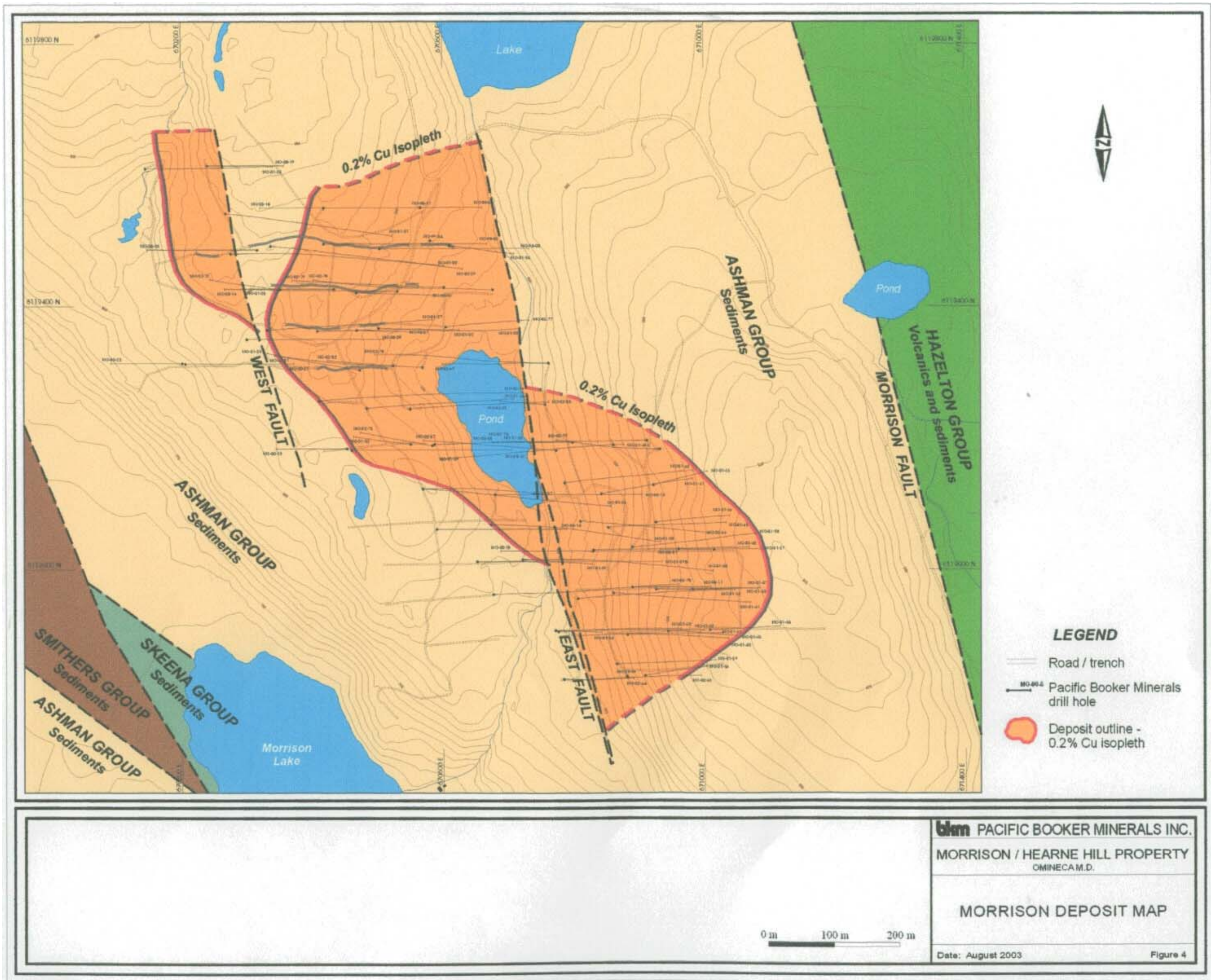
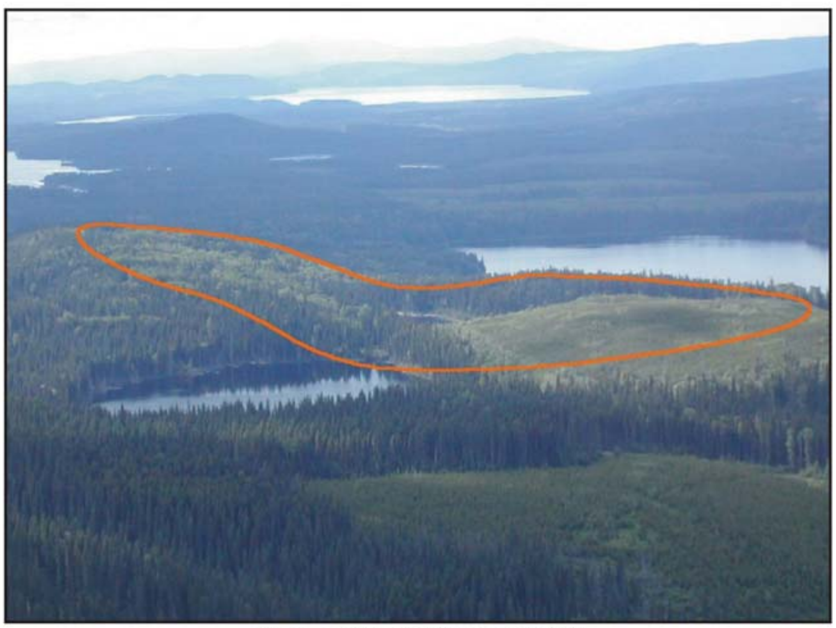

Lake
0.2% Cu Isopleth
Pond
WEST FAULT
EAST FAULT
0.2% Cu Isopleth
Pond
ASHMAN GROUP
Sediments
MORRISON FAULT
HAZELTON GROUP
Volcanics and sediments
ASHMAN GROUP
Sediments
SMITHERS GROUP
Sediments
SKEENA GROUP
Sediments
ASHMAN GROUP
Sediments
Morrison Lake
LEGEND
Road / trench
Pacific Booker Minerals drill hole
Deposit outline - 0.2% Cu isopleth
0 m 100 m 200 m
PACIFIC BOOKER MINERALS INC.
MORRISON / HEARNE HILL PROPERTY
OMINECA M.D.
MORRISON DEPOSIT MAP
Date: August 2003
Figure 4

Figure 1-9

Morrison and Hearne Hill, looking east.



Proposed Ultimate Pit, Looking South

bkm PACIFIC BOOKER MINERALS INC.

MORRISON / HEARNE HILL PROPERTY
OMINECA M.D.

PHOTO OVERVIEW

Date: August 2003 Figure 5

Figure 1-10

1.8.3 Geology

Regional Geology

The Morrison deposit is on the northern edge of the Skeena Arch in a region underlain by volcanic, clastic and epiclastic rocks ranging in age from the Lower Jurassic to Lower Cretaceous. These rocks are correlative with the Takla Group, Hazelton Group, Bowser Lake Group, Skeena Group and Sustut Group (see Figures 1-11 and 1-12). They have been block-faulted by a series of post-Eocene, northwesterly-trending series of faults that have created a long linear sequence of horsts and grabens. Some of these structures have been traced over a distance of 100 km. The younger Middle Jurassic to Cretaceous rocks are often preserved in the down-dropped blocks, with the older Lower and Middle Jurassic rocks exposed in the Highlands.

Intrusive rocks in the area include the Early Jurassic diorite and granodiorite Topley intrusions, Eocene rhyolite and rhyodacite intrusions, and, most importantly from an economic viewpoint, the Eocene Babine igneous suite which consists of quartz, hornblende, biotite and plagioclase phyric intrusions.

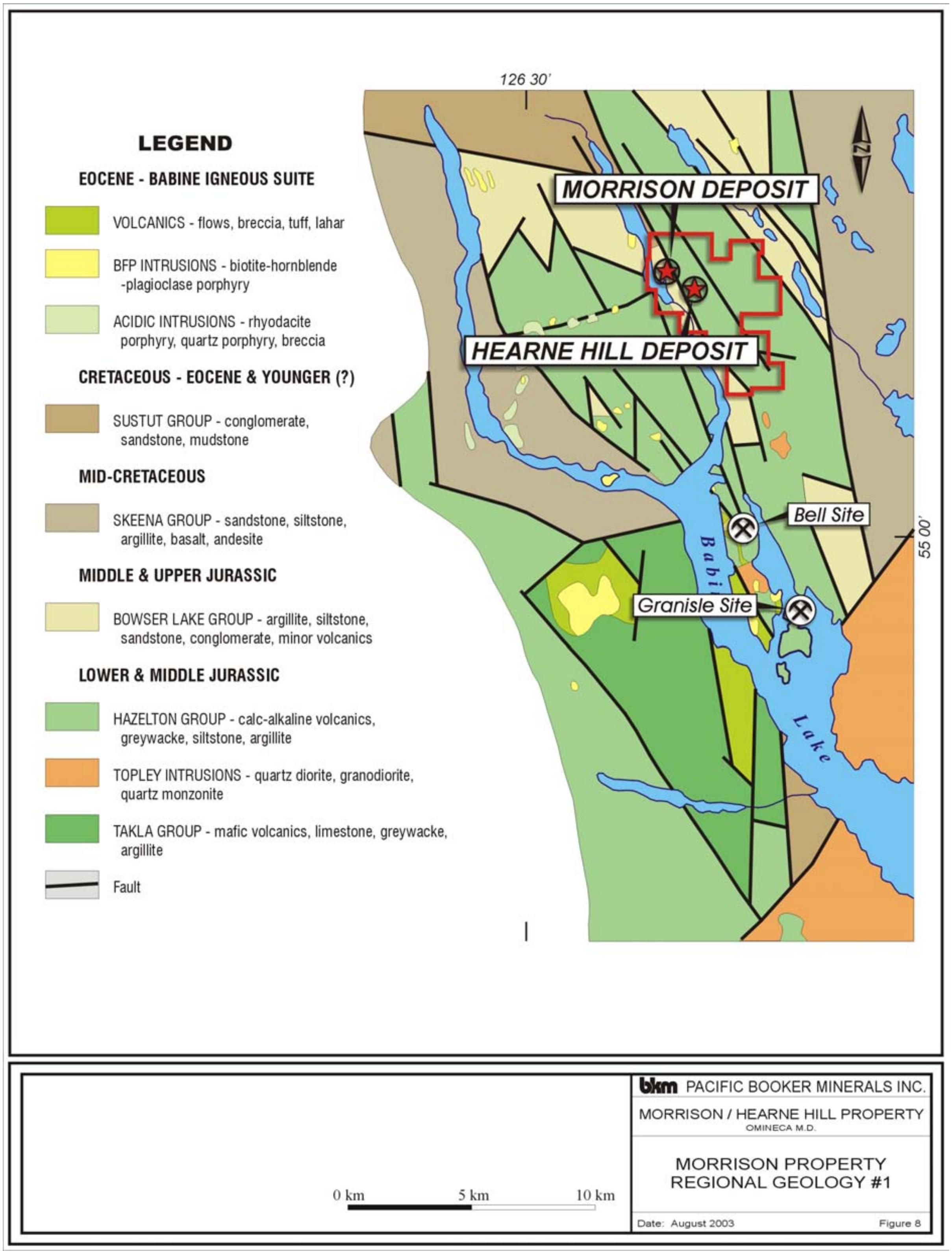
Geology of the Morrison Deposit

A zoned annular porphyry copper-gold deposit largely within a multi-phased Eocene 'Babine type' biotite feldspar porphyry (BFP) body which intrudes Middle to Upper Jurassic Ashman Formation siltstone and greywackes. The lower part of this sequence is mostly marine pebble conglomerate, interbedded with maroon to greenish grey sandstone and siltstone which change upwards to deeper water well-bedded shaley argillaceous siltstone and greywacke.

The lower marine sequence has abundant bivalves, ammonites, belemnites and fossil wood debris of Middle to Upper Jurassic age.

The intrusive BFP at Morrison is very similar to that at other Babine copper deposits. A complete description of the lithology including chemical and microprobe analysis is presented by Carson and Jambor (1975). The BFP intrusive at Morrison is a faulted plug with nearly vertical contacts which occupies a northwesterly-oriented elliptical area of 900 by 500 metres width. Before block faulting, the plug was roughly circular in plan with a diameter of about 500 metres. Numerous offshoots of the plug, many of which are 1 to 500 m-wide northerly-trending dykes or sills, occur abundantly in the Ashman sedimentary rocks.

The unaltered BFP is speckled with abundant 0.25 to 5 mm phenocrysts of plagioclase, biotite and hornblende in a fine-grained matrix of the same materials as well as quartz and K-feldspar. Apatite and magnetite are common accessory minerals.



126 30'
LEGEND
EOCENE - BABINE IGNEOUS SUITE
VOLCANICS - flows, breccia, tuff, lahar
BFP INTRUSIONS - biotite-hornblende -plagioclase porphyry
ACIDIC INTRUSIONS - rhyodacite porphyry, quartz porphyry, breccia
CRETACEOUS - EOCENE & YOUNGER (?)
SUSTUT GROUP - conglomerate, sandstone, mudstone
MID-CRETACEOUS
SKEENA GROUP - sandstone, siltstone, argillite, basalt, andesite
MIDDLE & UPPER JURASSIC
BOWSER LAKE GROUP - argillite, siltstone, sandstone, conglomerate, minor volcanics
LOWER & MIDDLE JURASSIC
HAZELTON GROUP - calc-alkaline volcanics, greywacke, siltstone, argillite
TOPLEY INTRUSIONS - quartz diorite, granodiorite, quartz monzonite
TAKLA GROUP - mafic volcanics, limestone, greywacke, argillite
Fault
MORRISON DEPOSIT
HEARNE HILL DEPOSIT
Bell Site
Granisle Site
Babine Lake
55 00'
N
0 km
5 km
10 km
bkm PACIFIC BOOKER MINERALS INC.
MORRISON / HEARNE HILL PROPERTY
OMINECA M.D.
MORRISON PROPERTY
REGIONAL GEOLOGY #1
Date: August 2003
Figure 8

Figure 1-11

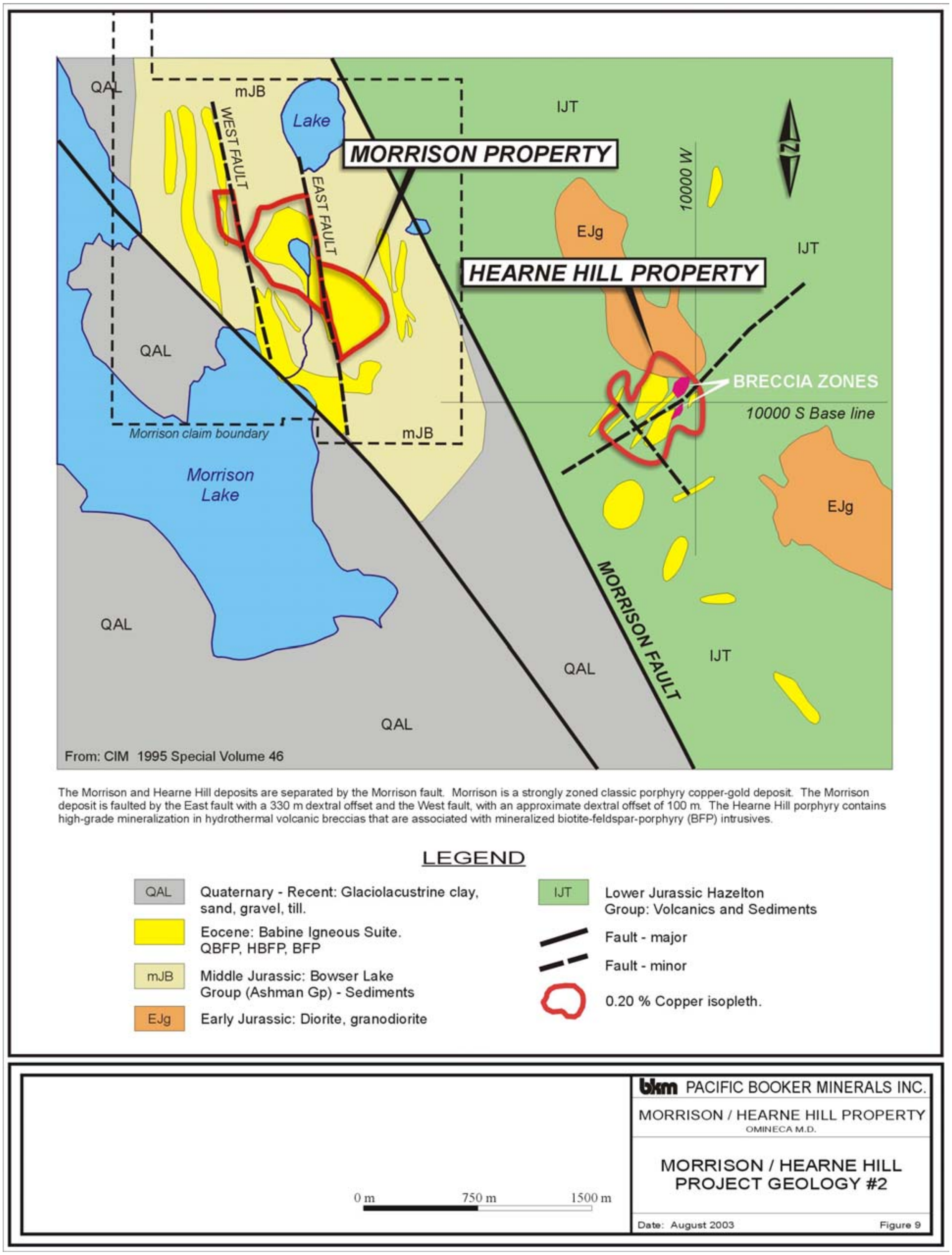

QAL
mJB
WEST FAULT
Lake
EAST FAULT
MORRISON PROPERTY
lJT
10000 W
EJg
HEARNE HILL PROPERTY
BRECCIA ZONES
10000 S Base line
Morrison claim boundary
Morrison Lake
MORRISON FAULT
From: CIM 1995 Special Volume 46
The Morrison and Hearne Hill deposits are separated by the Morrison fault. Morrison is a strongly zoned classic porphyry copper-gold deposit. The Morrison deposit is faulted by the East fault with a 330 m dextral offset and the West fault, with an approximate dextral offset of 100 m. The Hearne Hill porphyry contains high-grade mineralization in hydrothermal volcanic breccias that are associated with mineralized biotite-feldspar-porphyry (BFP) intrusives.
LEGEND
QAL Quaternary - Recent: Glaciolacustrine clay, sand, gravel, till.
Eocene: Babine Igneous Suite. QBFP, HBFP, BFP
mJB Middle Jurassic: Bowser Lake Group (Ashman Gp) - Sediments
EJg Early Jurassic: Diorite, granodiorite
lJT Lower Jurassic Hazelton Group: Volcanics and Sediments
Fault - major
Fault - minor
0.20 % Copper isopleth.
bkm PACIFIC BOOKER MINERALS INC.
MORRISON / HEARNE HILL PROPERTY
OMINECA M.D.
MORRISON / HEARNE HILL PROJECT GEOLOGY #2
0 m 750 m 1500 m
Date: August 2003
Figure 9

Figure 1-12

1.8.4 Resource Estimate

Data from 82 drill holes were supplied for the Morrison deposit which included collars co-ordinates, downhole surveys, assays, lithology and alteration codes. Composite lengths were chosen to be 3m and gold outliers were limited in influence to a radius of 2 block lengths.

The interpolation method used for the estimation process was inverse distance using an octant search strategy. A 12x12x12m block size was chosen and a detailed 0.2% Cu isopleth solid envelope was created to constrain the block model. Geostatistical methods were utilized to determine the estimation parameters and as the basis for resource classification.

Based on classification categories of measured, indicated and inferred the following table lists the resources for the Morrison deposit:

Table 1-3
Resources by Classification

Resouce Classification	*Cutoff Grade %Cu*	*Resouce BCM*	*Resouce Tonnes*	*Grade Cu%*	*Grade gAu/t*
Measured					
	0.00	51,706,235	138,043,729	0.344	0.174
	0.10	47,019,989	125,616,870	0.372	0.188
	0.20	40,055,036	107,026,532	0.411	0.209
	0.30	29,826,482	79,785,454	0.465	0.234
	0.40	18,587,449	49,787,469	0.535	0.267
	0.50	9,771,597	26,170,223	0.617	0.316
	0.60	4,256,483	11,415,402	0.710	0.372
	0.80	658,368	1,768,936	0.922	0.441
	1.00	146,880	394,416	1.113	0.507
Indicated					
	0.00	51,169,217	136,770,816	0.287	0.149
	0.10	43,499,866	116,232,108	0.327	0.169
	0.20	33,315,319	88,911,148	0.382	0.201
	0.30	23,841,819	63,586,162	0.434	0.228
	0.40	12,431,896	33,218,512	0.514	0.264
	0.50	5,592,757	14,941,604	0.601	0.307
	0.60	2,111,444	5,632,130	0.696	0.358
	0.80	214,272	572,452	0.895	0.346
	1.00	25,920	69,517	1.023	0.290
Inferred					
	0.00	16,527,717	44,394,006	0.222	0.110
	0.10	12,762,906	34,236,464	0.269	0.131
	0.20	7,589,297	20,258,320	0.354	0.178
	0.30	4,952,718	13,214,946	0.412	0.207
	0.40	2,139,992	5,727,349	0.499	0.244
	0.50	839,511	2,237,861	0.590	0.290
	0.60	297,216	790,698	0.678	0.330
	0.80	10,368	27,130	0.914	0.252
	1.00	3,456	8,882	1.012	0.110
Total					
	0.00	119,403,169	319,208,550	0.302	0.154
	0.10	103,282,761	276,085,442	0.340	0.173
	0.20	80,959,653	216,196,000	0.394	0.203
	0.30	58,621,020	156,586,562	0.448	0.229
	0.40	33,159,338	88,733,329	0.525	0.264
	0.50	16,203,866	43,349,688	0.610	0.311
	0.60	6,665,143	17,838,231	0.704	0.366
	0.80	883,008	2,368,517	0.915	0.416
	1.00	176,256	472,815	1.098	0.468

Utilizing this resource model, several open pit optimizations iterations were performed on varying production rates, cost structures and revenue criteria in order to determine an optimum open pit. The final pit was selected on the basis of US$0.90/lb copper and US$350/oz gold and was then utilized as the template for the creation of the designed pit which included the haul road. The design parameters for the pit were to utilize a double bench, 10 metre safety berm, 70 degree face slopes and 10% grade for the haul road. In addition, to accommodate geotechnical constraints, an overall pit slope of 45 degrees was used, with the exception of those sections of wall that transect the East Fault Block which required a 40 degree pit slope.

For scheduling, the approach was to create a Phase 1 pit which would extract the relatively higher grade resources in the initial years followed by a Phase 2 pit to exploit the remainder of the resources. The resulting resources for the final pit are listed as follows:

Table 1-4
Resources for the Final Pit by Classification Excluding Low Grade Stockpile Material

Phase 1 Pit						
Classification	**Resource Volume**	**Resource Tonnes**	**Grade Cu%**	**Grade gAu/t**	**Waste Tonnes**	**S/R**
Measured	10,382,788	27,714,851	0.490	0.265		
Indicated	5,101,385	13,456,888	0.441	0.247		
Inferred	249,539	614,178	0.355	0.276		
Total	**15,733,712**	**41,785,917**	**0.472**	**0.260**	**59,613,561**	**1.43**
Phase 2 Pit						
Measured	10,466,915	27,927,131	0.439	0.248		
Indicated	6,222,570	16,544,108	0.416	0.266		
Inferred	238,994	632,075	0.368	0.249		
Total	**16,928,478**	**45,103,314**	**0.430**	**0.255**	**65,708,680**	**1.46**
Combined Phase 1 and Phase 2 Pits						
Measured	20,850,376	55,643,752	0.465	0.257		
Indicated	11,324,363	30,002,067	0.428	0.257		
Inferred	488,541	1,246,275	0.362	0.262		
Total	**32,663,280**	**86,892,094**	**0.450**	**0.257**	**125,256,661**	**1.44**

In addition, the option of extracting material into a low grade stockpile was considered in the analysis. The total resources for this potential option are 28,151,658 tonnes with a grade of 0.278% Cu and 0.123 gAu/t. These resources are included in the total waste summarized in the above Table 1-4.

1.8.5 Mining Methods

Development of the Morrison open pit is planned as a two phase mining operation, utilizing conventional truck and shovel equipment. The first phase will be developed in the northwest end of the deposit, encompassing some of the higher grade ore and will extend down to a depth of approximately 200 metres below surface. Phase 2 will consist of a push back, or expansion, of the first phase pit to the southeast and will extend four benches lower than Phase 1. The planned production rate is 25,000 t/d ore and an average of 36,000 t/d waste over the 10 year life of the pit.

Mining activities at the Morrison pit will be conducted on two 12 hour shifts per day, 365 days per year. The owner will purchase and operate the equipment and contractors will only be used for specialized services and for pit pre-production development work.

Ore and waste will be drilled and blasted using 270 mm diameter holes drilled on a 8.0 m. x 8.5 m. pattern. A 70%/30% emulsion/ANFO mix will be used for blasting, resulting in an estimated powder factor of about 0.26 kg/t of material. A combination of 16 cubic metre electric cable shovels and 140 tonne diesel trucks will be used for loading and hauling the ore and waste from the pit to a primary crusher located near the top of the ramp. Crushed waste material will be transported by conveyor to the main disposal area located some 4 km north of the pit, while the ore will be conveyed to the mill coarse ore stockpile.

In addition to the primary mining equipment several pieces of auxiliary and service equipment will be required to maintain haul roads, waste dumps and general pit operations. A list of all major equipment is shown below, based on the maximum number of units required.

Description	Size	Max. No. Req'd
Blasthole drill (elec)	270mm	2
Electric cable shovel	$16m^3$	2
Haul truck	140t	8
Front end loader	$5m^3$	1
Tracked dozer	250kW	4
Grader	210kW	2
Air trac/compressor		1
Service truck		4
Crane truck		1
Water truck		1
Explosives truck		1

1.8.6 Metallurgy

Metallurgical testwork carried out in the early 1980's by Noranda indicated that the metallurgy of the Morrison deposit was relatively straightforward and that good copper recoveries and acceptable concentrates could be achieved. More recent work by I.M.E. Consultants of Kelowna again indicated metallurgical performance typical of many BC porphyry copper deposits, achieving an overall copper recovery of 88.4% into a concentrate grading about 27.6% copper.

In the proposed flowsheet copper is concentrated by flotation in large tank cells after grinding in a SAG/ball mill circuit, then cleaned and filtered to achieve acceptable shipping moistures without thermal drying.

Additional testwork will be required to refine metallurgical performance and enable plant design criteria to be developed. This work is described in Section 8.0 of this report and in the Appendices.

The plant design concept developed in this study is based on campaigning both ore and waste through a 60″- 89″ primary crusher located at the pit rim, and then conveying the crushed material to the relevant stockpiles. The waste will be crushed to 300-400 mm before being conveyed about 4 km to the waste disposal area, while the ore will be crushed to 150-200mm and conveyed to the coarse ore stockpile near the mill.

Ore will be reclaimed from the stockpile by apron feeders, and fed by conveyor to a 9.75m x 4.6m SAG mill c/w 7500HP motor. The grinding circuit will contain 2 ball mills (6m x 8.5m each) with 7500HP motors. Provision has also been made for pebble crushing in the layout, however no allowance has been made in the capital cost estimate since it is unlikely to be required. If harder ore is experienced pebble crushing can be retrofitted.

The flotation feed will be the cyclone overflow, 80% passing 150 microns. After conditioning, the concentrate will be floated in a bank of six 130m^3 tank flotation cells. Rougher concentrate is reground but this may be a combination of ball and tower mills. Column flotation with conventional cells will be used for cleaning rougher concentrate.

The final concentrate will be thickened and thickener overflow water recycled. The thickened concentrate in the underflow will be fed to a stock tank which in turn will be fed to a pressure filter. Ancillary requirements in the plant will be various types of air instruments, plant and flotation blowers, cranes and reagent systems.

1.8.7 Power

Power supply to the project would originate at the existing BC Hydro Babine Substation located on the west side of Babine Lake in the vicinity of the Granisle Township. From this point two alternate routes have been investigated, these are;

- **Alternate 1** – From Babine Substation a new 138 kV transmission line would extend north along the western shore of Babine Lake, cross the west arm of the lake either overhead (Option 1A) or via a submarine cable (Option 1B), then extend in a northerly direction to a new substation at the Morrison project site.
- **Alternate 2** – Extend the existing line to the Bell Mine site which was shut down several years ago and which is currently in a “care and maintenance” mode (Option 2). The 138 kV service, which was extended to the Bell Mine in 1971, is now energized at 25 kV and could possibly be re-energized to its design voltage. Appropriate arrangements would need to be negotiated with Noranda/Bell and BC Hydro.

In addition three production rates have been evaluated together with comparison between truck haulage and conveying the ore and waste from the rim of the pit to the waste disposal area and the process plant respectively.

The investigations carried out as part of the Preliminary Assessment indicate that alternative Option 2 together with conveyor transportation of the waste and ore is the most economically attractive. The power supply Option 2 is shown on Figure 1-13.

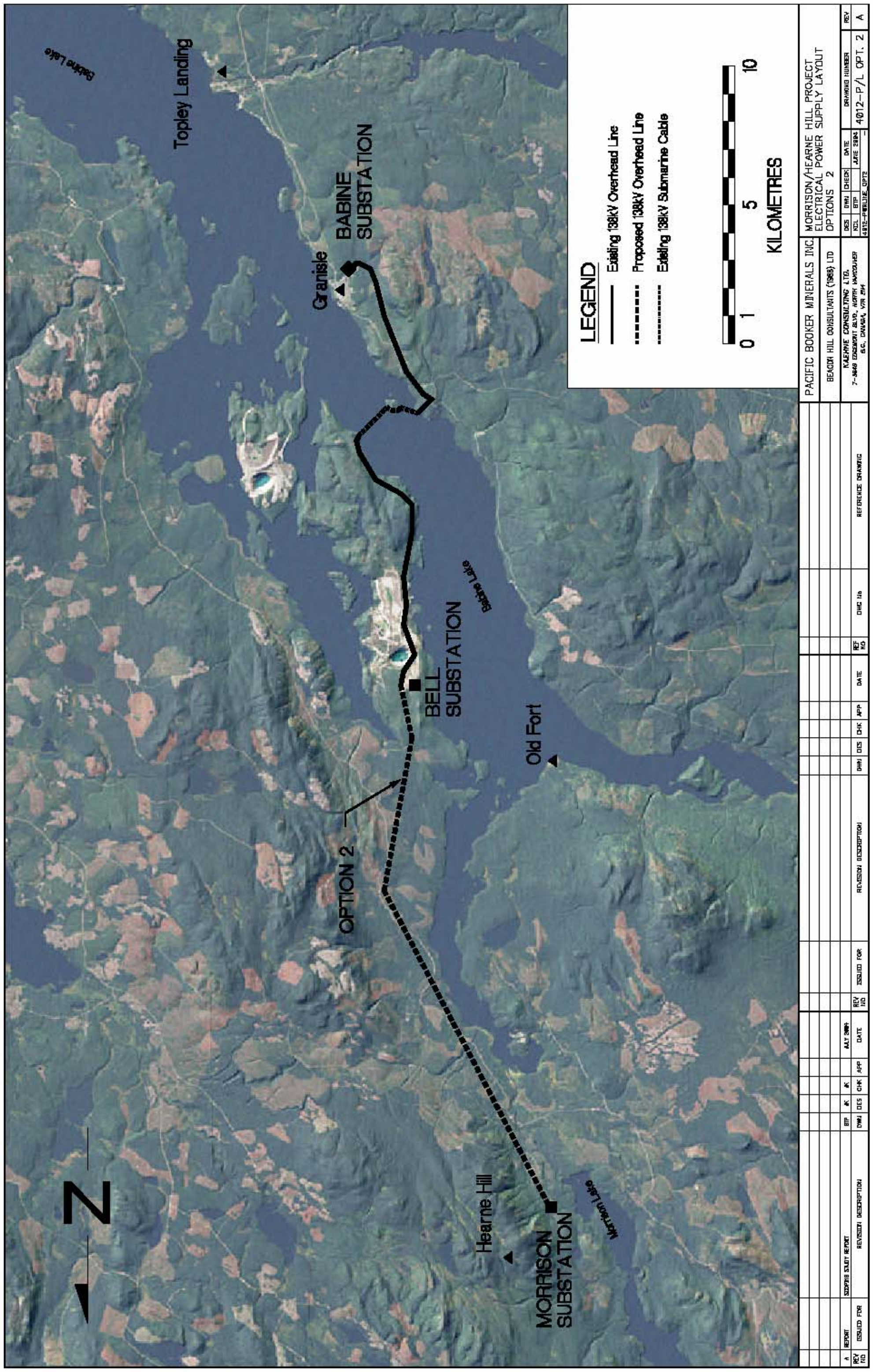

Babine Lake
Topley Landing
Granisle
BABINE SUBSTATION
Babine Lake
BELL SUBSTATION
Old Fort
OPTION 2
Hearne Hill
MORRISON SUBSTATION
Morrison Lake
N
LEGEND
Existing 138kV Overhead Line
Proposed 138kV Overhead Line
Existing 138kV Submarine Cable
0 1 5 10
KILOMETRES
PACIFIC BOOKER MINERALS INC.
BEACON HILL CONSULTANTS (1988) LTD
MORRISON/HEARNE HILL PROJECT
ELECTRICAL POWER SUPPLY LAYOUT
OPTIONS 2
4012-P/L OPT. 2
A

Figure 1-13

1.8.8 Waste Disposal

Several locations have been investigated to determine the most likely location where waste can be deposited adjacent to the proposed open pit.

Several criteria have been used to locate and compare waste disposal areas. These are;

- Location of the waste disposal site as close as is feasibly possible to the open pit. This approach results in the lowest cost for moving waste rock and provides the shortest distance for the movement of tailings, normally piped from the process plant.
- A suitable area, sufficient to house all the waste rock and tailings that can be contained with the minimal of artificial dams or structures.
- A location that has the minimal effect on the environmental.
- A location that can reclaimed in such a manner that the environment is fully protected and the system is self sustaining.

The investigation completed as part of the Preliminary Assessment has concluded that Site B is the most likely acceptable waste disposal site for tailings and waste rock. This site is shown on Figure 1-14 and the comparison between the various sites is included in Section 9.0 of this report and in the Appendices.

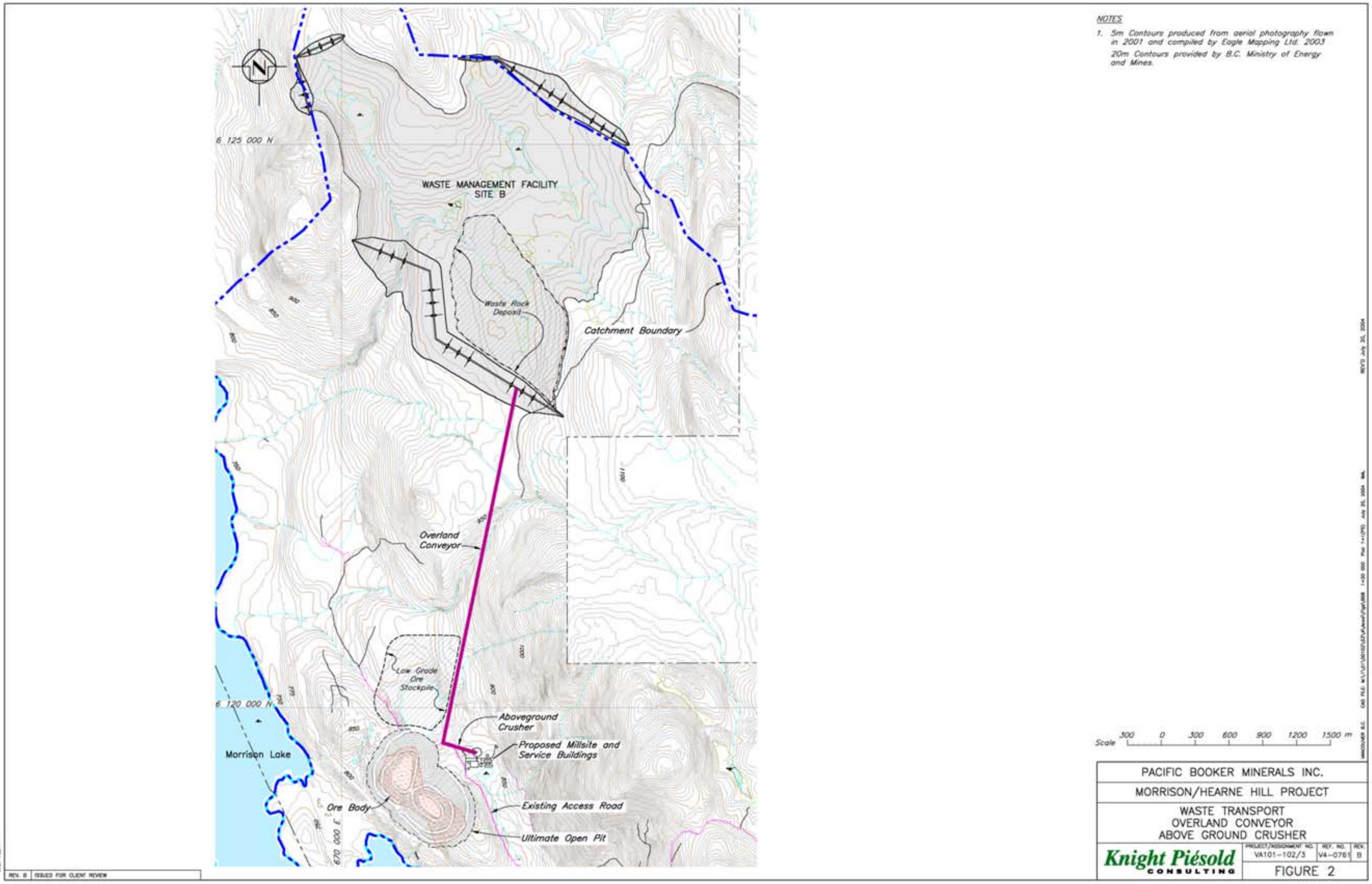

NOTES
1. 5m Contours produced from aerial photography flown in 2001 and compiled by Eagle Mapping Ltd. 2003
20m Contours provided by B.C. Ministry of Energy and Mines.
6 125 000 N
WASTE MANAGEMENT FACILITY SITE B
Waste Rock Deposit
Catchment Boundary
Overland Conveyor
Low Grade Ore Stockpile
6 120 000 N
Aboveground Crusher
Proposed Millsite and Service Buildings
Morrison Lake
Ore Body
Existing Access Road
Ultimate Open Pit
670 000 E
Scale 300 0 300 600 900 1200 1500 m
PACIFIC BOOKER MINERALS INC.
MORRISON/HEARNE HILL PROJECT
WASTE TRANSPORT
OVERLAND CONVEYOR
ABOVE GROUND CRUSHER
Knight Piésold CONSULTING
VA101-102/3
V4-0761
B
FIGURE 2
REV. B ISSUED FOR CLIENT REVIEW

Figure 1-14

1.8.9 Infrastructure

Property Access

The property is on the east side of the southern end of Morrison Lake. It is accessed from the highway that turns north off Highway 16 at Topley to Michell Bay, then by an all-season barge (which can transport up to 10 fully loaded logging trucks) across Babine Lake from where a main haulage logging road network extends to both Pacific Booker's camp and the Morrison deposit. Pacific Booker plans to install its own all season barge approximately 10 km north of Granisle for transportation of personnel supplies, equipment and concentrates. During construction the all season barge owned by Canfor will be used for heavy equipment too large or too heavy to be transported on the Pacific Booker barge.

Water

There are several lakes and watercourses adjacent to the proposed mining area that can be used as a source of both potable and process water. The amount of process water used will be minimized by ensuring that this water is re-circulated and the only additional requirement will be make-up water lost through evaporation.

Camp

A camp exists at the site and can accommodate up to 20 persons. This camp will be updated and expanded to house 40 persons. The camp will be used for those employees who live far from the site. The majority of employees are expected to be drawn form Granisle and Smithers and the surrounding First Nations' settlements.

Fuel Storage

Fuel storage will be sufficient for one month's supply for operations. Access to the site is available at all times thus the storage facilities can be minimized.

Explosive Storage

Explosives will be stored at the site and the supply of explosives will under contract to an explosives' supplier. Bulk explosives will be mixed on the site.

Warehouse/Shops

It has been estimated that the maintenance shops will consist of three service bays 6m long x 5m wide x 5m high; a lay down area 6m long x 6m wide x 5m high; two offices @ 3m x 3m x3m each. A warehouse, 10m wide x 10m long x 5m high has also been included.

Roads

An allowance for surface roads has been included.

1.8.10 Environmental Programs

The environmental base line studies have commenced for the Morrison/ Hearne Hill project. These studies include fishery habitat, water quality and flow measurements, hydrology, wildlife and acid rock drainage.

The consultative process with the regulators, First Nations and local communities has commenced.

The meetings and discussions completed to date indicate that there are no significant environmental concerns and that the First Nations' with the project and local communities are interested in seeing the project move ahead into the construction phase.

1.8.11 Capital Cost

Table 1.5

Capital Costs Case B 25000t/d SUMMARY	
Description	**$(000)'S**
Plant and Surface Facilities	101,183
Exploration/Pre-production Dev.	17,574
Mining	19,060
Services	17,840
Miscellaneous	4,000
Contingency	15,566
Total	175,223
On-going Capital	54,704

1.8.12 Operating Costs

Table 1.6

Operating Costs Case B 25000t/d SUMMARY	
Description	**$/tonne**
Ore	1.86
Plant	3.09
Tailings	0.05
Equipment	0.28
Conveyor	0.16
G&A	0.63
Total	6.07

SECTION 2.0

INTRODUCTION

2.1 PURPOSE OF THIS STUDY

Pacific Booker Minerals Inc. (Pacific Booker) has a 100% interest, subject to an Agreement with Noranda Inc., in the Morrison/Hearne Hill property located near Granisle, British Columbia. Pacific Booker wishes to evaluate the potential of this property and establish a plan for its development.

The Morrison/Hearne Hill property contains two known deposits, one of which, the Morrison, has been subject to extensive exploration work. The majority of the resources can be categorized as measured and indicated and the deposit is considered to have potential for development utilizing surface extraction methods and conventional flotation processing to produce a copper/gold concentrate.

The Hearne Hill deposit resources are categorized as inferred only and are not considered at this time to have development potential, but are considered to be worthy of further exploration. The Hearne Hill deposit is not evaluated in this report.

Pacific Booker engaged **Beacon Hill Consultants (1988) Ltd.** (Beacon Hill) to complete a preliminary assessment of the Morrison Deposit that would establish the mine production rate, evaluate the waste disposal areas, determine the infrastructure requirements, assess the potential viability and establish a development program for the property.

Note:

This Preliminary Assessment has used measured, indicated and inferred resources to evaluate the alternatives. This study does not meet the requirements of a pre-feasibility report in that it includes inferred resources that are considered too speculative to have economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary assessment will be realized.

2.2 REPORT COMPILATION

This report has been compiled by Beacon Hill Consultants (1988) Ltd. The location, history and geological sections have been derived from information supplied by Pacific Booker. The geological information has been accepted by Beacon Hill since it has been completed by reputable qualified persons and thus did not warrant further evaluation by the authors of this report. The resources and pit optimization section has been prepared by G. Kirkham, P.Geoph, the metallurgical and process plant section by J.W.R. Fox, P.Eng. The power section was extracted from a report prepared by J. Kaehne of Kaehne Consulting Ltd., dated July 2004. The environmental and waste disposal sections were prepared by R. Killam, P.Eng. and K. Brouwer, P.Eng., respectively; both of Knight Piésold Ltd. All other sections were prepared by W. P.

Stokes, P.Eng., and B. M. Briggs, P.Eng. W. P. Stokes provided project management and co-ordination.

2.3 ACKNOWLEDGEMENTS

The data complied in this report has been completed with the help of a number of companies who have provided budget pricing, equipment descriptions and other information. The authors of this report wish to thank these companies for their assistance and also wish to thank Mr. J. P. Stevenson, Mr. C. J. Sampson, P.Eng., Mr. J. Plourde, Mr. D. Farnsworth, MBA, P.Eng., Mr. E. Kimura, P.Geo., and Mr. K. Lesnikov, Pacific Booker Minerals Inc., for their help.

SECTION 3.0

PROPERTY DESCRIPTION

3.1 LOCATION AND ACCESS

The Morrison property is located on Crown Land 65 km northeast of Smithers and 35 km north of the village of Granisle within the traditional territory of the Lake Babine Nation. It is situated within the forest management area of Canadian Forest Products Ltd. (Canfor). This area is currently used for forestry activities and has been logged and replanted. Coordinates of the property are 55° 11′ N Latitude and 126° 16′ W Longitude. The National Topographic System (NTS) map sheet that covers the area is 93MO1/W. Refer to Figures 1-6, 1-7, 1-8, 1-9 and 1-10 which display the Location Map, the Regional Location Map, the Local Location Map, the Morrison Deposit Map and the Photo Overview respectively. The property elevation ranges from 737 metres above sea level at Morrison Lake to 890 metres at the top of the ridge southeast of the deposit. Topography can be characterized as undulating and rolling plateau rising steeply to the east to a ridge dominated by Hearne Hill at an elevation of 1350 metres.

Drainage from the Hearne Hill and Morrison deposit areas is contained within seven sub-basins. From south to north, drainages 1, 2 and 3 flow into Morrison Creek downstream of Morrison Lake. Drainages 4, 5, 6 and 7 drain directly to Morrison Lake (McElhanney, 2002).

The property is on the east side of the southern end of Morrison Lake. It is accessed from the highway that turns north off Highway 16 at Topley to Michell Bay, then by an all-season barge (which can transport up to 10 fully loaded logging trucks) across Babine Lake from where a main haulage logging road network extends to both Pacific Booker's Camp and the Morrison Deposit.

The Morrison property is geologically similar to both the nearby Bell and Granisle deposits. The Bell open pit mine operated from 1972-1982 and 1985-1992 producing 77 million tonnes of ore at 0.47% Cu and 0.17 gAu/t. The Granisle open pit mine operated from 1966-1982, producing 53 million tonnes at 0.47% Cu, 0.13 gAu/t.

The proximity of Morrison to the two former producers, the village of Granisle and Highway 16 will result in relatively low infrastructure costs being required to develop the property.

3.2 TITLE

Pacific Booker's land position consists of 398 claim units in 28 contiguous claims totaling 9950 hectares as shown on the Claim Map - Figure 3-1. This ground position includes the Morrison property (20 units in 1 claim – ERIN 1) and the Hearne Hill property (378 units in 27 claims). All claims are located within the Omineca Mining Division.

In an Agreement, dated April 19, 2004 between Pacific Booker Minerals Inc. and Noranda Inc., Noranda agreed to sell all of its interest in the Morrison property, including the Royalty, to Pacific Booker providing Pacific Booker meets the following conditions:

(a) make payments to Noranda in the following amounts and at the times described:

(i) $1,000,000 on or before the expiry of 60 days from execution of this Agreement:
(ii) $1,000,000 on or before the expiry of 18 months from execution of this Agreement:
(iii) $1,500,000 on or before the expiry of 36 months from execution of this Agreement:

(b) on or before the expiry of 60 days from the execution of this Agreement issue 250,000 shares in the capital of Pacific Booker to Noranda at a deemed price to be determined by issuance by Pacific Booker of a private placement proposed by Pacific Booker in accordance with Exchange policies; and

(c) on or before the expiry of 60 days from the execution of this Agreement issue 250,000 warrants to Noranda for the purchase of 250,000 common voting shares of at a price of $4.05 per share exercisable for a two year period from date of issue;

(d) Pacific Booker shall issue 250,000 common voting shares of Pacific Booker to Noranda on or before Commencement of Commercial Production;

(e) In the event that the average trading price over the 10 day period preceding such occurrence under (d) is less than $4.00 per share, Pacific Booker agrees to pay the difference between $1,000,000 and the average trading price which is less than $4.00 per share multiplied by 250,000 shares on such occurrence in cash to Noranda.

This Agreement is in good standing as of the date of this report

Beacon Hill is not qualified to carry out, nor has it carried out, any title search on the property and such title verification does not form part of this study.

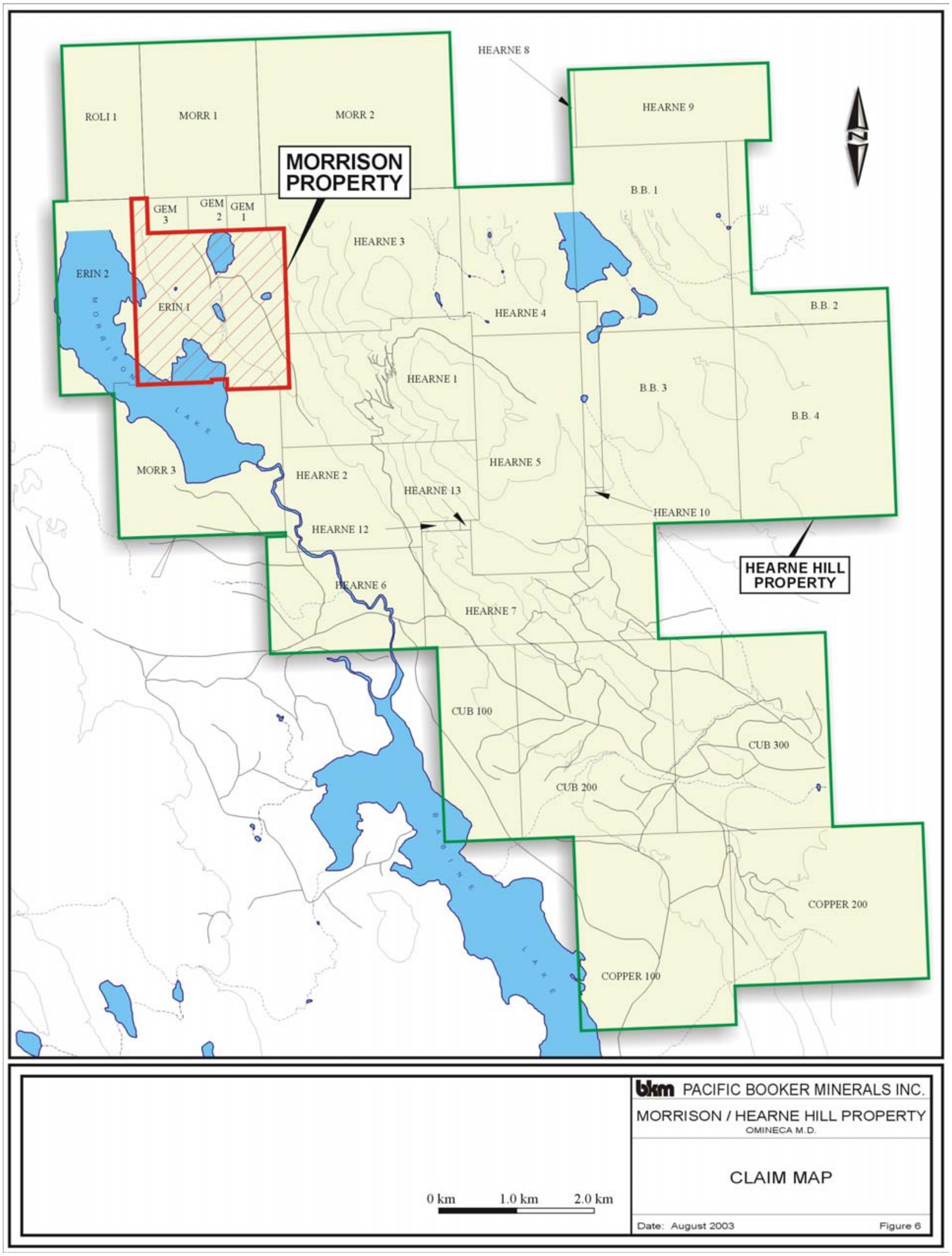

HEARNE 8
HEARNE 9
ROLI 1
MORR 1
MORR 2
MORRISON PROPERTY
GEM 3
GEM 2
GEM 1
B.B. 1
HEARNE 3
ERIN 2
ERIN 1
MORRISON LAKE
HEARNE 4
B.B. 2
HEARNE 1
B.B. 3
B.B. 4
MORR 3
HEARNE 5
HEARNE 2
HEARNE 13
HEARNE 10
HEARNE 12
HEARNE HILL PROPERTY
HEARNE 6
HEARNE 7
CUB 100
CUB 300
CUB 200
BABINE LAKE
COPPER 200
COPPER 100
PACIFIC BOOKER MINERALS INC.
MORRISON / HEARNE HILL PROPERTY
OMINECA M.D.
CLAIM MAP
0 km
1.0 km
2.0 km
Date: August 2003
Figure 6

Figure 3-1

SECTION 4.0

HISTORY

4.1 DISCOVERY AND INITIAL EXPLORATION

The Morrison Lake area was first explored in the early 1960's during the initial rush of porphyry copper exploration in the Babine Lake region. Follow up to regional stream sediment sampling in 1962 lead to the discovery of the Morrison deposit in 1963 by Noranda's exploration group. Trenching of the thin overburden uncovered relatively unweathered chalcopyrite-bearing bedrock in large areas on both sides of the unnamed stream that flows across the centre of the Morrison deposit.

Further delineation of the deposit occurred from 1963 to 1973 and included soil geochemical, electromagnetic (EM) and magnetic surveys, trenching and geological mapping, alteration studies and drilling. Noranda completed six diamond drilling programs totaling 13,893 metres in 95 holes. The first 65 holes were drilled from 1963 to 1968 and were of AEX 27mm diameter core. Recoveries were poor, particularly in areas of argillaceous alteration and the East Fault Zone where values may have been washed out of the narrow drill core. The remaining 30 holes were drilled in 1973 with BQ 36.5mm diameter core. Following the 1973 drill program, Noranda did no further work on the property apart from assessment work.

Noranda published two resource estimates for the Morrison deposit. The first (Carson and Jambor, 1976) was 86 million tonnes grading 0.42% Cu at a 0.30% cut-off grade. The second estimate using an inverse distance block model, calculated by Bell Mine staff (Ogryzlo, Dirom, and Stothart, 1992), gave an inferred resource of 190 million tonnes of 0.4% Cu and 0.21 gAu/t to a depth of 300 m, using a 0.3% Cu cut-off grade. A preliminary open pit resource with a strip ratio of 0.75:1 and the same cut-off grade was estimated to be 58 million tonnes grading 0.41% Cu and 0.21 gAu/t, using a 0.3% Cu cut-off grade. These figures were based on the 95 holes drilled between 1963 and 1973 of which 68 holes were within the deposit.

4.2 RECENT EXPLORATION WORK

Pacific Booker, which had been working on the adjoining Hearne Hill property, started work on the Morrison property in 1998 after it concluded an agreement with Noranda in late 1997. Initially Pacific Booker considered Morrison to be a relatively low grade deposit which could be combined with the two high grade breccia zones at Hearne Hill to form a viable open pit mining operation.

Pacific Booker's work on the Morrison property, consisting mainly of diamond drilling, has been carried out in three phases, the last of which was completed in July, 2002.

The Phase I drilling program was carried out between 1998 and 2000 and comprised 11 holes totaling 3,818 metres. The large size (55mm diameter) NQ core provided excellent recoveries. It was spread throughout the deposit in order to establish grade and continuity of copper values, establish gold and silver grades, and explore the depth potential of the copper/gold/silver bearing system. Only a few of the original (Noranda) drill holes were assayed for gold and silver and consisted principally of short 45° angle holes, which explored the system to an average maximum depth of 500 vertical feet.

Phase I achieved its stated aims by successfully confirming higher copper grades, establishing significant gold values within the known deposit and extending the deposit at depth.

The Phase II drilling program, carried out in 2000 and early 2001 also utilizing NQ core size, consisted of 13 holes totaling 3,181 metres. It further defined and extended the Morrison deposit. The exploration program also consisted of geophysics (Induced Polarization and Magnetometer surveys) and trenching. The porphyry system was extended to the northwest resulting in deposit dimensions approximating 1200 metres in a northwesterly strike direction by 600 metres in width.

Upon completion of Phase II, Pacific Booker's plan was to combine the new drill hole data with the 1963-1973 data and reevaluate the resource. Pacific Booker's qualified persons advised against reevaluating the resource using 1963-73 data for the following reasons; the gold content was not established according to modern assay standards and the statistical comparisons of copper assays from Pacific Booker's drilling with those from the original drilling indicated that Pacific Booker's copper grades were 20-23% higher than those obtained from the original drilling in the same general location within the deposit.

Phase III commenced in July, 2001 and consisted of completely defining the deposit using 45° angle holes at 60-metre spacing. The program was completed in July, 2002. Upon completion of Phase III, Pacific Booker had drilled 82 holes totaling about 23,000 metres at Morrison. Most of the drilling was NQ size with a small proportion being HQ.

Additional definition drilling totaling about 3300 metres will be conducted during the summer and fall of 2004.

The larger drill core sizes used in Pacific Booker's three-phase drill program were likely the key factor for the increased core recoveries experienced by Pacific Booker as compared to Noranda's earlier drilling program. Overall core recoveries increased from roughly 80% in Noranda's program to about 97% in Pacific Booker's program. In particular, Pacific Booker was able to gain a reasonable estimate of metal values in such areas as the East Fault Zone which the Noranda program was unable to do.

Drill core was logged in detail in 3.05-metre intervals to correspond with sample lengths. (The drilling industry still uses 10 ft. core barrels). In specific instances, geologic contacts determined the sample intervals. In addition to the geological log, core recoveries, geotechnical data and fracture densities were recorded. Following the core logging, the entire length of recovered core was split into two halves for the first 14 holes. One-half was bagged and tagged in plastic bags as a sample for shipment to the laboratory. The other half was replaced in the core box for reference and storage at the campsite.

Core samples from the first three holes were shipped to the Min-En Laboratory at Smithers, BC for sample pulp preparation. The pulps were then delivered to ACME Analytical Laboratories in Vancouver for 30-element ICP analysis plus gold by fire assay. Core samples from drill holes subsequent to and including MO-99-4 have been shipped to ACME for both sample preparation and analyses.

Starting with drill hole MO-00-14, the core has been cut with a diamond saw to provide a more representative half core sample.

All subsequent samples complemented with quality control standards have been delivered to ACME Analytical Laboratories for sample preparation and analyses for total copper and gold by fire assays.

Initial results indicated that tonnages and grades were enhanced by Pacific Booker's drilling campaign.

Snowden Mining Industry Consultants completed a report entitled "Morrison Project Resource Estimation and Pit Optimization Study" in March 2003. This study indicated that under favourable economic conditions, an open pit mine at Morrison should generate an economic return. Pacific Booker therefore advanced toward the pre-feasibility stage on the Morrison/Hearne Hill properties in June 2003.

The property is being introduced to and positioned with key elected officials, ministry and agency personnel, the Lake Babine Nation and other interest groups to ensure that subsequent environmental assessment and permitting activities are performed properly and expeditiously.

SECTION 5.0

GEOLOGY

5.1 REGIONAL GEOLOGY

The Morrison deposit is on the northern edge of the Skeena Arch in a region underlain by volcanic, clastic and epiclastic rocks ranging in age from the Lower Jurassic to Lower Cretaceous. These rocks are correlative with the Takla Group, Hazelton Group, Bowser Lake Group, Skeena Group and Sustut Group (see Figures 1-11 and 1-12). They have been block-faulted by a series of post-Eocene, northwesterly-trending series of faults that have created a long linear sequence of horsts and grabens. Some of these structures have been traced over a distance of 100 km. The younger Middle Jurassic to Cretaceous rocks are often preserved in the down-dropped blocks, with the older Lower and Middle Jurassic rocks exposed in the Highlands.

Intrusive rocks in the area include the Early Jurassic diorite and granodiorite Topley Intrusions, Eocene rhyolite and rhyodacite intrusions, and most importantly from an economic viewpoint, the Eocene Babine Igneous Suite which consists of quartz, hornblende, biotite and plagioclase phyric intrusions.

5.2 GEOLOGY OF THE MORRISON DEPOSIT

The Morrison deposit is a zoned annular porphyry copper-gold deposit largely within a multi-phased Eocene 'Babine type' biotite feldspar porphyry (BFP) body which intrudes Middle to Upper Jurassic Ashman Formation siltstone and greywackes. The lower part of this sequence is mostly marine pebble conglomerate, interbedded with maroon to greenish grey sandstone and siltstone which change upwards to deeper water well-bedded shaley argillaceous siltstone and greywacke.

The lower marine sequence has abundant bivalves, ammonites, belemnites and fossil wood debris of Middle to Upper Jurassic age.

The intrusive BFP at Morrison is very similar to that at other Babine copper deposits. A complete description of the lithology, including chemical and microprobe analysis, is presented by Carson and Jambor (1975). The BFP intrusive at Morrison is a faulted plug with near vertical contacts which occupies a northwesterly-oriented elliptical area of 900 by 500 metres. Before block faulting, the plug was roughly circular in plan with a diameter of about 500 metres. Numerous offshoots of the plug, many of which are 1 to 500 m-wide northerly-trending dykes or sills, occur abundantly in the Ashman sedimentary rocks.

The unaltered BFP is speckled with abundant 0.25 to 5 mm phenocrysts of plagioclase, biotite and hornblende in a fine-grained matrix of the same materials as well as quartz and K-feldspar. Apatite and magnetite are common accessory minerals.

5.3 HYDROTHERMAL ALTERATION

Hydrothermal alteration at Morrison is similar to that at Bell and Granisle porphyry copper deposits. The copper deposit itself is located within a central biotite zone of potassic alteration, the intensity of which decreases outward. Surrounding the biotite zone is a chlorite-carbonate zone which can be loosely referred to as the zone of propylitic alteration. Carson and Jambor concluded that a phyllic zone is largely absent at Morrison.

There is, in addition, a later phase of retrograde alteration which occurs along major faults and shears. This consists of clay-carbonate alteration superimposed on the earlier biotite zones and chloritic alteration. It occurs along the East and West fault zones, and subparallel fractures. In these localities original biotite, hornblende, plagioclase phenocrysts, the BFP matrix and secondary biotite from the potassic alteration have been almost totally altered to kaolinite, montmorillonite, chlorite and mixtures of calcite, dolomite, and, rarely, siderite.

In several localities where the streaks and patches of moderately intense clay-carbonate alteration are exposed in trenches, many can be seen to be parallel or sub-parallel with the Morrison Fault, with most of the BFP dyke contacts, and with the overall strike of the Hazelton sedimentary rocks.

In summary, apart from the superimposed structurally-controlled clay-carbonate alteration, the hydrothermal zoning of the alteration at Morrison is uniformly developed in concentric zones.

5.4 MINERALIZATION

5.4.1 Copper Zone

The copper zone forms the central core of the Morrison deposit. The zone is predominantly hosted in a potassic altered BFP plug with intercalations of older siltstone. This plug was initially intruded into the siltstone unit as a near-vertical subcircular intrusion approximately 700 m in diameter. It has been subsequently disrupted along the northerly-striking East and West Faults with progressive en echelon-oriented dextral offsets to form the present configuration of an elongated 1,500 m long body in the northwest trend. Within this lithologic and structural framework, the copper zone is defined by the limits of well-developed copper mineralization with associated gold that consistently grades greater than 0.20% Cu. The peripheral limits of the copper zone are generally abrupt as the copper content declines outward to less than 0.10% Cu within a 40 m-wide margin around the copper zone. The degree of structural development and hydrothermal alteration within the internal core of the copper zone are locally more intense, and these favourable elements contribute to the development of higher grade zones of copper and gold mineralization. Although the copper to gold ratios may vary within these high grade zones, the copper grades locally are greater than 0.50% Cu, and gold grades frequently range from 0.40 to 0.60 gAu/t and up to 1.00 gAu/t over short intervals. The occurrence of comparatively narrow zones of lower grade material are commonly associated with siltstone intercalations within the BFP. Deep diamond drilling has confirmed that copper and gold mineralization in the Morrison deposit is continuous and persistently developed in the BFP down to depths of 370 m below surface.

At Morrison all copper sulphides are primary. Chalcopyrite is the main copper-bearing mineral. The copper mineralization occurs in three principal types; (a) fine-grained disseminated chalcopyrite mineralization probably related to microfractures; (b) chalcopyrite-bearing fractures commonly 1-3 mm wide containing coarser chalcopyrite, and (c) late-stage fracture-filling and disseminated sulphides. It is estimated that the type (a) initial fine-grained disseminated mineralization comprises 40% of the overall copper, the fracture-filling chalcopyrite type (b) is probably around 30 to 40% of the overall copper content and the final copper content is complemented by that occurring in the late stage-type (c) fractures where it is associated with the retrograde clay-carbonate alteration. Minor amounts of bornite occur in the higher grade copper zones as disseminations. Spotty occurrences of galena and sphalerite occur within carbonate-cemented veins within and near the East and West Faults.

5.4.2 Pyrite Halo

A pyrite halo is developed in the chlorite-carbonate altered wall rock that spatially bounds the copper zone which is typical of many porphyry copper deposits. The pyrite mineralization characteristically occurs as thin (0.1 to 5.0 cm) fracture-fillings and quartz-pyrite-minor chalcopyrite stringers in the form of stockwork within the halo. There is a crude zonation to the pyrite development with coarse (0.5 to 5.0 mm) disseminated crystals commonly occurring and complementing the stockwork style of mineralization within the inner parts of the halo immediately peripheral to the copper zone where pyrite content ranges from 5 to 15% by volume. Pyrite in the outer zone is predominantly developed as a stockwork and averages 1 to 2% by volume. Copper mineralization is weakly developed in the pyrite halo, and in the outer zone, it averages about 0.05% Cu.

5.4.3 Sulphide Mineralogy and Zoning

Diamond drilling, geological mapping and detailed polished-section studies performed by Caron and Jambor (1976), indicate that pyrite and chalcopyrite have a well-defined zonal relationship. Although pyrite predominates in the pyrite halo, the 0.2% Cu isopleth precisely marks a change in pyrite-to-chalcopyrite ratios; chalcopyrite consistently exceeds pyrite in samples only from the inside of this boundary. Although the absolute abundance of pyrite decreases toward the centre of the Morrison deposit, disseminated grains of pyrite persist throughout the copper zone and in the low-grade core.

Polished-section studies have also shown that, in addition to chalcopyrite and pyrite, magnetite and minor bornite are present in the low-grade core of the deposit. Magnetite is confined to the low-grade core and the copper zone; that is, the area enclosed by the outer 0.2% copper isopleth. The mineral is a finely disseminated original constituent of the BFP and siltstones, and is most abundant in the western segment of the copper zone. Many magnetite grains are partly altered to hematite, which seems to be most abundant at the outer 0.2% boundary. No iron oxides have been observed in the pyrite halo.

SECTION 6.0

RESOURCE ESTIMATION

6.1 DATA EVALUATION

Data for 82 drill holes were supplied for the Morrison deposit which included collar coordinates, downhole surveys, assays, lithology and alteration codes. The author accepts that the data provided by Pacific Booker Minerals Inc. are valid and accurate for the purposes of this study, based upon inspection and validation by qualified, independent consultants (Snowden 2003), in addition to review of previous independent studies performed on behalf of Pacific Booker (Kimura 2003).

The list of the drill holes utilized in this study are included in the Appendices and simple statistics for the assay data are shown below in Tables 6-1 and 6-2, which shows statistics for copper and gold assays unweighted and weighted by assay interval, respectively.

The assay copper and gold database (8,064 copper and 8,071 gold values) shows that both the copper and the gold distribution is relatively well behaved (in comparison with other deposits), still with a few gold samples representing an outlier population. The respective average overall copper and gold grade (weighted by sample length) is 0.338% and 0.173 g/t, with standard deviations of 0.2166 and 0.173.

While the copper assays have a very low coefficient of variation (CV) of 0.639, the gold assays have an extremely high CV of 1.661 (weighted by sample length in Table 6-2). This indicates a large scatter of the raw gold data values. The coefficient of variation is defined as $CV=\sigma/m$ (standard deviation/mean), and represents a measure of variability that is unit-independent. This is a variability index that can be used to compare different and unrelated distributions.

In Tables 6-3 and 6-4, approximately 75% of the assay data is below 0.42% Cu and 0.22 gAu/t, and 50% of the data is below 0.51% Cu and 0.3 gAu/t. There are few high-grade gold values, the maximum being 15.17 g/t. Figures 6-1 through 6-4 shows the histogram and basic statistics of all copper and gold assays available along with the corresponding probability plots. Figure 6-5 shows a plan view of the drill holes and Figure 6-6 illustrates a perspective view of the drill holes, looking N-NE.

The database has extensive geologic information in the form of lithologic and alteration codes. Due to geostastistical considerations and the modeling approach, described in more detail in subsequent sections, a 0.2% Cu isopleth grade envelope is used as grade modeling control.

Table 6-1
Statistics for Copper and Gold Assays

Description	Cu %	gAu/t
Number of Samples	8,064	8,071
Mean Value	0.338	0.173
Standard Deviation	0.2166	0.324
Minimum Value	0.001	0.01
Maximum Value	1.813	15.17
Coefficient of Variation	0.642	1.874

Table 6-2
Statistics for Copper and Gold Assays Weighted by Assay Interval

Description	Cu %	gAu/t
Mean Value	0.337	0.169
Standard Deviation	0.2151	0.281
Minimum Value	0.001	0.01
Maximum Value	1.813	15.17
Coefficient of Variation	0.639	1.661

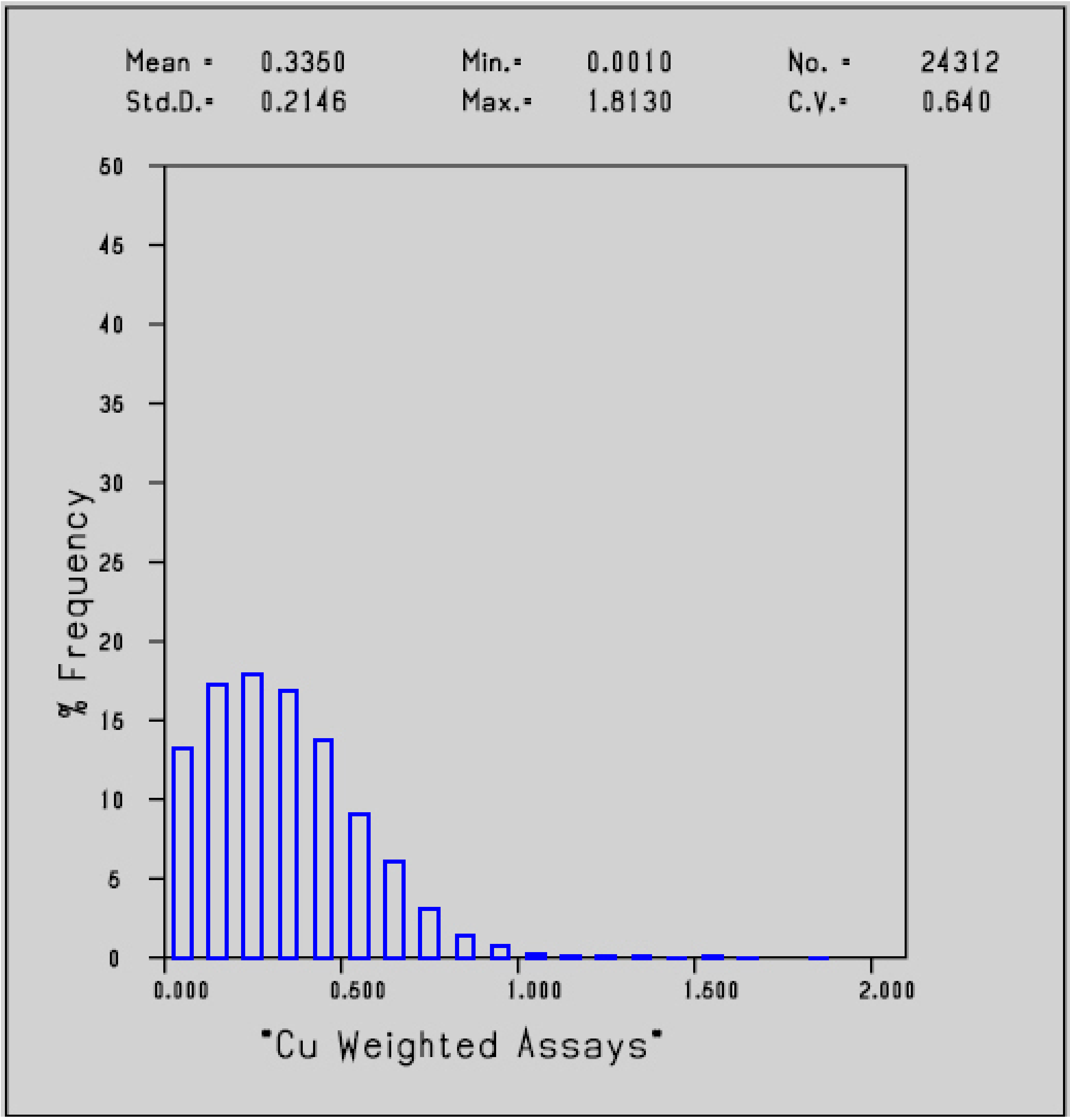
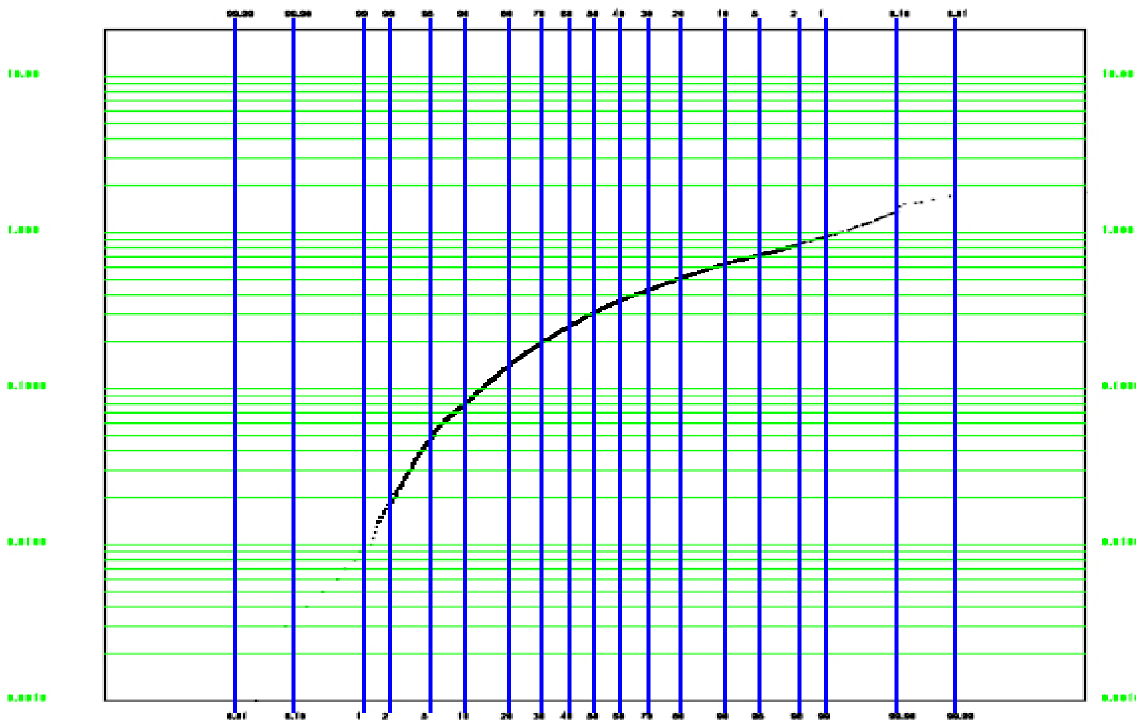

Mean = 0.3350
Std.D.= 0.2146
Min.= 0.0010
Max.= 1.8130
No. = 24312
C.V.= 0.640
% Frequency
0
5
10
15
20
25
30
35
40
45
50
0.000
0.500
1.000
1.500
2.000
"Cu Weighted Assays"

Figure 6-1



** PROBABILITY DISTRIBUTION PLOT OF CU **

ITEM	CU	NATURAL LOGS	
NUMBER	8080	NUMBER	8080
MEAN	0.3380	MEAN	-1.3700
MINIMUM	0.0010	MINIMUM	-6.9080
MAXIMUM	1.8130	MAXIMUM	0.5950
VARIANCE	0.0470	VARIANCE	0.7980
ST.DEV.	0.2170	ST.DEV.	0.8930

Figure 6-2

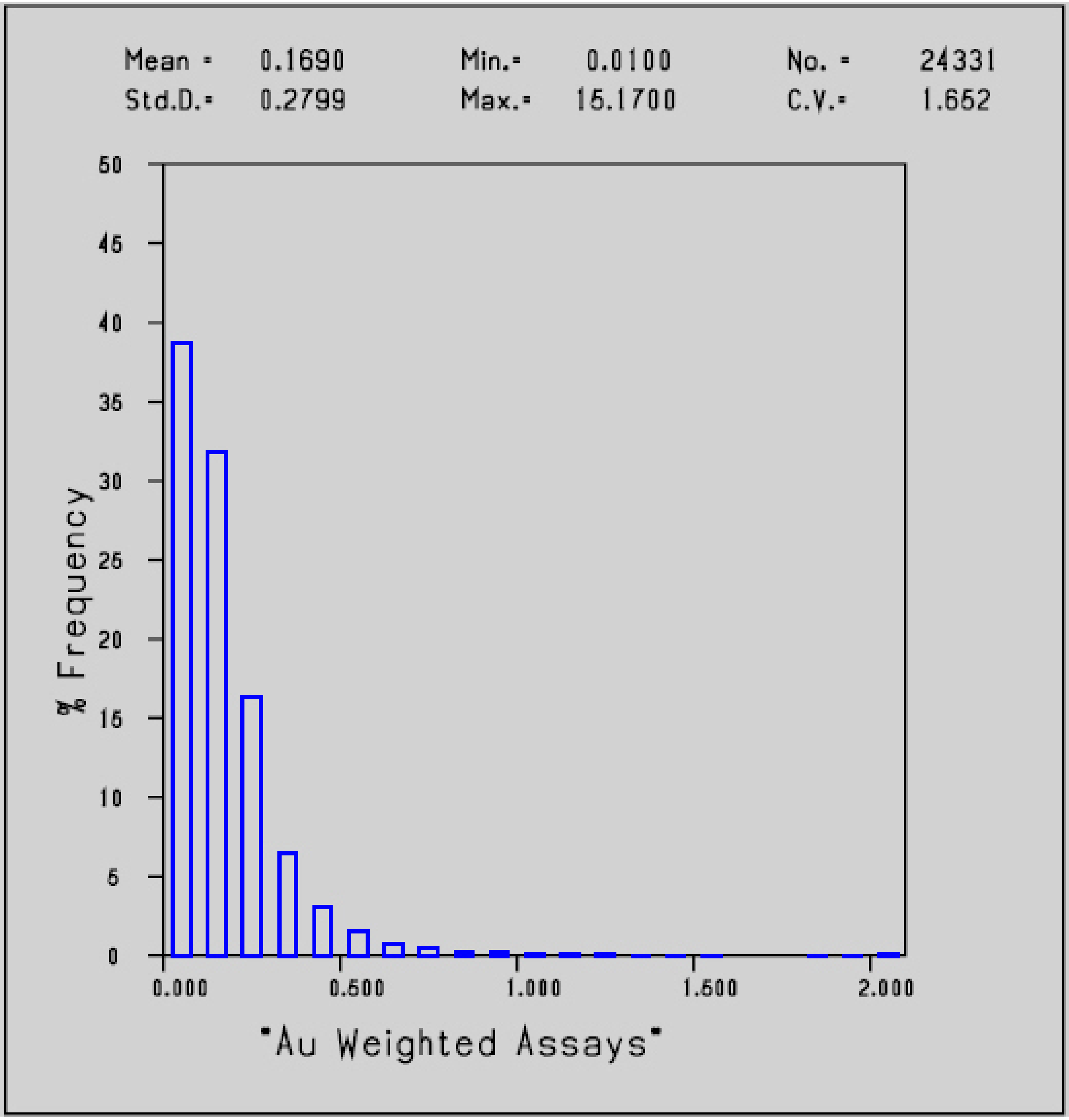
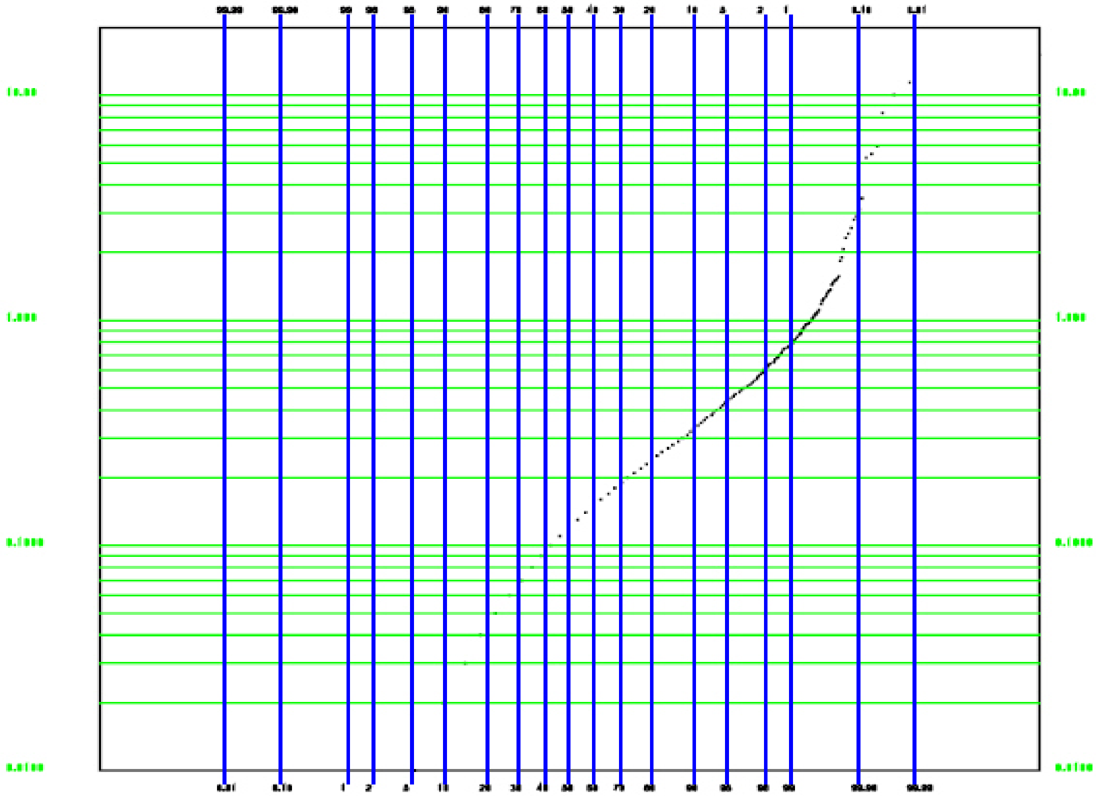

Mean = 0.1690
Min.= 0.0100
No. = 24331
Std.D.= 0.2799
Max.= 15.1700
C.V.= 1.652
50
45
40
35
30
25
20
15
10
5
0
% Frequency
0.000
0.500
1.000
1.500
2.000
"Au Weighted Assays"

Figure 6-3



** PROBABILITY DISTRIBUTION PLOT OF AU **

ITEM	AU	NATURAL LOGS	
NUMBER	8087	NUMBER	8087
MEAN	0.1730	MEAN	-2.2240
MINIMUM	0.0100	MINIMUM	-4.6050
MAXIMUM	15.1700	MAXIMUM	2.7190
VARIANCE	0.1050	VARIANCE	1.0220
ST.DEV.	0.3240	ST.DEV.	1.0110

Figure 6-4

Table 6-3
Statistics by Cut-off Grade for Copper Assays

Cutoff Grade Cu%	UnWeighted					Weighted				
	Weight	%	Grade Cu %	SD	CV	Weight	%	Grade Cu %	SD	CV
0.00	8064	100.0%	0.338	0.217	0.642	24034.1	100.0%	0.337	0.215	0.639
0.05	7633	94.7%	0.355	0.209	0.589	22762.2	94.7%	0.354	0.208	0.587
0.10	7004	86.9%	0.381	0.200	0.526	20884.7	86.9%	0.379	0.199	0.524
0.15	6342	78.6%	0.407	0.192	0.471	18903.9	78.7%	0.406	0.190	0.468
0.20	5614	69.6%	0.437	0.183	0.418	16716.8	69.6%	0.436	0.181	0.416
0.25	4872	60.4%	0.470	0.175	0.372	14491.1	60.3%	0.468	0.173	0.369
0.30	4191	52.0%	0.502	0.168	0.335	12456.3	51.8%	0.500	0.166	0.332
0.35	3505	43.5%	0.537	0.162	0.302	10410.1	43.3%	0.535	0.160	0.299
0.40	2821	35.0%	0.576	0.158	0.274	8364.7	34.8%	0.574	0.155	0.271
0.45	2206	27.4%	0.618	0.153	0.248	6520.9	27.1%	0.616	0.151	0.245
0.50	1722	21.4%	0.658	0.150	0.228	5079.2	21.1%	0.657	0.147	0.225
0.55	1327	16.5%	0.698	0.149	0.214	3902.3	16.2%	0.696	0.146	0.210
0.60	986	12.2%	0.742	0.150	0.203	2887.4	12.0%	0.740	0.147	0.199
0.65	712	8.8%	0.787	0.154	0.196	2070.5	8.6%	0.786	0.150	0.191
0.70	482	6.0%	0.842	0.160	0.190	1399	5.8%	0.840	0.155	0.185
0.75	333	4.1%	0.895	0.167	0.186	965.6	4.0%	0.893	0.161	0.180
0.80	226	2.8%	0.955	0.172	0.180	659.9	2.7%	0.951	0.165	0.173
0.85	160	2.0%	1.010	0.178	0.176	470.4	2.0%	1.003	0.169	0.169
0.90	115	1.4%	1.062	0.185	0.174	332.3	1.4%	1.056	0.176	0.167
0.95	85	1.1%	1.113	0.191	0.172	244.5	1.0%	1.104	0.182	0.165

Table 6-4
Statistics by Cut-off Grade for Gold Assays

Cutoff Grade gAu/t	UnWeighted					Weighted				
	Weight	%	Grade gAu/t	SD	CV	Weight	%	Grade gAu/t	SD	CV
0.00	8071	100.0%	0.173	0.324	1.873	24053.5	100.0%	0.169	0.281	1.663
0.10	4953	61.4%	0.252	0.394	1.563	14726.8	61.2%	0.246	0.337	1.370
0.20	2397	29.7%	0.370	0.541	1.462	7084.6	29.5%	0.360	0.458	1.272
0.30	1067	13.2%	0.533	0.780	1.463	3146.8	13.1%	0.511	0.657	1.286
0.40	553	6.9%	0.715	1.051	1.470	1630.9	6.8%	0.673	0.881	1.309
0.50	299	3.7%	0.949	1.388	1.463	878.4	3.7%	0.873	1.164	1.333
0.60	173	2.1%	1.249	1.766	1.414	504.9	2.1%	1.121	1.488	1.327
0.70	117	1.4%	1.539	2.089	1.357	333.6	1.4%	1.367	1.782	1.304
0.80	79	1.0%	1.920	2.457	1.280	220.5	0.9%	1.685	2.124	1.261
0.90	59	0.7%	2.286	2.753	1.204	160.5	0.7%	2.000	2.417	1.209
1.00	45	0.6%	2.703	3.040	1.125	117.8	0.5%	2.382	2.724	1.144
1.10	35	0.4%	3.176	3.305	1.041	89.2	0.4%	2.810	3.011	1.072
1.20	31	0.4%	3.436	3.431	0.999	77	0.3%	3.071	3.165	1.031
1.30	26	0.3%	3.856	3.604	0.935	63.4	0.3%	3.463	3.364	0.971
1.40	23	0.3%	4.183	3.713	0.888	56.2	0.2%	3.736	3.485	0.933
1.50	21	0.3%	4.443	3.789	0.853	50.1	0.2%	4.014	3.595	0.896
1.60	17	0.2%	5.128	3.914	0.763	41.5	0.2%	4.526	3.752	0.829
1.70	17	0.2%	5.128	3.914	0.763	41.5	0.2%	4.526	3.752	0.829
1.80	17	0.2%	5.128	3.914	0.763	41.5	0.2%	4.526	3.752	0.829
1.90	16	0.2%	5.334	3.947	0.740	38.5	0.2%	4.739	3.819	0.806

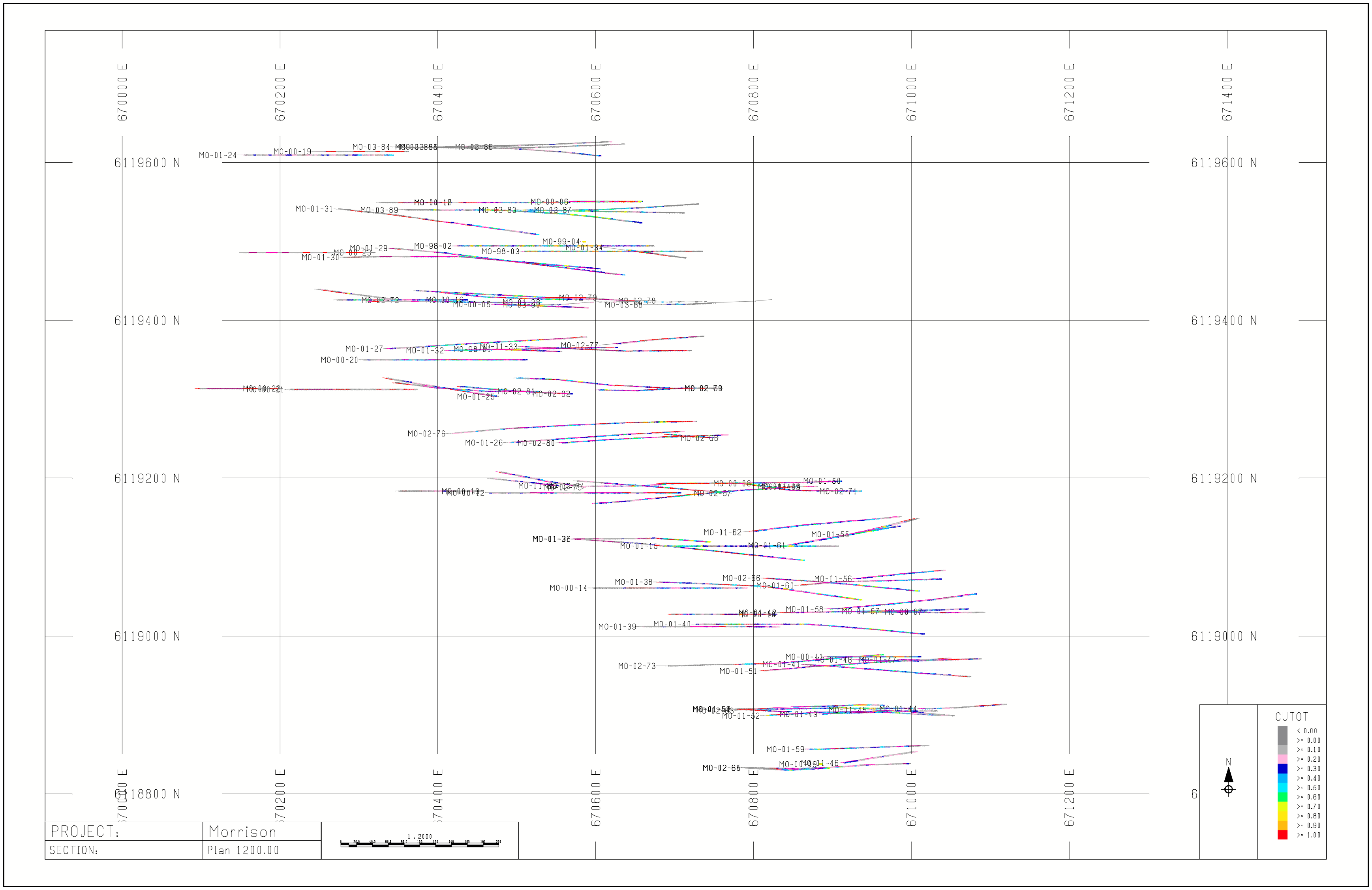


Figure 6-5: Plan view of Morrison deposit drill holes used in Resource Estimate

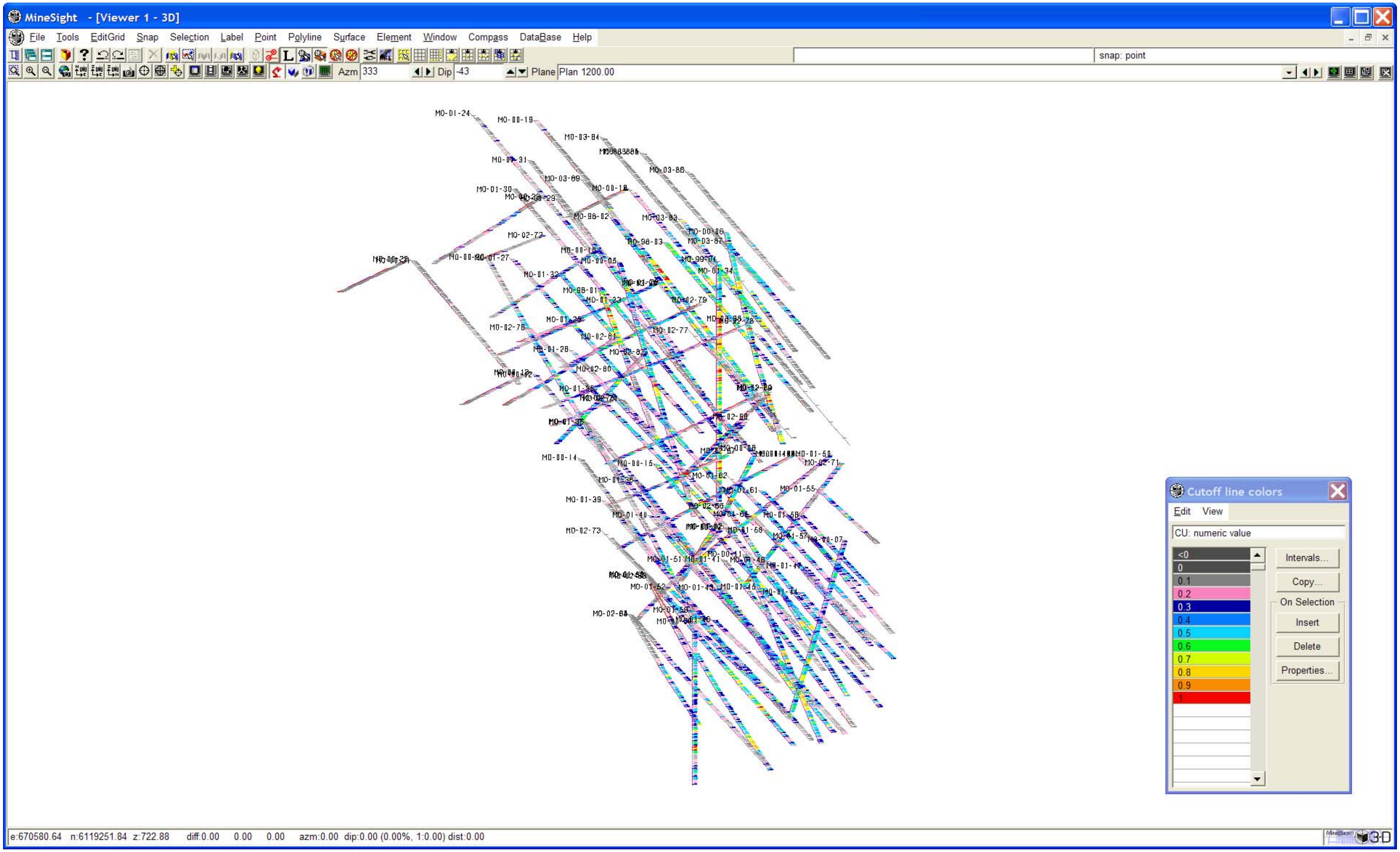


Figure 6-6: Perspective of the Morison deposit drill holes used in Resource Estimate

6.2 TOPOGRAPHY.

Topography was imported from an AutoCAD topographic map supplied by Pacific Booker in DXF format. Figure 6-7 shows a plan view of the topographic map and Figure 6-8 illustrates a three-dimensional rendition of the topography, looking North. Note that the elevations range between 740 and 1167 metres (Figure 6-8) with a large ridge extending to the NE. The deposit lies between and on the flanks of two small hills which is intersected by a small pond and bounded to the north by a lake. This topographic surface was checked against drill hole collars along every section and it was determined that the majority of drillhole collar elevations matched topography to within 3 metres. However, there is a small sub-set of drillholes (i.e. MO-01-24, MO-01-30, MO-00-16, MO-01-27, MO-00-20, MO-00-21, MO-00-20) which have collar elevations that have variations greater than 5 metres relative to the topographic surface. These drillhole collar elevations warrant further investigation and survey to be resolved for future studies, however the effect of these anomalies on the overall resource estimate in this study is very minor.

6.3 RESOURCE ESTIMATION

6.3.1 Composites

Three metre composites were chosen following a detailed analysis of varying composite lengths (i.e. 1.5m, 2m, 3m, 4m, 6m, 9m and 12m) it was determined that 3 meter composites offered the best balance between supplying common support for samples and minimizing the smoothing of the grades, in addition to reducing the effect of high grades to a small extent. See Appendices for statistics and probability plots for assays at 1.5m, 2m, 3m, 4m, 6m, 9m and 12m lengths.

Table 6-5 shows the basic statistics for the 3 meter composites. Figures 6-9 through 6-12 illustrate the histogram and distribution plots for both copper and gold composite grade intervals.

Table 6-5
Statistics for 3 metre Gold Composites

Description	Cu%	gAu/t
Number of Samples	8108	8113
Mean Value	0.3355	0.1687
Standard Deviation	0.2073	0.2499
Minimum Value	0.001	0.01
Maximum Value	1.756	13.56
Coefficient of Variation	0.618	1.482

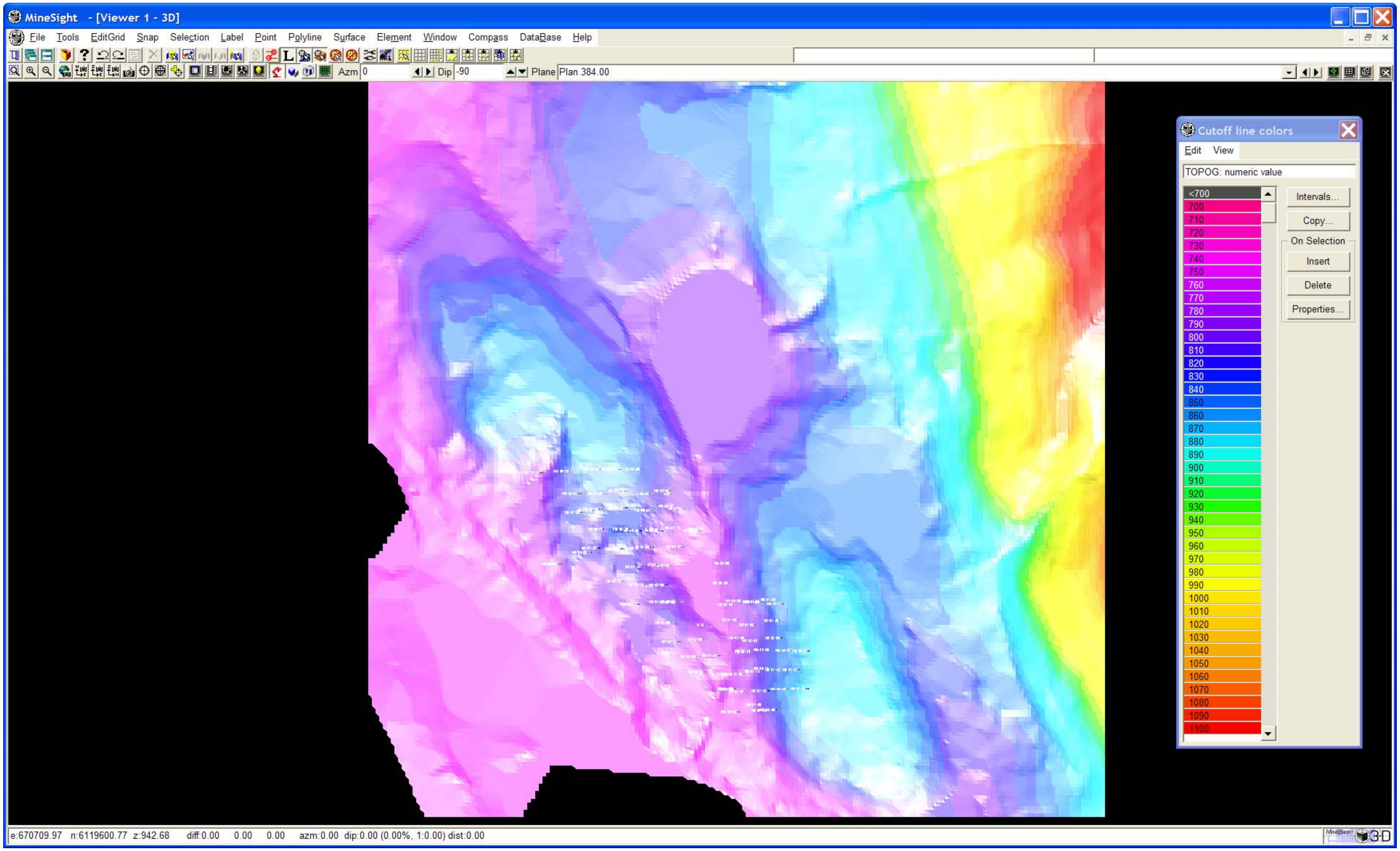


Figure 6-7: Plan view of Morrison Deposit showing drill holes and topography colour coded by elevation

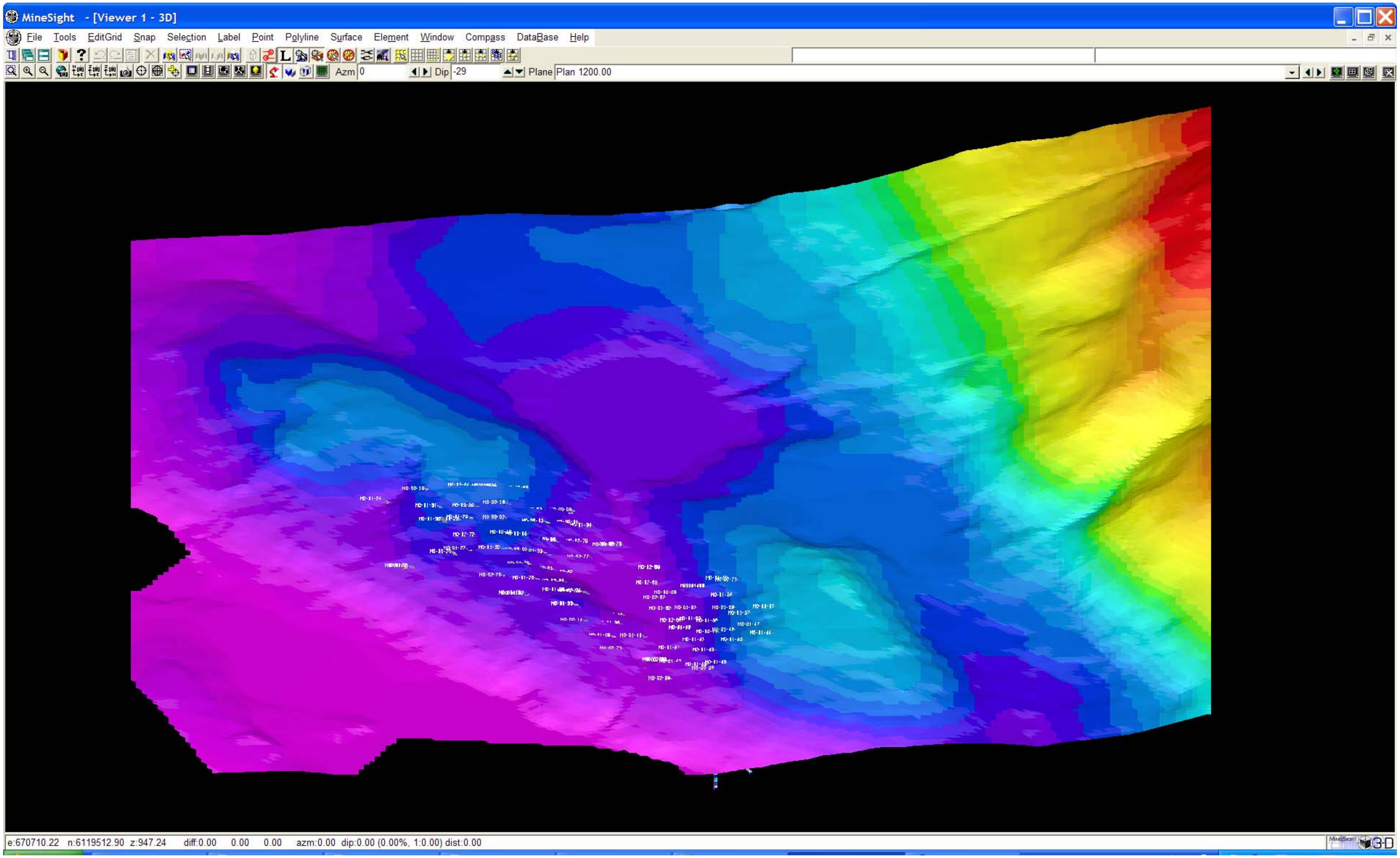


Figure 6-8: Perspective view of Morrison Deposit showing drill holes and topography colour coded by elevation.

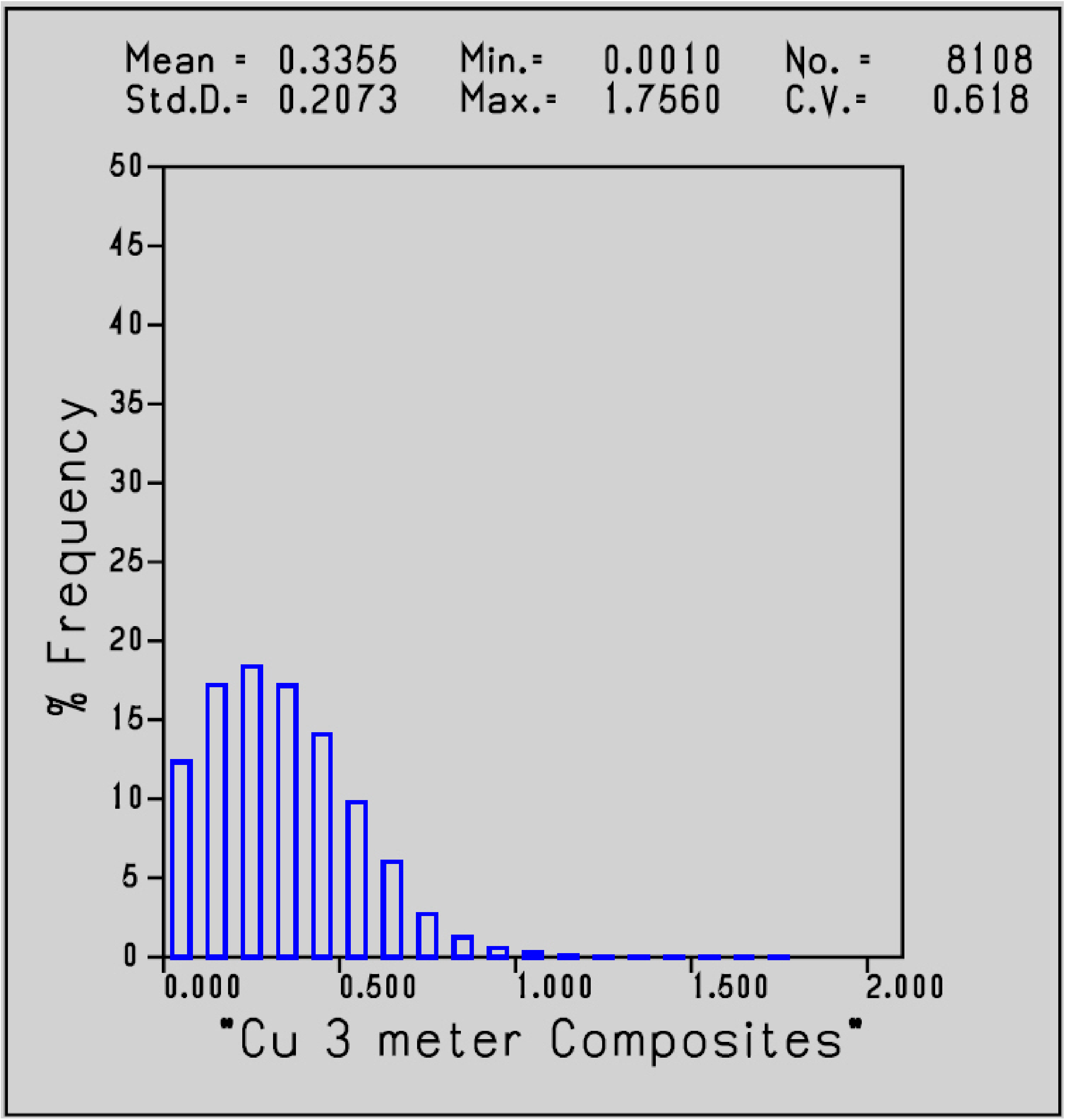
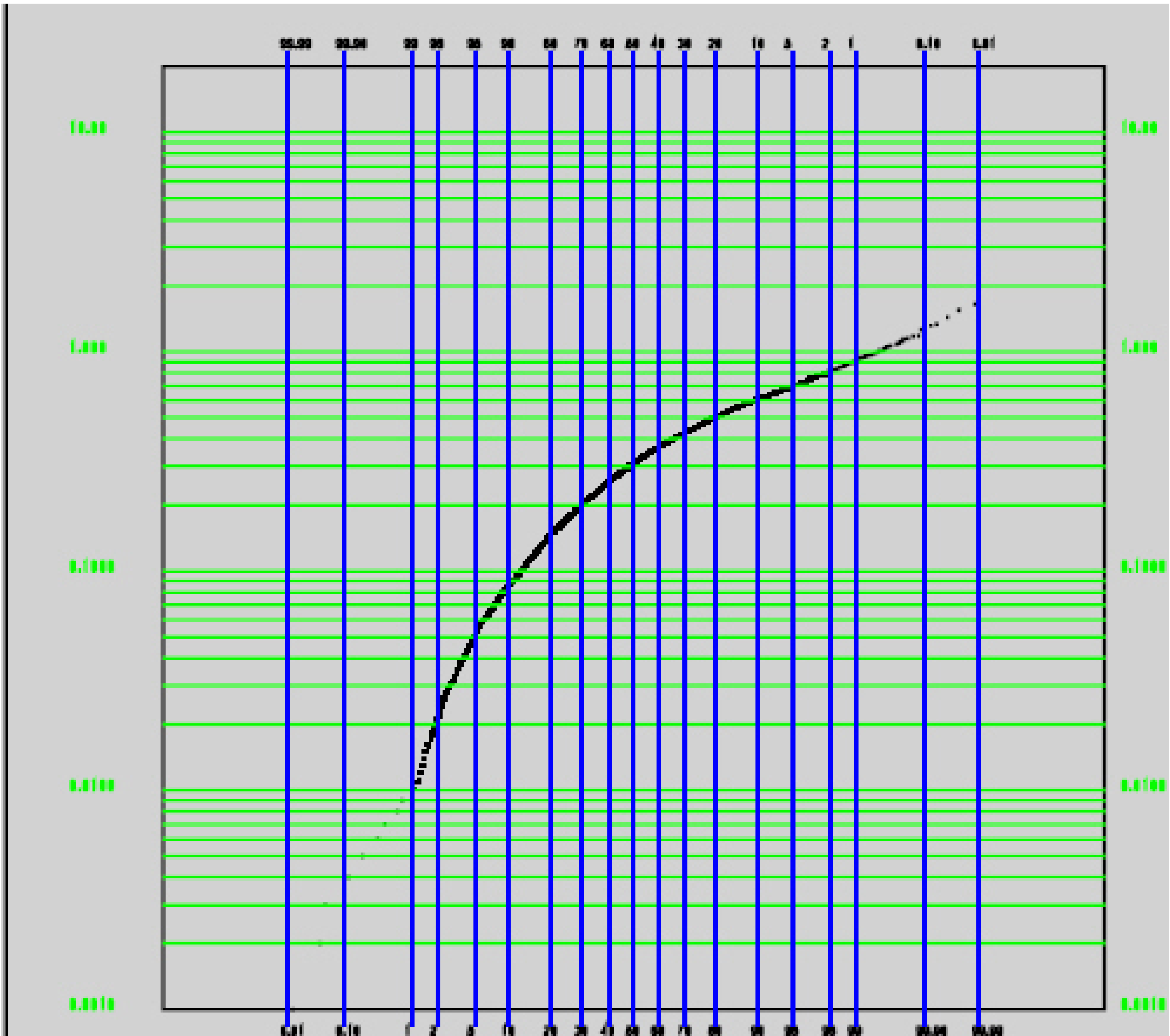


Figure 6-9: Histogram for Copper, 3 metre composites.



** PROBABILITY DISTRIBUTION PLOT OF CU **

ITEM	CU	NATURAL LOGS	
NUMBER	8108	NUMBER	8108
MEAN	0.3360	MEAN	-1.3570
MINIMUM	0.0010	MINIMUM	-6.9080
MAXIMUM	1.7560	MAXIMUM	0.5630
VARIANCE	0.0430	VARIANCE	0.7400
ST.DEV.	0.2070	ST.DEV.	0.8600

Figure 6-10: Distribution Plot for Copper, 3 metre composites.

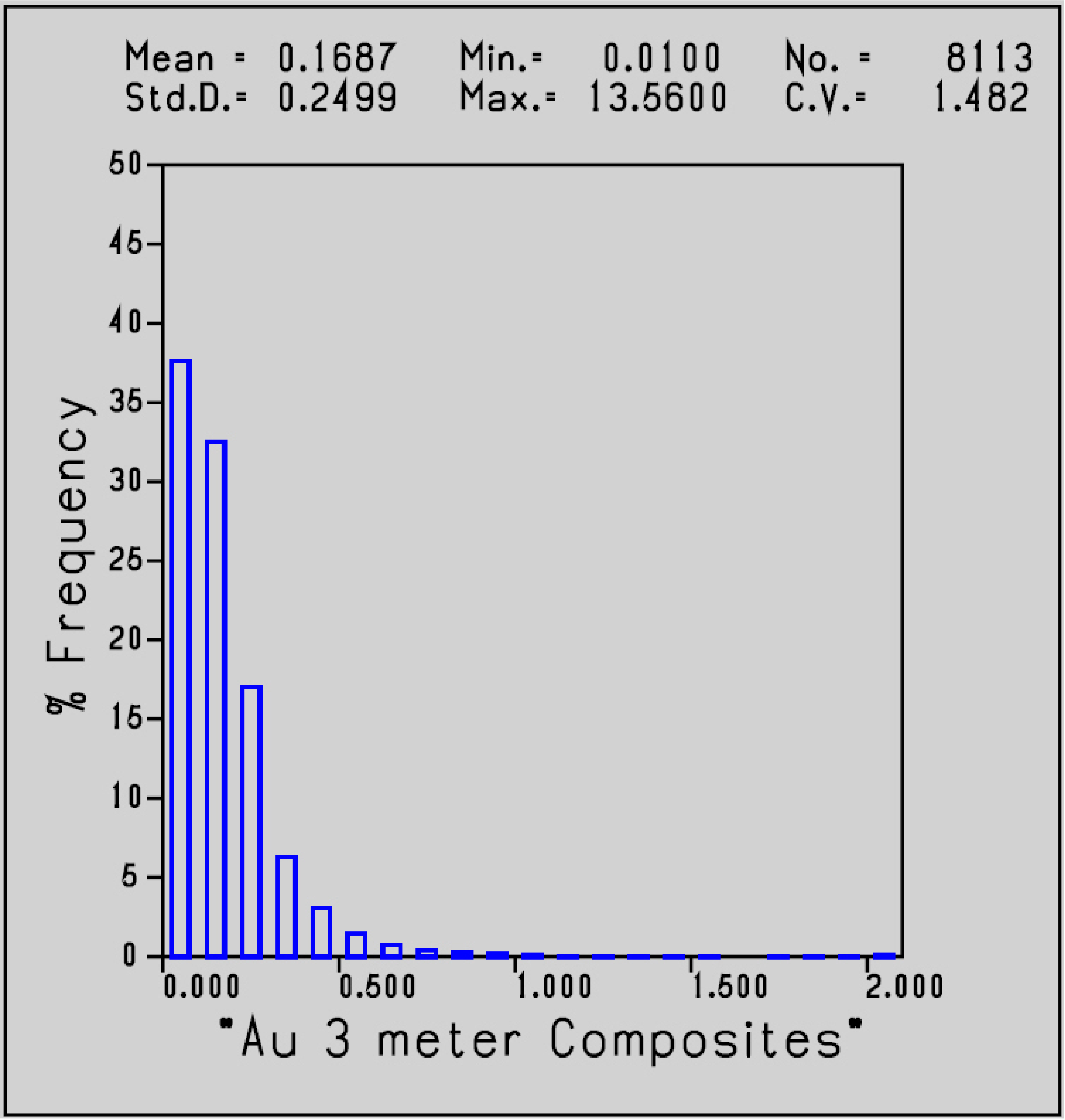


Figure 6-11: Histogram for Au, 3 metre composites.

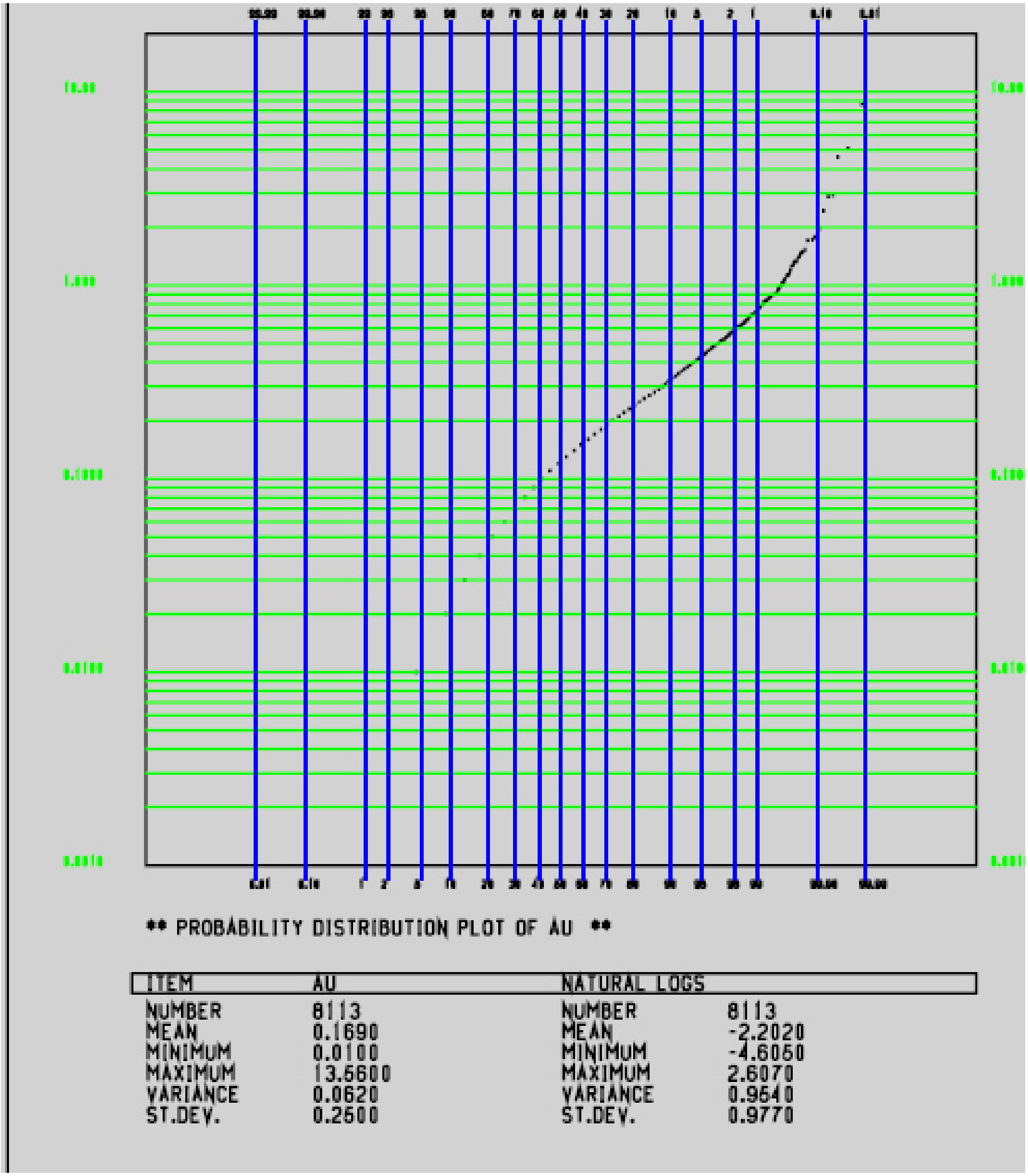


Figure 6-12: Histogram for Gold, 3 metre composites.

6.3.2 Outliers

Capping of copper grades was not performed in previous studies and it was also considered unnecessary for this study as the distribution of copper grades followed a normal distribution without evidence of multiple populations.

To better understand the effect of a few high grade gold composites on the estimation of grades into the block model, a study was performed to decide whether it was necessary to cut (cap) grades, and, if so, to what extent. It should be emphasized that the impact of high grades in the Morrison deposit is expected to be low, since the high grade population is very small relative to the overall database.

The analysis was based on looking at the cumulative probability curve and the quantity of metal (QM) graph by gold cut-off grades. Controlling the overestimation of gold grades due to a few high-grade outliers is, in effect, an arbitrary decision as to how much gold should be removed from the database to avoid such overestimation of grades in the resource model.

Figure 6-13: Percentages of Metres and Gold Metal Content by Gold Cut-off Grade.

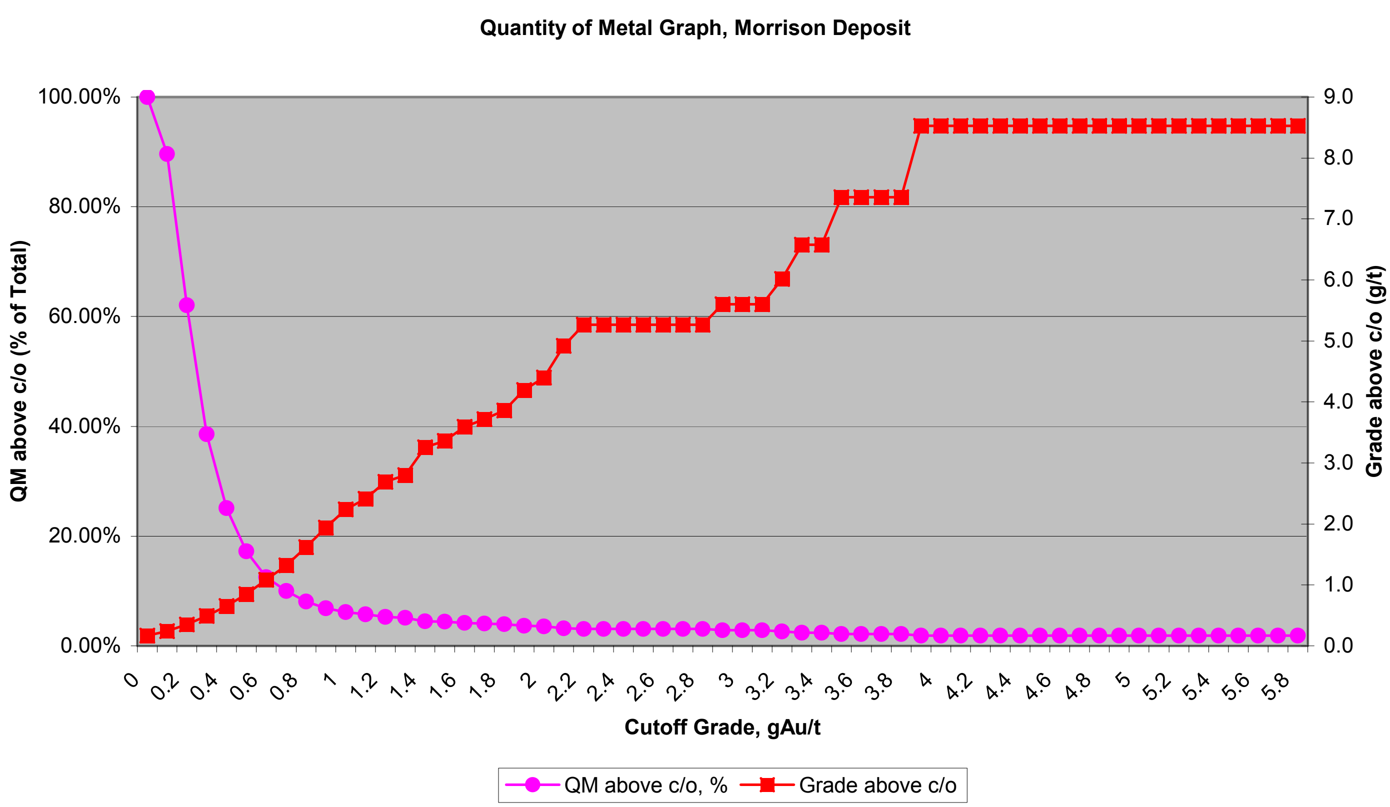


Figure 6-13 shows the percentages of the total metres in the assay database and the corresponding metal content for the full set of cut-offs. The QM curve begins to lose continuity at between 1.3 and 1.4 gAu/t, and then again at other higher-grade cut-offs. Compare also to the probability plots shown in Figure 6-12 (3 metre composites), where the "breaks" occur at approximately the same threshold.

Given the information shown above, 1.35 gAu/t was chosen as the most reasonable threshold at which to cut grades. However, it is important to note the method employed for this study is not to cut the high grade outliers but to limit their influence. The range chosen at which to limit grades greater than 1.35 gAu/t was the size of two block or 24 metres. In other words, composite grades greater than 1.35 gAu/t would not be used in the estimation of blocks if those high grade composites are outside a 24 metre radius from that block.

6.3.3 0.2% Cu Grade Envelope

In an effort to assign geological controls for constraining the estimation process, a number of options were investigated. These included utilizing the lithologies (i.e. BFP, fault material and SED), alteration codes (i.e. ArSe, KH, KL, QzSe), a combination of lithology and alteration, structural domains and a combination of all of these.

The first and most obvious of these options to be considered is that of utilizing lithological controls. Previous geologic modeling studies, namely Snowden (2003), created a detailed lithologic model that was coded into blocks (Figures 6-14 and 15). This model was supplied as part of the overall dataset for this study and was confirmed by Pacific Booker personnel to be a relatively accurate representation of the lithology for the deposit. This avenue was ruled out as an option for a number of reasons. Firstly the resultant model for the lithologies was created using a nearest neighbour interpolation. If utilized as the control for interpolation, the result would be that of an estimation controlled by estimation. In addition, the model was coded on a whole block basis which would have resulted in a coarse approximation. Finally, the interpretations and coded blocks at depth, especially at any meaningful distance from any one drillhole, are absent and required filling with undefined material to complete the model.

The options of utilizing alteration codes, ArSe (argillitic sericite), high potassic (KH), low potassic (KL) and QzSe (quartz sericite), as well as a combination of lithology and alteration was ruled out for the time being, as again interpretations at depth and away from any drillhole control are coarse or non-existent. In addition, although classical statistical and histogram analysis of drillhole copper and gold data by lithology code, and alteration code along with the lithology and alteration codes combined, did demonstrate good distributions and behavior, the best results were extracted when using the 0.2% Cu isopleth envelope as described later in this section. It was decided by the author that the lithologic and alteration codes defined within the block model are useful as a guide and for volume/tonnage reporting purposes but not for definitive control at this time.

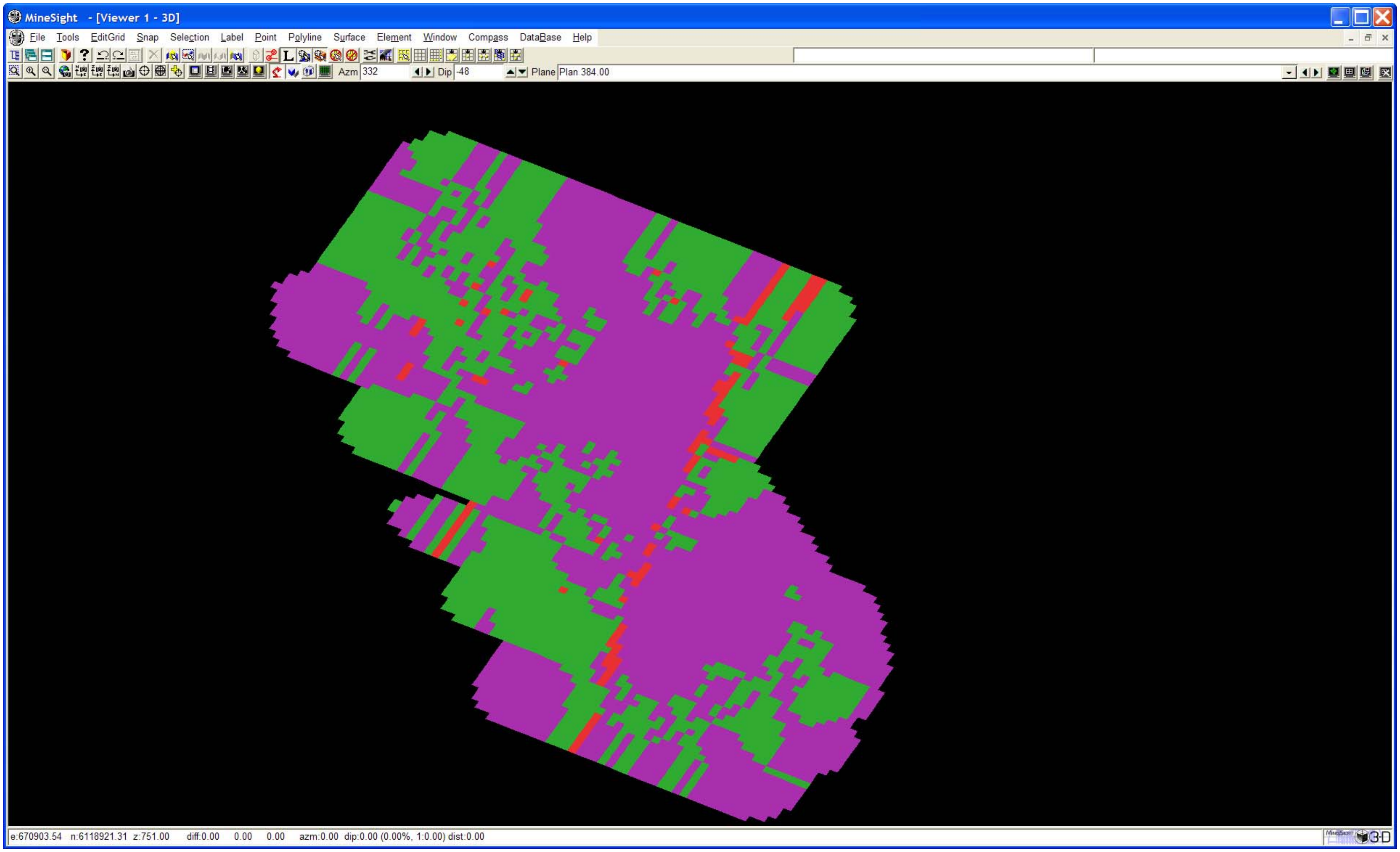


Figure 6-14: Perspective View of the Lithology Model Looking North at the 684m Elevation; BFP in purple, SED in Green and FLT in red.

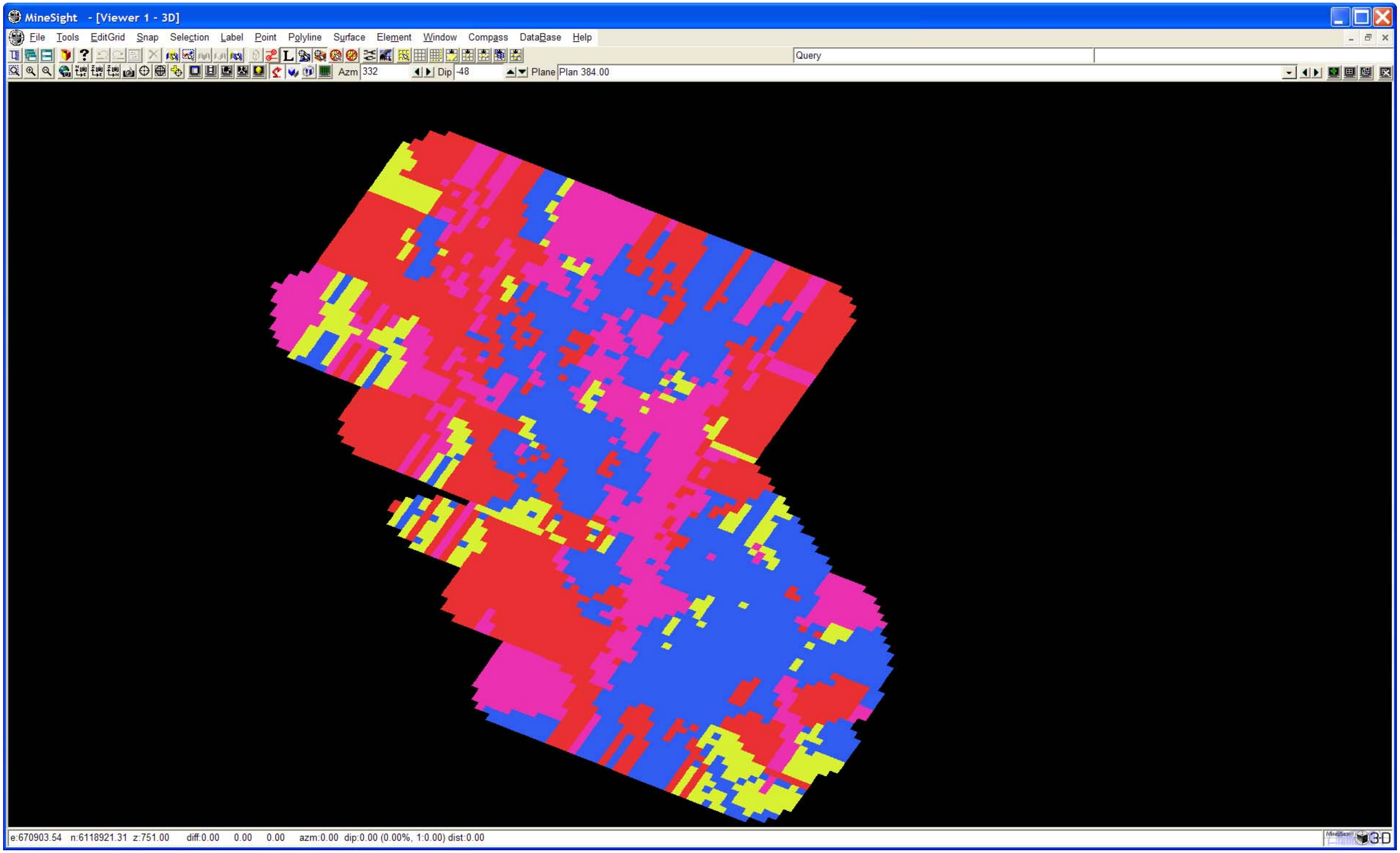


Figure 6-15: Perspective View of Alteration Model Looking North at the 684 Elevation; ArSE in pink, KH in blue, KL in yellow, QzSe in red.

The use of structural controls or domains was another option considered. The methodology employed for this alternative was that of creating solids of the three structural domains (i.e. Southeast Zone, East Fault block and Central Zone in Figure 6-16), coding these domains into the drillholes and subsequently into the composites.

Visual inspection of individual variograms within the Southeast and Central zones when compared with variography produced within the 0.2% Cu did not offer the same level of spatial continuity. In addition, the number of data points within the East Fault Block were too sparse to offer meaningful results. See Appendices.

Kimura (2003) identified that there are three principal controls for mineralization; lithologic controls, structural elements and hydrothermal alteration phases. It is the opinion of the author that this combination is best characterized by a grade envelope based on copper grades as an alternative to using a true geologic variable as mineralization control. Therefore, the approach of using a grade envelope was adopted for the resource modeling. A 0.2% Cu isopleth envelope was used in this study and in the past, mostly because it follows prior practice in this type of deposits in the vicinity (and in particular, practice at the Bell Copper and Granisle Copper mines). The 0.2% Cu envelope was used because of mining and economic considerations, but with the added geologic component that it is thought to represent a reasonable definition of the boundaries for the mineralization. This was the main control for the proposed Morrison Deposit Resource Model.

The 0.2% isopleth solid created for this study included refined, detailed interpretations every 12 metres using the drill hole sections oriented east-west (Figure 6-17) using polygonal sectional interpretations created in the Kimura (2003) Study. This was performed by first defining a larger plug limit initially to define the main unit. This was followed by defining splays outside the plug, under the condition that they had a thickness greater than 6 metre (i.e. 2 composite lengths) of greater than 0.2% Cu grade. Initially, it was anticipated that these splays would be fairly isolated; however these units appeared continuous where they existed.

The 0.2% Cu envelope involved creating the major envelope, which included the east boundary, west boundary, bottom (400m elevation) and top (topography). The limits of the 0.2% Cu envelope ran from 6,118,797N to 6,119,639N. The criterion for defining these limits was based on assays being greater than 0.2% Cu. However, if a section of a drill hole or cross-cut had an interval that was less than 6 metres in length but was bounded on both sides by grade greater than 0.2% Cu, then it was included within the envelope.

The 0.2% Cu solid was linked (wireframed) into one continuous solid as it exhibits excellent continuity and correlated well from section to section.

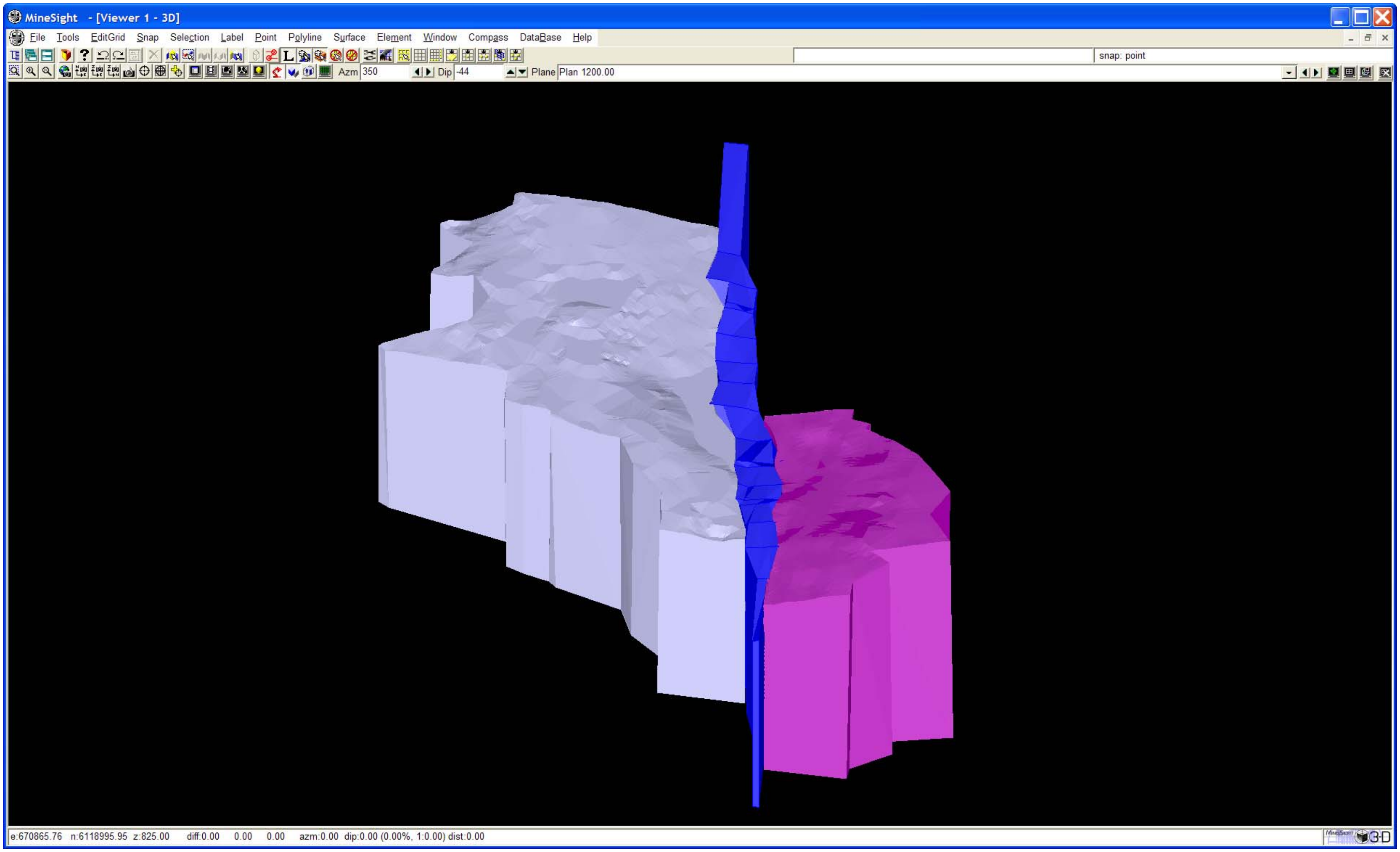


Figure 6-16: Perspective View Looking North of Structural Domains; SE zone in Purple, East Fault Block Blue and Central Zone in Grey.

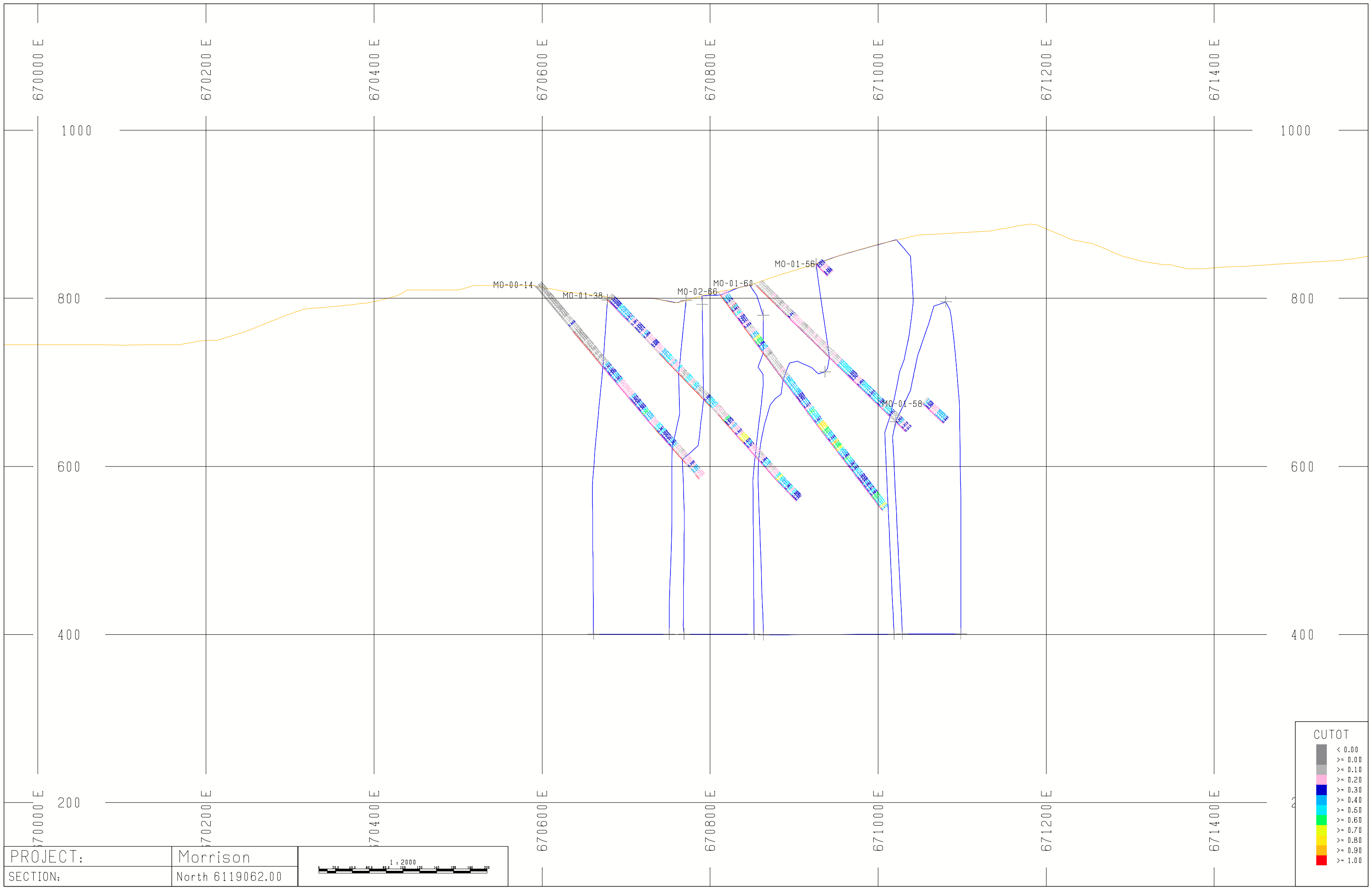


Figure 6-17: Sectional Interpretation of 0.2% Cu Isopleth Envelope with Drillholes and Topography.

After the 0.2% Cu solid envelope was completed, it was utilized to assign a numeric code into the intervals within the assay database so that they may be used for matching of geology back into the assays and subsequent composite database. This process entails first assigning a numeric code to the assays depending on whether or not the intervals fall within the 0.2% Cu envelope. This step ensures that all intervals outside the 0.2% Cu envelope receive a code and are not overwritten by the subsequent coding for those that do fall within the 0.2% Cu envelope. The reason being that coding the assays outside the envelope is necessary, as a separate estimation is performed for this material during the grade estimation process.

The next step is to composite the drillholes at 3 metre intervals as discussed above, however the zones for the 0.2% Cu isopleth envelope are matched from the drillhole to the corresponding composite interval. At the transition boundaries, the composites are truncated and the remaining tails retained.

A necessary, parallel process involves assigning numeric codes based on the geology solids, back to the block model. This step insures that the geology codes within the grade model are matched with the corresponding codes within the composite database. This process is based on the same solids created for the 0.2% Cu envelope.

In addition to the numeric codes, it is necessary to assign a percentage for the amount in which these geologic solids fall within the defined solids. This is primarily done when weighting the block model for the purpose of resource calculations. It should be noted that it is imperative that the codes and percentages assigned to a particular block retain their own individual field. This is to insure that overlapping areas, especially at the interface between the topography and both inside and outside the 0.2% Cu envelope where any block will have all material accounted for. Also, in an effort to eliminate larger waste areas but to insure that material with sufficient grade and width is included, splays were included in the sectional interpretations and resultant solids were created.

It is at this point that both the composite database and the block model are prepared for setting up the interpolation and grade modeling process detailed in the following section. Figure 6-18 shows a plan view and Figure 6-19 shows a three-dimensional view looking north of the 0.2% Cu isopleth envelope, with a few drill holes piercing through.

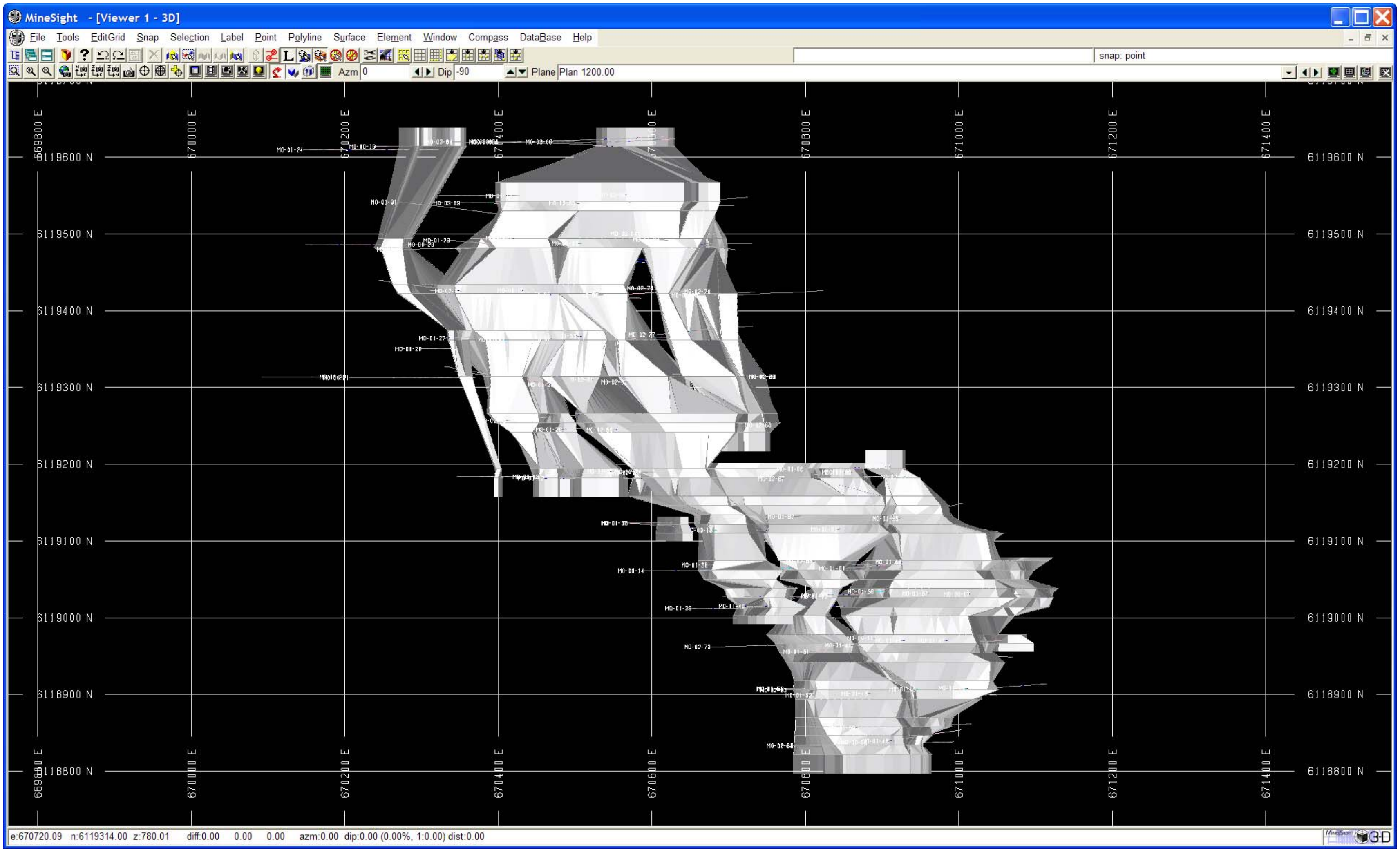


Figure 6-18: Plan View of 0.2% Cu Isopleth Envelope Solid with Drillholes.

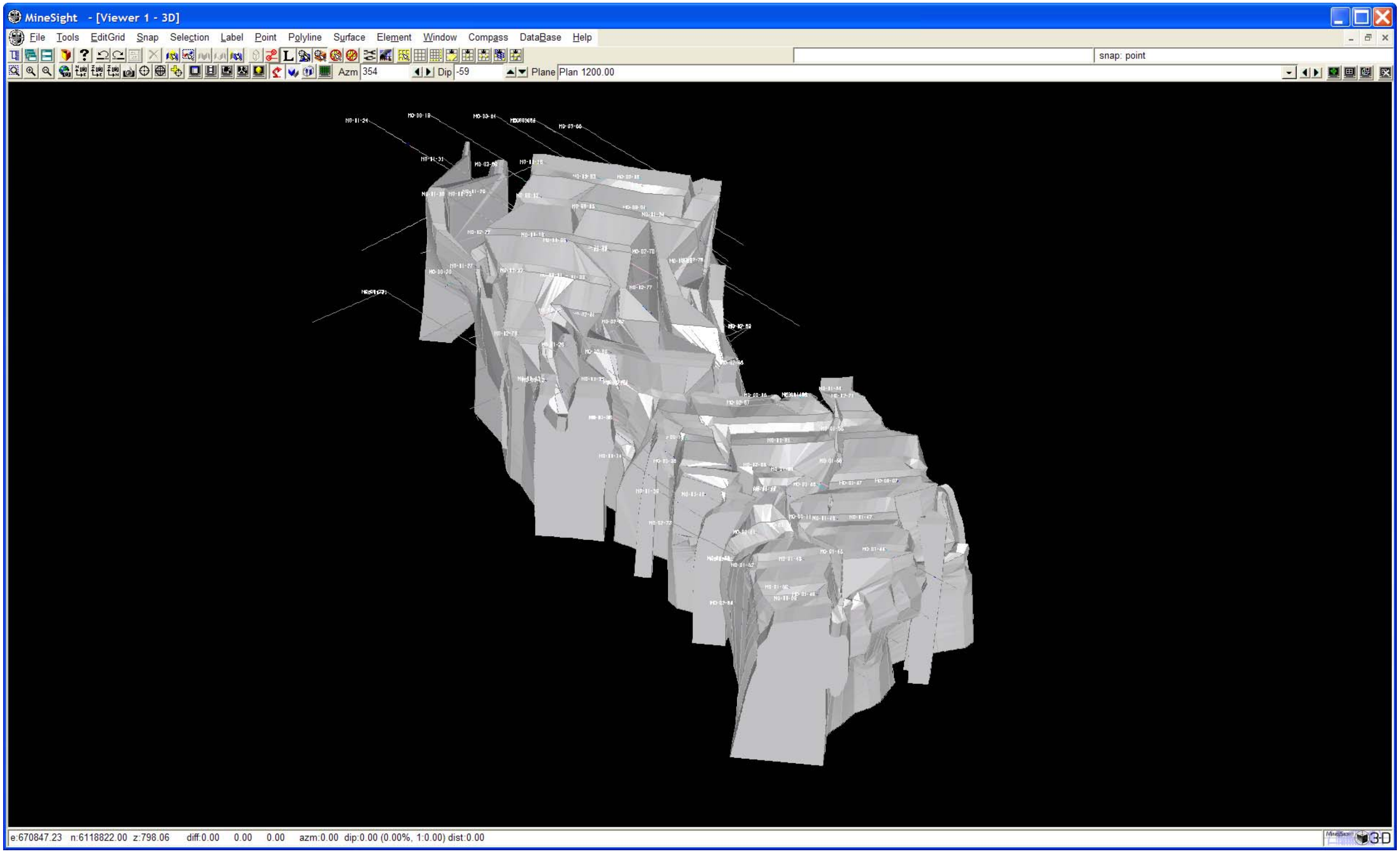


Figure 6-19: Perspective View of 0.2% Cu Isopleth Envelope Solid with Drillholes.

6.3.4 Specific Gravity Determinations

Previous studies have utilized density values of 2.71 t/m^3 for all blocks, with the exception of the argillitic sericite blocks which were assigned a density value of 2.57 t/m^3. In addition, blocks that were assigned to be overburden were assigned a density value of 1.50 t/m^3. These values and their assignment to rock type were based on recommendation from Pacific Booker.

6.3.5 Block Model Definition

The Morrison deposit block model used for calculating the resources was defined according to the following limits:

- Minimum Easting: 669,586E;
- Maximum Easting: 671,986E;
- Minimum Northing: 6,118,486N;
- Maximum Northing: 6,120,886N;
- Minimum Elevation: 0;
- Maximum Elevation: 1,200.

The block size chosen was 12 x 12 x 12 m to roughly reflect drill hole spacing available and proposed bench height. Drillhole spacing averages from approximately 60 metres throughout the deposit. Typically, three to five blocks between sections is commonly used as a rule of thumb for block models, which is the case for the Morrison deposit block model (i.e. 5 blocks per 60 metres).

Of the potential 4,000,000 blocks to be estimated (200 rows, 200 columns, 100 levels), less than 122,705 blocks, or 3%, have estimated values in them (weighted against topography). This is primarily due the constraints applied to the estimation process, namely the limited search distances applied, search ellipsoid direction and the use of inverse distance to the fourth power as the modeling method.

6.3.6 Resource Interpolation

Correlograms and other variogram estimators were used to attempt to obtain a spatial variability model that could be used in the estimation of the resources. Variography was run in all directions for copper and gold, both inside and outside the 0.2% Cu envelope and models created as shown in the Appendices. The software utilized for this exercise, called Sage 2003™ has a feature that calculates the optimal variogram range length for each of directional axis as a tool for directing variogram dimensions and orientation. The resultant combined models inside the 0.2% isopleth envelope (Figure 6-18a) indicate an ellipsoid that is spherical with a diameter of approximately 90 metres.

This result confirms the results from previous studies that utilized a search strategy that employed a 90 metre range as the furthest range for which to search for composites to estimate block values. Therefore, it was decided by the author to employ a search strategy based on running three passes using increasingly larger search distances from a search radius of 30 metres (1/3 of the maximum range) to 60 metres (2/3 of the maximum range) to 90 metres.

Calculate Sample Variograms

GSLIB Rotation Conventions

Nugget ==> 0.390
C1 ==> 0.283
C2 ==> 0.262

First Structure -- Spherical

LH Rotation about the Z axis ==> 83
RH Rotation about the X' axis ==> 77
RH Rotation about the Y' axis ==> 45

Range along the Z' axis ==> 82.8	Azimuth ==> 217	Dip ==> 9
Range along the Y' axis ==> 75.3	Azimuth ==> 83	Dip ==> 77
Range along the X' axis ==> 124.0	Azimuth ==> 129	Dip ==> -9

Second Structure -- Spherical

LH Rotation about the Z axis ==> 19
RH Rotation about the X' axis ==> -11
RH Rotation about the Y' axis ==> -1

Range along the Z axis ==> 918.3	Azimuth ==> 16	Dip ==> 79
Range along the X' axis ==> 35.8	Azimuth ==> 109	Dip ==> 1
Range along the Y' axis ==> 464.0	Azimuth ==> 19	Dip ==> -11

Modeling Criteria

Minimum number pairs req'd ==> 350
Sample variogram points weighted by # pairs

Figure 6-18a: Variogram Model Results for Copper Inside the 0.2% Cu Isopleth Envelope.

The choice of inverse distance was based primarily on experience that inverse distance or ordinary kriging are employed typically for an open pit, bulk tonnage scenario. However, in this case inverse distance to a higher power was deemed more appropriate as it localizes the grade to a certain extent and results in less smoothing. From a simplistic point of view, inverse distance weighting applies more weight to closer samples and less to those farther away depending upon the power utilized. The weight of each sample is inversely proportional to its distance from the point or block being estimated. From one end of the spectrum, inverse distance to the 0 power is just a straight arithmetic average and on the other end of the spectrum is inverse distance to the 10^{th} power for example which will heavily weight the point closest to the virtual exclusion of all others. Also, since the variogram models obtained had, in all cases, relatively low nugget effects and the fact that the coefficient of variance for the copper dataset is low, virtually all estimation methodologies will have fairly similar results depending upon search strategy and constraints.

A search strategy was utilized as follows:

Pass 1 - A search ellipse with dimensions of 30 metre at azimuth 230 ^{o} and dip -90 ^{o} was used to find a minimum of 4 and maximum of 10 composites to estimate a block.

Pass 2 - For blocks not estimated during Pass 1 the search ellipse was expanded to 60 metre and a minimum of 3 and maximum of 12 composites was required to estimate the block.

Pass 3 - For blocks not estimated by Pass 2 the search ellipse was expanded to 90 metre in each direction. A minimum of 4 and maximum of 16 composites were required to estimate the block.

Blocks not estimated in Pass 3 were left un-estimated. In all cases if more than 16 composites were within the search ellipse, the closest 16 were used.

Table 6-5
Proposed Estimation Criteria, Cu% and gAu/t Inside 0.2% Cu Envelope Model.

Pass	Search in X, Y, and Z	Interpolator	Min No. of Comps	Max No. of Comps	Max No. of Comps per DDH	Max. No. of Comps/Octant	High Grade Restriction to 24 x 24 x 24m
1	30x30x30m	ID^4	4	10	2	2	1.35 gAu/t
2	60x60x60m	ID^4	3	12	2	2	1.35 gAu/t
3	90x90x90m	ID^4	2	16	2	2	1.35 gAu/t

The process is then duplicated for the samples and blocks lying outside the 0.2% Cu isopleth envelope.

Also, an octant search was used in all passes as it aids in declustering the estimate. This means that it helps to avoid over-influence of individual drill holes or sectors being overly informed, avoiding the use of samples that clustered together and thereby redundant. For inverse distance techniques, a search strategy that accounts for clustering will yield improvements over using all samples.

The resultant block model is displayed in Figure 6-20. As a check Figure 6-21 confirms that the gold outlier grades were not extended beyond the restriction radius.

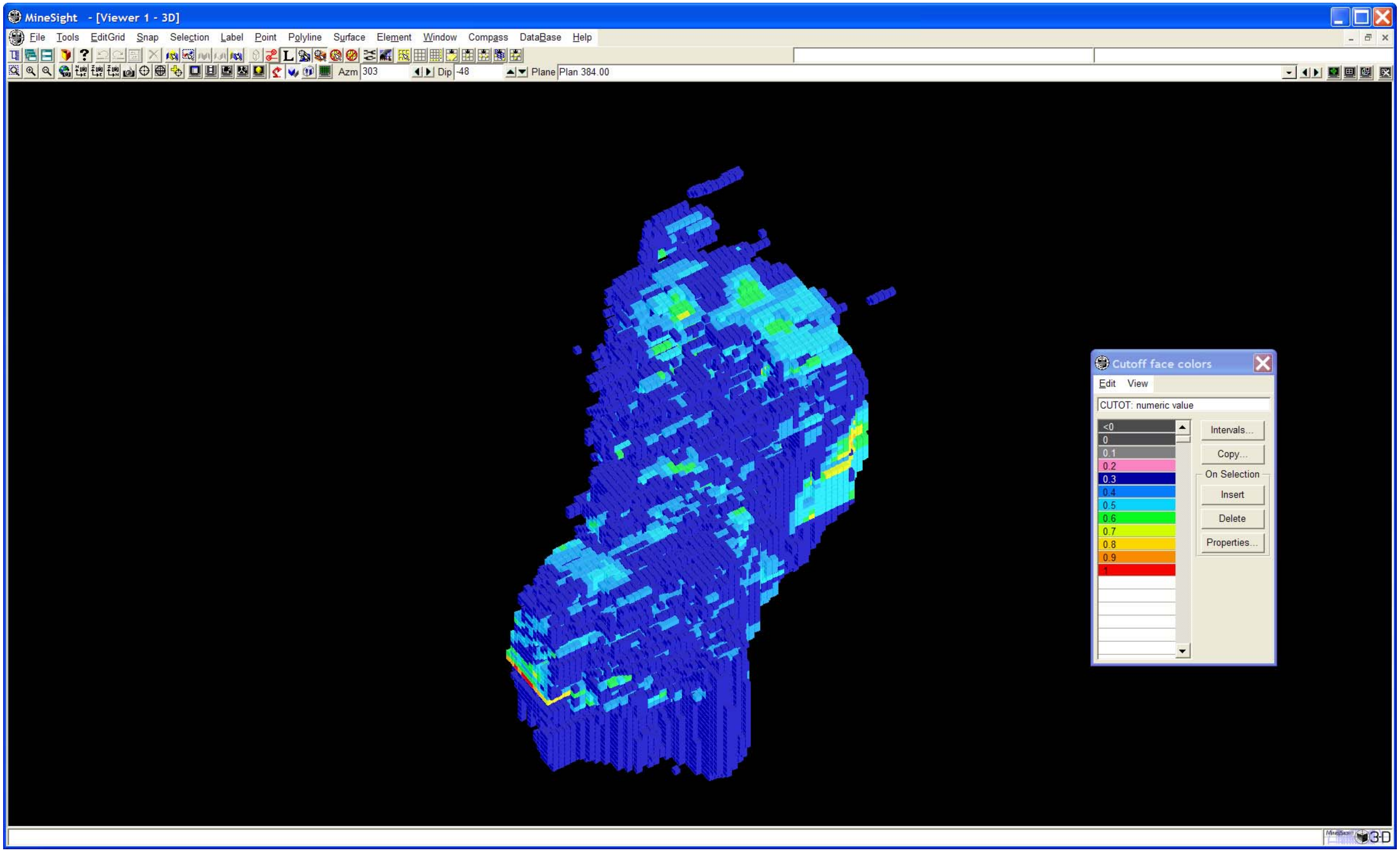


Figure 6-20: Grade Model Displaying Cu% at 0.3% Cut-off Grade.

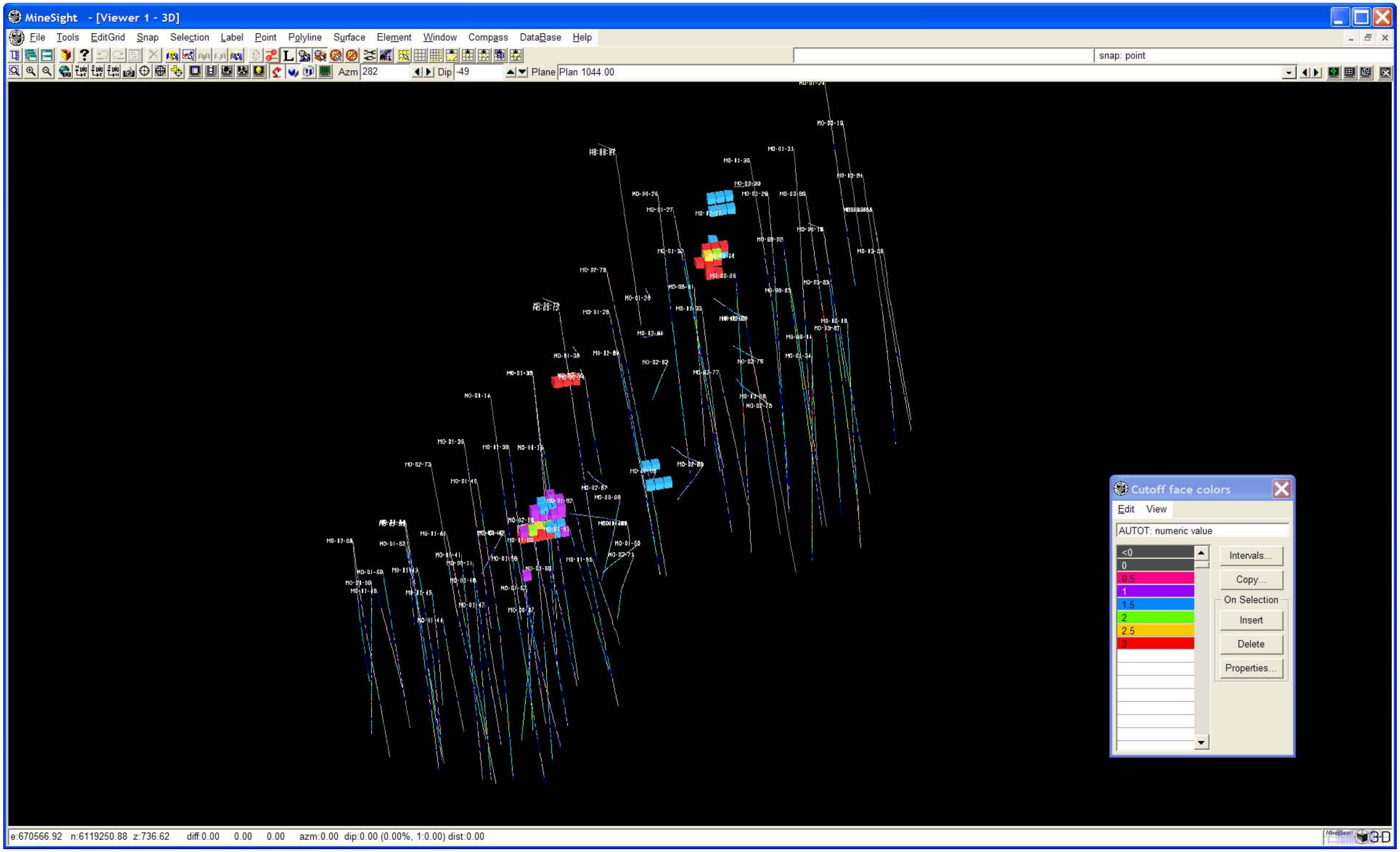


Figure 6-21: Illustration of the Effect of High Grade Restriction on the Model with Resultant Gold Blocks > 1.35 gpt .

6.3.7 Classification

Geologic continuity has been demonstrated over the years of drilling at the Morrison deposit with mineralized structures identified on adjoining sections. Grade continuity can also be demonstrated by semivariograms. Classification into measured/indicated/inferred resource categories was done by categorizing the block based on the search distances, along with the number of composites that were used to estimate a particular block.

Each estimated block was first assigned a code of 1 to 3 based on the search criteria for copper and gold. Blocks estimated during pass 1 with the search ellipse dimensions equal to 1/3 of the maximum ellipsoid range were assigned a code of 1. Blocks estimated during pass 2 with a search ellipse dimension of 2/3 the maximum range were coded 2 and the remainder of the blocks estimated using the full range of the maximum were coded 3.

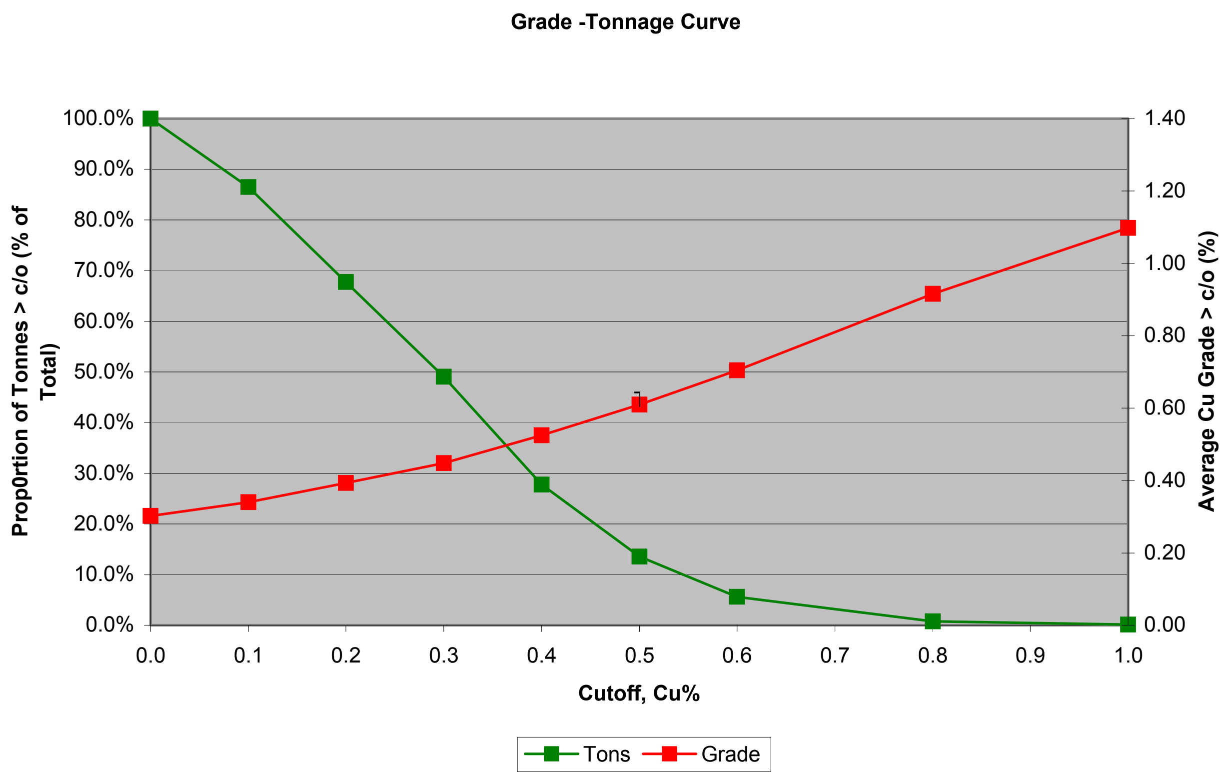
6.3.8 Resources

Table 6-6 lists resources based upon the classification categories of measured, indicated and inferred as defined above, for cut-of grades ranging from 0.00 to 1.00 Cu%.

Table 6-6
Resources by Classification

Class	Cutoff Grade %Cu	Resources BCM	Resources Tonnes	Grade Cu%	Grade gAu/t
Measured	0.00	51,706,235	138,043,729	0.344	0.174
	0.10	47,019,989	125,616,870	0.372	0.188
	0.20	40,055,036	107,026,532	0.411	0.209
	0.30	29,826,482	79,785,454	0.465	0.234
	0.40	18,587,449	49,787,469	0.535	0.267
	0.50	9,771,597	26,170,223	0.617	0.316
	0.60	4,256,483	11,415,402	0.710	0.372
	0.80	658,368	1,768,936	0.922	0.441
	1.00	146,880	394,416	1.113	0.507
Indicated	0.00	51,169,217	136,770,816	0.287	0.149
	0.10	43,499,866	116,232,108	0.327	0.169
	0.20	33,315,319	88,911,148	0.382	0.201
	0.30	23,841,819	63,586,162	0.434	0.228
	0.40	12,431,896	33,218,512	0.514	0.264
	0.50	5,592,757	14,941,604	0.601	0.307
	0.60	2,111,444	5,632,130	0.696	0.358
	0.80	214,272	572,452	0.895	0.346
	1.00	25,920	69,517	1.023	0.290
Inferred	0.00	16,527,717	44,394,006	0.222	0.110
	0.10	12,762,906	34,236,464	0.269	0.131
	0.20	7,589,297	20,258,320	0.354	0.178
	0.30	4,952,718	13,214,946	0.412	0.207
	0.40	2,139,992	5,727,349	0.499	0.244
	0.50	839,511	2,237,861	0.590	0.290
	0.60	297,216	790,698	0.678	0.330
	0.80	10,368	27,130	0.914	0.252
	1.00	3,456	8,882	1.012	0.110
Total	0.00	119,403,169	319,208,550	0.302	0.154
	0.10	103,282,761	276,085,442	0.340	0.173
	0.20	80,959,653	216,196,000	0.394	0.203
	0.30	58,621,020	156,586,562	0.448	0.229
	0.40	33,159,338	88,733,329	0.525	0.264
	0.50	16,203,866	43,349,688	0.610	0.311
	0.60	6,665,143	17,838,231	0.704	0.366
	0.80	883,008	2,368,517	0.915	0.416
	1.00	176,256	472,815	1.098	0.468

Grade-Tonnage Curve for Cu%



A graphical validation was done on the block model. This graphical validation serves several purposes:

- Checks the reasonableness of the estimated grades, based on the estimation criteria and the nearby composites.
- Checks that the estimated blocks carry the envelope codes as interpreted and modeled.
- Checks that the general drift and the local grade trends of the block model, compared to the drift and local grade trends of the composites.
- Checks that topography has been properly accounted for.

A full set of cross sections, long sections and plans were used to check the block model on the computer screen, showing the block grades, the composite data, and the 0.2 % Cu envelope used to define the volume within which the interpolation took place. No evidence of any block being wrongly estimated was found: it appears that every block grade can be explained as a function of the surrounding composites, the correlogram models used, and the estimation plan applied.

6.4 OPEN PIT OPTIMIZATION

6.4.1 Pit Optimization Study

A number of scenarios were run based on varying production cases (Tables 6-7 and 6-8), which evaluated a range of cost structures depending on ultimate depth of pit, variable pit wall slope parameters, and grade cut-off thresholds in an effort to determine the optimum pit. The net revenue models were based on increasing prices for gold and copper from US$350/oz and US$0.70/lb through to US$385/oz to US$1.10/lb. Each net revenue model was then run for 3 cost scenarios based on varying the cost of mining and processing costs. An additional, lower cost scenario, number 4, was run with the US$350/oz gold and US$0.90/lb copper revenue option, listed as Case 13.

Table 6-7
Summary of Economic Criteria for Use in Pit Optimization

Case	Gold Market Price per gram $US	Copper NSR/% per tonne	Gold NSR/gm	G&A Opex Ore	Mine Opex Ore	Mine Opex Waste	Plant Opex Ore	Total Opex Ore
1	$12.38	$19.92	$11.15	$0.40	$1.17	$1.27	$4.34	$5.91
2	$12.38	$19.92	$11.15	$0.40	$1.27	$1.37	$4.34	$6.01
3	$12.38	$19.92	$11.15	$0.40	$1.37	$1.47	$4.34	$6.11
4	$11.25	$14.80	$10.14	$0.40	$1.17	$1.27	$4.34	$5.91
5	$11.25	$14.80	$10.14	$0.40	$1.27	$1.37	$4.34	$6.01
6	$11.25	$14.80	$10.14	$0.40	$1.37	$1.47	$4.34	$6.11
7	$9.65	$12.24	$8.69	$0.40	$1.17	$1.27	$4.34	$5.91
8	$9.65	$12.24	$8.69	$0.40	$1.27	$1.37	$4.34	$6.01
9	$9.65	$12.24	$8.69	$0.40	$1.37	$1.47	$4.34	$6.11
10	$9.65	$9.67	$8.69	$0.40	$1.17	$1.27	$4.34	$5.91
11	$9.65	$9.67	$8.69	$0.40	$1.27	$1.37	$4.34	$6.01
12	$9.65	$9.67	$8.69	$0.40	$1.37	$1.47	$4.34	$6.11
13	$11.25	$14.80	$10.14	$0.75	$1.08	$1.13	$3.25	$5.08

Table 6-8
Cost Criteria for Use in Pit Optimization

Cost Scenario	1	2	3	4
Ore $/tonne	1.17	1.27	1.37	1.08
Waste $/tonne	1.27	1.37	1.47	1.13
Mill Cost $/tonne	4.34	4.34	4.34	3.25
G&A $/tonne	0.40	0.40	0.40	0.75

In addition from the cost data shown above, the source data for the pit optimization process are the calculated grades for copper and gold, and the SG values for each block. It is then necessary to calculate a dollar value per block.

Based on the above criteria, net values were created for each individual block calculated as follows:

Where Tonnage Factor (TF) = SG x 12 x 12 x 12 tonnes/block and;

US$/Canadian $ exchange rate = 1.408;

Firstly, an NSR value for copper and gold needs to be calculated.

CuNSR/% = Metal price/% -(Marketing + Freight + Refining)/% and;
AuNSR/gm = Metal price/g -(Marketing + Freight + Refining)/g

NETVAL= (TF x Cu% x CuNSR/% + TF x gAu/t x AuNSR/gm) – (TF x Total OPEX Ore)

If any one block does not provide a profit or a positive net value then those blocks will be considered waste and are assigned the cost of mining them as waste. Therefore, for all values of NET VAL < 0;

NET VAL = -1 x (TF x Waste Cost)

All values are in Canadian dollars unless stated otherwise. For tonnage calculations, specific gravity was derived from the block model on a block by block basis for both ore and waste. Initial variable pit slopes were determined to be 40 degrees in the north and south pit walls while the pit slope used in the east and west pit walls was 45 degrees. The 40 degree slopes which included a 20 degree sweep along with a 5 degree transition zone to 45 degrees, were necessary to accommodate geotechnical considerations associated with the fault zone (i.e., East Fault Block) running approximately north-south through the deposit. The bench height is equal to the block model bench height of 12 metres.

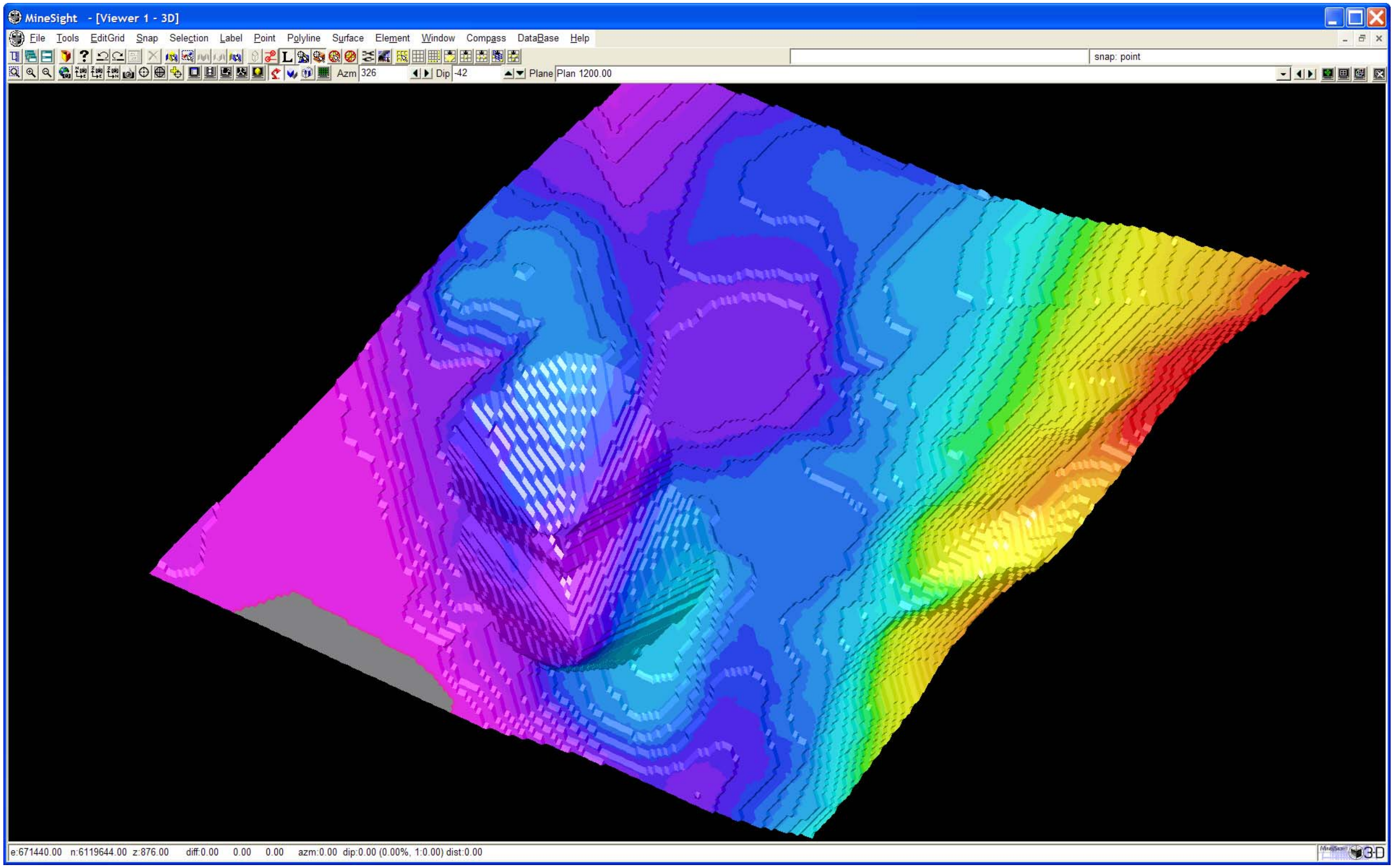


Figure 6- 22: Optimal Pit Based on US$350 Gold and US$0.90 Cu Utilizing Cost Scenario 3.

6.4.2 Results

Once the optimal pit was chosen it was utilized as the template for the creation of the designed pit which included a haulage ramp. The design parameters for the pit were to utilize a double bench, 10 metre safety berm, 70 degree face slope and 10% grade for the ramp. In addition, to accommodate geotechnical constraints, an overall pit slope of 45 degrees was used, with the exception of those sections of the wall that transect the East Fault Block which appears as a blue solid in Figures 6-23 and 6-24. The pit sectors transected by the East Fault Block requiring a reduced pit slope of 40 degrees for a sweep of 35 degrees from azimuth 320 through 355 degrees in the north sector and from 165 through 185 degrees for a 20 degree sweep in the south sector. The green lines in Figure 6- 24 show the reduced slope sectors along with 5 degree transition zones between the 40 degree and 45 degree slope changes.

For scheduling, the approach was to create a Phase 1 pit (Figure 6-25) which would extract the relatively higher grade resources in the central zone in the initial years followed by a Phase 2 pit to exploit the resources in the southeast zone. Figure 6- 26 shows the Phase 1 pit solid inside the final combined Phase 1 and Phase 2 pit shell to illustrate the material to be extracted in the initial years. Figure 6-27 illustrates the Phase 2 pit solid (purple) to be extracted following the development of the Phase 1 pit which is represented by the remainder within the pit shell. The final pit, which is the Phase 1 and Phase 2 pits combined, is shown in Figure 6-28 (looking from underneath). Figure 6-29 illustrates the final combined pit cut from original topography

The estimated resources are listed for the Phase 1, Phase 2 and combined pits in Tables 6-9 through 6-11, respectively. Note that these resources are not based upon a particular cut-off grade but are those that produce a positive net value by utilizing the revenue and cost data for Case 6 as described above, namely, US$350/oz gold and US$0.90/lb copper together with cost scenario 3.

In addition, the option of extracting material into a low grade stockpile was included in the analysis. This entailed calculating the differential between the material that would be profitable within a higher revenue model i.e., US$385 gold and US$1.10 copper but is not profitable within the chosen lower cost scenario. The amount and grade of this differential is listed by bench in Table 6-12. The premise being that although this material is not profitable under the current revenue / cost scenario, it has already been extracted. Therefore, the cost of mining can be removed from the costs to be incurred and only the cost of milling need now be considered for determining the profitability of this marginal material.

Figures 6-30 and 6-31 illustrate the combined Phase 1 and Phase 2 pit resources displaying only those blocks that exceed the net profit cut-off based on Case 6, color coded by Cu% grade. In addition, Table 6-13 lists the pit resources for the combined Phase 1 and 2 pit by measured, indicated and inferred class while Table 6-14 lists the resources by rock code as defined in the Snowden (2003) model.

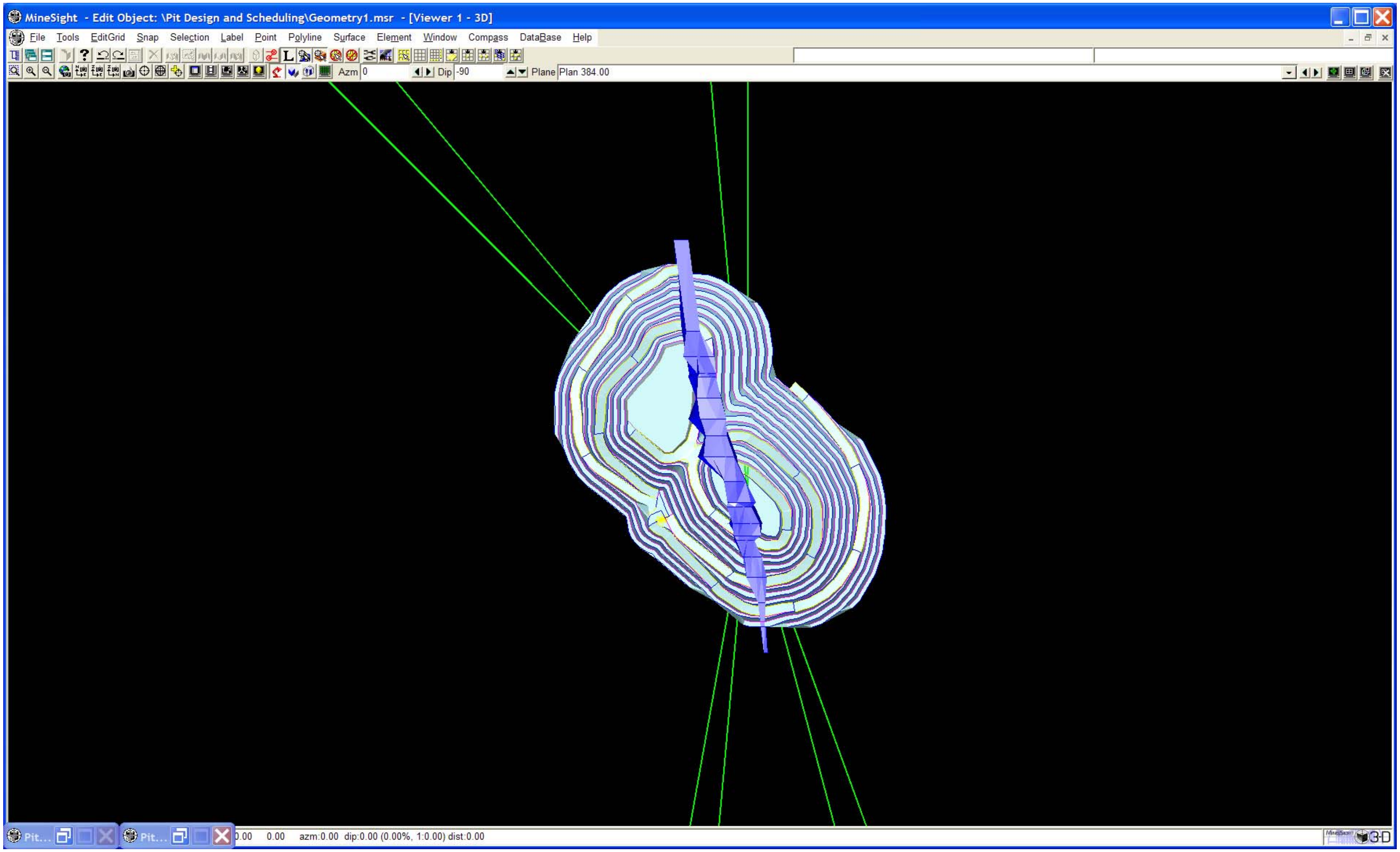


Figure 6-23: Phase 1 and Phase 2 Combined Pit Intersected by East Fault Block with Slope Sectors in Green.

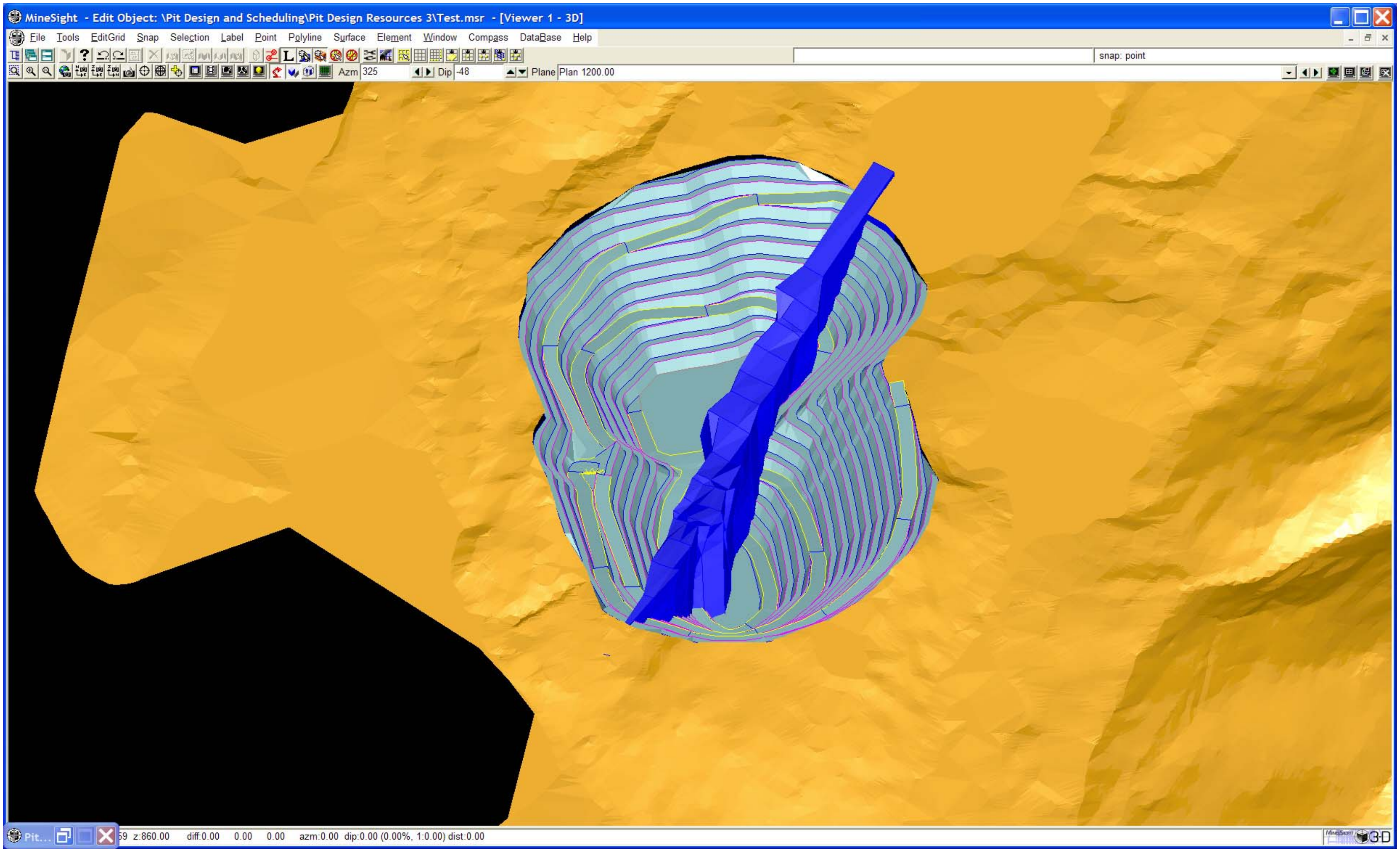


Figure 6- 24: Phase 1 and Phase 2 Combined Pit Intersected by East Fault Block.

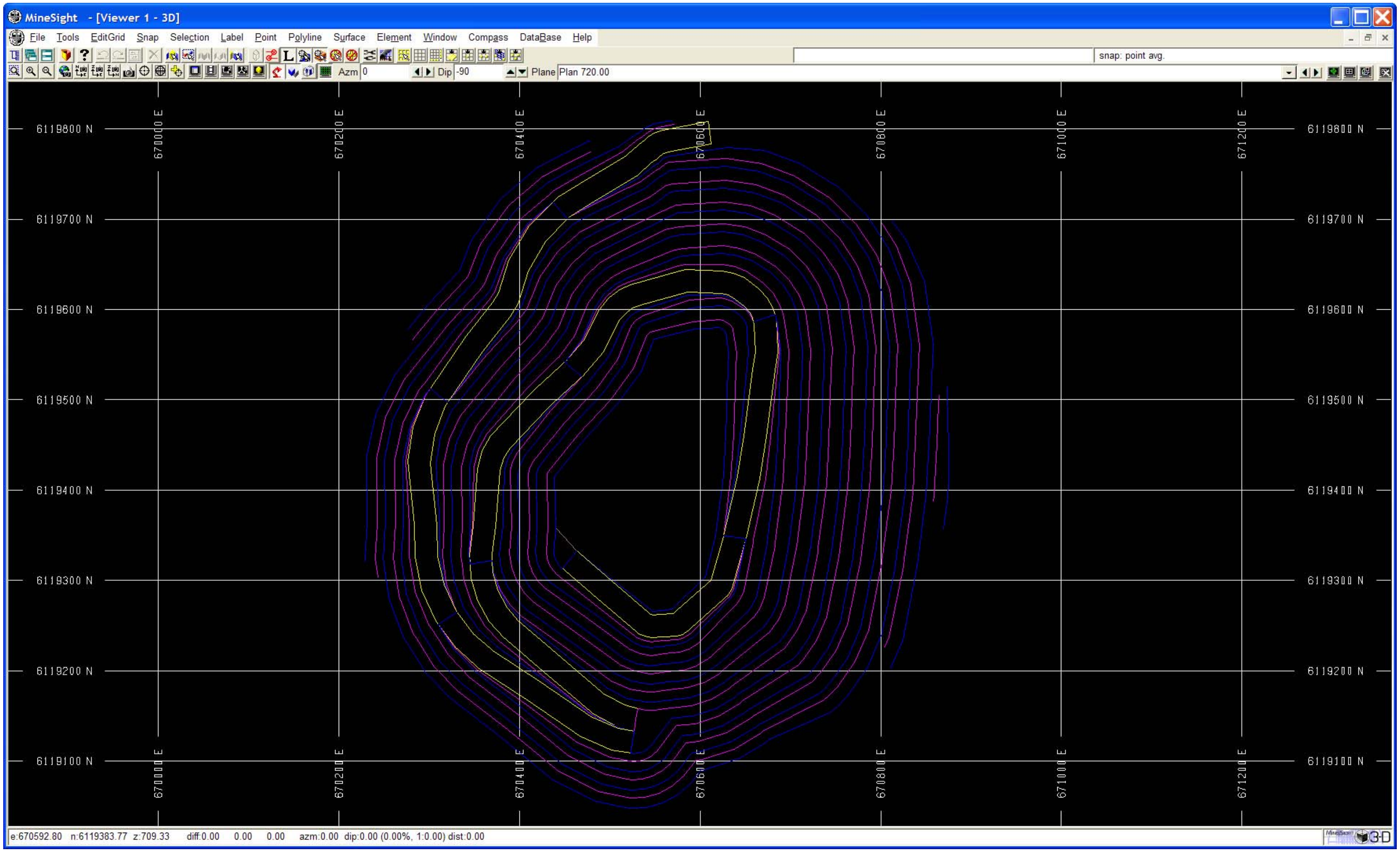


Figure 6- 25: Phase 1 Pit Contours in Plan View.

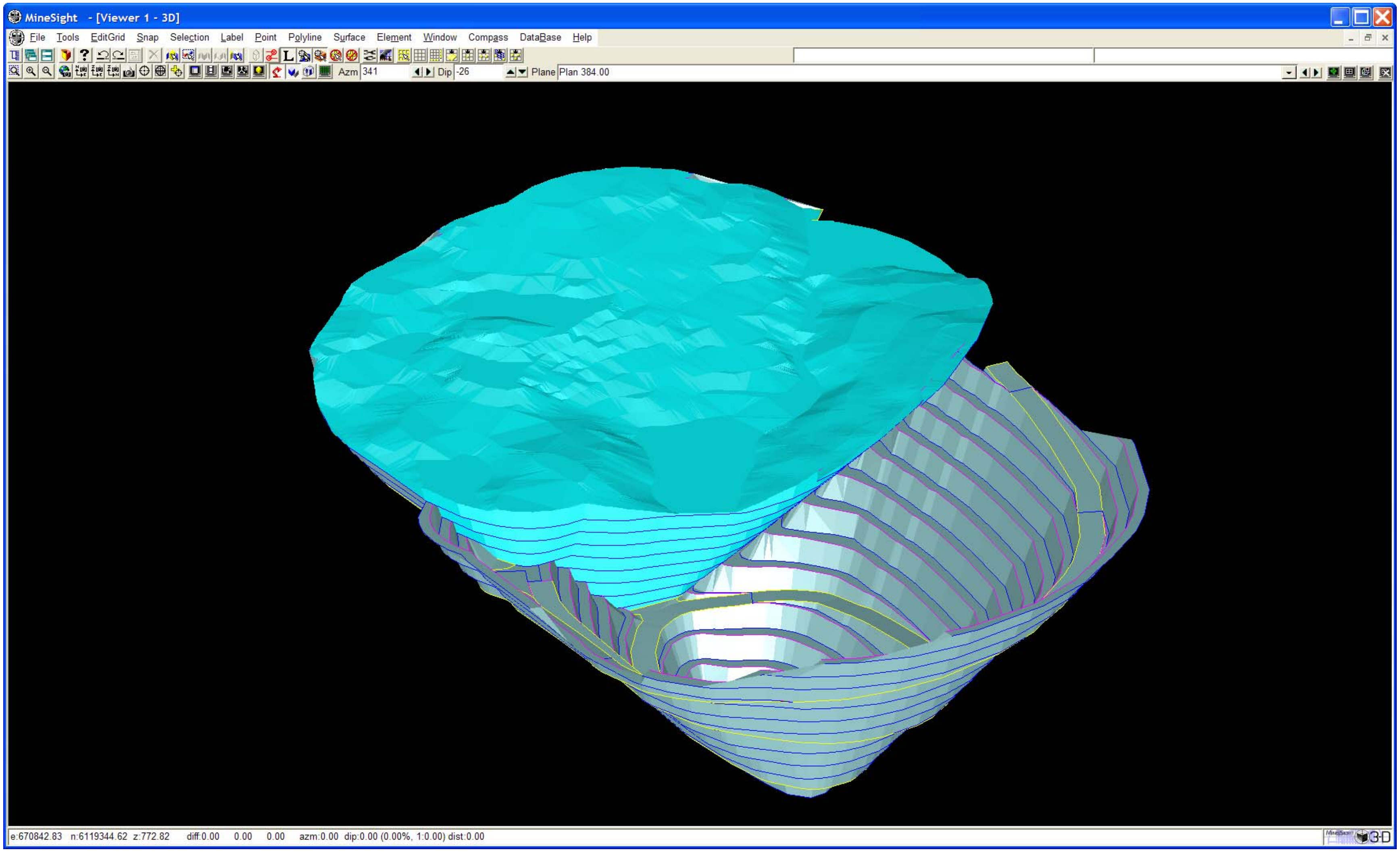


Figure 26: Phase 1 Solid Inside Final Combined Phase 1 and Phase 2 Pit

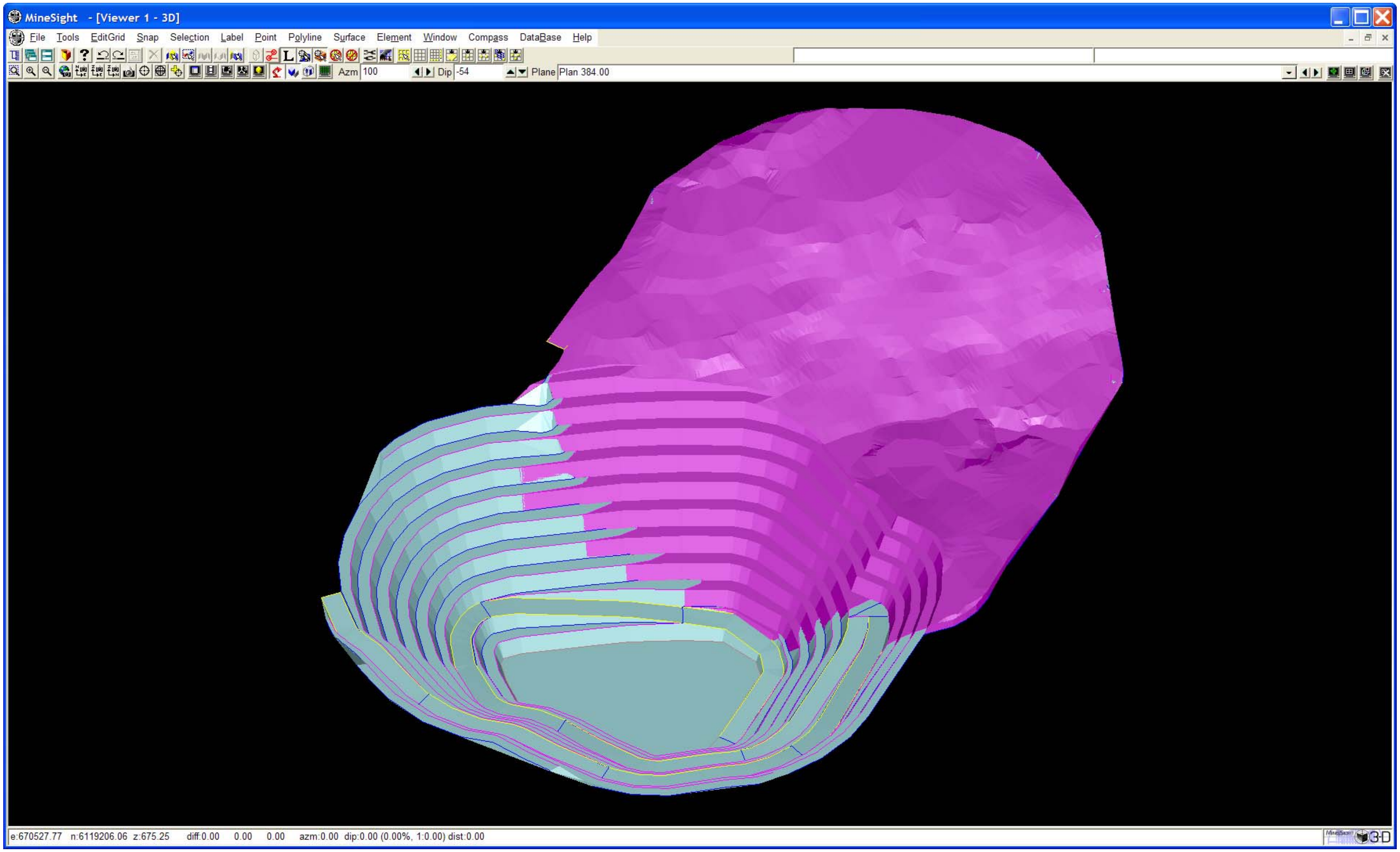


Figure 6- 27: Phase 2 Solid Inside Final Combined Phase 1 and Phase 2 Pit

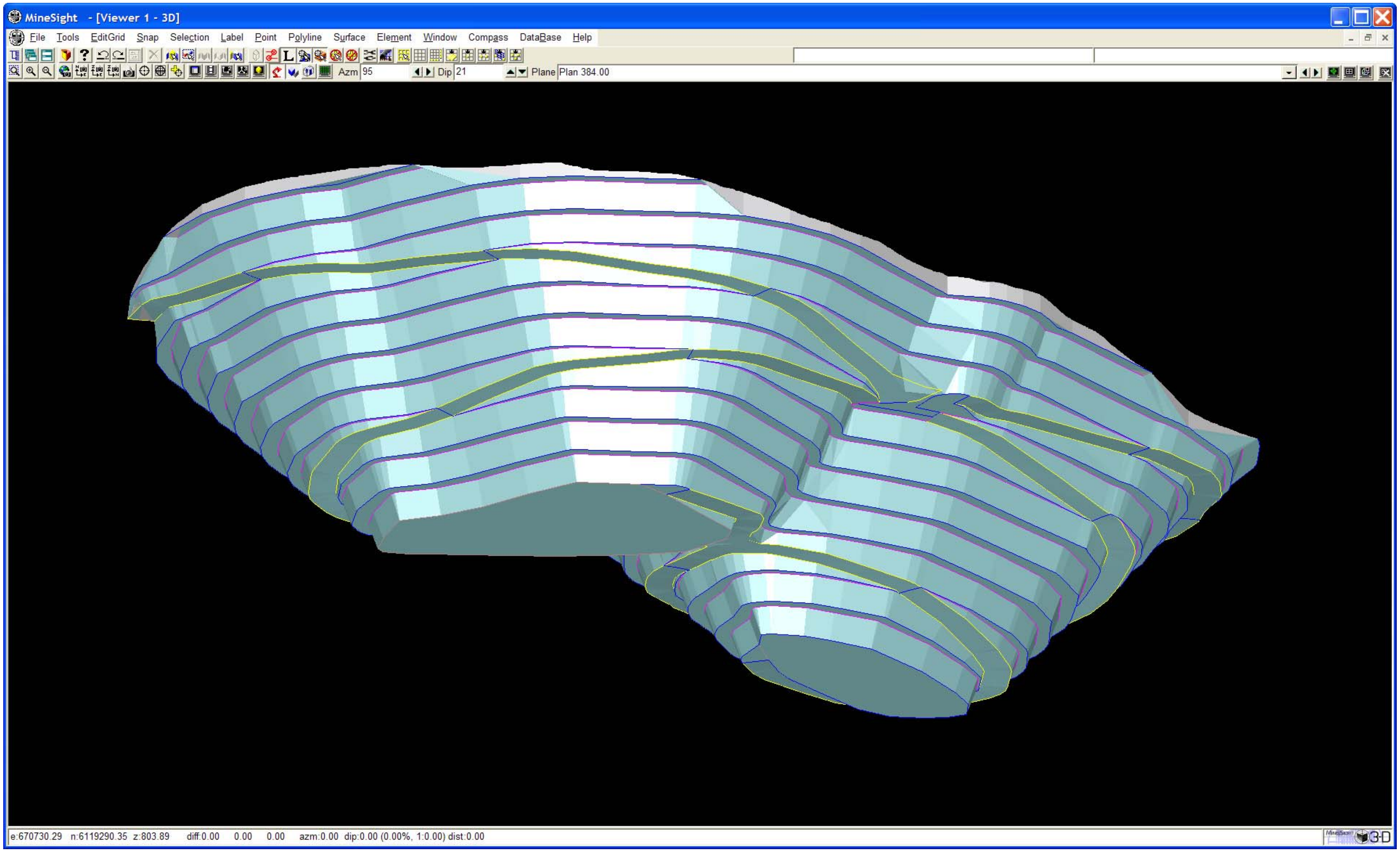


Figure 28: Combined Phase 1 and Phase 2 looking from Underneath.

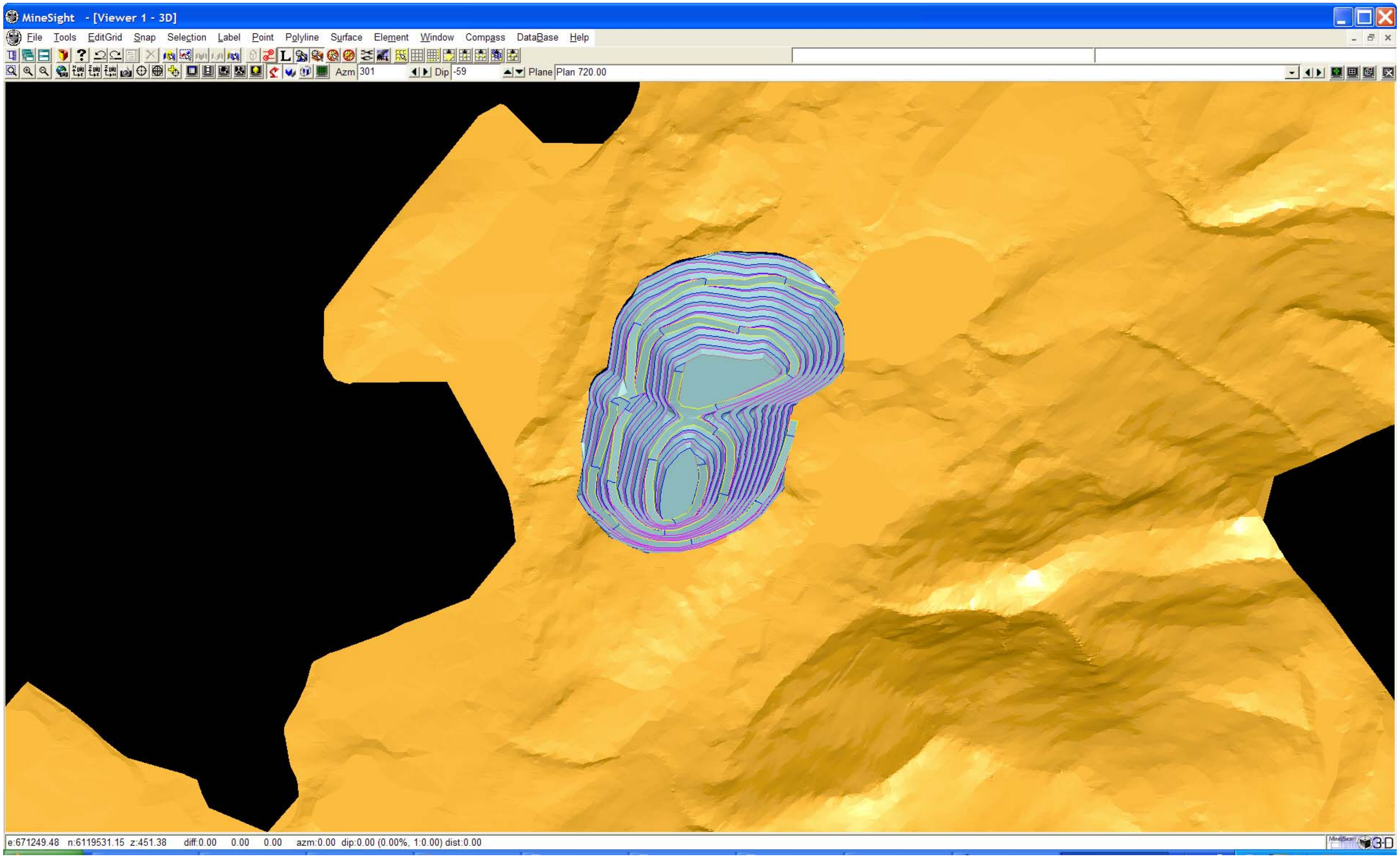


Figure 6- 29: Phase 1 and 2 Combined Pit with Topography.

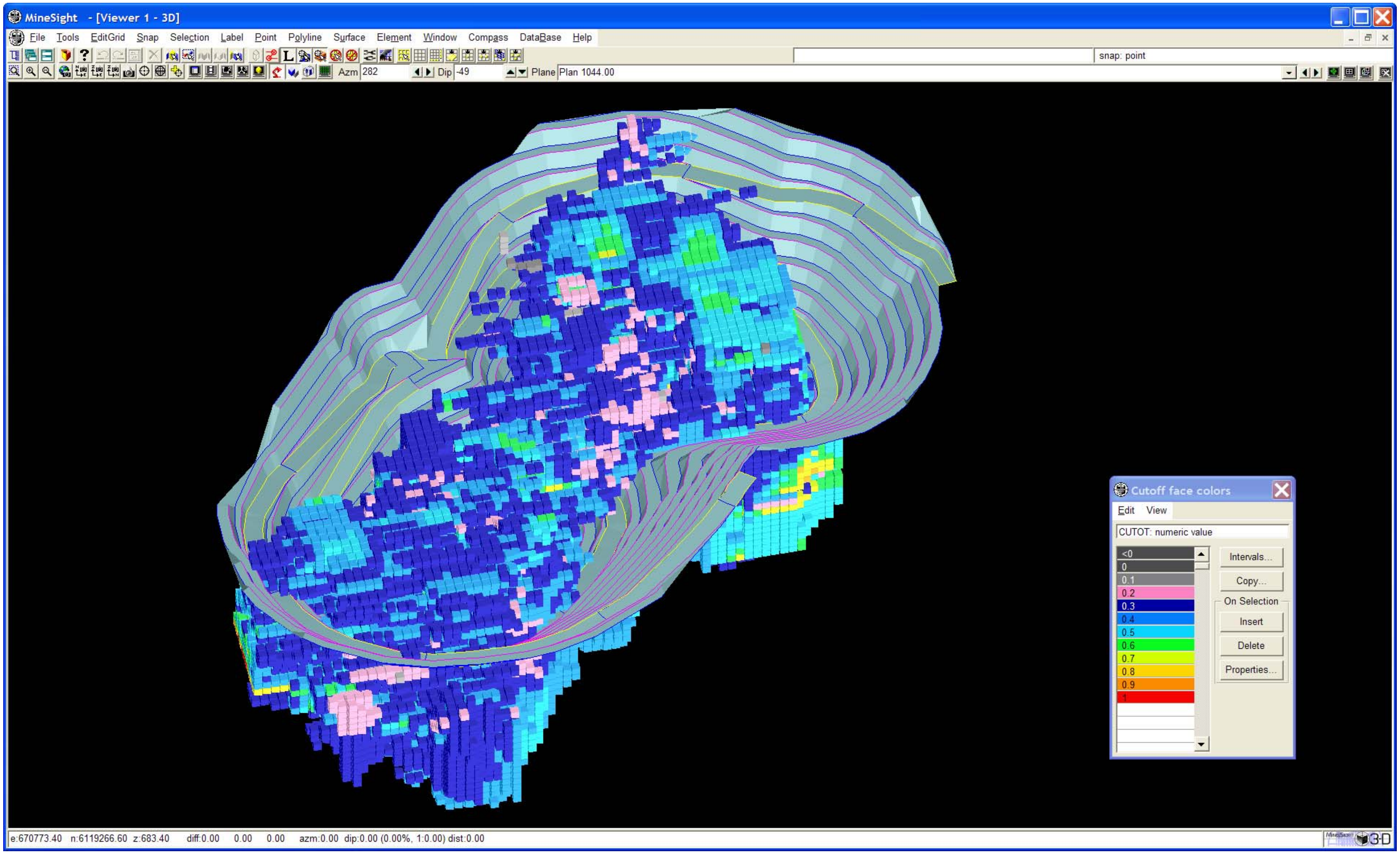


Figure 6- 30: Phase 1 and 2 Combined Pit Solid with Block Model.

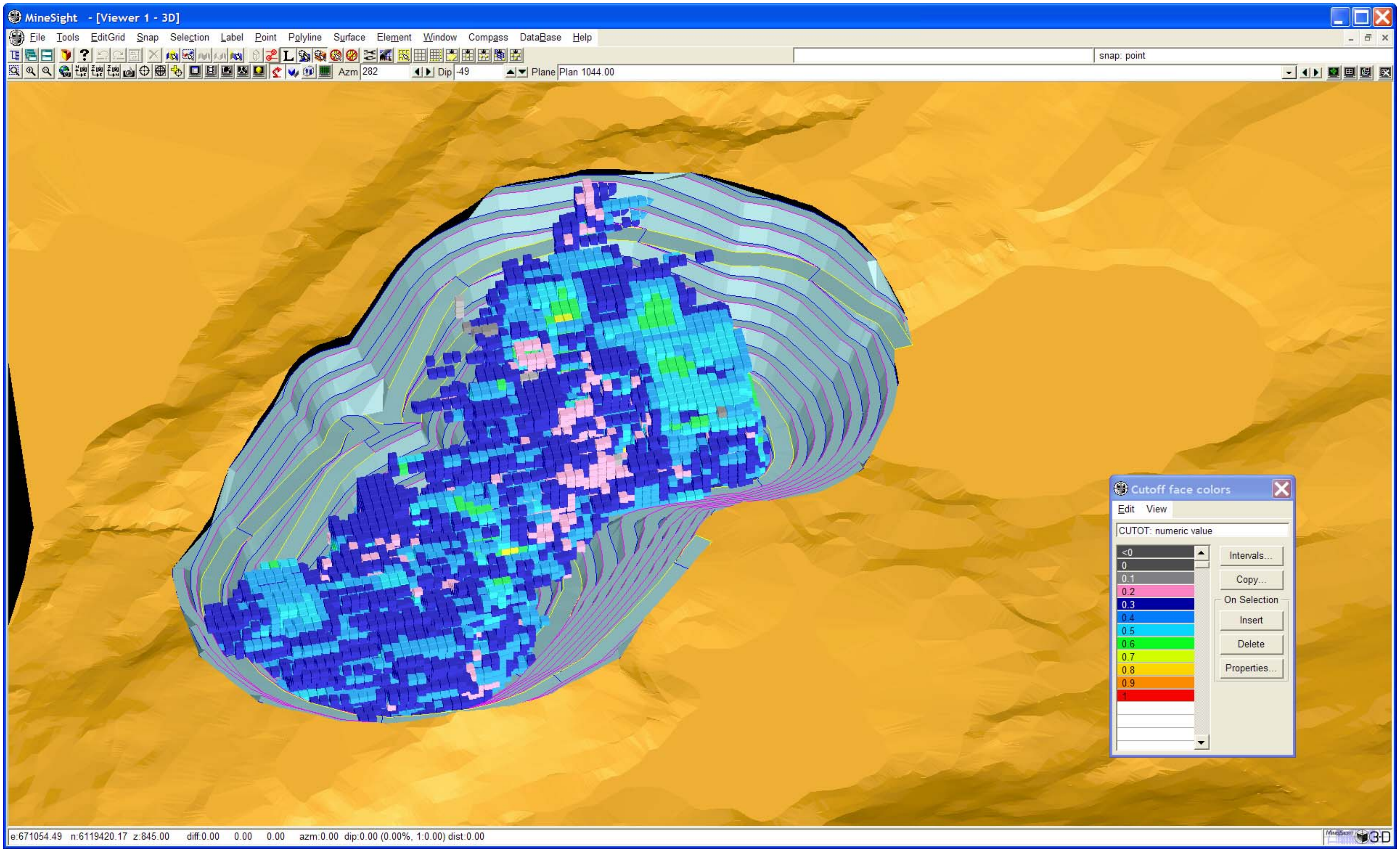


Figure 6-31: Phase 1 and 2 Combined Pit with Block Model and Topography.

Table 6-9
Mineral Resources for Phase 1 Pit by Bench

Bench	Insitu Mineral Resource		Waste	ROM	Grade	
Toe	(BCMS)	(Tonnes)	(Tonnes)	S/R	Cu%	gAu/t
852	-	-	114			
840	-	-	183,086			
828	16,867	39,388	1,019,563	25.89	0.404	0.138
816	260,056	691,504	3,078,776	4.45	0.455	0.202
804	522,576	1,334,664	5,710,088	4.28	0.465	0.220
792	722,047	1,837,524	7,312,710	3.98	0.462	0.231
780	917,276	2,300,332	6,862,714	2.98	0.440	0.222
768	967,340	2,578,793	6,537,372	2.54	0.443	0.232
756	976,901	2,606,025	5,441,303	2.09	0.454	0.274
744	990,365	2,641,522	5,054,118	1.91	0.459	0.295
732	1,035,932	2,760,040	3,944,918	1.43	0.489	0.268
720	1,068,701	2,858,003	3,543,287	1.24	0.493	0.248
708	1,078,616	2,884,665	2,556,393	0.89	0.499	0.249
696	1,054,678	2,819,922	2,308,614	0.82	0.475	0.239
684	936,718	2,507,048	1,815,176	0.72	0.455	0.243
672	942,133	2,523,576	1,506,601	0.60	0.462	0.256
660	890,499	2,386,667	931,312	0.39	0.463	0.254
648	863,568	2,315,765	729,495	0.32	0.484	0.276
636	754,706	2,025,318	413,081	0.20	0.498	0.303
624	706,852	1,900,869	299,160	0.16	0.495	0.304
612	549,905	1,483,755	204,039	0.14	0.498	0.312
600	477,979	1,290,535	161,639	0.13	0.491	0.297
TOTAL	**15,733,712**	**41,785,917**	**59,613,561**	**1.43**	**0.472**	**0.260**

Table 6-10
Mineral Resources for Phase 2 by Bench

Bench	Insitu Mineral Resource		Waste	ROM	Grade	
Toe	(BCMS)	(Tonnes)	(Tonnes)	S/R	Cu%	gAu/t
888	-	-	1,161			
876	-	-	194,382			
864	3,476	9,421	1,420,086	150.74	0.353	0.135
852	55,866	144,001	2,383,404	16.55	0.376	0.149
840	173,852	461,817	3,243,406	7.02	0.406	0.153
828	225,838	602,577	3,663,025	6.08	0.413	0.171
816	385,401	1,024,606	3,620,593	3.53	0.426	0.185
804	508,213	1,347,686	3,613,873	2.68	0.413	0.196
792	648,006	1,702,478	4,413,130	2.59	0.411	0.259
780	720,339	1,916,537	5,276,247	2.75	0.400	0.238
768	769,523	2,052,377	5,143,693	2.51	0.397	0.188
756	719,778	1,919,076	4,879,918	2.54	0.406	0.183
744	806,288	2,154,781	4,424,366	2.05	0.414	0.195
732	887,637	2,365,657	3,818,761	1.61	0.428	0.221
720	854,772	2,285,648	3,689,880	1.61	0.434	0.227
708	883,298	2,360,992	3,035,785	1.29	0.419	0.232
696	954,618	2,553,318	2,614,925	1.02	0.428	0.238
684	1,010,292	2,701,497	2,004,167	0.74	0.441	0.266
672	1,018,953	2,725,616	1,739,762	0.64	0.439	0.280
660	1,004,505	2,680,620	1,292,624	0.48	0.425	0.296
648	944,348	2,520,385	1,215,220	0.48	0.419	0.291
636	819,442	2,185,162	1,028,551	0.47	0.420	0.290
624	779,966	2,080,114	881,251	0.42	0.430	0.295
612	627,394	1,668,027	729,345	0.44	0.452	0.318
600	583,482	1,551,315	577,190	0.37	0.454	0.317
588	466,664	1,238,584	405,436	0.33	0.454	0.312
576	438,796	1,165,618	256,473	0.22	0.479	0.325
564	347,133	918,745	93,479	0.1	0.526	0.338
552	290,598	766,660	48,547	0.06	0.510	0.318
TOTAL	**16,928,478**	**45,103,314**	**65,708,680**	**1.46**	**0.430**	**0.255**

Table 6-11
Resources for Combined Phase 1 and Phase 2 Pit by Bench

Bench	Insitu Mineral Resource		Waste	ROM	Grade	
Toe	(BCMS)	(Tonnes)	(Tonnes)	S/R	Cu%	gAu/t
888	-	-	1,161			
876	-	-	194,382			
864	3,476	9,421	1,420,086	150.74	0.353	0.135
852	55,866	144,001	2,383,457	16.55	0.376	0.149
840	173,852	461,817	3,425,087	7.42	0.406	0.153
828	242,705	641,965	4,679,004	7.29	0.412	0.169
816	645,456	1,716,110	6,685,699	3.9	0.438	0.192
804	1,030,789	2,682,351	9,314,267	3.47	0.438	0.208
792	1,370,063	3,540,026	11,693,482	3.3	0.437	0.244
780	1,637,634	4,216,918	12,138,538	2.88	0.422	0.229
768	1,736,885	4,631,230	11,679,554	2.52	0.423	0.212
756	1,696,740	4,525,263	10,321,059	2.28	0.434	0.235
744	1,796,712	4,796,456	9,478,284	1.98	0.439	0.250
732	1,923,672	5,125,965	7,763,411	1.51	0.461	0.246
720	1,923,584	5,143,944	7,232,688	1.41	0.467	0.239
708	1,962,000	5,245,882	5,592,000	1.07	0.463	0.241
696	2,009,334	5,373,339	4,923,300	0.92	0.453	0.239
684	1,947,109	5,208,801	3,819,041	0.73	0.448	0.255
672	1,961,174	5,249,422	3,246,227	0.62	0.450	0.268
660	1,895,085	5,067,500	2,223,723	0.44	0.443	0.276
648	1,808,027	4,836,443	1,944,331	0.4	0.450	0.284
636	1,574,261	4,210,781	1,441,418	0.34	0.458	0.296
624	1,486,890	3,981,177	1,180,357	0.3	0.461	0.299
612	1,177,314	3,151,824	933,342	0.3	0.473	0.316
600	1,061,460	2,841,850	738,829	0.26	0.471	0.308
588	466,664	1,238,584	405,436	0.33	0.454	0.312
576	438,796	1,165,618	256,473	0.22	0.479	0.325
564	347,133	918,745	93,479	0.1	0.526	0.338
552	290,598	766,660	48,547	0.06	0.510	0.318
TOTAL	**32,663,280**	**86,892,094**	**125,256,661**	**1.44**	**0.450**	**0.257**

Table 6-12
Low Grade Stockpile Material Resources by Bench

Bench	Stockpile	Grade	
Toe	Tonnes	Cu%	gAu/t
864	74,038	0.309	0.111
852	252,621	0.291	0.098
840	369,926	0.297	0.106
828	706,567	0.293	0.105
816	984,988	0.287	0.107
804	1,533,015	0.289	0.100
792	2,038,851	0.285	0.108
780	2,447,262	0.282	0.113
768	2,288,361	0.279	0.117
756	2,208,755	0.282	0.114
744	1,804,544	0.284	0.112
732	1,566,266	0.282	0.119
720	1,728,844	0.277	0.127
708	1,639,308	0.274	0.131
696	1,542,227	0.271	0.135
684	1,380,141	0.272	0.143
672	1,146,794	0.268	0.145
660	865,723	0.263	0.153
648	879,388	0.264	0.141
636	809,519	0.267	0.147
624	623,321	0.262	0.149
612	455,314	0.263	0.144
600	404,602	0.260	0.152
588	223,010	0.251	0.157
576	121,968	0.254	0.159
564	53,055	0.255	0.178
552	3,250	0.265	0.200
Total	**28,151,658**	**0.278**	**0.123**

Table 6-13
Resources for Combined Phase 1 and Phase 2 Pit by Class Excluding Low Grade Stockpile Material

Phase 1 Pit						
Category	**Volume**	**Tonnes**	**Cu%**	**Au g/t**	**Waste Tonnes**	**S/R**
Measured	10,382,788	27,714,851	0.490	0.265		
Indicated	5,101,385	13,456,888	0.441	0.247		
Inferred	249,539	614,178	0.355	0.276		
Total	**15,733,712**	**41,785,917**	**0.472**	**0.260**	**59,613,561**	**1.43**
Phase 2 Pit						
Measured	10,466,915	27,927,131	0.439	0.248		
Indicated	6,222,570	16,544,108	0.416	0.266		
Inferred	238,994	632,075	0.368	0.249		
Total	**16,928,478**	**45,103,314**	**0.430**	**0.255**	**65,708,680**	**1.46**
Combined Phase 1 and Phase 2 Pits						
Measured	20,850,376	55,643,752	0.465	0.257		
Indicated	11,324,363	30,002,067	0.428	0.257		
Inferred	488,541	1,246,275	0.362	0.262		
Total	**32,663,280**	**86,892,094**	**0.450**	**0.257**	**125,256,661**	**1.44**

Table 6-14
Resources for Combined Phase 1 and Phase 2 Pit by Rock Type Excluding Low Grade Stockpile Material

Lithology	**Alteration**	**Code**	**Mineral Resource**		**Waste**	**Grade**		
			BCM	**Tonnes**	**Tonnes**	**Cu%**	**gAu/t**	**S/R**
Undefined		90	363,895	545,843		0.418	0.227	
Undefined		99	62,765	168,014		0.411	0.187	
BFP	**ArSe**	111	8,220,177	21,591,413		0.441	0.306	
BFP	**KH**	112	17,903,162	48,255,954		0.463	0.243	
BFP	**KL**	113	1,136,317	3,061,908		0.406	0.312	
FLT	**ArSe**	131	512,089	1,317,762		0.404	0.276	
FLT	**QzSe**	134	120,885	317,826		0.389	0.239	
SED	**KH**	152	2,268,394	6,079,927		0.451	0.191	
SED	**QzSe**	154	2,075,596	5,553,448		0.419	0.235	
			32,663,280	**86,892,094**	**125,256,661**	**0.450**	**0.257**	**1.44**

SECTION 7.0

MINE PLAN

7.1 RESOURCES AND PRODUCTION RATES

The preliminary design data utilized in the initial optimization studies were derived from previous pit evaluations carried out by Pacific Booker personnel and outside consultants. Costing data were based on the assumption that the current study would generate a pit resource of similar size to that derived in the previous studies, resulting in a pit operating at similar production rates to those previously envisaged i.e.approximately 20,000 t/d of ore at a stripping ratio of 1:1. The costs were used to develop an overall optimal pit shell from the new resource model, including a “starter” pit in the higher grade zone at the north end of the deposit, which was initially limited in depth to minimize stripping ratios in the early mining years.

Within the range of cost parameters used in the evaluation the preliminary optimization studies indicated that the optimal pit contained a resource of some 90-100 million tonnes of ore, grading approximately 0.45% Cu and 0.25 gAu/t, at a stripping ratios varying from 1.3 to 1.4. These resources contained a higher grade zone at the north end of the deposit, around which a starter pit was developed. This starter pit resource amounted to some 15 million tonnes of ore grading 0.50% Cu and 0.28 gAu/t at a stripping ratio of about 0.40, to a depth of approximately 150m below surface.

Refinement of the initial pit shells, due to the inclusion of the pit ramp, adjustment of pit slopes and updating of costs, resulted in a final pit resource of 87 million tonnes at 0.45 % Cu and 0.26 gAu/t with an overall striping ratio of 1.44. The initial starter pit was expanded to cover an additional 50 metres of depth and effectively became a Phase 1 pit containing almost half the total pit resource – 42 million tonnes at 0.47% Cu and 0.26 gAu/t with a stripping ratio of 1.43. The lower stripping ratio of the starter pit initially envisaged for the first two years of operation resulted in excessive waste removal requirements in subsequent years, so the plan was modified to try and smooth out the waste removal without incurring a significant drop in ore grade for the initial years.

Once the final pit resource was determined a production rate was established on the basis that the resource should provide sufficient mine life, about 10 years minimum, to balance capital expenditures against expected cash flow and provide an acceptable return on investment. The pit resource noted above suggested that the mining rate should be higher than previously considered. Thus, an ore production rate of 25,000 t/d was selected as the appropriate rate to use in this study to enhance project economics and maintain a minimum 10 year life.

7.2 PIT DESIGN

Development of the Morrison open pit is planned as a two phase mining operation, utilizing conventional truck and shovel equipment. The first phase will be developed in the northwest end of the deposit, encompassing some of the higher grade ore and will extend down to an elevation of 600 metres, i.e., approximately 200 metres below the pit rim. Phase 2 will consist of a push back, or expansion, of the first phase pit to the southeast and will extend a few benches lower, to about the 550 metre elevation.

Overall pit slopes have been assessed at 45 degrees (including ramp) where the east fault will be encountered. In these areas, which occur on the north and northeast walls of the Stage 1 pit and the south and southwest walls of Phase 2, the overall pit slope has been reduced to 40 degrees. The pit will be developed using a 12 metre bench height with a 10 metre safety berm being maintained every two benches at the final pit wall. Face slopes on the final walls will be 70 degrees, thus providing an interramp slope of about 52 degrees. In the fault zones the safety berm will be increased in width in order to maintain the overall pit slope at about 40 degrees.

The main haul ramp, designed to be 25 metres wide with a 10% grade, will be developed from the north end of the Phase 1 pit at 810 metres elevation, around the west side to 700 metres before switching back in the southwest and continuing down to the 600 metre pit bottom. Since the entire southeast wall of the Phase 1 pit will be pushed back in Phase 2 of the operation a second ramp will be developed for this phase, starting at about 840 metres elevation on the east wall of the pit. This ramp will be developed around the south end of the pit, switchback on the southwest wall and continue down to the 550 metre pit bottom. It will connect to the Phase 1 ramp at the 700 metre elevation on the west side and also at the Phase 1 pit bottom at 600 metres. The final ramp layout is depicted on the pit drawings shown in Section 6.0.

Investigations of potential waste disposal sites indicate the most suitable area lies some 4 kilometres north of the deposit at an elevation of about 200 metres above the pit. Although the initial site location studies suggested there was a suitable area for waste and tailings disposal much closer to the pit, subsequent evaluation discarded this site on the basis of capital costs and environmental factors. The selected site, however, results in a haul distance from the top of the Phase 1 ramp to the waste disposal area of some 4.5 kilometres with an uphill grade of almost 5%. The use of conventional diesel trucks for the waste haul adds significant cost to the mining operation and impacts on the overall project economics. In order to reduce the projected waste haul cost two alternative concepts were investigated, both using conveyors.

The first involved excavation of a raise, within the Phase 1 pit, at the bottom of which a primary crusher would be located to crush all the ore and waste from the pit operation. The crushed waste would be moved to the waste dump by conveyor, located in a 20% grade decline for about 1,400 metres and on surface for the remaining distance. The ore would travel on the same conveyor for a portion of the decline length and be diverted onto a second underground conveyor for transport to the mill stockpile.

The economic advantages to this concept are in the reduced operating costs for hauling waste to the disposal area. Since open pit trucks are mainly required for hauling ore and waste to the raise on each bench, there is minimal ramp haul and thus a significant saving in truck haulage cost. Project power costs are expected to be quite low, and even though the conveying system will have a considerable electrical load, the cost of moving large quantities of waste by conveyor is much less than by truck.

The disadvantage of the concept is the risk involved in maintaining the integrity of the excavation within the pit, due to potentially unstable ground in the vicinity of the fault zone. The raise will likely have to be concrete and /or steel lined and the large excavation required for the primary crusher will have to be heavily reinforced with rock anchors, shotcrete, etc. Capital costs for the excavations could be significant. Although the conveyor capital costs will be high this will be offset by the large savings due to less haulage truck purchases.

The other alternative is to locate the primary crusher on surface near the top of the Phase 1 ramp and convey the ore and waste to the mill stockpile and waste disposal areas using only overland conveyors. This will still reduce the high haulage costs of moving waste 4.5 kilometres from the pit to the dump, but will eliminate the underground excavations and their associated risks. Pit operating costs will not be significantly higher than the first alternative, even though all the ore and waste will have to be hauled up the main ramp and the capital costs of the surface conveyors will be lower than those in the underground concept.

The comparison of these alternatives resulted in the overland conveyor option being selected for this study.

Mining activities at the Morrison pit will be conducted on two 12 hour shifts per day, 365 days per year. It has been assumed for this study that the owner will purchase and operate the equipment and that contractors will only be used for specialized services. A mining contractor will be used, however, for all the pit preproduction development work.

Ore and waste will be drilled and blasted using 270 mm diameter holes drilled on an 8.0 m. x 8.5 m. pattern. Blasting operations will use a 70% /30% emulsion/ANFO mix, which will be delivered to the borehole by an explosives contractor who will operate a mix plant on site. The estimated powder factor will be about 0.26 kg/t of material. Equipment studies indicated that for the surface conveyor haulage option the most cost effective combination of loading and haulage equipment will be a 16 cubic metre electric cable shovel and 140 tonne diesel trucks for both ore and waste mining. At peak production two shovels will be required in combination with eight haulage trucks.

In addition to the primary mining equipment several pieces of auxiliary and service equipment will be required to maintain haul roads, waste dumps and general pit operations. A list of all major equipment is shown below, based on the maximum number of units required.

Description	Size	Max. No. Req'd
Blasthole drills(elec)	270mm	2
Electric cable shovel	$16m^3$	2
Haul trucks	140t	8
Front end loader	$5m^3$	1
Tracked dozer	250kW	4
Grader	210kW	2
Air trac/compressor		1
Service truck		4
Crane truck		1
Pump truck		1
Water truck		1
Explosives truck		1

It has been assumed that all the equipment would be purchased new except for the electric shovel and drill which would be obtained as reconditioned units.

SECTION 8.0

PROCESSING

8.1 METALLURGICAL TESTWORK

Metallurgical testwork was carried out in the early 1980's by Noranda. This detailed testwork was not available for review but internal Noranda reports indicated that the metallurgy of zones tested were quite unremarkable, giving good copper recoveries into acceptable concentrates.

More recently, in 2002, International Metallurgical and Environmental Consultants of Kelowna carried out testwork on a number of samples representing the three ore types contained with the Morrison deposit. This again indicated metallurgical performance typical of many BC porphyry copper deposits. A primary grind of 150 microns is indicated with a fine regrind to give an overall copper recovery of 88.4% at a concentrate grade of about 27.6% copper. Bond ball mill work index is 16.5. Molybdenum, although present, is at too low a grade for an acceptable recovery into a separate concentrate. Gold and silver are present and report to the copper concentrate.

The flowsheet developed is typical of a porphyry copper project and is described below. Copper is concentrated by flotation in large tank cells after grinding in a SAG/Ball circuit. Concentrate is cleaned in column cells after regrinding and is filtered in a pressure filter that will achieve acceptable shipping moistures without thermal drying.

Additional testwork, as described in 8.3, will be required to refine metallurgical performance and metallurgically map the deposit.

8.2 PROCESS PLANT DESCRIPTION.

In this study options at 20,000, 25,000 and 30,000 t/d were examined. In essence the flowsheet is the same in all cases although the size of the equipment differs somewhat (e.g., pumps, mills, crushers, etc.) in the three options, or else the number of units (e.g., flotation cells, etc.) may vary. The proposed scale of operations is such that a single module is capable of processing the ore in all cases. Capital costs are estimated in detail for the 25000t/d case with the other two options factored from this base case.

The concept developed in the study is based on locating the crusher at the pit rim and campaigning ore and waste through the same crusher and then conveying to the relevant stockpiles. The waste would be crushed to 300-400 mm before being transferred to the conveyor that would transport it to the waste disposal area. The size of the primary gyratory crusher (at 25000 t/d ore and 35000 t/d waste) is 60" to 89" (800HP). An alternative to one large primary crusher installation would be to install parallel smaller crushers and this should be reviewed at the feasibility study level as it may offer improved operational flexibility at little or no increase in cost. Ore will be crushed to 150-200mm by adjusting the crusher openings prior to the ore being fed to the crusher, and then will be conveyed to the coarse ore stockpile at the mill. The stockpile is designed for one day live storage and an additional 4 days of storage which can, if required, be reclaimed by dozer. The stockpile will not be covered.

Ore will be reclaimed by apron feeders, located in a reclaim tunnel below the stockpile. The ore will be fed onto the SAG mill feed conveyor which will be fitted with a weightometer to control the apron feeder speed and thus the feed to the SAG mill.

The size of the ore feed to the SAG mill is about 175mm. The SAG mill size for the 25000 t/d flow sheet is 9.75m x 4.6m c/w 7500HP motor. The grinding circuit will contain 2 ball mills (6m x 8.5m each) with 7500HP motors. Provision has also made for pebble crushing in the layout, however with a Work Index of 16.5 it is believed that pebble crushing will not be required, and thus no allowance for pebble crushing has been made in the capital cost estimate. If harder ore is experienced pebble crushing can be retrofitted.

The flotation feed will be the cyclone overflow, 80% passing 150 microns. This is finer than is typical on most porphyry copper ores and a coarsening of grind may be feasible. After conditioning the concentrate will be floated in a bank of six 130m^3 tank flotation cells. Rougher concentrate is reground (a ball mill is assumed and included in the cost estimate), but this may be a combination of ball and tower mills. Column flotation with conventional cells will be used for cleaning rougher concentrate.

The final concentrate will be thickened and thickener overflow water recycled. The thickened concentrate in the underflow will be fed to a stock tank which in turn will be fed to a pressure filter. Two filters will be required at 25000 t/d. Pressure filters are able to achieve moistures below 8%, which eliminates the need for dryers.

Ancillary requirements in the plant will be various types of air instruments, plant and flotation blowers, cranes and reagent systems. These items have been included in the cost estimate.

The plant layout is shown on Figure 9-1 and the process flowsheets are shown on Figures 9-2, 9-3 and 9-4.

8.3 PROPOSED METALLURGICAL WORK PROGRAM

Metallurgy and related activities required to be carried out in the feasibility study are described below.

Initially all existing metallurgical testwork data will be reviewed to establish a basic metallurgical data base. During this review process design criteria will be established in conjunction with other disciplines reviewing mining and resource estimates. During the metallurgical review the need for additional metallurgical testwork will be established.

The design criteria will enable a flowsheet to be developed and this will form the basis of some preliminary capital and operating cost estimates at a range of tonnages to enable optimization of the proposed operations. Plant capital and operating costs are critical components in establishing a mine cut-off grade and hence an optimized mill throughput and mining plan.

Following review of the optimization studies a preferred flowsheet will be established and then the design activities for the process plant will proceed. These will include:

- Preparation of process design criteria and preparation of a metallurgical statement;
- Preparation of feasibility level flowsheets;
- Process mass balance at the design tonnage;
- Process Plant layout and design including GA's and section drawings;
- Process Plant equipment list including motor sizes;
- Duty specifications for major items of equipment;
- Manpower requirements;
- Operating consumable requirements;
- Operating cost estimate;
- Input into the capital cost estimate.

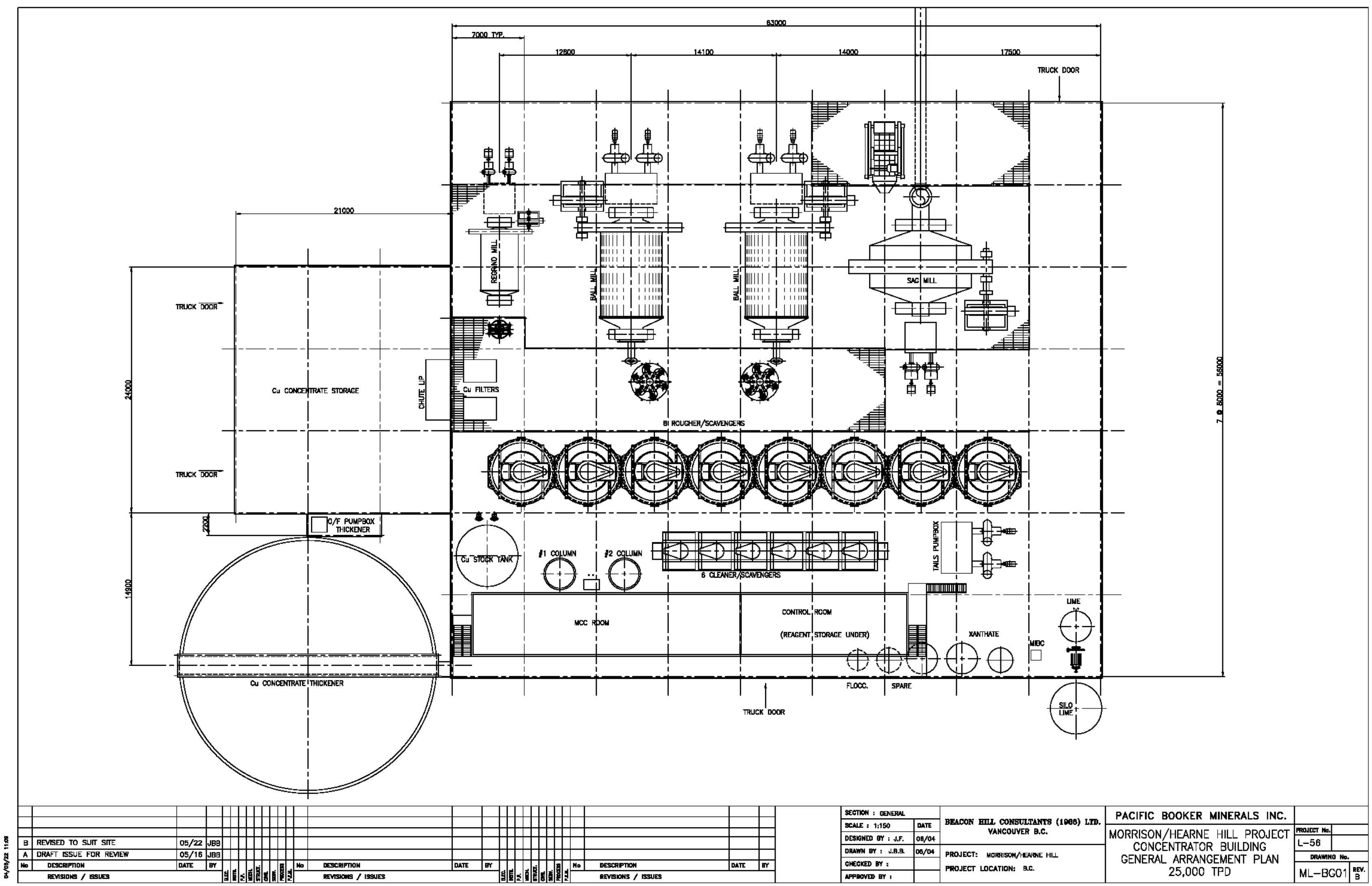

63000
7000 TYP.
12600
14100
14000
17500
TRUCK DOOR
21000
REGRIND MILL
BALL MILL
BALL MILL
SAG MILL
Cu CONCENTRATE STORAGE
CHUTE UP
Cu FILTERS
BI ROUGHER/SCAVENGERS
7 @ 8000 = 56000
24000
14900
2200
O/F PUMPBOX THICKENER
Cu STOCK TANK
#1 COLUMN
#2 COLUMN
6 CLEANER/SCAVENGERS
TAILS PUMPBOX
LIME
MCC ROOM
CONTROL ROOM
(REAGENT STORAGE UNDER)
XANTHATE
MIBC
FLOCC.
SPARE
SILO LIME
Cu CONCENTRATE THICKENER
B REVISED TO SUIT SITE 05/22 JBB
A DRAFT ISSUE FOR REVIEW 05/16 JBB
No DESCRIPTION DATE BY
REVISIONS / ISSUES
SECTION : GENERAL
SCALE : 1:150
DATE
DESIGNED BY : J.F. 08/04
DRAWN BY : J.B.B. 06/04
CHECKED BY :
APPROVED BY :
BEACON HILL CONSULTANTS (1988) LTD.
VANCOUVER B.C.
PROJECT: MORRISON/HEARNE HILL
PROJECT LOCATION: B.C.
PACIFIC BOOKER MINERALS INC.
MORRISON/HEARNE HILL PROJECT
CONCENTRATOR BUILDING
GENERAL ARRANGEMENT PLAN
25,000 TPD
PROJECT No.
L-56
DRAWING No.
ML-BG01
REV. B

Figure 9-1

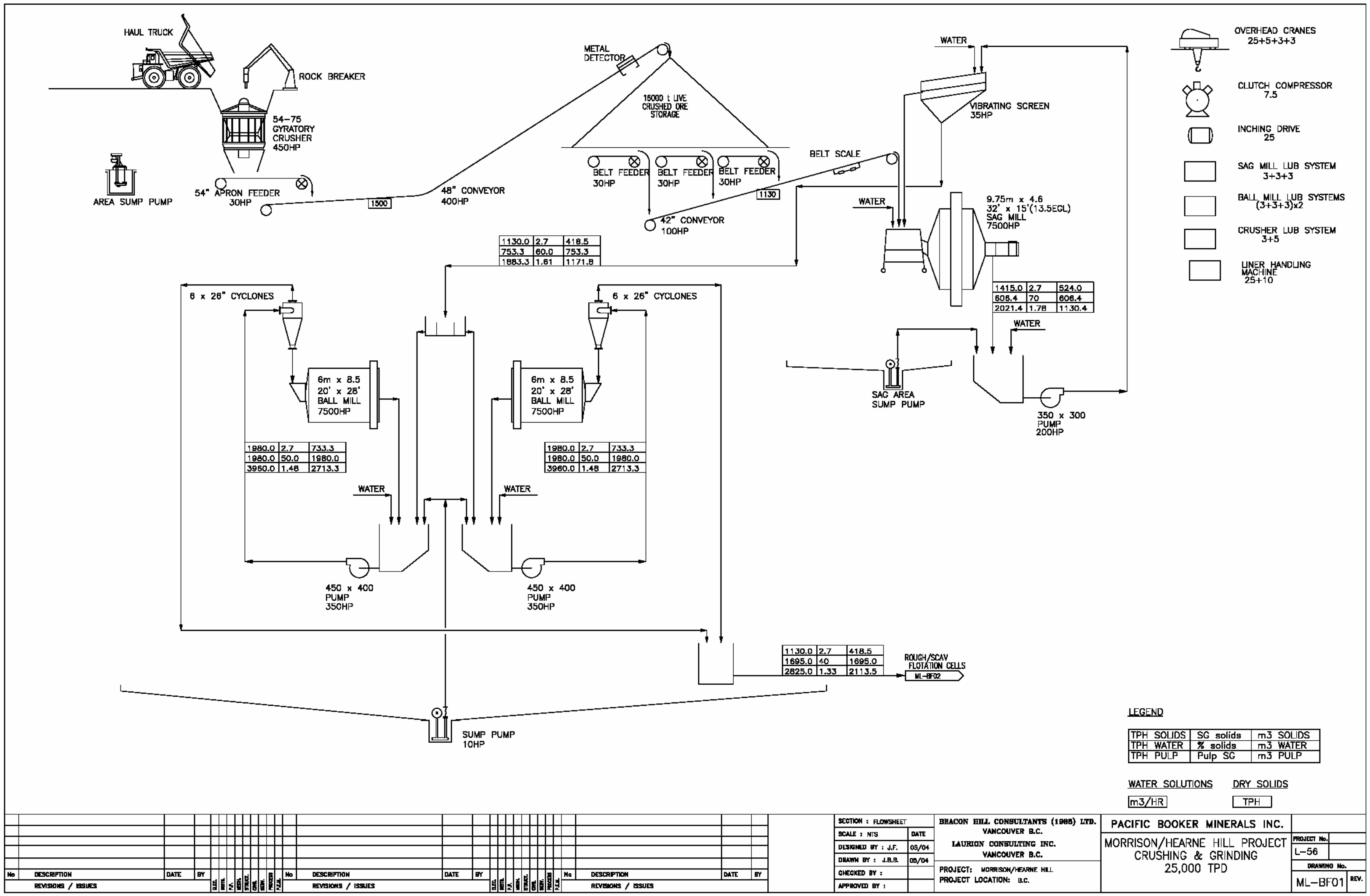

HAUL TRUCK
ROCK BREAKER
54-75 GYRATORY CRUSHER 450HP
AREA SUMP PUMP
54" APRON FEEDER 30HP
METAL DETECTOR
48" CONVEYOR 400HP
15000 t LIVE CRUSHED ORE STORAGE
BELT FEEDER 30HP
BELT FEEDER 30HP
BELT FEEDER 30HP
42" CONVEYOR 100HP
BELT SCALE
WATER
VIBRATING SCREEN 35HP
9.75m x 4.6 32' x 15'(13.5EGL) SAG MILL 7500HP
SAG AREA SUMP PUMP
350 x 300 PUMP 200HP
6 x 26" CYCLONES
6m x 8.5 20' x 28' BALL MILL 7500HP
450 x 400 PUMP 350HP
SUMP PUMP 10HP
ROUGH/SCAV FLOTATION CELLS
OVERHEAD CRANES 25+5+3+3
CLUTCH COMPRESSOR 7.5
INCHING DRIVE 25
SAG MILL LUB SYSTEM 3+3+3
BALL MILL LUB SYSTEMS (3+3+3)x2
CRUSHER LUB SYSTEM 3+5
LINER HANDLING MACHINE 25+10
LEGEND
TPH SOLIDS | SG solids | m3 SOLIDS
TPH WATER | % solids | m3 WATER
TPH PULP | Pulp SG | m3 PULP
WATER SOLUTIONS m3/HR
DRY SOLIDS TPH
BEACON HILL CONSULTANTS (1988) LTD. VANCOUVER B.C.
LAURION CONSULTING INC. VANCOUVER B.C.
PACIFIC BOOKER MINERALS INC.
MORRISON/HEARNE HILL PROJECT CRUSHING & GRINDING 25,000 TPD
PROJECT No. L-56
DRAWING No. ML-BF01

Figure 9-2

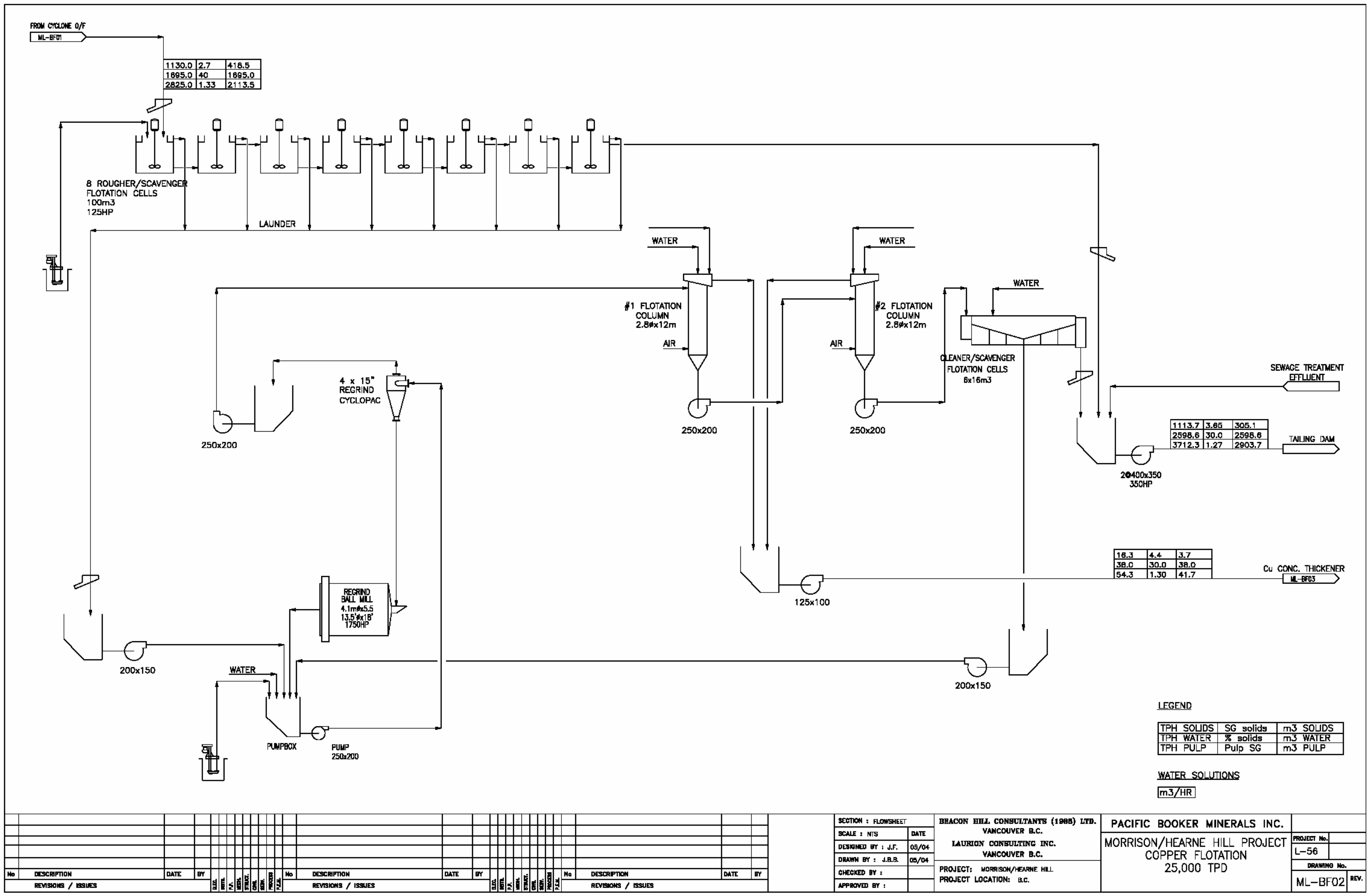

FROM CYCLONE O/F
ML-BF01
8 ROUGHER/SCAVENGER FLOTATION CELLS
100m3
125HP
LAUNDER
WATER
#1 FLOTATION COLUMN 2.8ϕx12m
AIR
#2 FLOTATION COLUMN 2.8ϕx12m
CLEANER/SCAVENGER FLOTATION CELLS
6x16m3
4 x 15" REGRIND CYCLOPAC
250x200
SEWAGE TREATMENT EFFLUENT
TAILING DAM
2ϕ400x350
350HP
Cu CONC. THICKENER
ML-BF03
125x100
REGRIND BALL MILL
4.1mϕx5.5
13.5'ϕx18'
1750HP
200x150
PUMPBOX
PUMP
250x200
LEGEND
TPH SOLIDS SG solids m3 SOLIDS
TPH WATER % solids m3 WATER
TPH PULP Pulp SG m3 PULP
WATER SOLUTIONS
m3/HR
BEACON HILL CONSULTANTS (1988) LTD. VANCOUVER B.C.
LAURION CONSULTING INC. VANCOUVER B.C.
PACIFIC BOOKER MINERALS INC.
MORRISON/HEARNE HILL PROJECT
COPPER FLOTATION
25,000 TPD
L-56
ML-BF02

Figure 9-3

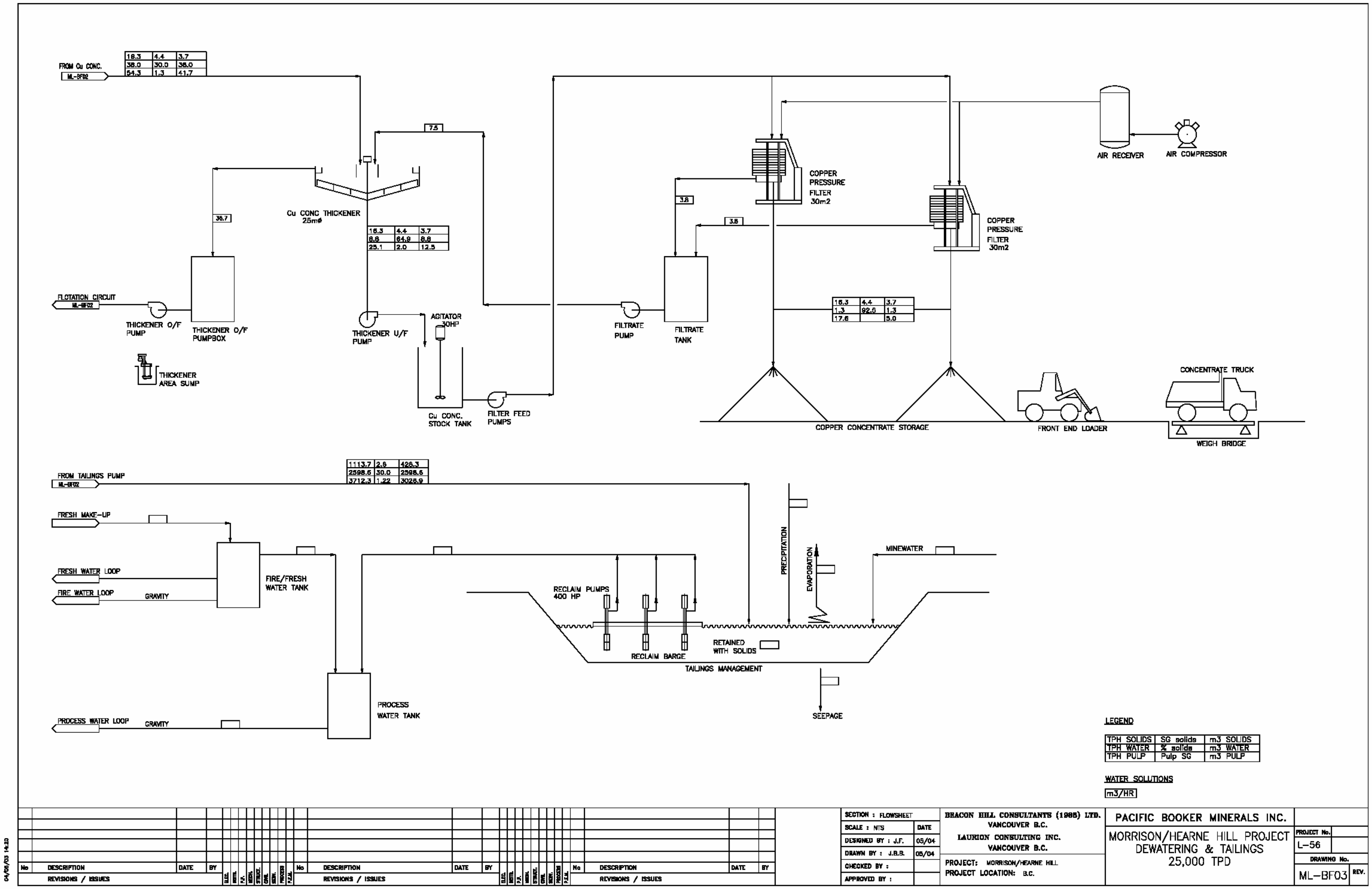

FROM Cu CONC.
ML-BF02
16.3 | 4.4 | 3.7
38.0 | 30.0 | 38.0
54.3 | 1.3 | 41.7
7.5
36.7
Cu CONC THICKENER
25mø
16.3 | 4.4 | 3.7
8.8 | 64.9 | 8.8
25.1 | 2.0 | 12.5
FLOTATION CIRCUIT
ML-BF02
THICKENER O/F PUMP
THICKENER O/F PUMPBOX
THICKENER U/F PUMP
AGITATOR
30HP
THICKENER AREA SUMP
Cu CONC. STOCK TANK
FILTER FEED PUMPS
3.8
3.8
COPPER PRESSURE FILTER
30m2
COPPER PRESSURE FILTER
30m2
AIR RECEIVER
AIR COMPRESSOR
FILTRATE PUMP
FILTRATE TANK
16.3 | 4.4 | 3.7
1.3 | 92.5 | 1.3
17.6 | | 5.0
CONCENTRATE TRUCK
COPPER CONCENTRATE STORAGE
FRONT END LOADER
WEIGH BRIDGE
FROM TAILINGS PUMP
ML-BF02
1113.7 | 2.6 | 428.3
2598.6 | 30.0 | 2598.6
3712.3 | 1.22 | 3026.9
FRESH MAKE-UP
FRESH WATER LOOP
FIRE WATER LOOP
GRAVITY
FIRE/FRESH WATER TANK
PRECIPITATION
EVAPORATION
MINEWATER
RECLAIM PUMPS
400 HP
RECLAIM BARGE
RETAINED WITH SOLIDS
TAILINGS MANAGEMENT
SEEPAGE
PROCESS WATER TANK
PROCESS WATER LOOP
GRAVITY
LEGEND
TPH SOLIDS | SG solids | m3 SOLIDS
TPH WATER | % solids | m3 WATER
TPH PULP | Pulp SG | m3 PULP
WATER SOLUTIONS
m3/HR
No | DESCRIPTION | DATE | BY
REVISIONS / ISSUES
SECTION : FLOWSHEET
SCALE : NTS
DATE
DESIGNED BY : J.F. 05/04
DRAWN BY : J.B.B. 05/04
CHECKED BY :
APPROVED BY :
BEACON HILL CONSULTANTS (1988) LTD.
VANCOUVER B.C.
LAURION CONSULTING INC.
VANCOUVER B.C.
PROJECT: MORRISON/HEARNE HILL
PROJECT LOCATION: B.C.
PACIFIC BOOKER MINERALS INC.
MORRISON/HEARNE HILL PROJECT
DEWATERING & TAILINGS
25,000 TPD
PROJECT No.
L-56
DRAWING No.
ML-BF03
REV.

Figure 9-4

SECTION 9.0

WASTE DISPOSAL

9.1 OVERVIEW.

Several locations have been investigated to determine the most likely location where waste can be deposited adjacent to the Morrison open pit. This section is intended to review the methodology used in deriving the most likely location for waste disposal and present the work completed to date concerning site selection.

9.2 CRITERIA

Several criteria have been used to locate and compare waste disposal areas. These are;

- Location of the waste disposal site as close as is feasibly possible to the open pit. This approach results in the lowest cost for moving waste rock and provides the shortest distance for the movement of tailings, normally piped from the process plant.
- A suitable area, sufficient to house all the waste rock and tailings, that can be contained with the minimal construction of artificial dams or structures.
- A location that has the minimal effect on the environment.
- A location that can be reclaimed in such a manner that the environment is fully protected and the system is self-sustaining.

9.2.1 Alternatives investigated

Knight Piésold Ltd. (KP) were commissioned by Pacific Booker to review the alternative sites available and determine, in conjunction with the Preliminary Assessment on the Morrison/Hearne Hill Project, the most appropriate location for waste disposal. The Morrison/Hearne Hill Project contemplates the mining of the Morrison deposit only. The Hearne Hill deposit requires further exploration work prior to being considered for evaluation at the Preliminary Assessment level.

The waste from the proposed open pit at Morrison consists of a number of different materials:

- Waste rock that is not acid generating, referred to as NAG;
- Waste rock that is possibly acid generating, referred to as PAG;
- Coarse tailings that are considered to be non-acid generating or have a low propensity to be acid generating;
- Fine tailings that are considered to be acid generating or have a high propensity to be acid generating.

The method of disposing of the different waste types is based on the potential acid generating characteristics of the waste.

The plan for the waste disposal is to use the NAG waste in any dam construction, deposit the PAG waste and the coarse tailings sub-aerially (exposed to the atmosphere) within the waste disposal facility, and deposit the fine tailings in the centre of the waste disposal facility below the surface water pond. A surface water pond would be maintained within the central part of the waste disposal facility to prevent oxidation of the tailings.

9.2.2 Site Evaluation

Several potential waste disposal sites have been investigated. A description of these sites and the results of the investigations are included in Appendices.

Two sites remain as possible waste disposal areas. These are Site A and Site B and are shown on the enclosed Figure 9-1.

Site B is the preferred site, based upon the work completed to date, and is the site that is used to evaluate the project. The benefits and disadvantages for Site A and Site B are shown below.

Site A is close to the open pit and thus reduces the cost of haulage and the distance to pump tailings, thereby reducing both capital and operating costs. As the preliminary evaluation developed it became apparent that Site A had a number of concerns, these are:

- The dam structure was close to Morrison Lake and very close to a salmon spawning area;
- The waste disposal area would cover a creek containing fish habitat and that creek fed the salmon spawning area mentioned above;
- The diversion of the creeks covered by the disposal area could provide a challenge in replacing the flow to the salmon spawning area;
- The dam was some 200m high, adjacent to Morrison Lake. The dam would be very visible and not environmentally aesthetic.
- The construction material for the dam was waste rock from the open pit operations. The production of the waste rock requirement for the dam could not be met from the scheduled production rates of waste rock from the open pit. Thus material for the dam would have to be quarried from another source or the dam would require construction of a temporary and a permanent low permeability barrier.

The preliminary evaluation of Site B indicated the following:

- There appeared to be little, if any, fish habitat that would be covered by site B;
- Creek diversion was much simpler for Site B and any make-up of water flows appear to be easier to implement than Site A;
- The site is sufficiently far from Morrison Lake that there is little effect, if any on the lake;
- The site is at a higher elevation than Site A and the dam heights much lower thus the aesthetics will be more pleasing to the eye;

- The site appears to be one that is easier to reclaim once the mine operations have ceased;
- The scheduled requirement for dam building material can be accommodated by material from the open pit operations, eliminating any need for additional quarrying of rock;
- The costs to construct the facility are estimated to be approximately 60% of the costs for site A;
- The site is some 4 km from rim of the open pit resulting in higher haulage costs for the waste rock and higher tailings pumping costs.

The result of the work to date indicates that Site B is the most environmentally sound site and has the lowest construction cost. Although it is some 4 km from the open pit it is the preferred site at this point in the evaluation of waste disposal for the Morrison/Hearne Hill Project.

9.3 SITE B

9.3.1 Conceptual Tailings Disposal Methodology

Tailings produced by the Morrison/Hearne Hill operation will be stored behind a secure and fully engineered earthfill/rockfill embankment dam constructed across the southern outlet valley, with a northern and eastern containment embankment dams required later in the facility life. The waste disposal facility embankment dams will be designed as water retaining structures and will store co-mingled tailings and waste rock behind the dam. The dam will be developed in stages over the life of the mine to spread the capital cost out over time, and to enable the knowledge gained from the first few years of operations to be applied to the design of subsequent stages and closure.

It is understood that two tailings streams are to be deposited into the waste disposal facility, the rougher scavenger tailings (RST) and cleaner scavenger tailings (CST), each having significantly different geotechnical and geochemical properties. Subject to confirmation by the upcoming waste characterization work that is planned, the RST will be deposited by sub-aerial methods from selected points around the perimeter of the facility to form stiff well drained beaches while the CST, which is anticipated to have a high potential for generating acid, will be deposited below the surface water pond to keep it submerged and unavailable for oxidation.

The dry densities in storage and the rates of consolidation likely to be achieved by the two types of tailings are not known at this time although the sub-aqueous stored CST is likely to have a low dry density, probably in the order of 0.8 to 1.0 t/m^3, while the sub-aerially deposited RST is likely to have a higher dry density, probably in the order of 1.3 to 1.6 t/m^3. Test work will be completed in the months ahead during the planned site investigation to better estimate the densities that can be expected. An average placed dry density of 1.4 t/m^3 was assumed for the entire tailings mass for the conceptual level costing.

9.3.2 General Description

Site B is located approximately 4 km north-northeast, and 150m above, the deposit and mill site. Under Options 2 and 3, the impoundment would be in a flat elevated valley at the head of the watershed draining into “Creek 54300” (“00221 BABL” system), which ultimately drains to Morrison Lake. Embankment dams would be required on the north and south sides of the valley with small saddle dams to the northwest. Either central till core dams (Option 2) or upstream face HDPE liners (Option 3) would be used as the low permeability seepage control barriers for the dams. These two options have a common layout and both have been costed. The concept layout of Site B is shown in Figure 1-14. Common features of HDPE lined or till core dams at Site B are:

- a main southern dam built primarily from mine waste with the northern and the saddle dams built from local borrow materials,
- downstream-developed staged construction used in all dams,
- initial development to include only one starter dam (the southern dam) for storage of 2 years tailings,
- from year 3 onwards the southern and northern dams would be required, with the northwest saddle dams added later,
- PAG mine waste placed in the south-eastern area of the facility just upstream of the southern dam for encapsulation and long-term saturated storage in the tailings,
- drainage collection systems in the dams to intercept and remove any seepage passing through the low permeability zone to ensure the downstream shells remain well drained,
- construction of a grout curtain, if needed, in the rock foundation expected in the steep valley under the east side of the southern dam,
- deposition of the RST tailings from spigot offtakes located along the crests of the dams to form stiff drained tailings beaches against the dams,
- CST deposition through submerged pipes into the bottom of the surface water pond,
- a reclaim barge on the surface water pond to reclaim water to the mill and remove any excess water (a water balance is required to confirm that excess water will exist),
- a lined polishing pond to receive any excess water together with flows from the dam drainage and seepage systems for final cleaning, if necessary, and monitoring prior to release,
- a discharge system from the polishing pond into the bottom of Morrison Lake terminating with an outlet diffuser.

Features specific to HDPE lined dams at Site B are:

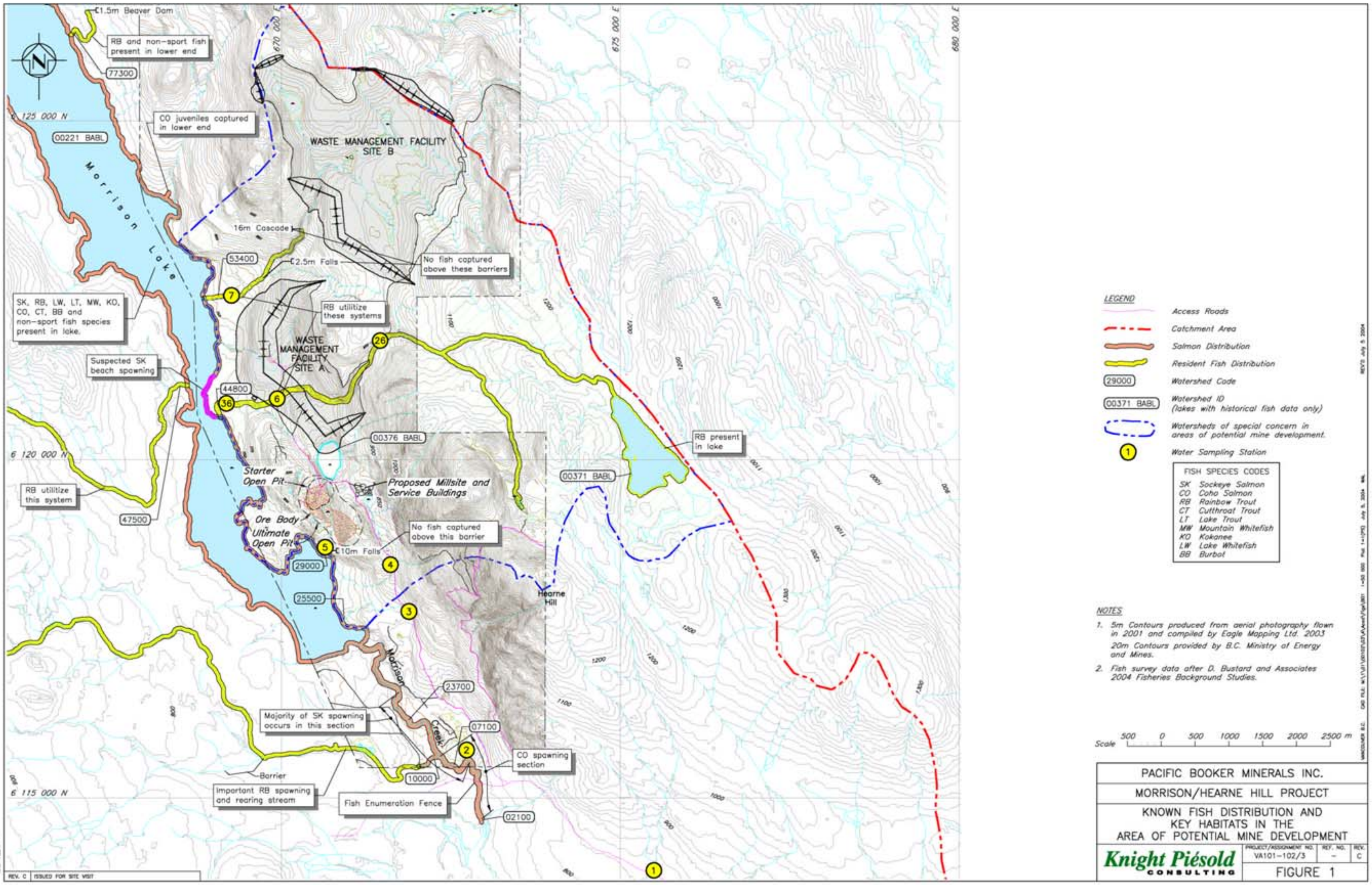
- an HDPE face liner, backed by a free draining bedding material layer in each dam,
- the HDPE liners to be extended out into the bottom of the basin and intimately bonded to the natural ground along the length of the embankment, to increase the length of the seepage path,

- establishment of a buffer zone between the PAG mine waste rock placed in the south-eastern portion of the facility and the liner on the face of the southern dam to prevent mine waste rock from damaging the HDPE liner,
- all materials placed in the dam to be NAG as they will be downstream of the seepage barrier (a total material volume of approximately 23.1 M cu. m. is required for all three dams).

Features specific to a central core dam at Site B are:

- central cores to be built from local borrow materials consisting of tills or other suitable material (availability to be confirmed in the planned site investigation),
- the downstream shells to be constructed using NAG material, either mine waste rock or local borrow materials,
- the upstream shells to be constructed from PAG mine waste rock or local borrow materials,
- graded filters on the downstream sides of the cores to form a filter relationship between the cores and the downstream shells, for protection of the cores against internal erosion,
- a drainage collection system in the dams to intercept and remove any seepage passing through the core and ensure that the downstream shells remain fully drained,
- PAG mine waste rock may be placed directly against the upstream face of the dam, in the south-eastern area of the facility.

The storage of all mine waste can be accomplished at Site B in a safe, secure and environmentally acceptable manner for the long-term. Site B is at an elevated location relative to the pit and mill site, and consequently pumping costs and haul distances will increase. There are no currently identified fatal flaws with Site B but constraints that will have a significant influence on the design of the facility.



LEGEND
Access Roads
Catchment Area
Salmon Distribution
Resident Fish Distribution
Watershed Code
Watershed ID (lakes with historical fish data only)
Watersheds of special concern in areas of potential mine development.
Water Sampling Station
FISH SPECIES CODES
SK Sockeye Salmon
CO Coho Salmon
RB Rainbow Trout
CT Cutthroat Trout
LT Lake Trout
MW Mountain Whitefish
KO Kokanee
LW Lake Whitefish
BB Burbot
NOTES
1. 5m Contours produced from aerial photography flown in 2001 and compiled by Eagle Mapping Ltd. 2003
20m Contours provided by B.C. Ministry of Energy and Mines.
2. Fish survey data after D. Bustard and Associates 2004 Fisheries Background Studies.
PACIFIC BOOKER MINERALS INC.
MORRISON/HEARNE HILL PROJECT
KNOWN FISH DISTRIBUTION AND KEY HABITATS IN THE AREA OF POTENTIAL MINE DEVELOPMENT
Knight Piésold CONSULTING
VA101-102/3
FIGURE 1
Morrison Lake
WASTE MANAGEMENT FACILITY SITE B
WASTE MANAGEMENT FACILITY SITE A
Starter Open Pit
Ore Body
Ultimate Open Pit
Proposed Millsite and Service Buildings
Hearne Hill
1.5m Beaver Dam
RB and non-sport fish present in lower end
CO juveniles captured in lower end
16m Cascade
2.5m Falls
No fish captured above these barriers
RB utilitize these systems
SK, RB, LW, LT, MW, KO, CO, CT, BB and non-sport fish species present in lake.
Suspected SK beach spawning
RB present in lake
RB utilitize this system
No fish captured above this barrier
10m Falls
Majority of SK spawning occurs in this section
CO spawning section
Barrier
Important RB spawning and rearing stream
Fish Enumeration Fence
Morrison Creek

Figure 9-1

SECTION 10.0

INFRASTRUCTURE

10.1 PROPERTY ACCESS

The property is on the east side of the southern end of Morrison Lake. It is accessed from the highway that turns north off Highway 16 at Topley to Michelle Bay, then by an all-season barge (which can transport up to 10 fully loaded logging trucks) across Babine Lake from where a main haulage logging road network extends to both Pacific Booker's camp and the Morrison deposit.

The all season barge which provides access to the property is presently owned and operated by Canfor, a logging company that has the logging rights on the Morrison/Hearne Hill property. The development plan included in this study allows for the provision of a barge owned and operated by Pacific Booker to provide independent access to the property. The barge loading area would be located approximately 10 km north of the town of Granisle in a location previously used by Noranda for access to the Bell mine. The barge unloading point, on the north shore of Babine lake, is to be located north of any land owned by Noranda. The proposed barge location is shown on Figure 10-1.

All personnel, materials, supplies and equipment, other than large heavy equipment, will be transported via this barge. The heavy equipment will be transported via the Canfor barge.

10.2 TRANSPORTATION OF CONCENTRATES

The concentrates will transported by tandem trucks from the mine site to Stewart BC, where they will be loaded onto ocean going vessels for shipping to the applicable smelter. The concentrates are expected to be shipped to China, Korea, India or Japan. Figure 10-1 shows the concentrate transportation route.

10.3 WATER

There are several lakes and watercourses adjacent to the proposed mining area that can be used as source of both potable and process water. The amount of process water used would be minimized by ensuring that this water was re-circulated and the only additional requirements would be make-up water lost through evaporation.

10.4 CAMP

It is expected that most of the employees will be able to travel on a daily basis to and from the site. In order to accommodate those who cannot do this a camp is included in the overall plan. It is expected that the maximum number of persons staying at the site at any one time will be 40. The present camp, operated by Pacific Booker as an exploration camp, will house about 20 persons. It is planned to upgrade and expand this camp.

10.5 FUEL STORAGE

Fuel storage requirements at the site has been estimated at 500,000 litre based upon an average one month consumption. Access to the site is available at all times, thus delivery of fuel would be on a regular schedule.

10.6 EXPLOSIVE STORAGE

It is planned to provide bulk explosives to the pit using a contractor who will set up operations at the site. The explosives contractor will supply the infrastructure, silos, mixing equipment, shop, office, etc., with Pacific Booker providing the magazines for storage of detonators and accessories.

10.7 WAREHOUSE/SHOPS

The following buildings have been included for each case to provide the facilities for warehousing and maintenance shops.

Maintenance shops -	Two service bays 15 m long x 9 m wide x 11m high; two service bays 6 m x long x 5 m wide x 5 m high; lay down area 12 m long x 12 m wide x 5 m high; offices 6 @ 3m by 3 m x 3m.
Warehouse -	12 m wide x 30 m long x 5 m high; three offices

10.8 ROADS

The Morrison/Hearne Hill property is an active logging area and thus there is at present a road infrastructure that Pacific Booker can utilize to its advantage. There are a number of bridges and roads that will require to be upgraded and new roads are required to access the proposed mine facilities. An allowance for the cost of these has been included in the evaluation.

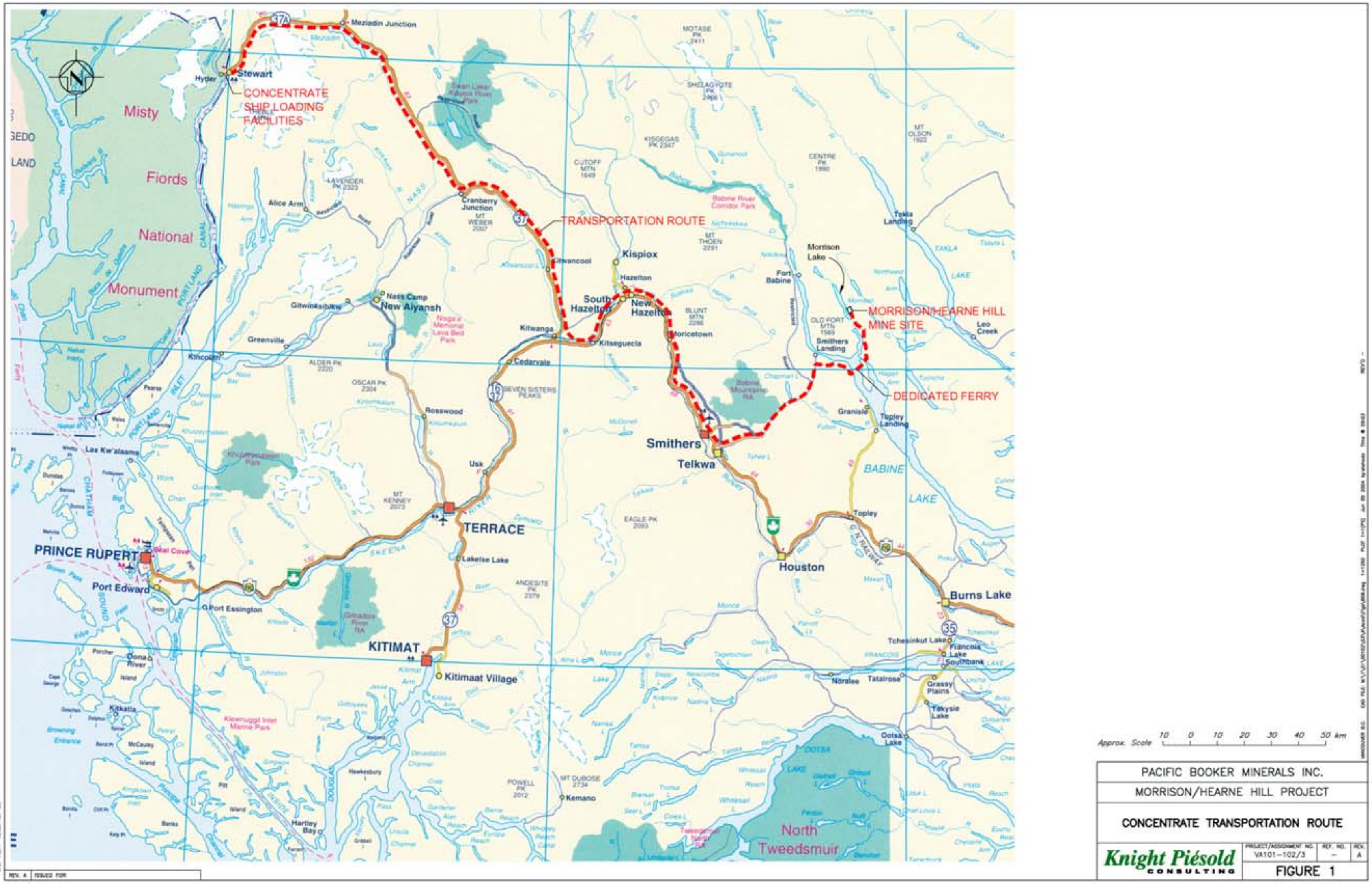

CONCENTRATE SHIP LOADING FACILITIES
TRANSPORTATION ROUTE
MORRISON/HEARNE HILL MINE SITE
DEDICATED FERRY
Stewart
Meziadin Junction
Cranberry Junction
Kitwancool
Kispiox
Hazelton
South Hazelton
New Hazelton
Kitwanga
Kitseguecla
Moricetown
Smithers
Telkwa
Houston
Topley
Granisle
Topley Landing
Smithers Landing
Fort Babine
Morrison Lake
Burns Lake
TERRACE
KITIMAT
Kitimaat Village
PRINCE RUPERT
Port Edward
Port Essington
New Aiyansh
Nass Camp
Alice Arm
Rosswood
Usk
Lakelse Lake
BABINE LAKE
Misty Fiords National Monument
North Tweedsmuir
Approx. Scale 10 0 10 20 30 40 50 km
PACIFIC BOOKER MINERALS INC.
MORRISON/HEARNE HILL PROJECT
CONCENTRATE TRANSPORTATION ROUTE
Knight Piésold CONSULTING
VA101-102/3
FIGURE 1

Figure 10-1

SECTION 11.0

POWER SUPPLY

11.1 OPTIONS FOR POWER SUPPLY

Power supply to the project would originate at the existing BC Hydro Babine substation located on the west side of Babine Lake in the vicinity of the Granisle township. From this point two alternate routes have been investigated, these are;

- **Alternate 1** - From Babine substation a new 138 kV transmission line would extend north along the western shore of Babine Lake, cross the west arm of the lake either overhead (Option 1A) or via a submarine cable (Option 1B), then extend in a northerly direction to a new substation at the Morrison project site.
- **Alternate 2** – Extend the existing line to the Bell mine site which was shut down several years ago and which is currently in a "care and maintenance" mode (Option 2). The 138 kV service, which was extended to the Bell mine in 1971, is now energized at 25 kV and could possibly be re-energised to its design voltage. Appropriate arrangements would need to be negotiated with Noranda/Bell and BC Hydro.

In addition three production rates have been evaluated together with comparison between truck haulage and conveying the ore and waste from the rim of the pit to the waste disposal area and the process plant respectively.

The chosen approach for power supply is alternate 2. The production rate option has been selected as 25,000 t/d and the mode of transportation from the pit rim is conveying.

The information presented in this section reflects the foregoing; the electrical report covering the evaluation of the alternate approaches is included in the Appendices.

11.2 ELECTRICAL POWER SUPPLY

The power supply involves the re-use of the original Bell mine 138 kV service from Babine Substation which was converted to a 25 kV service several years ago when the Bell mine ceased production and went into remediation mode. The feasibility of this option depends on the suitability and reliability of the existing facilities which are about 35 years old. In particular, part of the facilities include a submarine cable crossing about 5 km north of Granisle and this cable would require extensive testing to confirm its suitability for the Morrison project. This option also depends on cooperation with Noranda, the owners of the Bell mine, with whom a joint-usage agreement would have to be reached. This option allows for some repairs to the existing overhead line and a cost allowance for testing the submarine cables. It also would require that Morrison install new metering for Bell at the Bell mine and accept responsibility for all power consumed at the BC Hydro revenue metres at Babine substation. A new service substation would be required at Bell and a new 138-25 kV transformer would be installed to supply the existing 25 kV load and distribution. North of Bell, a new 138 kV overhead line would extend approximately 21 km to the new Morrison Substation. Based on the assumption that the Bell mine load is less than 1 MW, it has been assumed for this scoping study that Morrison would provide electrical supply to Bell free in lieu of paying Noranda a wheeling charge for the use of their supply facilities. Morrison would also take over operating and maintenance responsibility for the Noranda power facilities up to the point of their metering at the Bell mine.

The Morrison electrical service point will be located at the Babine substation and the line to Morrison will be built, maintained and owned by Pacific Booker. Losses in each of the systems and routes proposed are estimated to be in the vicinity of 5% including transformer losses at Morrison. These losses will be seen by the BC Hydro revenue metres as additional to the actual load and will be included in their billings.

Power line capital costs have been estimated from costs of similar lines in the region, however no site inspection or survey has been carried out to determine land ownership, timber lot licences, access or clearing costs.

Operating costs are based on likely consumption and load factor and assume the application of BC Hydro tariff schedule 1821, a copy of which is included in the Appendices. An allowance has also been made in operating costs for inspection and maintenance of the power line and ROW.

11.3 MAIN SITE SUBSTATION

At the Morrison plant site a substation will be established consisting of two identical three phase outdoor power transformers complete with primary isolation and protective devices. Check metering may be installed if desired. Each of the main transformers would have sufficient capacity to carry the plant load at its forced cooling rating. Main secondary outdoor bus would transfer power to the main 4.16 kV switchgear line-up, located indoors in an adjacent electrical room. This switchgear will also distribute power at 4.16 kV to the various plant loads.

11.4 ELECTRICAL DISTRIBUTION

Power will be distributed from the main site substation at 4160 volts, three phase, 60 Hertz and distributed to main load centers via cable feeders mounted on ladder trays or buried underground, or overhead lines as appropriate. Between the mill building and the shop complex, a 4160V feeder will run in a buried duct and from the shop complex 600V will be distributed to the warehouse, offices/dry and to the explosives building. Main load centres in the process plant will be in the crushing area and the mill area. In addition 4160 volt overhead lines will run to fresh and reclaim water pumping systems. In the case which includes overland conveying, a 4160 volt feeder will be installed to the conveyor drive locations.

The main 4160 volt load centers will each consist of an outdoor transformer, an electrical room and a control room. The mill will have dual transformers feeding into one electrical room. Transformers (4160-600 volt) will be outdoor oil-filled type with forced air cooling. 4160 and 600 volt switchgear, 600 volt motor control centres and low voltage lighting and power panels, and AC and DC power supplies will also be located in electrical rooms.

11.5 PROCESS DRIVE MOTORS

Process drive motors shall be totally enclosed fan cooled (TEFC) and be of high efficiency. These motors have been priced as part of the mechanical equipment they drive and are not included in this portion of the cost estimates. SAG, ball and regrind mill motors (large, special motors) have been quoted by GE complete with starting/running equipment and their cost is included herein.

11.6 GROUNDING

The main substation will be provided with an overall ground grid, gradient control mats where required and structure and fence grounding systems. Overall ground resistivity will be limited to 1 ohm to ensure acceptable touch-and-step potentials. If necessary, a remote ground electrode will be used. All buildings and major outdoor structures will be connected to a buried grounding system with a maximum resistance to ground of 5 ohms. This may be achieved with grounding rods, a few deep holes with copper piping installed or by connecting the system to sunken metal in Morrison Lake (or similar).

11.7 LIGHTING

Lighting will be provided to Factories Act and WCB requirements. Highbay discharge lighting will be used in process and service buildings with a mounting height of 20 feet or more. Lowbay vapourtight discharge lighting will be provided in other process and service areas, fluorescent lighting in offices, control rooms and similar. Exit lights will be provided where required. Emergency lighting will provide minimal lighting for safe egress in event of a power failure. Outdoor lighting will be provided where required from fixtures mounted on building exteriors.

11.8 FIRE DETECTION & SUPPRESSION

POC (products of combustion) and ROR (rate of rise) detector heads will be installed in transformer rooms, electrical rooms and control rooms. No sprinkling is permitted in these areas. Suppression systems will be either CO_2 or halon replacement, manually operated.

11.9 HEAT TRACING

Heat tracing will be provided on the main freshwater supply line to the processing plant from Morrison Lake and the reclaim water line from the tailings pond. The tailings line will be insulated only, no heat tracing.

11.10 SECURITY

Surveillance/security systems have not been included in this report. It is expected that all site security will be located at the guard house at the property entry point.

11.11 PROCESS CONTROL / INSTRUMENTATION

The main elements of the process control equipment will be controlled/monitored through a 100% redundant PC based HMI (Human-Machine Interface) similar to Wonderware's FactorySuite and will be centralized at a control room in the crushing building and another in the mill building. Control will be PLC based and will not have manual override.

Conveyors will have standard control devices: emergency pull cord switches, belt misalignment switches, speed and plugged chute switches where applicable.

SAG mill feed conveyor will have a weightometer. Process water tanks will have continuous level monitoring with ultrasonic level transmitters.

Thickener will have a sludge level detector. pH monitors will be installed and automated lime addition will be installed at various points in the process.

11.12 SPACE HEATING

Space heating has been assumed to be provided by a combination of propane fired hot water boilers, electric fan heaters and, in offices and small rooms, electric baseboard heaters. No capital cost has been allowed in this electrical report for any space heating equipment, however electrical capacity and supply costs have been included.

11.13 PLANT SITE COMMUNICATIONS

An allowance has been made for an in-plant intercom system. This will be a self contained system with multi-channel selective calling.

Allowance has been made for telephone or satellite communications to the Morrison/Hearne Hill project site.

11.14 CAPITAL COST

The capital costs included in this section of the report include all electrical costs from BC Hydro's charges to expand the Babine substation, electrical power supply, the site substation, site distribution and all site services. A contingency factor of 15% has been allowed on material and labour and a 5% allowance for spares on material.

Capital costs are listed in the Appendices and are expressed in current (July 2004) Canadian dollars.

11.15 OPERATING COST

Process plant electrical operating costs will consist of the cost of power, the cost of personnel and the cost of parts and materials for ongoing repairs and maintenance to the electrical installation. The cost of power, based on BC Hydro's tariff schedule 1821 and an overall load factor of 80%, is in the range of 3.8 to 4 cents (Canadian) per kWh depending on the options chosen and including an allowance for 5% line, cable and transformer losses in the power supply circuit

SECTION 12.0

ENVIRONMENTAL ASSESSMENT PROGRAM

12.1 INTRODUCTION

As an integral part of the Morrison / Hearne Hill Project development program, the assessment of the project's environmental, social and economic impact upon its regional zone of influence must be taken into account. To a large extent, the assessment requirements are defined by applicable legislation of the Provincial and Federal governments. This legislation among other requirements provides for public consultation to ensure that the approval process has afforded all communities of interest a reasonable opportunity to understand the project and to communicate their concerns in a manner that they can be satisfactorily addressed. Pacific Booker Minerals ("Pacific Booker") has enunciated its view that its relationships with the community are of strategic importance to the company and notably, this includes the First Nations upon whose traditional territory the project will be accessed and developed. Open dialog and response to the concerns of the community are seen as essential elements of effective environmental and social risk management.

Pacific Booker is committed to the principles of sustainable development and to abiding by a management system that assures that sound operating procedures, adequate resources and effective training programs are in place to meet these principles from the pre-construction period through the operations phase to final reclamation. Appropriate engineering design criteria will also be applied to ensure that operations can comply with all applicable government legislation. It is recognized that mine life will be finite but with an effective process of engagement with the community and the acceptance of environmental and social responsibilities, a positive and enduring legacy will result from the mine development.

12.2 ENVIRONMENTAL ASSESSMENT (EA) PROCESS

The constitutional division of power between the Federal and Provincial governments gives British Columbia responsibility for the development of its mineral resources. However, the Federal government retains an integral role in the project environmental approval process through its responsibility for fisheries, navigable waters, explosives storage and use, and environmental protection.

Through the past several years of exploration activity, Pacific Booker has maintained on going communications with both levels of government to inform them of their activities and to develop a mutual awareness of the project scope and the sequence of activities leading to its feasibility evaluation and environmental assessment.

In October 2002, Pacific Booker met with the Northwest Mine Development Review Committee in Smithers. Chaired by Wally Bergen of the BC Ministry of Energy and Mines (MEM), the meeting included representatives of the BC Environmental

Assessment Office (BCEAO), the Ministry of Water, Land and Air Protection (MWLAP), the Ministry of Forests, the Canadian Environmental Assessment Agency (CEAA) and Environment Canada (EC). Members of the Lake Babine Nation and councilors from the Village of Granisle also attended. At the meeting, Pacific Booker outlined its project plans and development schedule, and the agency representatives described the process for the pre-application stage of the Environmental Assessment Process.

Ongoing consultations have been held with various provincial and federal agencies. These included meetings with the BCEAO and the MEM in Victoria in June 2003. A courtesy meeting was also held in June 2003 with the Canadian Environmental Assessment Agency, Environment Canada and Fisheries and Oceans Canada in Vancouver. In July 2003, a meeting was held with the regional managers of MWLAP and MEM. The purpose was to keep the authorities informed that Pacific Booker was actively advancing its preparatory activities to formally enter the Environmental Assessment Process.

At the June 2003 meeting with the BCEAO, it was stated that it was expected that the project would be a Reviewable Project pursuant to the *BC Environmental Assessment Act*. The BCEAO would determine the scope, procedures and methods for its environmental assessment and Pacific Booker could formally trigger this process by submitting a Project Description.

The required Project Description was submitted to the BC Environmental Assessment Office in September 2003. This document and related information are posted on the BCEAO website (www.eao.bc.ca). Following this on October 20, 2003, a multi-agency meeting chaired by the BCEAO (Bob Hart) was held in Smithers. Along with the BCEAO and Pacific Booker, representatives of other Provincial and Federal agencies and representatives of the First Nations also attended. A planned site visit the following day was postponed pending the resolution of procedural requirements requested by the Nedo'at (Old Fort) Band.

The visit to the Morrison / Hearne Hill for the Provincial and Federal agencies is an essential part of the process. It allows interested agencies to determine the site-specific issues of concern under their enabling legislation that must be addressed by the environmental assessment program investigations. This visit was completed on July 6, 2004 and included representatives of the First Nations as well as the BCEAO, MEM, MWLAP, BC Ministry of Sustainable Resource Management (MSRM), Environment Canada, and Fisheries and Oceans Canada (FOC).

The *Canadian Environmental Assessment Act* is the Federal law that requires Federal decision makers (i.e., "responsible authorities") to consider the environmental effects of proposed projects before taking any actions that would allow a project included under the Act's regulations to proceed. In most cases, this will require that all significant adverse environmental effects have been addressed. Frequently, more than one Federal authority will be involved in an environmental assessment, either in a decision-making role or as an expert department.

The Morrison / Hearne Hill Project is an included project under the Federal regulations and will require a comprehensive study to be presented to the Canadian Environmental Assessment Agency. Through a harmonization agreement with the Province of BC, this study is expected to be the same document as that to be submitted to the BCEAO. It will be submitted for approval by means of a Screening Process or possibly, a more extensive Review Panel. The latter procedure would normally be required however, only for projects of extraordinary environmental significance or public concern and as determined by the Federal Minister of Environment. Certain legislation will determine the participation in the environmental assessment process by the responsible Federal agencies. The Fisheries Act in particular is expected to trigger FOC involvement because of the potential to alter or destroy fishery habitat. The proximity of the project to a major salmon spawning and rearing habitat will almost certainly require their involvement. Other legislation including the Explosives Act, the Navigable Waters Protection Act, and the Environmental Protection Act are expected to involve Natural Resources Canada, the Coast Guard (Transport Canada) and Environment Canada to some extent.

It is incumbent upon Pacific Booker to continue to maintain on going communications with CEAA and the other Federal authorities. This will enable them to determine their decision-making responsibility that triggers the need for their participation in the assessment process. The updated project description provided by the present Scoping Study has been specifically requested by FOC and is expected to formalize the determination of their participation. Other agencies will similarly formalize their participation or not.

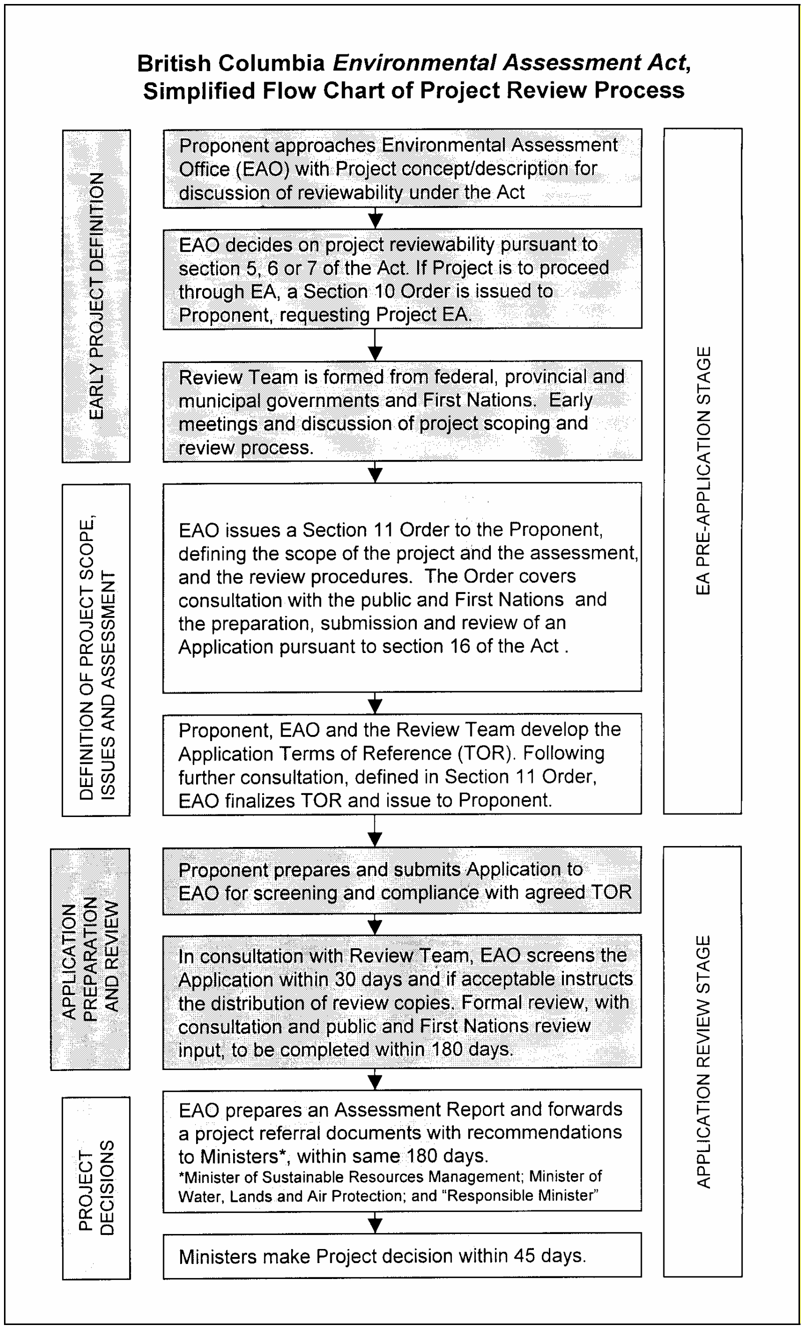
The BCEAO takes a facilitating role to coordinate the communication of agency interest and participation. This responsibility is provided by their enabling Act and by the harmonization agreement with the Federal authorities. The Environmental Assessment Process is illustrated in Figure 12-1.

Presently with the completion of the site visit by the various Provincial and Federal agencies, the Morrison / Hearne Hill Project is awaiting the BCEAO decision to issue its Section 11 order under the BCEA Act. This requires the preparation of draft Terms of Reference for the project environmental assessment studies and other investigations to support an Application for an Environmental Assessment Certificate by the BCEAO and a Ministers' Decision. For mining projects, the BC Ministers of Energy and Mines; Sustainable Resource Management; and Water, Land and Air Protection have responsibility. The Provincial process allows up to 255 days for their review, recommendation and the Ministers' Decision.

The Federal review and approval process by their Responsible Authorities is expected to require a similar time period although this is not specified by the applicable legislation.

Pacific Booker is required to prepare the draft Terms of Reference in consultation with the interested agencies, communities, First Nations and other parties for the approval of the BCEAO. The approved Terms of Reference will be used to define the scope of work of specialty consultants to undertake issue-specific investigations. The Federal CEA Act similarly requires for meaningful public participation in conducting environmental assessments to give interested parties the opportunity to put forward their knowledge and views on the project.

Figure 12-1
The Environmental Assessment Process



12.2.1 Regulatory Framework

The Morrison / Hearne Hill Project will be a reviewable project in accordance with the British Columbia Environmental Assessment Act (BCEAA) Reviewable Projects Regulation, Part 3-Mine Projects, Table 6, Mineral Mines as "a new mine facility that, during operations, will have a production capacity greater than 75,000 tonnes/year of mineral ore."

It will require a Comprehensive Study under the Canadian Environmental Assessment Act (CEAA), Comprehensive Study List Regulations, Part V being "a metal mine, other than a gold mine, with an ore production capacity of 3000 t/d or more" and "a metal mill with an ore input capacity of 4000 t/d or more."

In addition to obtaining the BC Environmental Assessment Certificate under the BCEAA, other permits and approvals will be required for the construction and operation of the Morrison mine. The following list is not exhaustive but identifies most of the legislation that is expected to apply:

12.2.2 Provincial:

Mines Act
Health, Safety and Reclamation Code for Mines in British Columbia 1997
Waste Management Act, 1996
Health Act
Wildlife Act
Land Act – Application for Crown Land
Water Act – Application for a Water License
Heritage Conservation Act

12.2.3 Federal:

Canadian Environmental Assessment Act
Canada – British Columbia Agreement for Environmental Assessment Cooperation (2004)
Canadian Environmental Protection Act (1999)
Fisheries Act
Metal Mining Effluent Regulations (2002)
Migratory Birds Convention Act
Species at Risk Act
Navigable Waters Protection Act
Explosives Act

12.2.4 Public Consultation

Both the *BC Environmental Assessment Act* and the *Canadian Environmental Assessment Act* contain provisions for public consultation as a component of the Environmental Assessment process. As a part of its ongoing efforts to develop and maintain open communications, Pacific Booker will direct a program of public consultation to meet the specific requirements of the two Acts. Results of public consultation efforts will be documented for presentation in the environmental assessment report.

First Nations Consultation and Participation

The Morrison property is located on the traditional territory of the Lake Babine Nation. There are four LBN communities: Fort Babine, Nedo'ats (Old Fort), Tachet and at Burns Lake which is outside LBN traditional territory within the traditional territory of the Wet'suwet'en Nation. Indian and Northern Affairs Canada census data for 2002 gives a LBN population of 2051, of whom 1370 live on reserve and 681 live off reserve.

Pacific Booker has been working on the traditional territory of the LBN for the past decade – both on the Hearne Hill and the Morrison properties. During this time the company has been actively communicating with members in all communities of the LBN and employing many of its members on its projects. The boundary between the traditional territories of Nedo'ats and Fort Babine cuts across the project area with the boundary line just south of the proposed open pit – Nedo'ats to the south and Fort Babine to the north. Currently Pacific Booker is seeking advice from both Nedo'ats and Fort Babine on how Pacific Booker can involve both communities and the broader LBN in a way that is culturally appropriate while following traditional protocols.

Pacific Booker considers that the development and maintenance of ongoing communications and business linkages with the LBN is essential. It is proposed that Pacific Booker and representatives of the LBN will participate in project planning from the onset to develop mutual understanding, respect, trust and a good working relationship to the mutual benefit of both parties. This strategy is intended to:

- Provide employment that leads to self-reliance and respect. This includes training programs.
- Provide contractual opportunities.
- Involve LBN individuals, at the earliest opportunity, in baseline studies, the EA process, permitting, ongoing life-of-mine joint monitoring and other planning and communications activities.
- Incorporate traditional knowledge into project planning activities.

The components of this strategy will enhance the capacity of the LBN to participate meaningfully in the Morrison/Hearne Hill Project, and other opportunities that present themselves.

12.3 LAND USE

The Morrison Project is located within the Morice Land and Resource Management Plan (LRMP) area. The Ministry of Sustainable Resource Management (MSRM) has identified the completion of an LRMP for the Morice area as a priority. Deliberations of the Morice LRMP Committee commenced in September 2002 and were completed by

March 27, 2004. Final approval by the Provincial Government is pending. The Morice LRMP encompasses 1,509,203 hectares in northwestern British Columbia including 36,455 hectares of private land that will be excluded from the LRMP. The Morrison / Hearne Hill property is located in the northern end of the LRMP area.

The proposed mine operation site is situated on Crown land. Current land uses in the vicinity of the Morrison / Hearne Hill property relate primarily to forestry activity with Canfor having tree farm licences at the project site and Houston Forest Products operating nearby to the west of Morrison Creek. Much of the mine site development area has been logged and to a certain extent re-planted.

Other activity within the surrounding region includes hunting, trapping, guide outfitting, backcountry wilderness tourism and recreation. The nearest other mineral occurrence with development potential is the Hearne Hill. Mineral exploration has been ongoing on and around the region for decades and both the Granisle and Bell Copper mines operated from 1966 to 1992. The environmental assessment report will provide information on the extent of other land uses in the area and identify the potential for mine development and operations to impact on such other users.

12.4 ENVIRONMENTAL SETTING AND EFFECTS ASSESSMENT

The Morrison / Hearne Hill property is located 65 km north-east of Smithers and it covers approximately 20,000 hectares. Located on the east side of Morrison Lake, it is in the sub-boreal spruce biogeoclimatic zone. The topography is characterized as undulating and rolling plateaus rising to the east to the ridge dominated by Hearne Hill at an elevation of 1350 metres. Drainage from the Hearne Hill and Morrison deposit areas is contained within seven sub-basins. From south to north, drainages 1, 2 and 3 flow into Morrison Creek downstream of Morrison Lake. Drainages 4, 5, 6 and 7 drain directly to Morrison Lake. Figure 9-1

The Morrison Creek Watershed is one of the four main sub-basins of the Babine Lake. Lakes are an important feature of the watershed and Morrison Lake is the most predominant with a surface area of 1325 ha and a maximum depth of 60 m (FISS database). Other lakes include Tahlo (152 ha) and Haul (304 ha) lakes as well as a dozen smaller lakes generally less than 70 ha in area, including several in the vicinity of the proposed mine development area (Bustard, 2004)

The Babine – Morrison lakes system is a salmon spawning and rearing area of high value and importance. Babine Lake is the largest natural lake in BC and is one of the major sockeye salmon producers in the Province, accounting for 90 percent of the Skeena River sockeye run. (Bustard, 2004)

12.4.1 Environmental Issues

Although Pacific Booker will have responsibility for safeguarding the air, land and water, and investigations will be conducted to characterize each of these as described below, the priority environmental issues are seen to concern water due to the proximity to the Morrison – Babine lake system. These issues have been identified as fisheries and fish habitat investigations, surface and ground water characterization, and acid rock drainage (ARD) potential.

Because of seasonal effects, these investigations and their baseline data collection can require an extended period (12 months or more) for development. In consultation with the interested authorities, field programs have been initiated in advance of formalizing the prescribed Terms of Reference. The resulting information is considered key to the development of engineering design concepts that provide for the prevention and mitigation features to safeguard the environment.

For the mine development and operation, water management is identified as an essential consideration for the assurance of surface water runoff, effluent control, and seepage containment and collection.

12.4.2 Climate and Air Quality

The development of a local climate database is essential for engineering design of tailing / waste rock management facility dams, process and other buildings and water management control structures. The BC Forest Service maintains a meteorological station adjacent to the Pacific Booker exploration camp and approximately 5 km from the project site. This station collects wind speed and direction data, temperature and relative humidity on a daily basis. This data is made available on a subscription basis as well as data from other BCFS north-central region stations. Atmospheric Environment Service meteorological stations should also provide regional data to enable the prediction for mine site maximum and minimum annual precipitation and storm events for various return periods. This data will be used for design purposes for the tailing and waste rock storage facilities and other structures, for water balance calculations and impact predictions through the operating and post-operating periods.

There has been no air quality monitoring to date. Logging activity has occurred on an intermittent basis but otherwise the impact upon air quality is minimal and it is essentially pristine. It is anticipated that standard modeling techniques will be applied to predict the potential air quality impact associated with the mine development and operation, and to determine appropriate mitigation strategies for both mobile and point sources.

12.4.3 Surface Water Hydrology and Quality

Water management is an essential consideration for the assurance of surface water runoff quality, effluent control, and seepage containment and collection. Engineering features will be integrated into the design to maximize the effectiveness of water management and to minimize fresh water consumption.

During the exploration period Pacific Booker has monitored stream flow at six stations with staff and crest gauges since 1999. Data collection has not been continuous. To develop baseline data for water management pertaining to mine development and fisheries habitat protection, plans are proceeding to install up to five automated pressure recording transducers in the principal streams transecting the mine site and the two tailing/waste rock management facility site alternatives A and B. Site hydrological data will be correlated to data available from regional hydrological stations to obtain estimates of stream flow over a variety of return periods. This information will be applied in the design of the tailings/waste rock management facility and in particular to provide for minimum acceptable flows on streams inhabited by fish.

The assessment of potential impacts of the project on surface waterways as defined under the Navigable Waters Protection Act needs to be determined. Further consideration of possible ferry use across Babine Lake needs to be pursued as well as the requirements for power supply and any other infrastructure.

A field sampling and laboratory analytical program have been defined and applied for surface water quality baseline data collection with samples collected and analyzed in October 2003 and since May 2004. Some earlier data is also available from the exploration program period. Pending the approval of draft Terms of Reference, the program was initiated in consultation with the MWLAP Regional Office and in general accordance with Environment Canada requirements. Physical and chemical parametres of streams draining the mine development area have been collected from six existing stations and it is expected that this will be increased to eight (plus a control station at Morrison Creek) in order to characterize the Site B tailing/waste rock management facility drainage. Water quality monitoring will continue to be conducted at a frequency specified by the regulators. Parameters will include total and dissolved metals, major anions (SO_4^{-2}, Cl^-, NO_3^-, etc.), hydrocarbons, pH, temperature, conductivity, dissolved oxygen, etc.

A detailed compilation and analysis of existing baseline water quality data will be used in conjunction with water balance and hydrological data to complete mass loading models for an assessment of discharge impacts from the operation including runoff, seepage and any controlled discharges.

12.4.4 Ground Water Hydrogeology and Quality

Information from these programs will be used to provide a detailed analysis of the groundwater regime in the vicinity of project area and to assess the potential impacts associated with mine development, operation and closure. Initial water level measurement and falling head tests were conducted in coordination with the 2003 drilling program. Piezometer installation and exploration drill hole measurements to determine the existing subsurface water level were commenced. Further work is proposed to install several standpipe piezometers in drill holes during the 2004 exploration program.

To develop the baseline physical and chemical character of the ground water within the mine development area, monitoring wells will be drilled near the open pit and tailing/waste rock management facility site. The expected number of wells will be determined in coordination with proposed geotechnical investigations. From four to six wells will be developed. These will be used for water level measurements, water quality sampling and response tests as approved by the regulators.

12.4.5 Lake and Stream Sediments

To determine the baseline physical and chemical character of water body sediments around the mine development area, sediments will be collected from surface water courses and Morrison Lake in areas susceptible to sediment loading associated with mine development and operations.

12.4.6 Acid Rock Drainage / Metal Leaching

Chalcopyrite and pyrite are the main sulphides at the Morrison deposit with minor to moderate amounts of bornite in several places within the copper zone. Surrounding the copper core is a pyrite halo. All rock sampled at Morrison contains varying quantities of pyrite, locally in excess of 1%. It has been conservatively assumed that all the rock to be mined (ore and waste) will have varying degrees of ARD potential. Minor calcite veining and carbonate alteration are associated with the copper-gold mineralization, and the presence of these minerals will neutralize the acid generation to some extent. The extent of this ARD potential and the strategies for its management must be further investigated.

An initial 24 sample set selected from drill core obtained from the 2003 program was tested by standard acid-base accounting methods. Samples were obtained from the northwest and east-central perimeters of the deposit. Results have indicated a varying range of ARD potential from high probability to generate acidity, to uncertain or with some acid neutralizing capacity. Further sampling and analysis will be done on drill core from the 2004 program. In addition, 100 samples of drill core have been collected for acid-base accounting analyses. Extensive additional ABA and kinetic testing and analysis will be required to understand the potential for metal transport and ARD generation from the deposit waste rock and tailings.

Of particular importance will be ARD sampling for all major rock types, mineralogy, etc. by ore, waste rock and overburden categories determining their location and spatial distribution within the ultimate open pit limits. The results of the ML/ARD characterization program will be used to develop the operating strategy, tailing and waste rock storage location, and prevention and mitigation requirements for their handling and storage. It will also provide guidance for sourcing of rock and aggregate for construction.

12.4.7 Fisheries and Aquatic Species

The Federal Fisheries Act provides rigorous requirements for the protection of fish habitat and is very specific with respect to the habitat alteration, disruption and destruction (HADD) that can be authorized by FOC. Thorough assessment of fishery and other aquatic resources (benthic species, periphytons) and their physical and biological habitat is essential to determining the involvement of FOC and the extent of mitigation or compensation that will be required for HADD.

In consultation with FOC and the MWLAP Regional Office, a field program has been initiated for 2004. This program will provide an assessment of fish utilization and habitat in the vicinity of the mine site, and in particular in areas proposed for development, such as the tailing/waste rock management facility. It will determine the potential for mine development, operations and closure to affect fish and fish habitat. Where potential impacts are predicted, mitigation measures will be determined.

Further field investigations will develop baseline aquatic resource data on species, population and distribution of benthic invertebrates, periphyton, phytoplankton and zooplankton.

Should it be determined that mine development, operation and/or closure will result in an unavoidable loss of fish habitat; a fish habitat compensation plan may be required. Such a plan would require additional fieldwork to identify appropriate compensation measures.

12.4.8 Flora and Fauna Studies & Terrestrial Ecosystem Mapping

In consultation with MWLAP Regional Office, a program has been designed to provide for the compilation and assessment of flora and fauna including rare and endangered species. Initial reconnaissance will commence in August 2004. Wildlife surveys will be required on a seasonal basis and this will continue into 2005. A program of terrestrial mapping will be developed to document the vegetation by species and location. Particular attention must be given to any species listed in the Species at Risk Act.

Recent Predictive Ecosystem Mapping (PEM) provides information on wildlife use and habitat suitability/capability based on for the Morice and Lakes Innovative Forest Practices Agreements (IFPA). The mapping indicates potential high value grizzly bear, moose, amphibians, furbearers (e.g. marten, fisher), and waterfowl habitats in the area. There is also the potential for waterfowl and amphibian habitats in the proposed project area that may require evaluation. Presence and habitat use by other species such as nesting raptors (e.g. eagles, osprey, hawks etc.), small mammals, predators, etc. will be noted during the habitat assessments.

The PEM products and air-photos would be used to plan sampling and mapping of rare plants and ecosystems within the project area. Sampling will be carried out in conjunction with the wildlife habitat assessment work.

Baseline information is expected to be required on the ambient concentrations of trace elements in the upland and wetland plants used by ungulates and bears in the vicinity of the proposed tailing areas. It will provide baseline information and allow future comparisons during operations and closure for assessing the effects of uptake of metals in vegetation on wildlife and human health.

The results of the assessments, mapping and potential mitigation measures will be reported in a detailed compilation and assessment of the baseline wildlife information. This will be used to develop mitigation measures for potential development and operational impacts to wildlife and wildlife habitat and to provide for the return to productive wildlife habitat upon closure. Species at Risk, as defined in the Species at Risk Act, in the vicinity of the project will be identified and the potential for the project to impact on listed species and their habitat.

12.4.9 Surficial Geology & Soils

In coordination with site engineering investigations, a survey will be conducted to develop a detailed description of surficial geology in the vicinity of the property including glacial, colluvial, alluvial and fluvial landforms and features. Of particular interest will be the identification of basal tills for dam construction.

Soils mapping and sampling for soils recovery and reclamation will be carried out in detail on the proposed pit and infrastructure areas, and at a reconnaissance level within the surrounding study area. Removal and storage of surface soils will be planned for site reclamation purposes. The availability of local limestone will be important as part of an ARD control strategy.

12.4.10 Seismicity & Terrain Stability

For project design purposes, an analysis of regional seismicity and earthquake potential based on data generated by the Pacific Geosciences Centre. Seismic data will be incorporated into designs for the tailings impoundment dams and other structures.

A terrain stability analysis for the property and infrastructure corridors will be conducted including the potential for landslides and avalanches. Information generated from the terrain stability analyses will be utilized in assessing the location and design of tailing/waste rock management facility, process buildings, and other structures.

12.4.11 Noise

While no baseline noise monitoring has been conducted to date, the site is located in a remote location with limited potential for noise impacts associated with anthropogenic sources. With the exception of periodic forestry activity, baseline noise levels are considered to be essentially natural. Standard modeling techniques will be applied taking into account topography and weather conditions for the area, and experience from similar operations to predict the potential for noise impacts on wildlife and the public associated with the operation and to design appropriate mitigation measures.

12.4.12 Archaeology, Traditional & Cultural Use

The Babine Lake region is known to have a rich heritage that includes the culture of the Lake Babine Nation that preceded the arrival of European settlers. After the Europeans' arrival, their activity and development contributed further to the heritage of the region. No archaeological or cultural use assessment has been conducted in the immediate vicinity of the property. Such an assessment is planned and will be compiled and presented as a part of the environmental assessment report. The assessment of cultural and heritage values within the area of activity of the Morrison Project (for example, culturally-modified trees) will be determined by literature review and consultation with the LBN, local museums and other sources. Field investigations will be planned to further document any evidence of artifacts or other indications of heritage and cultural significance.

12.4.13 Socio-Economic Assessment

Through job creation (direct and indirect), purchasing, training programs and transferable skills, contracting opportunities and tax payments, the Morrison/ Hearne Hill Project has the potential to create significant positive economic benefits for the Bulkley-Nechako Region and beyond. At the same time, the mine development has the potential to impact on local and regional resources through increased demand on social services such as police, health care, housing and education. Social impacts at the community and family level also have the potential to occur as a result of increased disposable income, lifestyle changes and work-associated demands.

An assessment will be made of the potential economic and social impacts associated with mine development based on regional demographics and community profiles. The assessment will include and be based on factors such as estimates of employment income, taxation levels, and purchased goods and services, as well as expected numbers of local versus non-resident employees, increased population resulting from in-migration of employees, shift rotation schedules, housing and accommodation.

The potential social impacts upon the LBN at the local level will be given particular consideration in the context of the commitment that Pacific Booker has to engaging and providing for the participation of the LBN. The potential social impacts and benefits of the project are being addressed with the LBN and will continue to be throughout the life of the mine.

12.4.14 Public Health & Safety

The environmental assessment report will include an examination of the potential impacts of all phases of the proposed project (construction, operation, maintenance, decommissioning) on public health and safety with consideration of relevant determinants of health. Included in this assessment will be descriptions of the general public health setting and characteristics influenced by such factors as public utility services (water, waste, etc.), emergency services, noise, and air quality. The application will assess and evaluate the potential project impacts upon the health and safety of employees, their families and local communities (including First Nations), and describe mitigation measures for any possible effects to human heath and safety.

12.5 ENVIRONMENTAL ASSESSMENT REPORT

The environmental assessment report for the Morrison / Hearne Hill Project is to be prepared in support of an application for an Environmental Assessment Certificate. The report's detailed format will be prepared to meet the requirements of BCEAO and CEAA. It will nevertheless include these five principle elements:

Project Description
Environmental Characterization
Environmental Impacts and Control Measures
Socio-Economic Aspects
Environmental Management System and Reclamation Plan

SECTION 13.0

CAPITAL COSTS

13.1 BASIS OF ESTIMATE

The capital cost estimate has been based upon the provision of new equipment with the exception of the open pit shovels and drills for which costs have been based on rebuilt units, and for certain pieces of equipment for the mill which are considered to be available as resale equipment.

All project development costs, including equipment, construction activities, pre-production, design, procurement, construction management, engineering and environmental studies have been capitalized, with the exception of the large pieces of mobile equipment which have been leased to purchase and included as an operating expense.

The list of the cost includes a $3.0 million reclamation bond, similar to Huckleberry's present bond. Interest costs for that period of time when the loan is taken down to the time the repayment commences is also included.

A 10% contingency has been added to the capital costs.

The costs for equipment purchases have been based upon budget quotations received from suppliers as well as data from Beacon Hill in-house files. Allowances have been made for transportation of equipment and supplies.

On-going capital costs consist mainly of the costs to raise the dams for the waste disposal area and associated costs. An allowance has been included for miscellaneous capital. Since the life of the mine is some 10 years, it is not expected that there will be a requirement to purchase replacement mobile equipment.

The capital cost summary spread sheet is shown below in Table 13.1.

13.2 COST SUMMARIES

Table 13.1e

MORRISON/HEARNE HILL PROJECT
MORRISON DEPOSIT
CAPITAL COSTS $(000)s
Case B Open Pit 25000 t/d

Description	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Plant and Surface Facilities																					
Design				$2,500	$1,700																**$4,200**
Procurement				$2,000	$1,400																**$3,400**
Yard & General Services					$500	500															**$1,000**
Process Plant				$25,000	$25,000	$12,000															**$62,000**
Tailing Dam					$12,000	$4,177															**$16,177**
Buildings & Structures					$3,000	2764															**$5,764**
Roads					$1,125																**$1,125**
Camp						400															**$400**
Fuel supply						600															**$600**
Explosive Magazine						440															**$440**
Barge and facilities				$300																	**$300**
Indirect Costs				$240	$1,636	$1,044															**$2,920**
EPCM				$127	$1,633	$1,096															**$2,856**
Sub-Total				$30,167	$47,994	$23,021															**$101,183**
Mining																					
Design				$500	$300																**$800**
Mining Equipment					$2,380																**$2,380**
Conveyors				$5,000	$10,880																**$15,880**
Sub-total				**$5,500**	**$13,560**																**$19,060**
Exploration/Pre-production Dev.																					
Exploration Drilling		$400	400																		**$800**
Pre-feasibily Study/Feasibility		$1,350	$3,065																		**$4,415**
Pre-production Development						$12,359															**$12,359**
Sub-total		**$1,750**	**$3,465**			**$12,359**															**$17,574**
Services																					
Power Line				$4,230																	**$4,230**
Power Distribution					$5,000	$8,610															**$13,610**
Sub-total				**$4,230**	**$5,000**	**$8,610**															**$17,840**
Misellaneous																					
Bonding				**$3,000**																	**$3,000**
Bank Charges					**$1,000**																**$1,000**
Sub-total				**$3,000**	**$1,000**																**$4,000**
Cont		$175	$347	$3,990	$6,655	$4,399															**$15,566**
Total Capital		**$1,925**	**$3,812**	**$46,887**	**$74,210**	**$48,390**															**$175,223**
On-going capital																					
Tailings								$11,865		$11,865		$11,865		$11,865							**$47,458**
Replacement vehicles	2.50%						$100	$200	$200	$200	$200	200	$200	200	$200	200	200	200	200		**$2,500**
Reclamation																				$2,000	**$2,000**
Cont.	10.00%						$10	$1,206	$20	$1,206	$20	$1,206	$20	$1,206	$20	20	20	20	20	$200	**$5,196**
Total							**$110**	**$13,271**	**$220**	**$13,271**	**$220**	**$13,271**	**$220**	**$13,271**	**$220**	**$220**	**$220**	**$220**	**$220**	**$2,200**	**$57,154**
Loan Repayment																					
Loan Remaining							**$94,620**	**$102,190**	**$68,765**	**$43,066**	**$15,312**										**$94,620**
Interest							**$7,570**	**$6,575**	**$4,301**	**$2,245**	**$589**										**$21,280**
Repayment								**$40,000**	**$30,000**	**$30,000**	**$15,900**										**$115,900**

SECTION 14.0

OPERATING COSTS

14.1 BASIS OF ESTIMATE

Operating cost estimates are based on operating the site 24 hours per day, 7 days per week, 365 days per year, with all personnel working a 12 hour shift. Management and technical staff would operate on a standard 5 day week unless they were attached to the daily mime and mill operating team, in which case they would operate on the 12 hour shift system.

Labour rates used in the study were based on a typical current union labour agreement for mining projects in the area. The rates included appropriate allowances for overtime, mandatory social security benefits, vacations, medical benefits, travel and other payroll burdens.

The cost of materials and supplies were obtained from several suppliers.

Operating costs for the open pit were developed from estimates of equipment productivity, material consumption and manpower requirements. Costs were estimated on a year by year basis for each phase of the pit to account for variances in haulage distances and waste production schedules.

Operating costs for the process plant were built up from detailed manning levels and consumable consumptions based on metallurgical testwork, or industry standards.

Power costs have been estimated based upon the prevailing BC Hydro's tariffs.

Overheads have been based upon the manpower levels that normally apply to this type of operation and include camp operation, supplies, legal costs, insurance and head office overhead.

The operating cost summary is shown below in Table 14.1.

14.2 COST SUMMARIES

Table 14.1

MORRISON/HEARNE HILL PROJECT MORRISON DEPOSIT OPERATING COSTS $ Case B Open Pit 25000 t/d																
Year	**Cost/tonne**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Production		**3,421,875**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**9,125,000**	**2,119,013**	**115,040,888**
Ore	**$0.85**	$2,739,156	$8,389,301	$8,437,680	$9,196,362	$10,151,370	$8,526,015	$8,807,398	$9,790,729	$11,536,148	$12,057,303	$3,719,380	$1,825,000	$1,825,000	$423,803	$97,424,645
Waste	**$1.01**	$3,417,488	$9,837,376	$16,286,318	$17,000,878	$10,030,653	$16,103,135	$20,658,882	$11,095,005	$6,563,575	$5,068,463	$185,613				$116,247,384
Plant	**$3.09**	$10,581,840	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$28,218,241	$6,552,857	$355,753,592
Tailings	**$0.05**	$171,094	$456,250	$456,250	$456,250	$456,250	$456,250	$456,250	$456,250	$456,250	$456,250	$456,250	$456,250	$456,250	$105,951	$5,752,044
Equipment	**$0.28**	$1,492,833	$2,369,518	$3,502,585	$4,477,825	$4,477,825	$4,638,475	$6,735,325	$4,477,825							$32,172,209
Conveyor	**$0.16**	$665,268	$1,771,044	$2,535,228	$2,409,105	$1,686,512	$2,427,104	$2,770,437	$1,711,927	$1,225,040	$1,093,623	$259,981				$18,555,269
G&A	**$0.63**	$3,719,667	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$5,579,500	$1,295,675	$71,969,342
Total	**$6.07**	**$22,787,345**	**$56,621,231**	**$65,015,802**	**$67,338,161**	**$60,600,351**	**$65,948,719**	**$73,226,033**	**$61,329,477**	**$53,578,754**	**$52,473,381**	**$38,418,965**	**$36,078,991**	**$36,078,991**	**$8,378,285**	**$697,874,486**

SECTION 15.0

FINANCIAL ANALYSIS

15.1 PURPOSE

The data derived in this Preliminary Assessment have been used for a preliminary economic evaluation of the Morrison deposit of the Morrison/Hearne Hill project. The open pit mining method is the only method that is applicable for the Morrison deposit and as such the purpose of this evaluation is to determine the most appropriate manner in which to mine and process the deposit. The results of this evaluation are not intended to place a value on the project but to indicate the possible benefits should the project be developed in the manner described herein.

15.2 METHOD

The financial analysis has been prepared using standard discounted cash flow (DCF) methods to determine net present value (NPV) and internal rate of return (IRR) based upon 50:50 equity/bank loan financing and metal prices of US$1.10/lb copper and US$385/oz gold. The analysis was performed in constant 2004 Canadian dollars and all dollar amounts referred to in this report are Canadian dollars unless specified otherwise. Inflation has been excluded.

15.3 CRITERIA

The criteria used in completing this financial analysis are as follows;

- The discount rate commences in year two of the project development schedule;
- The rates of discount are 5%, 8% and 10%;
- The working capital will consist of 2 months' operating costs;
- 50% of the capital costs will be financed through equity and the remaining 50% obtained as a bank loan at 8% interest;
- The bank loan would be repaid as quickly as is feasible, leaving Pacific Booker with an acceptable cash flow to ensure its obligations are met;
- A reclamation bond of $3.0 million will be required by the regulatory authorities prior to permitting the project;
- On-going capital expenditures are written off in the year of expenditure;
- Tax calculations are approximate.

15.4 TREATMENT AND FREIGHT CHARGES.

The proposed operation at the Morrison/ Hearne Hill project will produce a concentrate containing copper and gold. This concentrate will be loaded into trucks and transported from the mine site to Stewart B.C. from where it will be loaded on to ocean going vessels to be transported to smelters in Japan, Korea, China or India. The transportation costs and treatment costs have been calculated within the financial analysis and subtracted from the value of the gross concentrate revenue to obtain the net revenue.

A report was prepared by N. S. Seldon and Associates Ltd. dated 2003 and the freight and treatment costs as described in that report have been utilized in the financial analysis. The report is included in the Appendices and shown below is a list of the freight and treatment charges by metal.

Smelter Terms and Metal Payment

- Payable Copper. The amount of payable copper in the concentrate is subject to a 1% reduction.
- A refining charge of US$0.08/lb of Copper is charged
- Payable gold. The payable ounces of gold are 96.5%.
- Penalties. The concentrate is considered as a clean concentrate and thus there are no penalties for such metals as Zinc, Arsenic, Antimony, Lead, Mercury or Bismuth.
- Treatment Charge of US$80.00 per dry metric tonne (Dmt) of concentrate.
- Transportation cost, Sea, US$$35.00/Dmt.
- Transportation cost, Land, US$30.00/Dmt.
- Acceptable moisture content, 7.50%.
- Transportation Loss, 0.25%.

15.5 RESULTS

The evaluation of **Case B** clearly indicates that based upon a capital expenditure of **$175.2 million,** an average operating cost **$6.07/t,** a copper price of **US$1.10** and a gold price of **US$385/oz** the project generates an after tax Internal Rate of Return (IRR) of **14.69%** and a Net Present Value (NPV) of **$186.4 million** undiscounted and **$80.8 million** discounted 5%. Payback of initial capital can be achieved in **5.6 years**. The mineral resources established in this study are **86,892,000 tonnes** grading **0.450% Cu and 0.257 gAu/t.** Waste to be produced during open pit mining has been estimated at **125,256,700 tonnes** with a waste to ore ratio of **1.44.** Contained within this waste is material that would be placed on a low grade stockpile and, subject to prevailing metal prices, processed after the foregoing mineral resource is depleted. This low grade stockpile consists of **28,152,000 tonnes** with a grade of **0.278% Cu** and **0.123 gAu/t**.

Note: The mineral resource of 86,892,094 grading 0.450% Cu and 0.257 gAu/t includes measured resources of 55,643,752 grading 0.465% Cu and 0.257 gAu/t, indicated resources of 30,002,067 grading 0.428% Cu and 0.257 gAu/t and inferred resources of 1,246,275 grading 0.362% Cu and 0.262 gAu/t.

SECTION 16.0

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SECTION 17.0

AUTHORS

CERTIFICATE OF QUALIFICATION

I, W. Peter Stokes, of 206, 1248 Hunter Road, Tsawwassen Vancouver, British Columbia, V4L1Y8, do hereby certify that:

1) I am a consulting mining engineer with an office at 1400-750 West Pender Street Vancouver, British Columbia V6C 2T8

2) I am a graduate of the Stoke-on–Trente College of Technology, Stafforshire, UK in 1965 with an HND in Mine Engineering.

3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4) I have practised my profession continuously since 1965.

5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in draft National Policy 43-101.

6) In the Morrison/Hearne Hill Project Preliminary Assessment I am responsible for the overall study management, study compilation, derivation of cost data and financial analysis. I have visited the site on two separate occasions, April 14, 2004 and July 6, 2004.

7) I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the Technical Report.

8) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

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

Dated this 1st day of August, 2004

____

CERTIFICATE OF QUALIFICATION

I, Bruce M. Briggs, of 10691 Hollymount Drive, Richmond, British Columbia, do hereby certify that:

1) I am a consulting mining engineer with an office at 1400 – 750 West Pender Street, Vancouver, British Columbia.

2) I am a graduate of the University of Nottingham, England in 1967 with a B.Sc. (Hons) degree in Mining Engineering.

3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4) I have practised my profession continuously since 1977.

8) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in draft National Policy 43-101.

9) This report is based on a study of the data and previous reports on the Morrison/Hearne Hill property. I am responsible for the development of the mining plans and mining cost estimates. A site visit was made by me to the property on April 14, 2004.

10) I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report.

8) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

9) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

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

Dated this 1 day of August, 2004

PROFESSIONAL PROVINCE OF B. M. BRIGGS # 11648 BRITISH COLUMBIA ENGINEER

Garth Kirkham, P.Geoph.

I, Garth David Kirkham, of 3178 Three Cedars Drive, Vancouver, British Columbia, do hereby certify that:

1) I am a consulting geoscientist with an office at 3178 Three Cedars Drive, Vancouver, British Columbia.

2) I am a graduate of the University of Alberta in 1983 a B. Sc. in Geophysics.

3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of Alberta.

4) I have continuously practiced my profession performing computer modelling for more than 20 years, both as an employee of mine planning software companies and as an independent consultant.

5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in draft National Policy 43-101.

6) This report is based on a study of the data and literature available on the Morrison Deposit. I am responsible for the updated resource modelling and pit optimization completed for the Preliminary Assessment Report. I have not made a site visit.

7) I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the Preliminary Assessment Report.

8) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

9) I have no shareholding or interest either directly or indirectly in Pacific Booker Minerals.

10) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

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

Dated this 1st day of August, 2004

Garth Kirkham, P.Geoph.

CERTIFICATE OF QUALIFICATION

I, John R.W. Fox, of 1677 Deep Cove Road, North Vancouver, British Columbia, V7G 1S4 do hereby certify that:

1) I am a consulting metallurgical engineer with an office at 302-304 W. Cordova St. Vancouver, British Columbia V6B 1E8

2) I am a graduate of the University of Leeds (UK) in 1971 with a B.Sc. in Applied Minerals Sciences.

3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4) I have practised my profession continuously since 1971.

5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in draft National Policy 43-101.

6) In the Morrison/Hearne Hill Project Preliminary Assessment, I am responsible for the review of metallurgical data, the design and supervision of recent metallurgical testwork, and the development of the process flowsheet, and the generation of capital and operating cost data based on the foregoing flowsheet. I have not made a site visit.

7) I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the Technical Report.

8) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

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

Dated this 1st day of August, 2004

J. R. W. Fox

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — J. R. W. FOX

Knight Piésold
CONSULTING

Our Reference: VA101-102/3
Continuity No.: V4-0814

CERTIFICATE OF QUALIFICATION

I, Ken J. Brouwer, P. Eng., do hereby certify that:

1) I am Managing Director of:
   Knight Piésold Ltd.,
   Suite 1400, 750 West Pender Street,
   Vancouver, B.C., Canada,
   V6C 2T8

2) I have graduated with a Bachelor of Applied Science degree in Geological Engineering from the University of British Columbia in 1982. In addition, I have obtained a Master of Engineering degree in Civil Engineering from the University of British Columbia in 1985.

3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

4) I have practised my profession continuously since 1982.

5) I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

6) I am responsible for the preparation of the technical report on the waste disposal options for the Morrison/Hearne Hill Project Preliminary Assessment, I am responsible for the review of the waste deposit facility geotechnical data, the concept design of recent scoping studies, and the generation of capital cost data based on the concept design. I visited the site on the 8^{th} of July 2003 for two days.

7) I have not had prior involvement with the property that is the subject of the Technical Report.

8) I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

9) I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

10) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Knight Piésold CONSULTING

11) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the technical report.

Dated this 30th day of July, 2004.

PROFESSIONAL PROVINCE OF K. J. BROUWER BRITISH COLUMBIA ENGINEER

Ken J. Brouwer, P. Eng.

CERTIFICATE OF QUALIFICATION

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I, Richard G. Killam, P. Eng., am a Professional Engineer of Knight Piésold Ltd. of 1400 – 750 West Pender Street, in the City of Vancouver in the Province of British Columbia.

I am a member of the Association of Professional Engineers and Geoscientists of British Columbia. I graduated from the University of British Columbia with a Bachelor of Applied Science degree in Metallurgical Engineering in 1971 and I have practiced my profession continuously since 1973.

Since 1973, I have been involved in: mine development, operations, environmental assessment and management projects for copper, molybdenum, tungsten, gold and silver in Canada, Chile, Costa Rica, Papua New Guinea, Peru, the United States and Venezuela.

I am presently a Vice-President Environment and have been so since February 2004.

As a result of my experience and qualification, I am a Qualified Person as defined in NI 43-101.

On the 6th of July 2004, I most recently visited the Morrison / Hearne Hill Project in British Columbia for the purposes of reviewing environmental matters pertaining to the environmental impact assessment and regulatory approval process for mine development.

The environmental assessment program section of this preliminary assessment report was prepared by me.

I am not aware of any material fact or material change with respect to the subject matter of this preliminary assessment report, which is not reflected in this technical report, the omission to disclose which would make this report misleading.

I am independent of the issuer in accordance with the application of Section 1.5 of National Instrument 43-101.

I have read National Instrument 43-101, Form 43-101FI and the environmental assessment program section of the preliminary assessment report has been prepared in compliance with NI 43-101 and Form 43-101FI.

Dated at Vancouver, British Columbia, this 5th day of August 2004.

Richard G. Killam, P.Eng.

SECTION 18.0

APPENDICES

(Included on the enclosed CD)

APPENDIX 1
FEASIBILITY PROPOSAL

APPENDIX 2
RESOURCES

APPENDIX 3
PRODUCTION RATE COMPARISON

APPENDIX 4
ELECTRICAL

APPENDIX 5
WASTE DISPOSAL

APPENDIX 6
COMPARISON OF TRANSPORTAION OPTIONS

APPENDIX 7
CAPITAL AND OPERATING COSTS

APPENDIX 8
MARKETING SELDON REPORT

APPENDIX 9
ENVIRONMENTAL REPORTS