43-101 Technical Report

Mount Polley Mine
2004 Feasibility Study

Likely, B.C., Canada

Imperial Metals Corporation
Vancouver, B.C., Canada

by

Greg Gillstrom, P.Eng
Geological Engineer
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Aug 1, 2004

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Imperial Metals

Aug 1, 2004

J. Brian Kynoch
Imperial Metals Corporation
200-580
Hornby Street
Vancouver, BC
V6C 3B6

Dear Mr. Kynoch:

Re: Technical Report Mount Polley Mine 2004

Please find attached the Technical Report you requested updating the technical aspects of the Mount Polley Mine with respect to the new resource/reserve statement and the Feasibility Study for the property. The mining plan summarized in this report is based on the 2004 Mount Polley feasibility study, which was produced by Imperial Metals and Mount Polley staff.

I am the Qualified Person responsible for the report's preparation in accordance with National Instrument 43-101.

Sincerely,

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA G. O. GILLSTROM

Greg Gillstrom, P.Eng,

CERTIFICATE OF AUTHOR

Greg Gillstrom, P.Eng
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I, Greg Gillstrom, am a registered Profession Engineer with the Association of Professional Engineers and Geoscientist of British Columbia.

I graduated from the University of British Columbia with a Bachelor of Applied Science in Geological Engineering in 1990, and from the British Columbia Institute of Technology with a Diploma of Technology in Electrical Engineering in 1984.

I have been practicing my profession continuously since graduating from UBC. I have been involved in numerous exploration and mining projects, mostly in base and precious metals. As a result of my experience and qualifications, I am a Qualified Person as defined in N.I. 43-101.

I was employed as the Chief Mine Geologist at the Mount Polley mine from September 1999 to suspension in September 2001. I was rehired by the Mount Polley Mining Corporation in January of 2004 to assist in the reopening of the Mount Polley Mine. A majority of the geological work and verification of the data contained in this report is based on my work done as Chief Geologist at the Mount Polley mine. The 2004 Feasibility Study presented in this report was produced as a team effort by Mount Polley and Imperial metals engineering and metallurgical staff.

Major Contributors to this report:

- Greg Gillstrom, Geological Engineer, Mount Polley Mining Corporation.
- Howard Bradley, Mine Manager, Mount Polley Mining Corporation.
- Art Frye, Senior Mining Engineer, Mount Polley Mining Corporation.
- Jack Zuke, Maintenance Super., Mount Polley Mining Corporation
- Tim Fisch, Mill Super., Mount Polley Mining Corporation
- Brock Taplin, Senior Metallurgist, Mount Polley Mining Corporation.
- André Deepwell, Chief Financial Officer, Imperial Metals Corporation.
- Pat McAndless, VP Exploration, Imperial Metals Corporation.
- Steve Robertson, Senior Geologist, Imperial Metals Corporation.
- David Pow, DJP Consulting

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1 Summary

1.1 Summary Introduction

This report has been written to conform to the specification outlined in NI 43-101F1, for the Standards of Disclosure for Mineral Projects as required in National Instrument 43-101. Greg Gillstrom, P.Eng. is the Qualified Person responsible for the report's preparation in accordance with National Instrument 43-101. This report presents a summary of the 2004 Mount Polley Feasibility report prepared by Imperial Metals and Mount Polley Technical Staff.

The 100% owned Mount Polley open pit copper-gold mine is one of Imperial Metals Corporation's principal mineral properties. It is located in central British Columbia, 56 kilometres northeast of Williams Lake. A general location map is shown in Figure 1.1. The property consists of a mineral lease covering 483 hectares and 25 mineral claims and one fractional claim comprising a total of 344 units encompassing approximately 8,908 hectares. An aerial view of the site shows the relative proximity of site facilities in Appendix D.

Mount Polley is a porphyry copper-gold deposit hosted within intrusion and hydrothermal breccia in diorite, plagioclase porphyry and lapilli crystal tuff. The principal copper-bearing mineral is chalcopyrite but numerous other copper minerals are present, especially in the oxidized zones. The other minerals include bornite, malachite and azurite. Gold is present principally as inclusions in copper sulphides and as free liberated grains.

In late May 1996, construction of an 18,000 tonne per day mine and milling facility began at the Mount Polley site. Construction at Mount Polley was completed in June of 1997. The plant start-up took place in late June with the plant rising towards design capacity by the end of 1997.

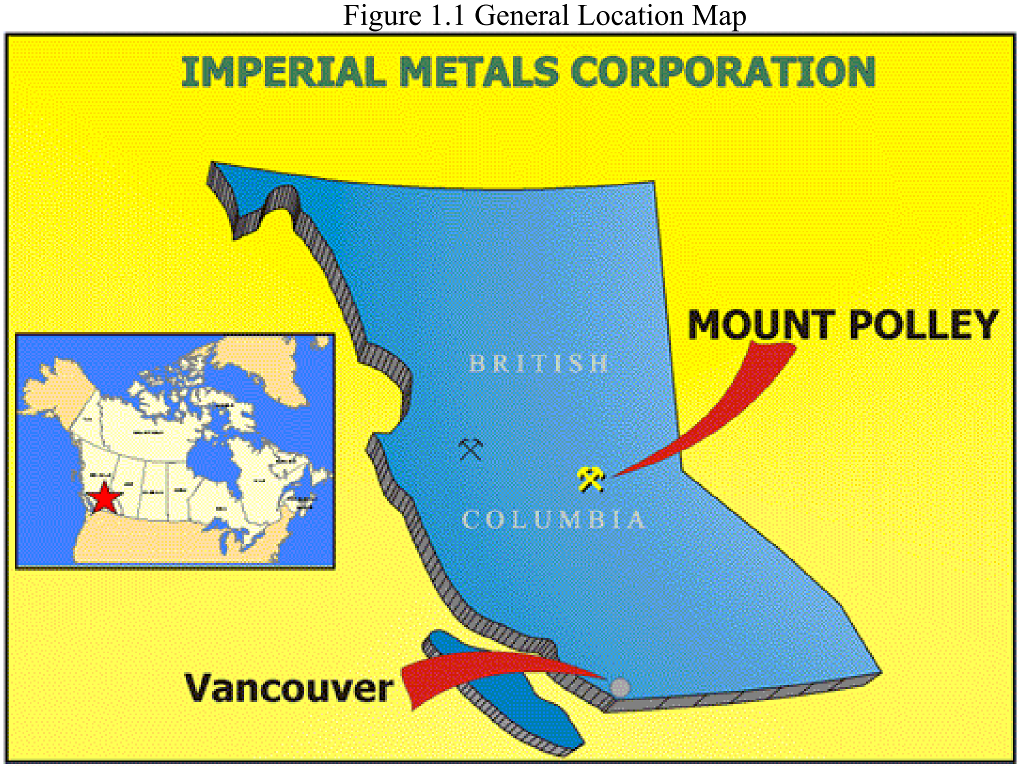
Mining operations continued from the Cariboo and Bell pits through September 2001 when operations were suspended due to continued low metal prices. At that time, the mine facilities were placed on care and maintenance.

An in-depth review of potential exploration targets was undertaken subsequent to the suspension of operations. A consequent trenching and diamond drilling exploration program resulted in the discovery of the high-grade copper Northeast Zone deposit. The positive results from the ensuing in-fill drilling program coupled with increased metals prices have improved the economics of resuming operations at Mount Polley. The proposed pit in this new zone will be named after the late George Wight, who was the Mine Manager at Mount Polley from 1996 to 2003.

In order to restart operations as soon as possible, a new Feasibility Study was undertaken in the spring of 2004. The purpose of this report is to confirm that a restart of operations at Mount Polley is viable at this time, based on resources in place at the time of suspension of operations in 2001 together with the resources identified by exploration in the period from August 2003 through May 2004. This study details the start-up and life of mine plan for resumption of operations. Exploration on the property is ongoing and continues to outline additional resources that will be incorporated in the mine plan at the appropriate time. As such, this report should not be used as a definitive measure of the ultimate economic potential of the Mount Polley project.

This study is now complete and confirms the viability of restarting operations at Mount Polley mine. The 2004 Mount Polley Mine Feasibility Study presented in this report is based on a six and one quarter year mine life. During this plan, 40.7 million tonnes of ore and 101.6 million tonnes of waste will be mined from three pits. Mining will begin in the Bell and Wight pits, and then continue in the Springer Pit in the middle of the second year. Conventional ore processing will occur in the existing mill that has been well looked after under care and maintenance since suspension of operations in 2001. Mine site personnel will total between 225 and 250 personnel during peak operations.

Figure 1.1 General Location Map



1.2 Reserves

Approximately 27.7 million tonnes of ore, grading 0.563 g/mt gold and 0.332% copper were mined at Mount Polley prior to suspension of operations. Based on drilling information available, Proven and Probable Reserves are as follows:

Table 1 Mount Polley Proven and Probable Reserves

Mount Polley Proven and Probable Reserves					
Zone	**Tonnes Ore**	**Waste Tonnes**	**Copper%**	**Gold g/t**	**Silver g/t**
Wight	6,202,814	19,768,525	0.978	0.324	6.978
Bell	9,784,689	19,606,929	0.264	0.297	n/a*
Springer	24,733,044	62,278,289	0.362	0.310	n/a*
Total	**40,720,547**	**101,653,743**	**0.432**	**0.309**	**n/a***

These reserves have been calculated and reviewed by Greg Gillstrom, P. Eng., Chief Geologist, an employee of Mount Polley Mining Corporation, and who has been designated as its Qualified Person for this purpose. The reserves are calculated at metal prices of US$1.10 per pound of copper, US$400 troy ounce of gold and US$6.00 troy ounce of silver and an exchange rate of US$0.75. Anticipated mine operations, off-site handling costs and metal recoveries were included in the evaluation. These costs and recoveries were based on actual data from Mount Polley operating history updated with current cost information and additional laboratory test work.

1.3 Mining

Prior to suspension of operations 55.0 million tonnes of material were mined from the Cariboo and Bell pits of which 27.7 million tonnes were ore. While in operation the mine segregated and stockpiled low-grade material in response to the low metal prices. Currently there are 2.66 million tonnes of low-grade material grading 0.220% copper and 0.306 g/mt gold and 208,000 tonnes of high-grade material grading 0.285% copper and 0.420 g/mt located in the stockpile for future processing. This stockpiled ore along with the ore quantities discussed in Section 2.4 constitutes the tonnes to be mined/milled in the Feasibility Study. The mine and mill facilities and location of ore stockpiles are shown in Appendix D.

Conventional open pit mining operations were performed at Mount Polley with two P&H 2100 shovels, two Cat 992 front end loaders and nine Cat 777B haul trucks assisted by a suite of electric drills, bulldozers and other assorted equipment. Since suspension of operations six Cat 777B haul trucks and one P&H 2100 shovel have been sold from the original mining fleet.

Based on updated pit designs and mine scheduling an upgraded equipment fleet is envisioned for the reopening of Mount Polley. This is discussed further in Section 3, Mining.

1.4 Milling

When operations were suspended, orderly shutdown procedures were followed, and the mill was maintained on standby pending an improvement in metal prices. During the last year of operation, January to September 2001, the concentrator processed a total of 5.4 million tonnes grading 0.335% copper and 0.52 g/t gold. Metal recoveries were 75.4% for copper and 73.8% for gold into 58,100 dry metric tonnes of concentrate grading 23.7% Cu and 35.8 gm/t gold.

Mill performance after start-up is expected to be more varied than that seen in the past. The average mill feed grade from the new Wight Pit runs 0.98% copper and 0.32 gm/t gold, with little or no oxide copper content. The Springer Pit has more traditional feed grades, at 0.36% copper and 0.31 g/t gold, and variable oxide copper content. Bell Pit ore has the lowest heads, at 0.26% copper and 0.30 g/t gold. Spot production from any of these sources can be significantly above or below these averages. Recovery will range from traditional levels for some of the Springer Pit ore up to 89.9% copper and 90.1% gold for Wight Pit ore.

In order to handle the range of feed without negatively affecting mine planning, the mill equipment will be reconfigured and supplemented to be able to handle copper heads of up to 1.0% copper at a target throughput of 20,000 tonnes per day. This will require expansion of flotation and concentrate dewatering areas in the mill.

1.5 Environmental

There were no environmental compliance issues during operations from 1997 through September 2001, nor have there been any compliance issues subsequent to suspension of operations. All environmental issues have already been addressed and permits are in place for resumption of mining and processing activities for the Bell and Springer pits.

A permit amendment application will be submitted for mining activities in the Wight Pit. A number of studies by outside consultants were completed during the preparation of the permit amendment application; an acid rock drainage, metal leaching study of the rocks and an archaeological review of the pits, access and overburden storage areas was performed with nothing of interest noted. A soil survey of these same areas was performed and a Wildlife and Species at Risk review was accomplished with no issues noted.

1.6 Production Statistics

Production statistics shown below show mine performance prior to suspension and estimates for the first two scheduled years of production following resumption of operations.

Table 1.6 Mount Polley Production Statistics

	1999	2000	2001 (9 months)	Yr. 1 Prod	Yr. 2 Prod
Ore milled (tonnes x 1000)	7,090	6,950	5,386	6,725	6,869
Ore milled per calendar day (tonnes)	19,426	18,988	17,716	18,425	18,819
Ore milled per operating day (tonnes)	21,299	20,683	17,716	20,195	20,628
Grade (%) – Copper	0.343	0.317	0.335	0.358	0.468
Grade (g/mt) – Gold	0.566	0.493	0.521	0.270	0.311
Recovery (%) – Copper (total Cu)	69.35	70.39	75.41	85.00	88.00
Recovery (%) – Gold	77.40	75.46	73.83	83.00	87.00
Copper produced (lbs x 1000)	37,100	34,181	29,968	45,082	62,659
Gold produced (ounces)	99,585	83,194	66,593	48,637	59,727

1.7 Exploration

In the final year of mining (2001), a total of 170 percussion holes for 9,421 metres and 41 core holes totalling 6,696 metres were completed on the Bell, Cariboo, Springer, and North Springer zones. This drilling was successful in discovering and defining high-grade copper/gold mineralization in the North Springer Zone. The drilling also helped infill the gaps in the central and south Springer. A majority of the Springer drill cuttings from these zones, were used for metallurgical test work.

In August 2003, Imperial Metals discovered a new copper-gold zone by prospecting north of the Bell Pit. The new discovery, named the Northeast Zone, is approximately 1.5 kilometres northeast from the partially mined Bell Pit. Trenching and drilling have revealed a mineralized hydrothermal breccia which has so far outlined over a strike length of 350 metres. This breccia remains open along strike to the southeast and to the northwest. Related breccias continue in all other directions, enhancing the potential for further discoveries. A total of 81 new drill holes were completed in this zone by May 31, 2004 and drilling continues. The proposed pit in this new zone will be named the Wight

Pit after the late George Wight, the Mine Manager at Mount Polley between 1996 and 2003.

In 2003 and 2004 (up to May, 2004), 44 new holes were drilled in the Bell and Springer zones, the results of which are incorporated into the new ore reserve estimate. An extensive exploration program is planned for the Mount Polley property during the summer of 2004, including property mapping, geophysics, trenching and follow up drilling.

2 Introduction and Terms of Reference

This report has been prepared by Imperial Metals Corporation to update the previously published 2002 43-101 technical report.

The scope of work for this study includes the following:

- Preparation of a feasibility study for the proposed re-opening of the Mount Polley Mine based on currently achievable metal prices, recoveries and capital/operating cost estimates
- Utilize the engineering and operating experience of Mount Polley employees and outside professional consultants to estimate the ore reserves, capital and operating cost estimates for refurbishing and opening the mill and mine and financial analysis of the project.

Greg Gillstrom, P. Eng., served as the Qualified Person responsible for the preparation of this report as defined in National Instrument 43-101.

The Author, Greg Gillstrom P.Eng was the Chief Mine Geologist at the Mount Polley Mine from September 1999 to suspension of operations in September 2001, and is presently an employee of the Mount Polley Mining Corporation.

3 Disclaimer

A majority of the geological work and verification of the data contained in this report is based on work done by the author during his employment as Chief Geologist at the Mount Polley mine.

Art Frye (Senior Engineer, Mount Polley Mining Corporation) provided technical assistance in block modeling and calculating the new ore reserve and resources in the report.

Information and calculations with regards to the mining, metallurgy, and environmental issues contained in this report were produced as a team effort by the:

Major Contributors to this report:

- Greg Gillstrom, Geological Engineer, Mount Polley Mining Corporation.
- Howard Bradley, Mine Manager, Mount Polley Mining Corporation.
- Art Frye, Senior Mining Engineer, Mount Polley Mining Corporation.
- Tim Fisch, Mill Super., Mount Polley Mining Corporation.
- Jack Zuke, Maintenance Super., Mount Polley Mining Corporation.
- Brock Taplin, Senior Metallurgist, Mount Polley Mining Corporation.
- André Deepwell, Chief Financial Officer, Imperial Metals Corporation.
- Pat McAndless, VP Exploration, Imperial Metals Corporation.
- Steve Robertson, Senior Geologist, Imperial Metals Corporation.
- David Pow, DJP Consulting.

4 Property Description and Location

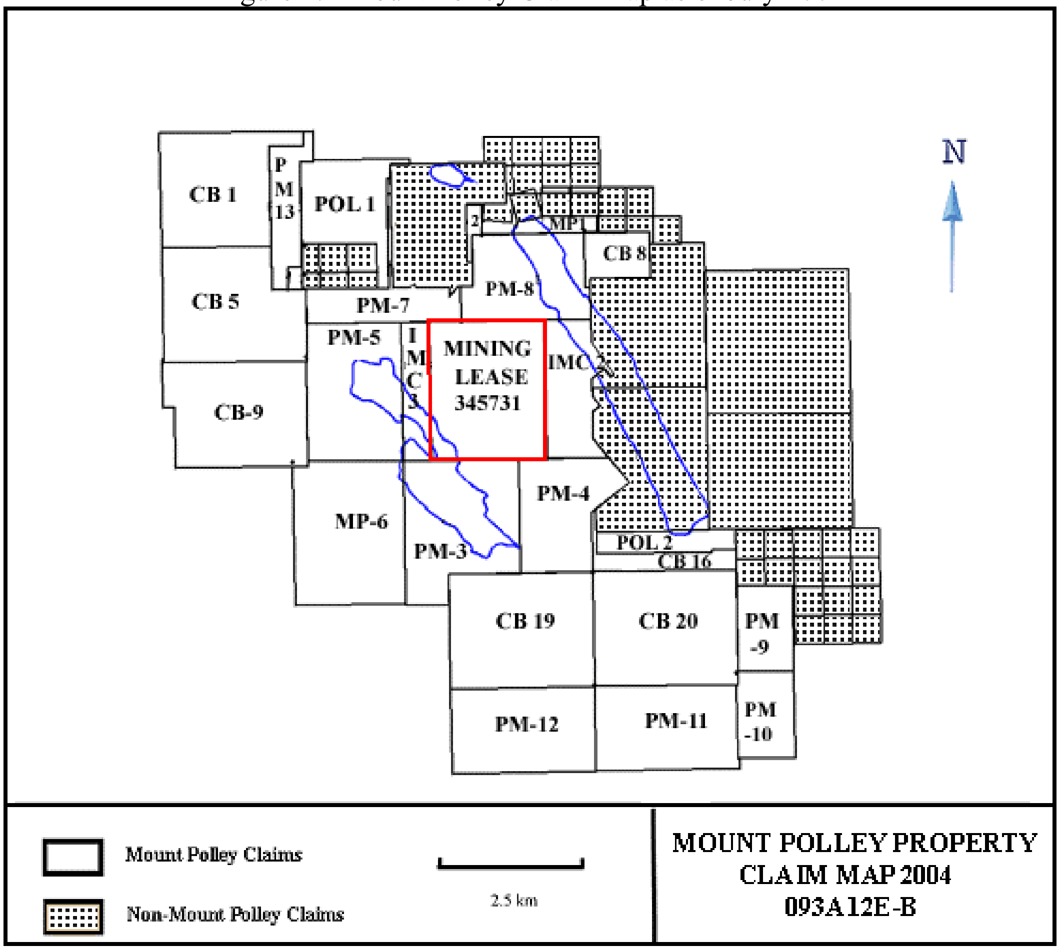
4.1 Location and Claim Status

The Mount Polley mine is located 56 kilometres northeast of Williams Lake, BC, on NTS Mapsheet 93A/12. The Mount Polley property consists of twenty-six mineral claims, one fractional claim, and one mining lease, with 349 units (Figure 4.1). The Mining Lease (3457310) covers 483 hectares. Mount Polley Holding Company Limited ("MPHCL"), a wholly owned subsidiary of Mount Polley Mining Corporation, owns all claims. A legal survey of the PM-8 mineral claim in 2003 has changed the border locations of this claim. See Section 15 for details.

Table 4.1 Status of Claims July 2004

TITLE NAME	TITLE #	UNITS	TYPE	RECORD DATE	EXPIRY DATE
MINING LEASE NO. 345731	345731	1	ML	22-Aug-96	22-Aug-26
POL 2	411010	5	MC4	22-May-04	22-May-05
POL 1	392620	20	MC4	10-Apr-02	08-Apr-06
POL 5	392622	1	MC2	11-Apr-02	08-Apr-06
MP 1	407181	4	MC4	05-Dec-03	08-Apr-06
MP 2	407182	3	MC4	07-Dec-03	08-Apr-06
POL 4	392621	1	MC2	11-Apr-02	08-Apr-06
CB 9	204474	20	MC4	04-May-81	09-Apr-12
CB 19	204476	20	MC4	04-May-81	09-Apr-12
CB 20	204477	20	MC4	04-May-81	09-Apr-12
PM-13	207244	12	MC4	26-Sep-90	09-Apr-12
PM-11	206800	15	MC4	23-Feb-90	09-Apr-12
CB 16	204475	20	MC4	04-May-81	09-Apr-12
PM-9	206798	6	MC4	23-Feb-90	09-Apr-12
PM-7	206452	12	MC4	17-Sep-89	09-Apr-12
PM-6	206451	20	MC4	29-Sep-89	09-Apr-12
PM-12	206801	15	MC4	21-Feb-90	09-Apr-12
PM-10	206799	6	MC4	23-Feb-90	09-Apr-12
PM-3	206448	20	MC4	17-Sep-89	09-Apr-12
PM-4	206449	20	MC4	14-Sep-89	09-Apr-12
CB 5	204472	20	MC4	04-May-81	08-Apr-13
IMC 4 FR.	340020	1	MCF	22-Sep-95	08-Apr-13
IMC 3	340019	5	MC4	22-Sep-95	08-Apr-13
IMC 2	340018	15	MC4	21-Sep-95	08-Apr-13
PM-8	206453	20	MC4	17-Sep-89	08-Apr-13
CB 8	204473	8	MC4	04-May-81	08-Apr-13
CB 1	204470	20	MC4	04-May-81	08-Apr-13
PM-5	206450	20	MC4	29-Sep-89	08-Apr-13
POL 2	411010	5	MC4	22-May-04	22-May-05

Figure 4.1 Mount Polley Claim Map as of July 2004



5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Mount Polley mine is located in south-central British Columbia, eight kilometres southwest of the village of Likely and 56 kilometres northeast of Williams Lake, on NTS Mapsheet 93A/12 at latitude 52° 33' N and longitude 121° 38' W.

Road access from Williams Lake is 15 kilometers southeast on Highway 97 to 150 Mile House, 76 kilometres north on the Likely Highway to Morehead Lake, and then 12 kilometres east on the unpaved Bootjack Forest Access Road to the mine site. Other forestry and mining roads afford good access to most parts of the property.
Travel time from Williams Lake is approximately 75 minutes

The property sits near the eastern edge of the Fraser Plateau physiographic sub-division, which is characterized by rolling topography and moderate relief. Elevations range from 920 meters at Polley Lake to 1266 metres at the summit of Mount Polley.

Forest cover consists of red cedar, Douglas fir and sub-alpine fir, with lesser black cottonwood, trembling aspen and paper birch. Much of the area has been clear-cut by commercial logging.

Mean monthly temperatures range from 13.7°C in July to –10.7° in January. Precipitation averages 755 mm with 300 mm falling as snow.

6 History

6.1 Ownership and Exploration History

The Mount Polley deposit was first discovered as a result of follow-up prospecting of an aero magnetic anomaly highlighted on a government aeromagnetic map sheet issued in 1963. Mastodon Highland Bell Mines Limited and Leitch Gold Mines first staked claims in 1964. In 1966 the two companies merged to form Cariboo-Bell Copper Mines Limited. The property was mapped, soil and geochemical surveys, and air-borne and ground-bases geophysical surveys were conducted. This was followed by bulldozer trenching and drilling.

In 1969 Teck Corporation assumed control of Cariboo-Bell. During the period from 1966 to 1972 at total of 18,341 metres of core drilling and 8,553 metres of percussion drilling was completed in 215 holes. In 1970 magnetic, seismic and induced polarization (IP) surveys were conducted. Teck continued to work the property in 1972, 1973 and 1975. In 1978 Highland Crow Resources, an affiliate of Teck, acquired control. In 1979 Teck completed six percussion holes for 354 metres.

In 1981 E&B Explorations Inc. optioned the property from Highland Crow and completed 1,746 metres of core drilling, 1,295 metres of rotary drilling, and soil geochemical and ground control surveys. In 1982 E&B acquired a 100% interest and continued to work the property with joint venture partners Geomex Partnerships and Imperial Metals Corporation. From 1982 to 1987 E&B completed soil geochemistry, magnetic, VLF-EM and IP surveys, geological mapping, 3,585 metres of core drilling and 4,026 metres of reverse circulation drilling.

In 1987, Imperial Metals purchased the remaining interest in the property from Homestake Canada and others. E&B had merged with Mascot Gold Mines that subsequently merged with Corona Corporation and finally became Homestake Canada. During the period between 1988 and 1990, Imperial Metals Corporation conducted a comprehensive exploration program consisting of 238 core holes totaling 27,566 metres, the collection of six bulk samples from surface trenches totaling 130 tonnes, geological mapping and IP surveys.

In 1990 Wright Engineers completed a Feasibility Study that incorporated new ore reserve calculations, metallurgical testing, geotechnical evaluations, and environmental impact assessments. In 1992, Imperial Metals bought the Geomex Partnerships consolidating ownership of the property in one Company. During 1993-1994, Theresa Fraser from the University of British Columbia completed a Masters thesis on the geology, alteration, and origin of hydrothermal breccias on the deposit. The focus of the study was to document data important to aspects of the genesis of the deposit, particularly breccia distribution, breccia types, distinctive matrix minerals and alteration.

In 1994, Gibraltar Mines Ltd., under an option agreement with Imperial Metals, drilled seven core holes for 1,216 metres. Upon evaluation of the project, Gibraltar declined further participation. Following a merger with Bethlehem Resources Corporation in 1995, Imperial completed an in-house Feasibility Study. Financing was arranged with Sumitomo Corporation through a joint venture with SC Minerals Canada that culminated in the formation of Mount Polley Mining Corporation in April 1996.

In 1995 Mount Polley Mining Corporation drilled five core holes for 884 metres to be used for metallurgical test work. Eleven core holes for 1,773 metres tested on-site exploration targets outside the proposed pit limits, including the Kay Lake Basin area and the Road Zone. Seven rotary holes for 932 metres were drilled to source and monitor groundwater near the mill and between the pits and adjacent lakes: these holes were also logged and assayed. A soil geochemistry survey was conducted over a six line-kilometre grid.

In 1996, seven core holes for 992 metres were drilled in areas peripheral to the proposed pits, such as the Road Zone, the Northwest Zone and the S Zone. Lithogeochemical samples were collected from road cuts and new bedrock exposures.

In 1997, fifteen core holes for 1,614 metres were drilled to define the margins of the Cariboo Pit and 17 percussion holes for 702 metres were drilled to provide better ore definition for mine planning. Surface and pit wall geological mapping east of and in the Cariboo Pit were conducted concurrently. Three water well holes for 351 metres were drilled to provide source water for milling and mining operations. Rock chip samples from new road cuts were collected and analyzed.

During 1998, nine core holes for 1,993 metres were drilled within and along the margins of the Cariboo Pit. These holes were designed to prove continuity of mineralization to depth, to determine the orientation of mineralization, to provide definition in under-drilled areas and to determine rock quality for pit design. Core from previously drilled holes within the Cariboo Pit area was relogged and reinterpreted.

In 1999, thirty-three percussion holes for 1,385 metres and eighteen core holes for 4,067 metres were completed. The percussion holes tested for near-surface ore reserves southeast of the Cariboo Pit. The core holes were drilled in the Bell Pit area to test for mineralization to the north and east and to depth, in the Cariboo Pit to test high-grade mineralization at the south end of the pit, and to test targets south of the Cariboo Pit that resulted in the discovery of the C2 Zone. Core from previously drilled holes within the Bell Pit and Cariboo Pit areas was relogged and reinterpreted. The surface geology of the Bell Pit area was mapped.

In 2000, a total of 226 percussion holes for 10,653 metres and 26 core holes of 4,875 metres were completed. The areas that received work were the 207, Bell, C2, Cariboo, MP-071, Road, Rad, Southeast and Springer zones. This drilling was successful in defining previously discovered copper and gold mineralization in the C2/207 and

Southeast zones, and in discovering high-grade copper mineralization north of the proposed Springer Pit.

In 2001, a total of 170 percussion holes for 9,421 metres and 41 core holes of 6,696 metres were completed. The areas that received work were the Bell, Cariboo, Springer, and North Springer zones. This drilling was successful in discovering and defining new high-grade copper and gold mineralization in the North Springer Zone and helped infill the gaps in the central and south Springer. A majority of the Springer drill cuttings from these zones were used for metallurgical test work. The drilling results from the Cariboo and the Bell zones facilitated short and long range production planning.

In August 2003 Imperial discovered a new copper and gold zone by prospecting north of the Bell Pit. The newly discovered Northeast Zone, is approximately one and a half kilometres northeast of the partially mined Bell Pit

6.2 Mining History

In late May 1996, construction of an 18,000 tonne per day mine and milling facility began at the Mount Polley site. Construction at Mount Polley was completed in June of 1997. The plant start-up and commissioning took place in late June with the plant rising towards design capacity by the end of 1997. Mining continued until September of 2001, when operations were suspended due to low metal prices. See Table 1.6 for a list of the Mount Polley Production Statistics from 1997 to 2001.

7 Geological Setting

The Mount Polley mine is located in south-central British Columbia, eight kilometres southwest of the village of Likely and 56 kilometres northeast of Williams Lake, on NTS Mapsheet 93A/12 at latitude 52° 33' N and longitude 121° 38' W.

Road access from Williams Lake is 15 kilometres southeast on Highway 97 to 150 Mile House, 76 kilometres north on the Likely Highway to Morehead Lake, and then 12 kilometres east on the unpaved Bootjack Forest Access Road to the mine site. Other forestry and mining roads afford good access to most parts of the property. Travel time from Williams Lake is approximately 75 minutes.

The property sits near the eastern edge of the Fraser Plateau physiographic sub-division, which is characterized by rolling topography and moderate relief. Elevations range from 920 metres at Polley Lake to 1266 metres at the summit of Mount Polley.

Forest cover consists of red cedar, Douglas fir and sub-alpine fir, with lesser black cottonwood, trembling aspen and paper birch. Much of the area has been clear-cut by commercial logging.

Mean monthly temperatures range from 13.7°C in July to –10.7°C in January. Annual precipitation averages 755 mm with 300 mm falling as snow.

The Mount Polley deposit is hosted in an alkalic intrusive complex within the Central Quesnel Belt (CQB), a part of Quesnellia extending along the eastern margin of the Intermontaine Belt in south-central British Columbia. The CQB is composed of Upper Triassic to Lower Jurassic sedimentary and volcanic rocks of island arc and oceanic origin extending along the western margin of the Omineca Crystalline Belt. The Nicola Group rocks are thought to have formed in a Late Triassic volcanic arc, east of a subduction-accretion complex.

Stocks within the CQB are interpreted to be coeval with the more broadly distributed volcanic rocks, likely as volcanic centers; northwest-trending faults appear to control the emplacement of these centers. The Polley Stock, (dated at 202 Ma and composed of syenite, monzonite, monzodiorite and diorite), intrudes Nicola Group volcanics and alkali basalts.

8 Deposit Types

Mount Polley is an alkalic porphyry copper-gold deposit. The deposit is hosted within the Polley Stock, a north westerly, elongated stock approximately five kilometres long that occurs between Bootjack and Polley lakes. The stock is a multi-phase pluton with a composition ranging from diorite through monzonite to porphyritic monzonite.

The orebodies consists of intrusion and hydrothermal breccias as well as porphyritic dykes related to monzonitic intrusions. The core of the system consists of the Cariboo, Bell and Springer deposits, which are truncated in the west by the north-northwest striking Polley Fault. This fault separates mineralization into two sub-areas, the Central orebody and the West orebody. The Central area has been subdivided into the Cariboo, Bell, and C2/207 zones. The West area includes the South and Central Springer and the Springer North Extension zones.

The Northeast Zone, discovered in 2003, lies one and a half kilometres to the northeast of the main deposits, near the northern boundary of the Polley Stock with the Nicola Group volcanics.

Lastly, a smaller deposit east of the Cariboo Pit, known as the Southeast Zone, was drilled in the 2000/01 exploration program.

Each zone has distinctive characteristics of mineralization, alteration, and oxidation, which affects its milling and metallurgical response.

9 Mineralization

9.1 Structure

There are four main phases of faulting in the Polley deposit. All are post mineralization, creating separate, mostly vertical, faulted blocks of copper/gold rich breccia. During mining, the ore-waste contacts in the Cariboo and Bell pits were found to be sharp and controlled by these structures. (See Figure 9.1)

The Polley Fault, a north-northwest trending structure, with a steep easterly dip, typifies the first phase of faulting. It is one of the largest structures in the deposit area and divides the Springer and the Cariboo pits. In the southwest corner of the Cariboo Pit, the fault consists of gougy fault breccia, clay gouge, and highly sheared and fractured rock over a maximum thickness of over fifty metres and likely represents late movement along an older regional fault structure. The Polley Fault also forms the western limit of the C2 Zone, in the south. Several other faults follow the same north/south trend, including the Cariboo and East Cariboo. The East Cariboo Fault defines the eastern edge of mineralization in the Cariboo and Bell pits.

The second phase of northwest-trending faults transects the Cariboo, Springer, Bell, and C2 deposits. These structures, including the Chrysocolla, Lower Oxide Boundary Fault, North Cariboo, and C2 Fault, tend to be highly fractured and gougy over several metres thickness. These structures form most of the in pit “ore type” boundaries.

A third phase of east/west trending faults forms the southern boundary of the Cariboo and the Springer pits. Examples include the Cariboo and Springer South Boundary faults (Ian’s fault) and Bell Diorite Fault.

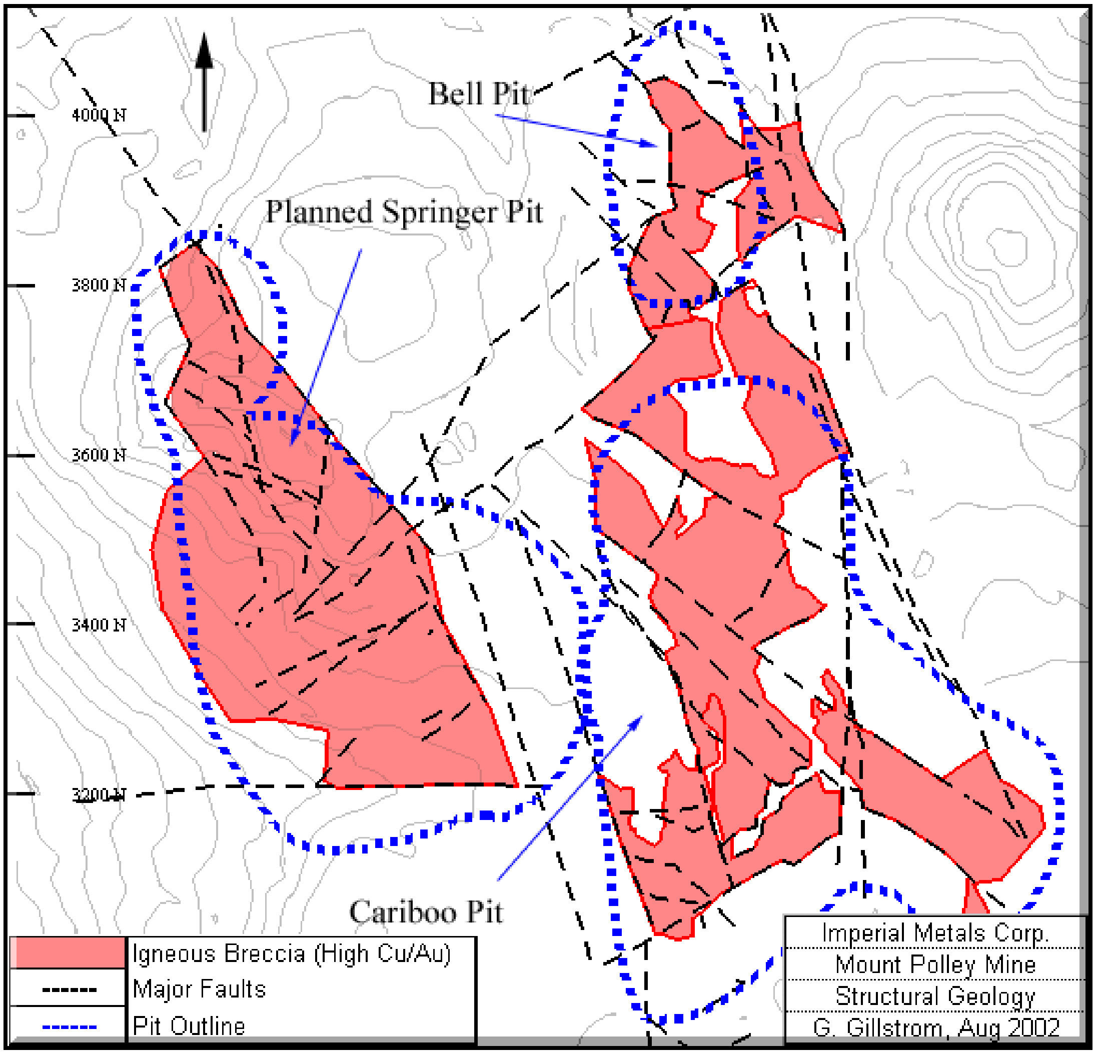
A final, late stage of north/south trending faults, cross most of the geological and structural boundaries in all zones. These structures are infilled with distinctive green augite porphyry dykes and are found everywhere on the property. Experience in mining the Cariboo Pit showed these dykes perch ground water between them, hampering production drilling. It was found that laying the first blast pattern on each bench across these dykes and breaking them up, was successful in helping dewater the bench.

In the Northeast Zone mineralization appears to be localized to a SE-NW trending, steep-sided body hosted in intrusion breccia and associated dykes. Three dimensional modeling based on drill hole data suggests the body tapers downwards and dikes are generally north-south trending. Post-mineral faults are generally narrow (less than a metre) and marked by rubble or gouge, and commonly coincide with dyke margins. A sheared augite porphyry (AP) dyke marks the termination of chalcopyrite mineralization and the northeast boundary of the deposit. Faulting oblique or transverse to the trend of the Northeast Zone may be more significant, however, and possibly responsible for apparent horizontal and vertical offsets identified in drill core and geophysical interpretations.

Recent mapping has provisionally identified shear fractures with a variety of trends from northeast to east, with sub-horizontal slip indicators, which could be implicated in post-mineral displacements. Preliminary mapping and trenching over the Northeast Zone has revealed a set of sub-vertical fractures trending approximately north. Northeast Zone rocks are strongly fractured and drilling breaks along veinlets and chlorite-hematite fractures are common.

At present not much is known about the genesis of the Northeast Zone but the area is currently the focus of an extensive exploration program involving diamond drilling, trenching, geophysical surveys (IP and seismic), and detailed surface mapping.

Figure 9.1 Structural Geology of the Core Mount Polley Zones



9.2 Waste Rock Characterization Common To All Zones (Pits)

The types of waste rock common to all zones chiefly consist of diorite, monzonite, plagioclase porphyry, and augite porphyry dykes. Other minor lithologies include volcanic breccias and tuffs, porphyritic augite monzodiorite, and biotite lamprophyre dykes.

- **Monzonite** forms most of the east, west and north walls of the Cariboo Pit, the south and east walls of the Bell Pit, and the west and south walls of the Springer Pit. Monzonite may be a major constituent of the projected waste in the Northeast Zone. This unit is a relatively fresh, white-grey/pink-grey, medium-grained (1-3 mm), equigranular to weakly feldspar-phyric intrusive. It is composed of potassium feldspar and plagioclase feldspar (mostly albite and orthoclase) with accessory minerals including magnetite, augite, biotite, calcite, apatite and epidote.
- **Plagioclase Porphyry Monzonite** forms the south wall of the Cariboo and Springer pits and is distributed as elongate faulted blocks in the Bell Pit. It is the most common rock type in the Northeast Zone bounding all sides of the known deposit. This unit is a fresh, grey intrusion with a medium-grained monzonitic groundmass and white plagioclase phenocrysts. The rock has a moderate to intense porphyritic texture. Porphyries in the Northeast Zone are generally finer grained and less crowded than in the core of the Mount Polley Stock, including potassium feldspar-phyric dykes.
- **Diorite** occurs at the center of the Cariboo Pit in three distinct structurally controlled blocks, and forms the west wall in the Bell Pit, and the north wall in the Springer Pit. To date, no diorite has been observed in the Northeast Zone. The unit is a fresh, blue-grey/salt-and-pepper, fine to medium-grained, equigranular to weakly porphyritic intrusion. It is mostly composed of plagioclase feldspar with minor pyroxene; accessory minerals include magnetite, biotite, calcite and apatite.
- **Volcanics** occur as a shallow faulted block in the center of the Bell Pit. The unit is fresh, dark green/grey andesite with a fine-grained matrix. The matrix is mainly composed of pyroxene and plagioclaseand occurs brecciated in some areas with rare sub-economic copper mineralization.
- **Augite Porphyry (AP) Dykes** occur as infillings in late stage north/south trending faulting. These distinctive green dykes cross most of the geological and structural boundaries in all zones. **(See Structure, Section 2.2.1, above for pit dewatering and blasting recommendations concerning these dykes)**

9.3 Cariboo Pit Ore Characterization

The Cariboo Pit was mined out in September of 2001.

In general, high-grade feed from the Cariboo consisted of pink, potassically altered breccia. Clasts within the breccia are angular and of varying lithology, ranging from black, fine-grained volcanic to grey, porphyritic intrusive; the matrix was medium-grained plagioclase porphyry monzonite. Plagioclase phenocrysts in the matrix were strongly clay-altered and texturally similar to those in the grey, unaltered plagioclase porphyry to the south of the pit. Veins and veinlets of calcite, epidote, actinolite and microcline, occured throughout the breccia, and were more abundant in more strongly mineralized rock.

Magnetite content within the breccia matrix was found to be highly variable depending on location and correlated strongly with copper and gold grades. Very high-grade (Cu-Au) magnetite pipes occurred in the South and East Lobe zones; these pipes were mistaken as supergene mineralization in the early stages of exploration.

Copper mineralization occurred mostly as disseminated chalcopyrite. Minor chalcopyrite also occurred in fractures and veinlets. Minor bornite and trace quantities of covellite, chalcocite and digenite were present in more strongly altered rock. Copper oxides (true oxides, carbonates and silicates) were present in varying quantities throughout the pit. Malachite/azurite occurred as powdery fracture-fill. Chrysocolla occurred in fractures, veinlets, and as blebs, and was most abundant only in a structurally controlled zone in the center of the pit.

Ore in the Cariboo Pit can be divided into four distinct zones: the South Zone, the Central Zone, the North Zone and the East Lobe Zone.

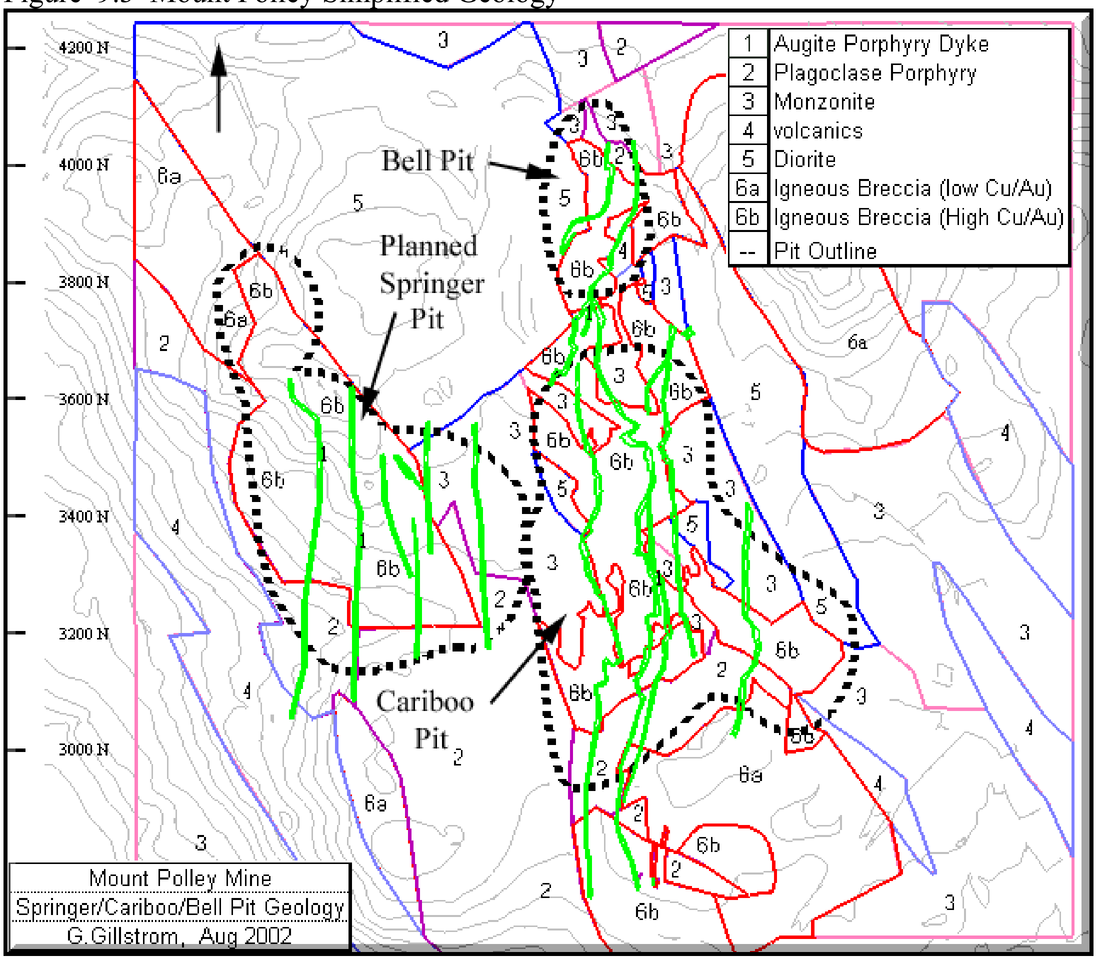
- The **South Zone** ore was moderately soft, more altered and relatively higher-grade, with larger blebs and veinlets of chalcopyrite. It had a moderate oxide to total copper oxide ratio of 10% to 30%. The ore had a moderate to high magnetite content and contained several post-mineralization, copper/gold-rich magnetite pipes. The magnetite pipes were two to five metres in diameter.
- The **Central Zone** was fault-bounded and highly oxidized. The ore was strongly altered with common secondary biotite. It had a moderate to high oxide to total copper ratio of 30% to 60%. Chrysocolla comprised 5% to 25% of the copper mineralization. The chalcopyrite was very finely disseminated.
- The **East Lobe Zone** ore had the highest copper-gold grades and magnetite content. The zone contained several large magnetite pipes (up to twenty metres in diameter), and in many areas the breccia matrix was composed entirely of magnetite. Copper mineralization occurred as disseminated and veined, and occasionally massive chalcopyrite. Minor quantities of bornite, chalcocite, covellite and digenite also occurred. It had a moderate oxide to total copper ratio

of 20% to 35%, but unlike the Central Zone, chrysocolla was rare. This zone was mined out in 2000, with the magnetite feeders having been truncated at depth. The main mineralization occurred between the 1140 and 1100 benches.

- The **North Cariboo Zone** ore was typically hard, with the breccia matrix appearing less altered than elsewhere in the Cariboo Pit. Mineralization occured as finely disseminated chalcopyrite; other copper sulphides were rare. It had a low oxide to total copper ratio of 2% to 10%. Chrysocolla was rare to absent.

The waste rock in the Cariboo Pit was composed of all phases of the Polley Stock, with approximately 40% monzonite, 30% plagioclase porphyry monzonite, 20% diorite, and 10% green augite porphyry (AP) dyke.

Figure 9.3 Mount Polley Simplified Geology



9.4 Bell Pit Ore Characterization

The Bell Pit was mined down to the 1120 metre elevation in September 2001.

The Bell Pit is separated from the Cariboo Pit by an unmineralized, fault-bounded, section of monzonite. The Bell Pit ore is typically hard, and like the North Cariboo Zone ore, the breccia matrix appears less altered than the other zones.

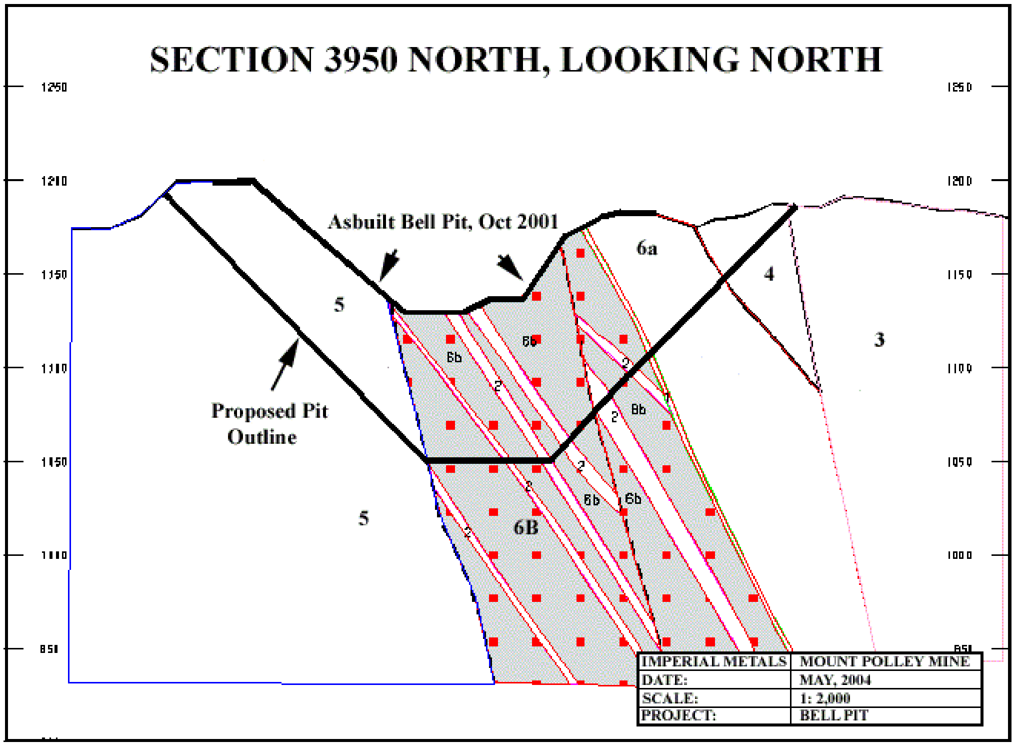
Mineralization occurs as fine to coarse disseminated and veined chalcopyrite. Other minor copper sulphides including bornite, chalcocite, covellite and digenite also occur. It has a low oxide to total copper ratio of two to ten percent. Chrysocolla is rare to absent. Most of the higher grade mineralization occurs in a band along the west wall diorite contact. This higher grade mineralization dips steeply to the east, and was, at the completion of mining in 2001, exposed on the 1120 bench floor.

Pyrite occurs (1% to 2%) along fractures in the north/central area of the pit, where the breccia is adjacent to a small block of fault bounded volcanic andesite. This elevated pyrite affected the concentrate grade during mining in 2001. The addition of lime to the mill flotation circuit was helpful in controlling this concentrate problem. The occurrence of this pyrite dropped significantly on the 1130 and 1120 benches of the Bell Pit, and is assumed to no longer pose a problem. This faulted zone has been in the past erroneously termed as a 'phyllic or pyrite halo', as described in the idealized Lowell and Guilbert Porphyry Model (1970), but is in fact still part of the potassic core of the Mount Polley deposit. The Mount Polley deposit more closely resembles the Diorite Porphyry Model (Holliter 1975, Evans 1980) than the Lowell and Guilbert model, as it lacks both the phyllic and argillic alteration phases.

> "*The diorite model deposits differ in a number of ways from the Lowell-Guilbert model; one of the main reasons is that the sulphur concentrations are relatively low in the mineralizing fluids. As a result, very little of the iron oxides in the host rock are converted to pyrite and most of the iron remains in the chlorites and biotites, while excess iron tends to occur as magnetite which may be present in all alteration zones"* (Evans 1980).

The waste rock in the Bell Pit is composed of approximately 50% diorite, 25% monzonite/plagioclase porphyry monzonite, 20% volcanic and 5% green AP dyke.

Figure 9.4 Bell Pit Section 3950N Geology



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9.5 Springer Pit Ore Characterization

A 70,000 tonne bulk sample from the 1170/60 elevation of the Upper South Springer was processed in September 2001. This sample was used to test the recovery and milling characteristics of the high copper oxide mineralization in this area.

In general, high-grade feed from the Springer Pit will consists of pink, potassically altered breccia similar to the Cariboo. Clasts within the breccia are angular and of varying lithology, ranging from black, fine-grained volcanic, to grey porphyritic intrusive. The matrix is composed of medium-grained plagioclase porphyry monzonite. Plagioclase phenocrysts in the matrix are strongly clay-altered, and are texturally similar to those in the grey, unaltered plagioclase porphyry to the south of the pit. Veins and veinlets of calcite, epidote, actinolite and microcline, present throughout the breccia, and are more abundant in strongly mineralized areas.

Magnetite content within the breccia matrix will also be similar to the Cariboo ore, which was found to be highly variable depending on location and correlated strongly with copper and gold grades. The high-grade (Cu-Au) magnetite pipes that occurred in the South and East Lobe zones of the Cariboo do not seem, from studying the drill core, to be present in the Springer. However, these pipes were never originally identified in the Cariboo Pit, so they may be present in the Springer Pit.

Copper mineralization occurs mostly as disseminated veined and blebbed chalcopyrite. Minor bornite and trace quantities of covellite, chalcocite and digenite are also present. Copper oxides (true oxides, carbonates and silicates) are present in varying quantities throughout the pit, depending on the zone. Malachite/azurite occurred as powdery fracture-fill. Chrysocolla occurs in fractures and veinlets and as blebs to two centimetres and will only be abundant in the upper part of the South Springer.

Ore in the Springer Pit can be divided into four distinct zones:

- The Upper South Springer
- The Lower (Deep) South Springer
- The Central Springer
- The Springer North Extension

The **Upper South Springer** ore has a moderate to very high, oxide copper to total copper ratio of 30% to 70%. The October 2001 test run of this ore found it to be soft and easy to mill. Total copper mineralization will be comprised of 10% to 30% chrysocolla, with azurite and malachite making up most of the rest of the oxide copper content. The sulphide portion of the ore consists mostly of fine-grained chalcopyrite. Ore control in this zone will be highly sensitive to metal prices and milling procedures. The ore will have moderate magnetite content.

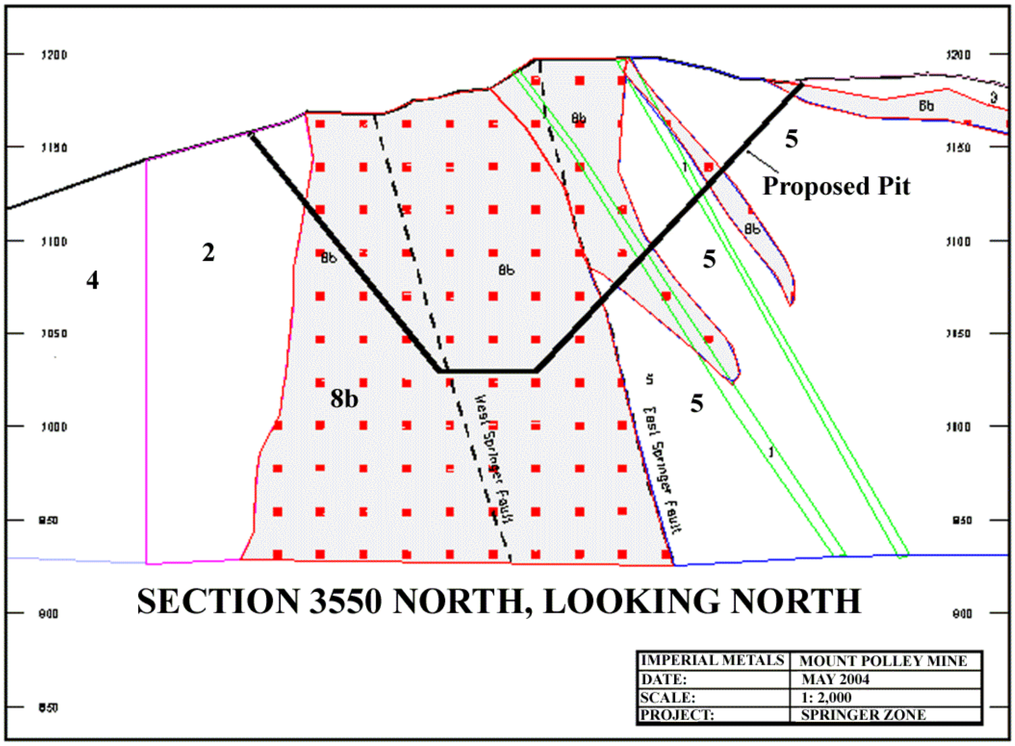
The **Lower (Deep) South Springer** is separated from the Upper Zone by a series shallow east-dipping faults. This ore has a low copper oxide content, 3% to15%, with chrysocolla rare to absent. The ore will be moderately hard, similar to the South Cariboo. The copper mineralization will consist mostly of fine to medium grained disseminated chalcopyrite, with rare veinlets and blebs of chalcopyrite. Like all other high grade zones in the Polley deposit minor quantities of bornite, chalcocite, covellite and digenite also occur. New drilling in this zone in 2004 has shown it to be a much larger zone having a higher copper grade than previously thought.

The **Central Springer** zone has an unoxidized high grade core exposed at the surface. The high grade core of this zone is fault bounded on the east and west by two steeply dipping structures. Low-grade mineralization exists on both sides, away from the zone. Copper mineralization consists mostly of fine to medium grained chalcopyrite. The ore will be moderately hard, similar to the ore mined in the lower South Cariboo in 2001. The zone has a typical copper oxide ratio of 5% to 25%. Chrysocolla is rare to absent in the core (Figure 9.5).

The **Springer North Extension** ore is typically hard and silicified, with similar milling characteristics as the Bell Pit ore. The high grade core of this zone has a fine grained grey brecciated matrix. The copper mineralization consists of fine grained chalcopyrite, with minor bornite, other copper sulfides are rare. Due to surface weathering the top 10 to 30 metres has a high copper oxide (30%-50%), mostly malachite. Below 30 metres the zone has a low oxide to total copper ratio of two to ten percent. Like the Central Zone, this high grade core is fault bounded on the east and west by two steeply dipping structures. Low-grade mineralization exists on both sides, away from the zone. Chrysocolla is rare to absent below 30 metres.

The waste rock in the Springer Pit is composed of approximately 55% monzonite 40% diorite, and 5% green AP dyke.

Figure 9.5 Central Springer Geology, Section 3550 North



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9.6 C2/207 Zone Characterization

The C2 Zone is located 60 metres south of the Cariboo Pit. The old Cariboo Pit access ramp runs over the deposit. The 207 Zone is east of the C2 Zone, a small block of unmineralized intrusive separates the two deposits. The C2 mineralization is hosted within potassically-altered, magnetite rich, monzonitic breccia. Non-sulphide copper mineralization consists of 40% to 60% chrysocolla, with azurite and malachite making up the rest of the oxide copper content. The sulphide portion of the ore consists mostly of fine-grained chalcopyrite. It forms a discontinuous thin body, running along strike with the Polley Fault, with the same easterly dip. This body is limited to the north by the C2 Fault and by a similarly tending unnamed fault to the south. Oxidation is very strong near surface and adjacent to the Polley Fault. This high over all copper oxide ratio has made this zone uneconomic. The 207 Zone is separated from the C2 Zone by several blocks of unmineralized porphyritic monzonite. The mineralization is similar to the C2 Zone, but the ore body is much less continuous and is faulted into a series of thin, east dipping strips. The waste rock in the C2/207 Zone is composed of approximately 60% monzonite, 35% poorly mineralized intrusive breccia, and 5% green AP dyke.

9.7 Southeast Zone Characterization

The Southeast Zone is located 1.4 kilometres southeast of the Cariboo Pit. Like the Springer North Extension Zone, it has a high grade core bounded on the east and west by faults. The high grade core consists of grey, intensely silicified, non-oxidized, magnetite rich, breccia. White quartz-calcite serves as significant interclast cement, with the intensely altered areas of breccia overprinted by strong clear quartz stockwork. Copper mineralization occurs mostly as fine disseminated chalcopyrite. Mineralization also occurs in intensely potassically altered and silicified plagioclase porphyry dykes, near or within wider breccia bodies. East of the high grade core, a zone of gold-only mineralization occurs in a dark magnetite breccia. The gold in this zone is associated with finely disseminated pyrite. In general, the degree of oxidation in the Southeast Zone drops off sharply after 15 to 20 metres. Most contacts between units are sharp and faulted.

The waste rock in the Southeast Zone is composed of approximately 95% green/grey monzonite, and 5% green AP dyke.

9.8 Northeast Zone Ore Characterization

Main Zone. Northeast Zone ore is distinctly high grade, and consists of coarser grained copper sulphides than the Cariboo, Bell or Springer ores. The average copper grade in this zone is 0.8% to 1.0%, which is approximately three times higher than the other zones.

Heterolithic intrusion breccia is the dominant host rock, with subordinate plagioclase porphyry dykes. Mineralization occurs in hydrothermally brecciated and moderately altered rocks, and in the main zone it is quite pervasive; however, continuity may be interrupted for several metres by post-mineral or otherwise non-brecciated dykes. Ore-waste contacts are relatively sharp in the east, and more gradational in the west.

Alteration is less texturally destructive than in the core of the Mount Polley system. Potassic alteration is the most characteristic and widespread but the intensity varies and does not necessarily correlate with copper/gold grades; secondary magnetite observed as minor blebs and veinlets does not correlate with mineralization. Albite alteration rarely forms substantial replacement but is very common as syn-mineral veins or vein stockworks, and locally as a delicate spotting or mottling. Calcite veining (locally vuggy) and veinlet stockworks are universally present in mineralized and unmineralized rocks in addition to a strong, finely disseminated carbonate overprint. Very minor clay alteration is restricted to fractured or sheared albite veins. A ‘gypsum-line’ was noted in several drill holes, marking the appearance of veins of clear, grey gypsum, outside the mineralized zone.

Chalcopyrite is the dominant copper mineral and as well as being generally disseminated and blebby, it fills veins ranging from millimetre scale veinlets and hairline fractures to a few centimetres thick, all typically associated with zones of mild to intense crackle brecciation. The copper assays of over 5% obtained from drill core are primarily due to the presence of the larger veins, which can be several centimetres thick. Intrusion breccia is the dominant host rock and strong concentrations of copper sulphides are common at the internal inclusion contacts. Bornite frequently accompanies chalcopyrite as a fine rim, and locally completely replaces it. Rarely is it the dominant sulphide. Copper minerals in the pre-mineral porphyritic dykes are disseminated or fracture-controlled. If pyrite is present in the high grade rocks it is very fine grained, disseminated and overwhelmed by chalcopyrite. Native copper has been observed as small blebs but is rare.

Mineralized breccia near the surface in the Northeast Zone is moderately to strongly oxidized for up to 10 metres, marked by malachite and azurite on rusty fracture surfaces. Generally, however, surface weathering is not deep, and the volume of oxidized ore is small.

Propylitic Zone. The margins of the main mineralized zone are sharp and structurally controlled. Outside of the zone and to the west, the intrusive grades to a variably pyritic, prophylitic shell. These prophylitic rocks are expected to characterize most of the Northeast Zone waste material. Primary rock types are similar to the intrusion breccia, plagioclase porphyry dykes and monzonite observed in the main body; the latter two will probably prove to be predominant. Potassic and calcareous alteration decrease in intensity and a dark green, chloritic-pyritic overprint becomes dominant. Where pyrite is found it is disseminated and fine-grained, and does not exceed one to two percent by visual estimate. The change in mineralogy is most pronounced in hydrothermal breccias due to greater hydrothermal fluid penetration. Sporadic chalcopyrite occurs for some distance from the main zone as isolated veinlets or small blebs.

9.9 Ore Control

9.9.1 Historical Method Used in the Cariboo and Upper Bell Pits

Most ore-waste contacts in the Cariboo and Bell Pits were found to be sharp and structurally controlled. The major faults in the pits are very linear structures that juxtapose the monzonite and diorite waste against the mineralized breccia; therefore grade control was fairly straightforward. Two milled head values (MHV & MHV2) were calculated for each mined block (5m x 5m). MVH was calculated at the current metal prices and US$ exchange rate, while MVH2 was calculated at the feasibility prices and exchange rate. Blocks valued at greater than Cdn$1.00/mt at current prices were staked out as “High Grade” and hauled to the mill. All remaining blocks were recalculated at the feasibility prices (MHV2). Blocks valued at greater than Cdn$1.00mt using MVH2 were hauled to the Low Grade Stockpile. All remaining blocks were classified as waste. A High Grade Stockpile, located across from the crusher, was used to stockpile ore during mill down times.

At the completion of mining in September 2001, the Low Grade Stockpile at Mount Polley had 2.66 million tonnes, total copper at 0.220% and gold at 0.306 g/mt, with an oxide copper ratio of 34%. The High Grade Stockpile had 208,000 tonnes, total copper at 0.285% and gold at 0.420 g/mt, with an oxide copper ratio of 23.8%.
(Oxide ratio = oxide copper % / total copper %)

9.9.2 Proposed Method for Springer, Bell and Wight Pits

The above method of separating ore types will continue to work well for the rest of the Bell Pit, in the lower unoxidized areas of the Springer Pit and the Wight Pit.

Ore control for the first four to five oxidized benches of the Springer Pit is planned to incorporate some stockpiling and blending. Experience from the Cariboo Pit and the Springer Test Pit showed improvement in copper and gold recovery when a small amount of high grade copper sulphide ore was blended with the oxide ore (high grade copper sulphide ore being greater than 0.50% total copper). A blend of four or five trucks of oxide ore to one of high sulphide ore, showed a marked improvement in recovery. The much higher-grade ore from the Wight Pit could be used in this blending.

10 Exploration

10.1 Exploration History

The Mount Polley deposit was first discovered as a result of follow-up prospecting of an aero magnetic anomaly highlighted on a government aeromagnetic map sheet issued in 1963. Mastodon Highland Bell Mines Limited and Leitch Gold Mines first staked claims in 1964. In 1966 the two companies merged to form Cariboo-Bell Copper Mines Limited. The property was mapped, soil and geochemical surveys, and air-borne and ground-bases geophysical surveys were conducted. This was followed by bulldozer trenching and drilling.

In 1969 Teck Corporation assumed control of Cariboo-Bell. During the period from 1966 to 1972 at total of 18,341 metres of core drilling and 8,553 metres of percussion drilling was completed in 215 holes. In 1970 magnetic, seismic and induced polarization (IP) surveys were conducted. Teck continued to work the property in 1972, 1973 and 1975. In 1978 Highland Crow Resources, an affiliate of Teck, acquired control. In 1979 Teck completed six percussion holes for 354 metres.

In 1981 E&B Explorations Inc. optioned the property from Highland Crow and completed 1,746 metres of core drilling, 1,295 metres of rotary drilling, and soil geochemical and ground control surveys. In 1982 E&B acquired a 100% interest and continued to work the property with joint venture partners Geomex Partnerships and Imperial Metals Corporation. From 1982 to 1987 E&B completed soil geochemistry, magnetic, VLF-EM and IP surveys, geological mapping, 3,585 metres of core drilling and 4,026 metres of reverse circulation drilling.

In 1987, Imperial Metals purchased the remaining interest in the property from Homestake Canada and others. E&B had merged with Mascot Gold Mines that subsequently merged with Corona Corporation and finally became Homestake Canada. During the period between 1988 and 1990, Imperial Metals Corporation conducted a comprehensive exploration program consisting of 238 core holes totaling 27,566 metres, the collection of six bulk samples from surface trenches totaling 130 tonnes, geological mapping and IP surveys.

In 1990 Wright Engineers completed a Feasibility Study that incorporated new ore reserve calculations, metallurgical testing, geotechnical evaluations, and environmental impact assessments. In 1992, Imperial Metals bought the Geomex Partnerships consolidating ownership of the property in one Company. During 1993-1994, Theresa Fraser from the University of British Columbia completed a Masters thesis on the geology, alteration, and origin of hydrothermal breccias on the deposit. The focus of the study was to document data important to aspects of the genesis of the deposit, particularly breccia distribution, breccia types, distinctive matrix minerals and alteration.

In 1994, Gibraltar Mines Ltd., under an option agreement with Imperial Metals, drilled seven core holes for 1,216 metres. Upon evaluation of the project, Gibraltar declined further participation. Following a merger with Bethlehem Resources Corporation in 1995, Imperial completed an in-house Feasibility Study. Financing was arranged with Sumitomo Corporation through a joint venture with SC Minerals Canada that culminated in the formation of Mount Polley Mining Corporation in April 1996.

In 1995 Mount Polley Mining Corporation drilled five core holes for 884 metres to be used for metallurgical test work. Eleven core holes for 1,773 metres tested on-site exploration targets outside the proposed pit limits, including the Kay Lake Basin area and the Road Zone. Seven rotary holes for 932 metres were drilled to source and monitor groundwater near the mill and between the pits and adjacent lakes: these holes were also logged and assayed. A soil geochemistry survey was conducted over a six line-kilometre grid.

In 1996, seven core holes for 992 metres were drilled in areas peripheral to the proposed pits, such as the Road Zone, the Northwest Zone and the S Zone. Lithogeochemical samples were collected from road cuts and new bedrock exposures.

In 1997, fifteen core holes for 1,614 metres were drilled to define the margins of the Cariboo Pit and 17 percussion holes for 702 metres were drilled to provide better ore definition for mine planning. Surface and pit wall geological mapping east of and in the Cariboo Pit were conducted concurrently. Three water well holes for 351 metres were drilled to provide source water for milling and mining operations. Rock chip samples from new road cuts were collected and analyzed.

During 1998, nine core holes for 1,993 metres were drilled within and along the margins of the Cariboo Pit. These holes were designed to prove continuity of mineralization to depth, to determine the orientation of mineralization, to provide definition in under-drilled areas and to determine rock quality for pit design. Core from previously drilled holes within the Cariboo Pit area was relogged and reinterpreted.

In 1999, thirty-three percussion holes for 1,385 metres and eighteen core holes for 4,067 metres were completed. The percussion holes tested for near-surface ore reserves southeast of the Cariboo Pit. The core holes were drilled in the Bell Pit area to test for mineralization to the north and east and to depth, in the Cariboo Pit to test high-grade mineralization at the south end of the pit, and to test targets south of the Cariboo Pit that resulted in the discovery of the C2 Zone. Core from previously drilled holes within the Bell Pit and Cariboo Pit areas was relogged and reinterpreted. The surface geology of the Bell Pit area was mapped.

In 2000, a total of 226 percussion holes for 10,653 metres and 26 core holes of 4,875 metres were completed. The areas that received work were the 207, Bell, C2, Cariboo, MP-071, Road, Rad, Southeast and Springer zones. This drilling was successful in defining previously discovered copper and gold mineralization in the C2/207 and

Southeast zones, and in discovering high-grade copper mineralization north of the proposed Springer Pit.

In 2001, a total of 170 percussion holes for 9,421 metres and 41 core holes of 6,696 metres were completed. The areas that received work were the Bell, Cariboo, Springer, and North Springer zones. This drilling was successful in discovering and defining new high-grade copper and gold mineralization in the North Springer Zone and helped infill the gaps in the central and south Springer. A majority of the Springer drill cuttings from these zones were used for metallurgical test work. The drilling results from the Cariboo and the Bell zones facilitated short and long range production planning.

In August 2003 Imperial discovered a new copper and gold zone by prospecting north of the Bell Pit. The newly discovered Northeast Zone, is approximately one and a half kilometres northeast of the partially mined Bell Pit.

10.2 Property Exploration Potential

The author of the 2002 technical report recommended five other areas for future exploration that may increase the value of the Mount Polley property. These areas were the Deep Bell and Deep Springer pits, the area northeast of the Springer Pit, Mount Polley Mountain itself, and the Lloyd-Nordic Zone. Since that report, the Northeast Zone (Wight Pit), a significant higher grade zone, has been discovered on the Mount Polley claims.

10.3 Northeast Zone Exploration

In this new zone trenching and drilling have revealed a hydrothermal breccia over a 350 metre strike length. This breccia remains open along strike to the southeast and northwest. Related breccias continue in all other directions, enhancing the potential for further discoveries.

The breccia is structurally well prepared and features an overprinting of potassic and carbonate alteration. It is distinguished from known breccia-hosted copper-gold deposits at Mount Polley by a higher copper to gold ratio, higher silver and bornite content, lower magnetite, as well as higher copper grade

Drilling and trenching are ongoing to determine the extent and geometry of this very promising new zone of high-grade mineralization. The exploration program is being conducted under the direction of Patrick McAndless, Vice President, Exploration and Stephen Robertson, Senior Geologist. Significant assay intervals for the 2003/04 drilling up to hole 50 are shown in Table 10.3 (See Figure 10.3 for a plan drill hole location map).

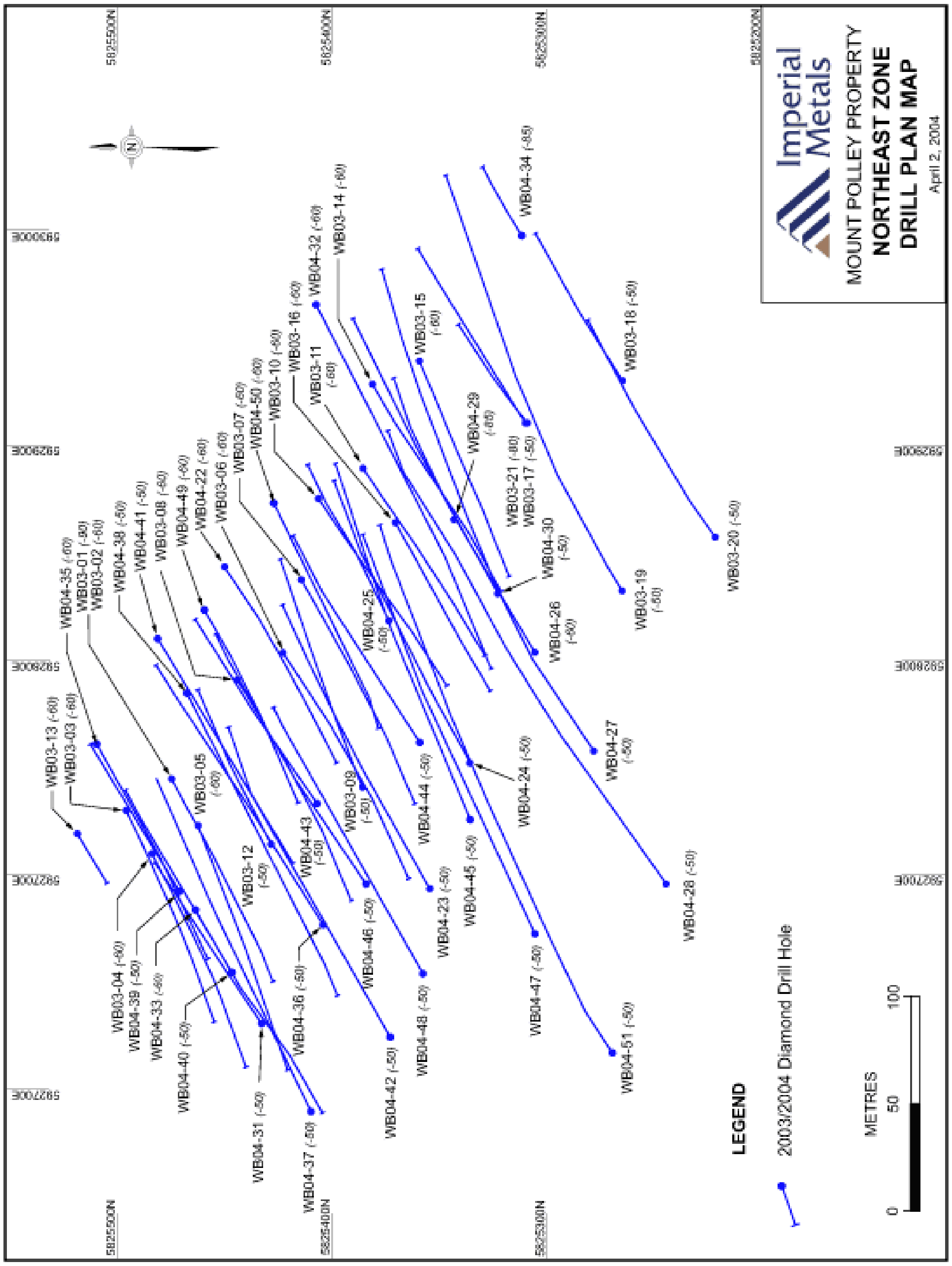
Table 10.3 Significant Assay Intervals: 2003/04 Northeast Zone Drilling

Northeast Zone Assay Data Summary						
Mount Polley	**From**	**To**	**Interval**	**Assays**	**Assays**	**Assays**
Drill Hole #	**(m)**	**(m)**	**Length**	**Copper %**	**Gold g/t**	**Silver ppm**
WB03 01	3.1	60	57.0	2.54	1.15	17.40
WB03 02	2.6	79.1	76.5	0.74	0.34	5.00
WB03 03	1.5	195	193.5	1.33	0.44	10.60
WB03 04	0.6	159	158.4	0.34	0.21	2.66
WB03 05	3.7	37.5	33.8	0.49	0.30	5.32
WB03 06	7.1	220	212.9	0.98	0.32	6.18
including	7.1	110	102.9	1.94	0.57	11.71
WB03 07	13.4	217.5	204.1	1.02	0.40	7.31
including	13.4	126.3	112.9	1.72	0.56	12.33
WB03 08	7.3	81.1	73.8	0.98	0.31	8.04
WB03 09	0	132.5	132.5	1.04	0.24	6.53
including	62.5	132.5	70.0	1.69	0.39	10.38
WB03 10	21.3	163.6	142.3	1.16	0.40	8.20
WB03 11	24.4	205	180.6	1.00	0.40	7.30
WB03 12	0	15.2	15.2	0.72	0.23	6.65
WB03 13	lost	hole				
WB03 14	44.3	213.3	169.0	1.06	0.37	6.65
including	55	90	35.0	2.02	0.79	12.81
WB03 15	30	165	135.0	1.16	0.35	9.58
including	47.5	120	72.5	1.82	0.55	16.17
WB03 16	15.2	127.5	112.3	0.63	0.20	4.02
including	15.2	37.5	22.3	1.41	0.48	9.61
WB03 17	39.6	74.2	34.6	1.18	0.09	10.91
WB03 18	85	97.5	12.5	0.14	0.06	0.06
WB03 19	145.3	265	119.7	1.02	0.20	9.61
including	147.5	195	47.5	1.73	0.45	20.32
WB03 20	159.1	172.5	13.4	0.17	0.06	0.74
WB03 21	26.5	235	208.5	1.18	0.45	9.05
including	26.5	137.5	111.0	1.78	0.79	15.34
WB04-22	95	162.5	67.5	2.00	0.94	12.83
WB04-23	62.5	195	132.5	1.22	0.53	8.48
including	123.5	185	61.5	2.18	0.90	14.37
WB04-24	47.5	195.3	147.8	1.46	0.31	8.92
including	112.5	187.5	75.0	2.50	0.52	15.04
WB04-25	9.1	67.5	58.4	1.86	0.72	15.09
including	25	40	15.0	4.38	1.92	38.99
WB04-26	130	217.5	87.5	0.72	0.22	3.92
including	137.5	190	52.5	1.01	0.34	5.90
WB04-27	200	241	41.0	0.87	0.30	6.68
and	266.6	307.5	40.9	1.36	0.14	3.41

Northeast Zone Assay Data Summary - continued						
Mount Polley	**From**	**To**	**Interval**	**Assays**	**Assays**	**Assays**
Drill Hole #	**(m)**	**(m)**	**Length**	**Copper %**	**Gold g/t**	**Silver ppm**
WB04-28	239.6	353.3	113.7	0.62	0.25	3.20
including	255	297.5	42.5	0.92	0.46	4.13
WB04-29	21.3	158.2	136.9	1.14	0.44	8.57
and	211.8	235	23.2	0.54	0.35	3.10
WB04-30	25	147.5	122.5	1.64	0.32	11.63
including	52.5	78.3	25.8	3.51	0.96	26.84
WB04-31	40	115.6	75.6	0.50	0.20	5.05
including	40	64.3	24.3	0.66	0.29	7.99
and	102.5	115.6	13.1	1.00	0.49	7.10
WB04-32	65	77.5	12.5	0.45	0.01	3.00
and	149.8	237.5	87.7	0.65	0.16	2.95
including	150	187.5	37.5	1.02	0.14	3.31
WB04-33	42.5	45.3	2.8	1.28	0.60	10.02
WB04-34	172.5	180	7.5	0.91	0.07	2.30
and	205.5	217.5	12	0.51	0.05	2.02
WB04-35	No Significant Intervals					
WB04-36	22.5	55	32.5	0.55	0.20	5.42
and	115	132.5	17.5	1.04	0.63	6.47
WB04-37	177.5	202.5	25	0.62	0.11	4.42
WB04-38	8.2	50	41.8	2.16	0.66	12.51
and	80.2	87.5	7.3	0.46	0.17	4.97
WB04-39	12.5	55	42.5	1.17	0.43	8.04
WB04-40	7.5	15	7.5	0.47	0.16	4.27
and	75	95	20	0.85	0.59	7.18
WB04-41	75.3	79	3.7	1.15	0.11	4.71
and	92.3	94.3	2	2.21	0.22	6.80
and	120.8	135.3	14.5	1.27	0.93	7.80
WB04-45	93.6	115	21.4	0.42	0.15	2.80
and	137.5	215	77.5	1.02	0.38	5.67
WB04-46	25	45	20	0.82	0.99	7.80
and	77.5	86	8.5	0.88	0.49	9.03
and	102.5	112.5	10	0.43	0.11	3.88
WB04-47	205	245	40	0.98	0.44	5.03
and	282.5	291.7	9.2	0.46	0.15	2.58
WB04-48	172.5	212.5	40	0.67	0.36	4.71
including	187.5	199.8	12.3	1.16	0.61	7.79
WB04-49	135.4	140	4.6	0.56	0.18	3.80
and	158.6	170	11.4	0.75	0.54	4.98
WB04-50	85	167.5	82.5	1.30	0.20	9.15
WB04-51	No Significant Intervals					

Northeast Zone Assay Data Summary - continued						
Mount Polley	**From**	**To**	**Interval**	**Assays**	**Assays**	**Assays**
Drill Hole #	**(m)**	**(m)**	**Length**	**Copper %**	**Gold g/t**	**Silver ppm**
WB04-52	56.7	122.5	65.8	0.60	0.19	3.96
including	56.7	68.41	11.7	1.83	0.46	11.45
WB04-53	10	144.25	134.3	1.70	0.56	10.62
including	17.5	81.35	63.9	1.87	0.49	11.85
including	96.5	128.5	32	2.99	0.44	17.58
WB04-54	88	102.5	14.5	0.36	0.02	2.55
and	137.5	195	57.5	1.09	0.34	7.25
WB04-55	3.05	10	7	0.79	0.61	7.84
and	68.42	76.71	8.3	0.31	0.13	3.54
and	95.49	122.5	27	0.55	0.20	4.27
WB04-56	85	195.43	110.4	1.11	0.33	8.17
WB04-57	105	107.5	2.5	1.30	0.06	12.20
WB04-58	142.5	144.37	1.9	0.72	0.20	3.54
WB04-59	27.5	176.8	149.3	1.37	0.58	11.15
including	27.5	107.5	80	2.32	1.07	19.70
including	57.5	75	17.5	4.93	3.81	42.00
WB04-60	137.31	242.51	105.2	1.03	0.34	8.49
including	155	176.61	21.6	2.70	1.19	27.10
WB04-61	26.9	112.5	85.6	0.56	0.25	3.73
WB04-62	No Significant Intervals					
WB04-63	139.5	289.51	150	0.48	0.09	1.92
WB04-64	90	237.5	147.5	0.59	0.18	3.52
including	182.85	200	17.2	2.82	3.52	14.12
WB04-65	172.5	280	107.5	0.76	0.36	4.27
WB04-66	205	257.66	52.7	0.61	0.61	4.99
WB04-67	No Significant Intervals					
WB04-68	132.5	135.18	2.7	0.36	0.27	1.60
WB04-69	Assays Pending					
WB04-70	17.5	25	7.5	0.35	0.35	2.00
WB04-71	70	72.5	2.5	0.64	0.41	2.40
and	85	88.34	3.3	0.33	0.17	1.93
and	107.5	108.23	0.7	1.66	2.70	4.30
and	187.5	192.5	5	0.40	0.16	2.15

Figure 10.3 Northeast Zone 2003/04 Drilling Plan Map



10.4 Bell Zone Exploration

The Bell Pit was mined to the 1120 metre bench at the time of closure in September 2001. The 1130 bench yielded 129,000 tonnes at 0.50% TCu, 0.40 g/mt Au at 5.0% Cu oxide ratio, and the 1120 bench yielded 47,000 tonnes at 0.87% TCu, 0.62 g/mt Au at 3.5% oxide ratio. The ore/waste contact along the west wall diorite was well modeled, but the high-grade zone below the existing 1120 bench needed more drilling. Thirty new holes have been drilled in the Bell Zone in 2003 and 2004 totalling 6,451 metres. Significant assay intervals for this drilling are shown in Table 10.4. Figure 10.4 shows the new drilling on section 3965N.

Figure 10.4 Bell Zone Section 3965N

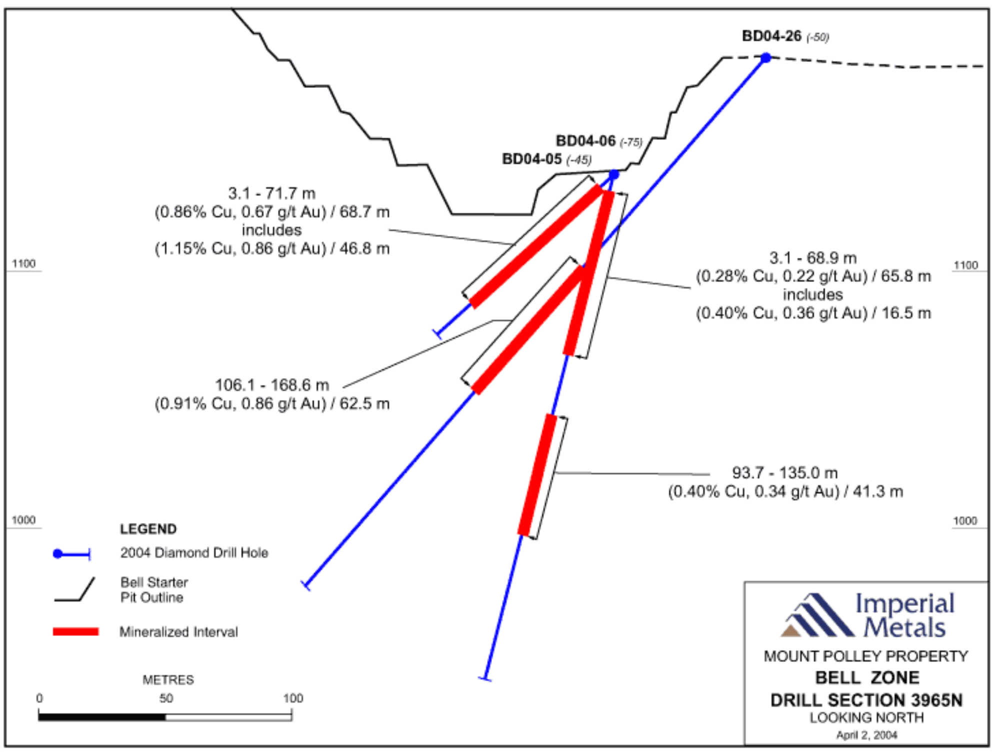


Table 10.4 Significant Assay Intervals: 2003/04 Bell Zone Drilling

Bell Zone Assay Data Summary						
Mount Polley			**Interval**	**Assays**		
Drill Hole #	**from**	**to**	**Length**	**Copper %**	**Gold g/t**	**Silver ppm**
BD04-01	51.85	95	43.1	0.35	0.27	*n/r
BD04-02	70	129.95	59.95	0.35	0.23	*n/r
and	177.5	338.5	161	0.35	0.30	*n/r
BD04-03	18.13	88.2	70.07	0.26	0.18	*n/r
including	30	65.48	35.48	0.31	0.20	*n/r
BD04-04	71.47	130	58.53	0.40	0.29	*n/r
BD04-05	3.05	71.7	68.6	0.86	0.67	1.60
including	24.87	71.7	46.83	1.15	0.86	2.07
BD04-06	3.05	68.88	65.83	0.28	0.22	0.79
including	3.05	19.56	16.51	0.40	0.36	1.24
and	93.7	135	41.3	0.40	0.34	0.80
BD04-07	6.1	87.6	81.5	0.47	0.38	0.67
including	71.3	82.5	11.2	1.36	1.09	1.49
BD04-08	6.1	35	28.9	0.59	0.45	1.11
and	48.7	150	101.3	0.39	0.39	0.63
BD04-09	3.05	20	16.9	0.31	0.10	1.30
and	228.16	255	26.84	0.30	0.22	0.71
BD04-10	70.03	100	29.97	0.26	0.11	0.56
and	145	156.43	11.43	0.36	0.21	1.17
BD04-11	10.84	51.02	40.18	0.21	0.29	0.15
and	67.9	118.46	50.56	0.29	0.39	0.65
BD04-12	80	157.25	77.25	0.37	0.63	0.27
and	171.22	208.27	37.05	0.75	1.12	1.11
BD04-13	54.55	65	10.4	0.34	0.31	0.33
and	109.89	225	115.1	0.41	0.69	0.42
BD04-14	95	146.7	51.7	0.32	0.35	0.23
and	162.85	198.7	35.8	0.40	0.42	0.23
BD04-15	112.5	174.6	62.1	0.38	0.67	0.51
and	198.6	227.5	28.9	0.29	0.38	0.71
and	262.5	288.9	26.4	0.29	0.31	0.56

Continued on following page

Bell Zone Assay Data Summary cont.						
Mount Polley			**Interval**	**Assays**		
Drill Hole #	**from**	**to**	**Length**	**Copper %**	**Gold g/t**	**Silver ppm**
BD04-16	27.52	70	42.5	0.30	0.21	0.45
BD04-17	3.65	222.5	218.9	0.50	0.43	0.78
BD04-18	170.97	224.2	53.1	0.31	0.49	0.39
BD04-19	132.5	188.67	56.2	0.33	0.55	0.49
BD04-20	20	35.41	15.4	0.41	0.32	0.81
and	107.5	120	12.5	0.41	0.28	0.42
BD04-21	131.43	187.22	55.8	0.27	0.39	0.24
BD04-22	137.5	157.5	20	0.40	0.27	0.48
BD04-23	72.5	100	27.5	0.34	0.31	0.58
and	124.25	172.54	48.2	0.48	0.49	0.81
BD04-24	127.5	165	37.5	0.47	0.36	1.23
BD04-25	175	233.3	58.3	0.27	0.45	0.09
BD04-26	106.1	168.61	62.5	0.91	0.86	1.58
including	140	168.61	28.6	1.61	1.60	2.90
BD04-27	85	110	25	0.35	0.45	0.31
BD04-28	45	55	10	0.27	0.35	0.18
and	137.5	150	12.5	0.29	0.39	0.24
BD04-29	87.5	127.5	40	0.31	0.58	0.22
BD04-30	125	158.5	33.5	0.27	0.41	0.70

10.5 Springer Zone Exploration

A total of 13 new holes have been drilled to date in the Springer Zone. This new 2003/04 drilling has concentrated on developing the deep part of the South Springer. The new drilling shows the existence of a much larger and higher-grade zone in this area. Figure 10.5 shows four of the new drill holes (with grades) in this lower zone. Significant assays intervals for the 2003/04 Springer drilling up to hole six are shown in Table 10.5.

Figure 10.5 Springer Zone, Section 3250N

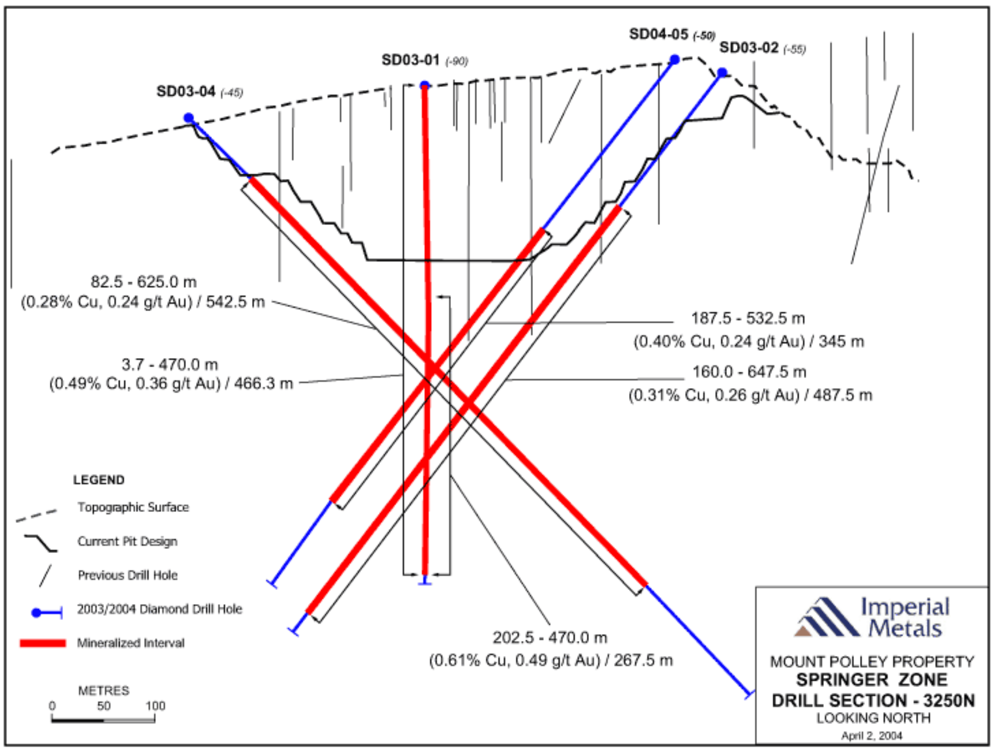


Table 10.5 Significant Assay Intervals: 2003/04 Springer Zone Drilling

Springer Zone Assay Data Summary						
Mount Polley			**Interval**	**Assays**		
Drill Hole #	**from**	**to**	**Length**	**Copper %**	**Gold g/t**	**Silver ppm**
SD03-01	3.7	470	466.3	0.49	0.36	*n/r
including	202.5	470	267.5	0.61	0.49	*n/r
and	295	375.3	80.3	0.94	0.64	*n/r
and	320	372.5	52.5	1.14	0.81	*n/r
SD03-02	160	647.5	487.5	0.31	0.26	*n/r
including	255	321.6	66.6	0.44	0.38	*n/r
SD03-03	150.2	665	514.8	0.25	0.36	*n/r
including	150.2	575	424.8	0.26	0.38	*n/r
and	452.2	575	122.8	0.46	0.62	*n/r
SD03-04	82.5	625	542.5	0.28	0.24	*n/r
including	217.5	330	112.5	0.47	0.29	*n/r
SD03-05	187.5	532.5	345	0.40	0.24	0.69
including	395	532.5	137.5	0.60	0.32	1.00
SD03-06	10	237.5	227.5	0.44	0.42	0.84
and	379.7	601.8	221.4	0.37	0.29	0.43
SD04-07	20.35	41.8	21.45	0.43	0.48	0.36
and	66.23	112.5	46.3	0.43	0.48	0.80
SD04-08	3.35	177.5	174.2	0.32	0.30	0.60
and	217.5	382.5	165	0.32	0.35	0.62
SD04-09	3.05	287.5	284.5	0.33	0.25	0.89
SD04-10	pending					
SD04-11	282.5	555.7	273.2	0.72	0.35	1.32
and	467.5	541.31	73.8	1.62	0.62	2.64

*silver assay not reported

10.6 Additional Areas for Exploration

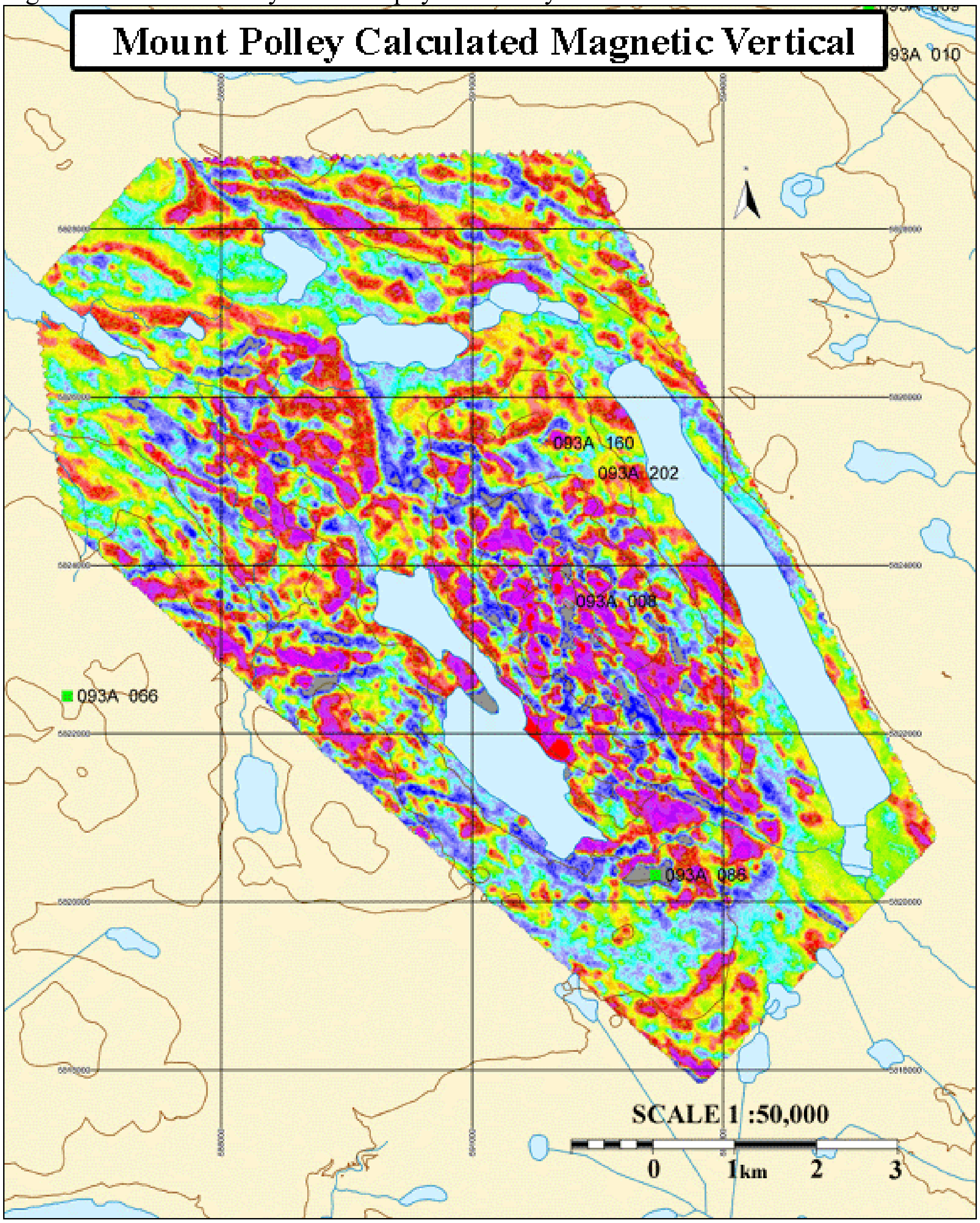
In addition to the ongoing exploration in the Northeast and Springer zones, an extensive property wide exploration program is planned for the summer and fall of 2004. The original geochemical and geophysical grids on the Mount Polley property show a number of still unexplored anomalies in the northern half of the property. To help define these targets Imperial Metals Corporation conducted a new multisensor (gamma-ray spectrometric, magnetic total field) helicopter-borne geophysical survey over the Mount Polley claims in 2003. Flight lines were oriented east-west, spaced at 100 metre intervals. The survey was flown under contract by Fugro Airborne Surveys. The survey was jointly funded by Imperial Metals Corporation and the British Columbia & Yukon Chamber of Mines "Rocks to Riches" Program.

A total of ten maps were produced using the data collected during this survey. They included:

MTF - Magnetic total field (nT)
CVG - Calculated magnetic vertical gradient (computed, nT/m)
(see figure 10.6)
TER - Ternary radioelement map (K, eU, eTh)
ADRN - Natural air absorbed dose rate (ADRN, nGy/h)
POT - Potassium (K, %)
URA - equivalent Uranium (eU, ppm)
THO - equivalent Thorium (eTh, ppm)
RUT - equivalent Uranium/equivalent Thorium (eU/eTh)
RUK - equivalent Uranium/Potassium (eU/K, ppm/%)
RTK - equivalent Thorium/Potassium (eTh/K, ppm/%)

The results of the new survey confirmed the potential to discover some new structurally controlled, high grade blocks of breccia on the property. These targets will be similar to the Springer North Extension and the Northeast Zone. Areas showing potential from mapping and trenching will be followed up with drilling in the fall 2004.

Figure 10.6 Mount Polley 2003 Geophysics Survey



11 Drilling

The Mount Polley claims have been drilled from 1966 to 2004, with a total of 1,247 drill holes in the property (see Section 10.1 for details). Addition drilling in the Springer and Northeast Zones was on going at the time of this writing. (see Section 10.2 for details).

All drill core from the 1981 to 2004 exploration drilling programs is stored on site, in covered core racks. Most of the early drill core from 1966 to 1980 was lost due to vandalism.

All core samples from 1981 onwards were collected in three metre runs and stored in wooden boxes. The average core size was NQ2. Each core box holds approximately four metres.

The core was logged geotechnically and geologically. Sample intervals are marked off and the core was submitted for cutting. The core was split and one half is sent for analysis and the other half is retained as a geological record or for future test work.

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12 Sampling methods and Approach

The author supervised all exploration drilling at Mount Polley from Sept 1999 to Closure in Oct 2001. Information on programs prior to 1999 was obtained from published reports and/or from Imperial Metals or Mount Polley Staff. The 2003/04 drilling is being supervised by on site by Pat McAndless P.Geo., VP Exploration, Imperial Metals Corporation.

Core from Mount Polley was, in most cases, sampled in their entirety. The usual sample length was 1 to 2.5 metres, visually unmineralized zones were often sampled at 3 to 5 metres.

The industry standard methods of taking duplicate samples were followed in all recent drilling programs for quality control. The core was first logged geotechnically and geologically, then samples were cut in half with a rock saw. One half of the core was sent for assaying and the other half stored on the property for future reference. The core library is located on the mine site near the administration building. A new core logging facility was built on site in 2003.

13 Sampling Preparation, Analyses and Security

All drill core from recent programs (post 1980) were assayed for gold, total copper, copper oxide, silver, and iron. Much of the pre-1980 core was assayed only for total copper. (See section 17.2.2)

Over the life of the mine, exploration samples were assayed at a number of B.C. Labs. During the last two years of the mine, approx. 75% of the core samples were prepared and analyzed by the on-site Mount Polley mine (MTP) laboratory; the remaining 25% of the core was prepared and analyzed by either Bondar Clegg (Vancouver, BC), Chemex (North Vancouver, BC), International Metallurgical and Environmental (Kelowna, BC) or R&T Metallurgical Services (Kamloops, BC). The core from the 2003/04 program is being assayed at ACME labs in Vancouver.

The quality of assay results was rigorously tested both internally and externally. The MTP laboratory included a standard; a blank and a duplicate sample in each analytical run with a minimum of 10% of all samples submitted to external laboratories for check analyses. Additionally, 5-10% of core samples were submitted as blind duplicates.

Original assay certificates and drill logs are stored on site at the Mount Polley mine. A complete report on each year's exploration program was submitted to the BC Ministry of Mines as part of the Annual Property Assessment Report (see the Appendix E for a complete list).

Typical assay procedure followed at the on-site Mount Polley Assay Lab:

All samples were dried, crushed (-10 mesh), split (1000 grams) and pulverized (-150 mesh) before being analyzed for total copper, oxide copper, gold, and iron. Total copper and iron were determined with $HNO_3/HCl/HF/HClO_4$ digestion with atomic absorption finish (0.01-15% detection limit). Gold was analyzed with a 30 gram Fire Assay and atomic absorption finish (5-10,000 ppb detection limit). Copper oxide was determined using a 30% H_2SO_4 leach and atomic absorption finish (0.01% lower detection limit).

14 Data Verification

All pre-closure drilling information on the Mount Polley deposit was tabulated in a Microsoft ACCESS database. The database is complete with all survey, geological and assay information. This database, along with the new 2003/04 drilling, and all pertinent information gained over the five years of mining at Mount Polley has been compiled into a MEDSYSTEMS mining software project file. MEDSYSTEMS software allows three dimensional analyses of drilling and mining data, along with survey, ore control, resource modeling and mine scheduling. This software was used during mining operations for the Cariboo and Bell Pits, and for the calculation of the reserve and resource values stated in this report.

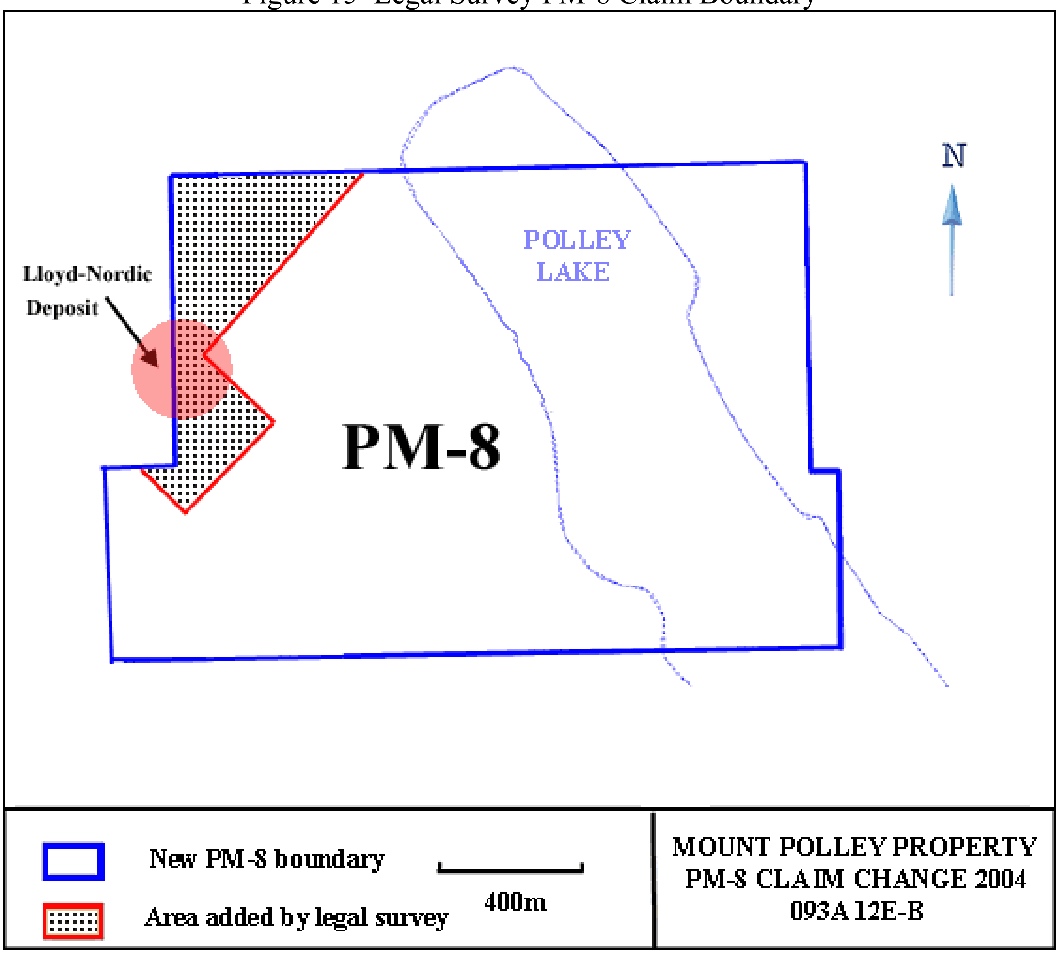
The quality of assays and drill information obtained previous to the start of the mine in 1999 was assessed by reconciliation of the mine and mill data, to the block model data from four years of mining in both the Cariboo and Bell Pits. This reconciliation was done daily during mining operations, checking the block model grades for each blast with the predicted grades found in the block model. For the 55.0 million tonnes of material mined from the Cariboo and Bell pits, of which 27.7 million tonnes were ore, good to excellent agreement was obtained between the block model, blast hole grades, and mill data.

The author also resurveyed the collar locations of some of the older drill in the Springer pit in 2001 to check their accuracy. All resurveyed holes were within one to three metres of the old coordinates.

15 Adjacent Properties

One kilometre north of the Bell Pit, there is a small high-grade deposit called the Lloyd-Nordic. The available data shows the high-grade core of this deposit to be very similar in description to the high-grade magnetite pipes found in the east Cariboo Pit (0.5% to 2.0% Cu, 0.5 to 1.5 g/t Au). Although most of this high-grade mineralization was encountered at depths greater than 60 metres, hole 94-04 did encounter a 22 metre band of this type of high-grade magnetite breccia at a depth of 10 metres. A legal survey of PM-8 mineral claim in 2003 has shown that approximately half of this deposit is actually on the PM-8 claim, which is held by MPHCL. Figure 15 shows the new shape of PM-8. Drilling is planned for this area in late 2004. Application to convert PM-8 to a Mining Lease has been filed, approval is expected by September.

Figure 15 Legal Survey PM-8 Claim Boundary



16 Mineral Resource and Mineral Reserve Estimates

16.1 Ore Reserves

The mineral reserve and resource estimates for Wight, Springer and Bell pits were calculated under the supervision of Greg Gillstrom, P. Eng., the designated Qualified Person on this project. Technical assistance was provided by Art Frye, Senior Engineer at the Mount Polley mine. The mineral reserve and resource estimates presented in this report are based on drill information available as at May 31, 2004. Exploration on the property is ongoing and continues to outline additional resources which will be incorporated in the mine plan at the appropriate time.

The mine plan pit designs and ore reserves were defined by using the Lerchs Grossman algorithm with MEDSYSTEM software using the following economic parameters to produce optimized pit shells from the interpolated grade model:

- Block model using a kriged indicator to identify zones with a high probability of being mineralized. Using the identified zones as boundaries to estimate the grades using kriging both within the mineralized zone and outside in areas where there is potential for ore grade mineralization. Clearly defined structural boundaries are considered boundaries for grade estimation.
- Block model parameters based on five years of refinement and experience gained while mining the adjacent Cariboo Pit.
- Estimated fixed mine operating costs plus variable haulage costs to the assigned Rock Disposal Sites, determined on a bench basis for ore and waste within the Springer and Bell pits.
- Mine design parameters based on experience gained while mining the adjacent Cariboo Pit and recommendations from Golder Geotechnical consultants of Vancouver.
- Estimated mill and administration operating costs.
- Metallurgical copper and gold recovery based on recent on and off site testing of Wight, Bell and Springer pit ore, and historical mill performance.
- Capital cost estimates for refurbishing mechanical and electrical mill systems, mine equipment, rock disposal site preparation, tailings storage facility construction and reclamation.
- Estimates for off-site concentrate handling, smelting and refining charges.

The following metal prices and exchange rate were used for the mine plan pit designs:

- Copper Price ($1.10/lb US)
- Gold Price ($400.00 /oz US)
- Silver Price ($6.00 /oz US)
- US/Can Exchange Rate ($0.75)

The tonnes, grades and net revenue for each pit shell have been calculated.

The detailed pit designs, based on information available as at May 31, 2004, contain 40.7 million tonnes of proven and probable economic reserves as shown in table 16.1a. The contained metal in these reserves is shown in table 16.1b.

Table 16.1a Mount Polley Proven and Probable Reserves

Mount Polley Proven and Probable Reserves					
Zone	Tonnes Ore	Waste Tonnes	Copper%	Gold g/t	Silver g/t
Wight	6,202,814	19,768,525	0.978	0.324	6.978
Bell	9,784,689	19,606,929	0.264	0.297	n/a*
Springer	24,733,044	62,278,289	0.362	0.310	n/a*
Total	**40,720,547**	**101,653,743**	**0.432**	**0.309**	**n/a***

Table 16.1b Mount Polley Reserves, Contained Metal

Mount Polley Reserves, Contained Metal				
Zone	Tonnes	Pounds of Copper	Ounces of Gold	Ounces of Sliver
Wight	6,202,814	133,738,798	64,614	1,391,588
Bell	9,784,689	56,948,299	93,432	n/a*
Springer	24,733,044	197,385,817	246,508	n/a*
Total	**40,720,547**	**388,072,914**	**404,553**	**1,391,588**

* Silver values are only economically significant in the Wight Pit

16.2 Block Model Methodology

The current block model in use for long range planning and pit optimization was constructed by kriging an indicator to identify zones with a high probability of being mineralized. Block grades were then assigned by kriging using these zones as boundaries. Areas with clearly defined structural boundaries are also considered boundaries. This was done to create a model that minimizes the over-smoothing of the grades often found in interpolated models. The method was chosen over other kriging/de-smoothing methods because of the polymetallic nature of the deposit and the intimate dependence of total copper percentage (TCu), oxide ratio (Ratio) and gold grade (AuGm) in defining the value of a block. It is difficult to calculate the block value if you have a different probability (percent) value for TCu and AuGm as well as grade in each block as would be the case with Multi Indicator Kriging or Conditional Probability or other similar de-smoothing methods.

The deposit was broken into seven zones for interpolation. The zones are mainly fault defined as defined in Table 16.2a.

Table 16.2a Mount Polley Model Zone Details

Identifier	Boundaries
Bell Main Zone	Bounded by a well defined diorite contact on the west side. This zone contains all of the mineralization in the Bell Pit. Several massive dikes in this zone were modeled and excluded from the grade interpolation.
Bell Diorite	West of the Bell Main Zone. Very little mineralization in this zone. No grades were estimated in this zone.
Northeast Zone	Discovered in the summer of 2003. Located 1.5km northeast of the Bell Pit. Contains the Wight Pit.
Springer Main Zone	West of the Polley Fault. South of 3650N
Springer Extension	Narrow vertical zone West of the Polley Fault and North of 3650N
Cariboo/ C2 / 207 Zone	Bounded in north by Ian's Fault and west by Polley Fault.
Southeast Zone	A small zone south and east of the Cariboo Pit. This zone has a separate model.

The Polley Fault is a massive north/south trending fault between Cariboo and Springer. Blocks within the fault are excluded from grade interpolation.

16.2.1 Capping Outlier Grades

The grade capping was done at the assay level to avoid masking abnormal grades when compositing. Grade capping was performed by zone and was based on picking a cut-off from log-probability plots of the grade distribution for each zone. In the case of Bell diorite no capping was required because no grades were estimated in this zone.

Table 16.2b Summary of Grade Capping Values

Identifier	TCu %	Au (g/t)
Bell Main	3.50	4
Bell Diorite	No-cap	No-cap
Northeast	6.00	3
Springer Main	2.00	3
Springer Extension	1.50	3
South Cariboo / C2 / 207	2.50	3
Southeast	2.00	2

In addition to capping grades wherever a separate high grade (outlier) population is identifiable in the zone composites, the identified high grade composites had their projection ranges limited as follows:

Table 16.2c Outlier Limiting in Zones

Outlier limiting in Mineralized Zones		
Zone	**>Grade**	**Search Limit**
Copper		
Northeast Zone	none	
Bell Zone	0.900	30
Springer Main Zone	0.700	30
Springer Ext. Zone	0.700	30
Gold		
Northeast Zone	none	
Bell Zone	1.200	30
Springer Main Zone	0.700	30
Springer Ext. Zone	1.000	30

Table 16.2c Cont.

Outlier limiting in Non-Mineralized Zones		
Zone	**>Grade**	**Search Limit**
Copper		
Northeast Zone	0.400	15
Bell Zone	0.200	30
Springer Main Zone	0.200	30
Springer Ext. Zone	0.150	30
Gold		
Northeast Zone	0.300	15
Bell Zone	0.200	30
Springer Main Zone	0.250	30
Springer Ext. Zone	0.250	30

16.2.2 Missing Gold and Oxide Copper Grades

Many of the early drill holes were not assayed for gold or copper oxide and in some cases the core was composited over longer intervals. Also, some gold assays were reported in ounces per ton to two decimals. With these assays the detection limit will almost make ore grade. With recent drilling there is an adequate density of reliable gold assays so all of the drill holes with no assays or inadequate assays are omitted from the gold grade estimation in the model blocks. There is a strong dependency between total copper and copper oxide grades. This creates a problem in estimating copper oxide grades when there is not a copper oxide assay for every sample. This was resolved by using copper oxide assays to calculate an oxide ratio, which is less dependent on total copper and interpolating oxide ratio.

16.2.3 Compositing the Drill Holes

The assays are composited to five metre downhole composites, by zone for use in interpolation.

16.2.4 Kriging the Mineralization Indicators

Within the model zones, a fairly sharp boundary usually exists between the mineralized and non-mineralized rock. Straight kriged or ID models tend to smooth the grades along this contact. The resulting interpolation tends to overestimate the ore tonnes and underestimate the grade.

Generally, the mineralization in all of the Mount Polley ore bodies is structurally controlled. With over 15 controlling structures in the Springer Pit alone, modeling these numerous structures can be difficult. The solution to this problem is to assign an indicator to the drillhole composites based on a grade that defines the mineralization threshold and then krige the indicator to assign a probability value in each block representing the probability the block is mineralized. The indicator is assigned based on TCu grade. TCu is used and not AuGm because of the missing AuGm grades in the early drillhole data.

There is a strong correlation between TCu and AuGm so a copper mineralized block usually contains significant gold as well. The exception to this is in the Bell model where a gold indicator was used to estimate gold because a zone of elevated gold exists in an area containing very little copper. The indicator threshold is selected by looking for the inflection point on the probability plot that suggests the cut-off grade between the population of non-mineralized and mineralized rock. The indicator cut-off for TCu was set 0.15%. Composites with grades above the cut-off are assigned an indicator value of one and those below the cut-off are assigned value of zero.

Variograms were calculated for each zone and the indicators kriged into a probability item in the block model. The probability values were contoured and the contours compared to available geological mapping. The contour that best fit the mapping was used to define the probability cut-off to classify a block as being mineralized. Based on this the cut-off was set to fifty percent probability. Using these cut-off values the blocks were assigned an indicator of zero if below the cut-off and one if above.

Drillhole composites were assigned an indicator matching the value of the indicator in the block that the composite resides in. This indicator was used to decide which composites would be used to interpolate the grades for each block. With this indicator some fringe or isolated mineralized grade composites receive a zero indicator. These composites usually represent some mineralization but not a large amount. When the grades are interpolated these composites have their range of influence severely limited. There are also some non-mineralized grade composites receiving an indicator of one.

A variogram is a geostatistical evaluation which describes the spatial correlation between grades in an ore deposit.

Table 16.2d Variography

Variography (ranges)

			Range 1			Rotation Direction			Search Elipse Length			Distance
Zone	Nugget	Sill	1.0	2.0	3.0	1	2	3	1	2	3	to Closest
Indicator Variograms												
Northeast Cu	0.325	0.675	48.9	327.1	303.6	22	-4	-24	32	216	200	60
Bell Cu	0.453	0.547	198.7	96.3	86.8	-32	50	10	131	64	57	40
Bell Au	0.497	0.503	438.1	119.8	150.7	-55	65	-11	289	79	100	40
Springer Main Cu	0.416	0.584	152.1	107.5	411.7	-64	-13	-9	76	54	205	40
Springer Extension Cu	0.257	0.743	205.7	43.3	158.9	-20	25	-4	105	30	79	40
Cu Grade Variograms												
Northeast Zone	0.398	0.602	62.5	212.5	119.8	37	3	-61	42	140	80	60
Bell Zone	0.280	0.720	83.3	148.2	264.1	49.0	-13.0	31.0	42.0	74.0	132.0	60
Springer Main Zone	0.397	0.603	106.6	44.0	52.6	-35.0	62.0	0.0	70.0	30.0	35.0	60
Springer Ext. Zone	0.288	0.712	269.8	20.0	64.2	-19.0	53.0	-12.0	178.0	20.0	42.0	60

Table 16.2d Variography cont.

Au Grade Variograms												
Northeast Zone	0.320	0.680	51.0	30.1	95.6	-38.0	-19.0	5.0	48.0	30.0	90.0	60
Bell Zone	0.468	0.532	80.9	300.2	197.1	47.0	-16.0	-70.0	41.0	150.0	99.0	60
Springer Main Zone	0.514	0.486	125.5	63.5	121.2	-12.0	49.0	29.0	83.0	42.0	80.0	60
Springer Ext. Zone	0.250	0.750	39.2	23.1	195.0	-29.0	-20.0	4.0	26.0	20.0	128.0	60

16.2.5 Kriging Parameters for the Indicators

- Minimum number of composites per estimate 4
- Maximum number of composites per estimate 12
- Maximum number of composites per hole 3
- Maximum distance to the nearest composite 40 metres
- Maximum 3d search distance 120 metres

An elliptical search was used and the search ellipse was limited to 2/3 of the variogram range in each direction.

16.2.6 Kriging Parameters for the Grades

- Minimum number of composites per estimate 4
- Maximum number of composites per hole 3
- Maximum number of composites per estimate 12
- Maximum distance to the nearest composite 60 metres
- Maximum 3d search distance 120 metres

Indicator matching is used so only mineralized zone composites are used to interpolate grades in the mineralized zone and these composites are not projected into the non-mineralized zone. High grade composites have their projection range reduced.

An elliptical search was used with the search ellipse limited to 2/3 of the variogram range in each direction.

16.2.7 Interpolation Parameters for Oxide Ratio

The Northeast Zone (Wight Pit) and Bell Zone do not have significant copper oxide levels.

- Minimum number of composites per estimate 3
- Maximum number of composites per hole 3
- Maximum number of composites per estimate 15
- Maximum distance to the nearest composite 100 metres
- Maximum 3d search distance 150 metres

Indicator matching is used so only mineralized zone composites are used to interpolate oxide ratio in the mineralized zone and these composites are not projected into the non-mineralized zone. The interpolation search is strongly anisotropic with local strikes and dips designed to project the ratios parallel to the surface topography.

An elliptical search was used and the search ellipse was limited to half of the variogram range in each direction.

16.2.8 Resource Estimate

Outside the designed pits, resources for various mineralized zones at Mount Polley have been estimated and are shown on the tables below. These estimates are based on drill information available as at May 31, 2004.

Table 16.2e Mount Polley Resource Classification

Mount Polley Total Resources Excluding Pit Reserves					
Type	**Tonnes**	**Copper Equivalent**	**Copper%**	**Gold g/t**	**Silver g/t**
Meas/Ind	54,576,849	0.507	0.305	0.256	n/a*
Inferred	14,669,828	0.521	0.288	0.297	n/a*

(n/a*) Sliver values are only economically significant in the Northeast zone
see table below for Northeast zone silver values

Table 16.2f Mount Polley Resource Classification by zone

Resource By Zone Excluding Pit Reserves					
Zone	**Tonnes**	**Copper Equivalent**	**Copper%**	**Gold g/t**	**Silver g/t**
Northeast					
Measured	3,702,332	0.790	0.625	0.191	3.814
Indicated	89,157	0.811	0.528	0.356	4.087
Inferred	307,796	0.422	0.248	0.230	1.611
Bell					
Measured	9,562,373	0.420	0.233	0.238	n/a*
Indicated	976,160	0.376	0.227	0.190	n/a*
Inferred	828,312	0.372	0.236	0.174	n/a*
Springer					
Measured	19,966,533	0.501	0.311	0.241	n/a*
Indicated	10,862,229	0.523	0.319	0.259	n/a*
Inferred	10,939,856	0.549	0.308	0.306	n/a*
C2					
Meas/Ind	5,891,159	0.475	0.236	0.304	n/a*
Inferred	1,448,995	0.450	0.223	0.288	n/a*
Southeast					
Meas/Ind	3,526,906	0.512	0.215	0.377	n/a*
Inferred	1,144,869	0.479	0.226	0.323	n/a*

(n/a*) Sliver values are only economically significant in the Northeast zone

The resource estimate was calculated using the block model prepared for the reserve estimate and classified based on the parameters shown in Table 16.2g, below.

Table 16.2g Mount Polley Resource Classification

Resource Classification			
	Minimum # Of Drillholes Used for Estimate	Minimum # Of composites	Max Distance to Nearest Composite
Inferred	1	3	60m
Indicated	2	3	50m
Measured	3	5	25m

The copper equivalent value shown on the resource estimate is calculated based on the table below. The resources have been based on a 0.3% copper equivalent cut-off. The Copper Equivalent Calculation takes into account relative recovery value and production costs. A 0.3% copper equivalent cut-off represents a value close to historic economic cut-off values.

Table 16.2h Copper Equivalent by Zone

Zone	
Northeast	EqCu = Copper + Gold / 1.44 + Silver / 116
Bell	EqCu = Copper + Gold / 1.27
Springer	EqCu = Copper + Gold / 1.27
C2	EqCu = Copper + Gold / 1.27
Southeast	EqCu = Copper + Gold / 1.27

17 Mining: 2004 Feasibility Plan

17.1 Past Mining Operations

Past production has been exclusively from open pit mining methods, exploiting two of the four main deposits, the Cariboo and Bell Pits. Waste rock is stored in three rock disposal sites; East, North and North Cariboo Backfill. Ledcor Industries Ltd. mined under contract until November 1997, when Mount Polley Mining Corporation assumed operations.

The Cariboo Pit, now mined out, was mined from the 1220m to the 1030m benches. The ore reserves were exhausted in September 2001. Waste was hauled to the east rock disposal site and north Cariboo backfill.

The Bell Pit was mined on a continuous basis from fall 2000 to suspension of operations in September 2001. Waste was disposed in the north rock disposal site and north Cariboo backfill.

The Springer Pit was pioneered in summer 2001. Accesses were built to the starter benches and a 73,000 tonne oxide copper bulk sample was removed for milling and metallurgical recovery tests. Haul road construction included access to the Cariboo Pit highwall and the north Cariboo backfill, access to a soil stockpile pad south of the designed Springer Pit highwall and an ore haul road to the primary crusher.

The high grade stockpile contains 208,000 tonnes grading 0.285% total copper, 0.420 g/mt gold with an oxide copper ratio of 23.8%, located adjacent to the primary crusher. Design maximum storage capacity was 2,000,000 tonnes. The Low Grade Stockpile currently contains 2.7 million tonnes grading 0.220% total copper, 0.306 g/mt gold with 34% copper oxide ratio and with room for future expansion.

Soil has been stripped from the disturbed areas and stored in three major stockpiles located above the East Rock Disposal Site, near the High Grade Stockpile and adjacent to the concentrator.

A new feasibility study for the proposed re-opening of the Mount Polley Mine, based on currently achievable metal prices, recoveries and capital/operating cost estimates is presented in Section 18.2 .

17.2 Overview

The 2004 Mount Polley Mine Feasibility Study presented in this report is based on a six and one quarter year mine life. During this plan, 40.7 million tonnes of ore and 101.6 million tonnes of waste will be mined from three pits. Mining will begin in the Bell and Wight pits, and then continue in the Springer Pit in the middle of the second year. Conventional ore processing will occur in the existing mill that has been well looked after under care and maintenance since suspension of operations in 2001. Mine site personnel will total between 225 and 250 personnel during peak operations.

Past property production has been exclusively from open pit mining methods, exploiting the two of the main deposits, the Cariboo and the Bell. Waste rock was stored in three Rock Disposal Sites; East, North and North Cariboo Backfill. Ledcor Industries Ltd. constructed the earthfills and mined under contract until November 1997, when Mount Polley Mining Corporation assumed operations.

The Cariboo Pit was the most economically robust of the three deposits. Pre-stripping of the Cariboo Pit commenced in 1996 during the construction phase, ceased during the winter of 1996 - 97 and recommenced on a full time basis in spring 1997. The pit was mined from the 1220 metre to the 1030 metre benches. The ore reserves were exhausted in September 2001. Waste was hauled to the East Rock Disposal Site and North Cariboo Backfill.

The Bell Pit was mined on a continuous basis from fall 2000 to suspension of operations in September 2001. Waste was disposed in the North Rock Disposal Site and North Cariboo Backfill.

The High Grade Stockpile contains 208,000 tonnes grading 0.285% total copper, 0.420 g/mt gold with an oxide copper ratio of 23.8%, located adjacent to the Primary Crusher. Design maximum storage capacity was 2,000,000 tonnes. The Low Grade Stockpile currently contains 2.66 million tonnes grading 0.220% total copper, 0.306 g/mt gold with 34% copper oxide ratio and with room for future expansion.

Soil has been stripped from the disturbed areas and stored in three major stockpiles located above the East Rock Disposal Site, near the High Grade Stockpile and adjacent to the Concentrator.

17.3 Mine Design Parameters

A 12-metre bench height has been selected, rather than the previous ten metre bench height, as a compromise of ore grade control, blast energy distribution using 9 7/8 inch blast holes and muck pile height using P&H 2100 shovels.

Ramps have been designed to accommodate double lane haulage traffic using Caterpillar 777 and Caterpillar 785C trucks The primary crusher pocket has capacity to accept material from a 150 tonne truck.

Table 17.3 Mine design parameters

Design Parameter	
Bench Operating Height	12 metres
Haul Road Final Grade	10 %
Haul Road Double Lane Width	27 metres
Swell Factor	33 %
RDS Angle of Repose	37 degrees
RDS Angle of Reslope	2:1 (H:V)

17.4 Geotechnical Design Parameters

Golder Associates Ltd. recommended inter-ramp wall geometry for the proposed pits.

17.4.1 Bell Pit

Table 17.4a Bell Pit Design Parameters

West and Northwest wall	
Vertical Berm Separation	24 metres
Bench Face Angle	65 degrees
Catch-berm Width	12 metres
Inter-ramp Wall Angle	46 degrees

East and South Wall	
Vertical Berm Separation	24 metres
Bench Face Angle	70 degrees
Catch-berm Width	10.8 metres
Inter-ramp Wall Angle	51 degrees

17.4.2 Wight Pit

Table 17.4b Wight Pit Design Parameters

South, West & North Wall	
Vertical Berm Separation	24 metres
Bench Face Angle	65 degrees
Catch-berm Width	12 metres
Inter-ramp Wall Angle	46 degrees

Table 17.4b Wight Pit Design Parameters cont.

East Wall	
Vertical Berm Separation	24 metres
Bench Face Angle	65 degrees
Catch-berm Width	10.8 metres
Inter-ramp Wall Angle	42 degrees

17.4.3 Springer Pit

Table 17.4c Springer Pit Design Parameters

West Wall	
Vertical Berm Separation	24 metres
Bench Face Angle	65 degrees
Catch-berm Width	9.6 to 12 metres
Inter-ramp Wall Angle	46 to 49 degrees

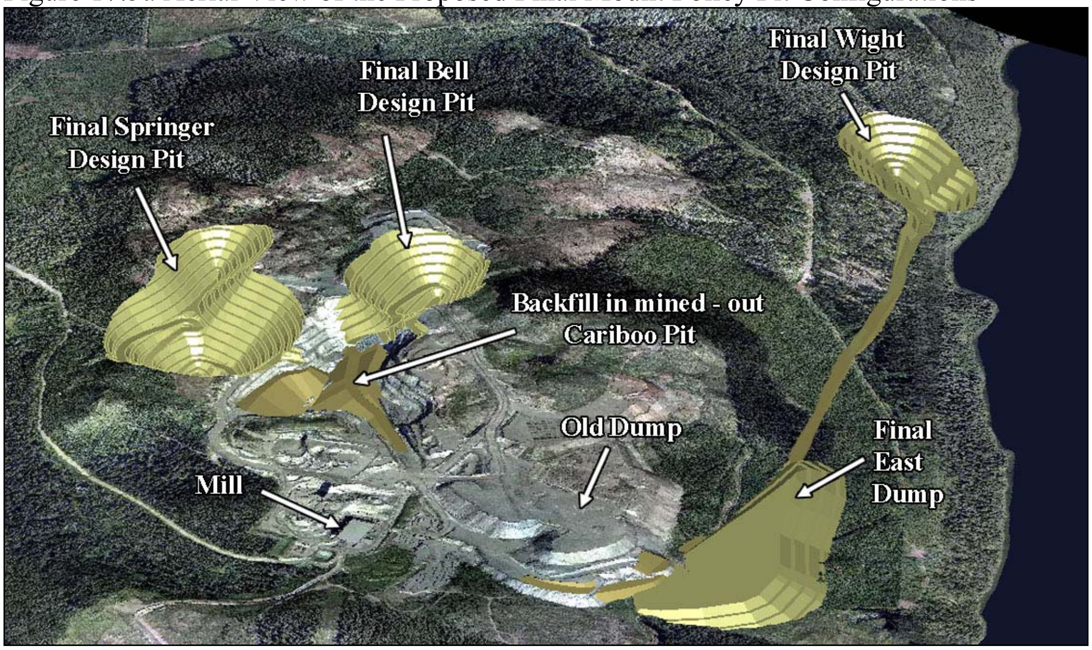
North Wall	
Vertical Berm Separation	24 metres
Bench Face Angle	65 degrees
Catch-berm Width	9.6 metres
Inter-ramp Wall Angle	49 degrees

Northeast & East Wall in Polley Fault	
Vertical Berm Separation	12 metres
Bench Face Angle	70 degrees
Catch-berm Width	9.6 metres
Inter-ramp Wall Angle	41 degrees

East Wall Outside Polley Fault	
Vertical Berm Separation	24 metres
Bench Face Angle	65 degrees
Catch-berm Width	9.6 to 12 metres
Inter-ramp Wall Angle	46 to 49 degrees

17.5 Pit Designs

Figure 17.5a Aerial View of the Proposed Final Mount Polley Pit Configurations



Pit designs based on Lerchs-Grossman pit optimization runs identified economic ore reserves in the Wight, Springer and Bell pit areas. The design parameters of Section 3.3 and 3.4 provided the basis for the design of these three main pits. All pits are designed with a 12 metre bench height.

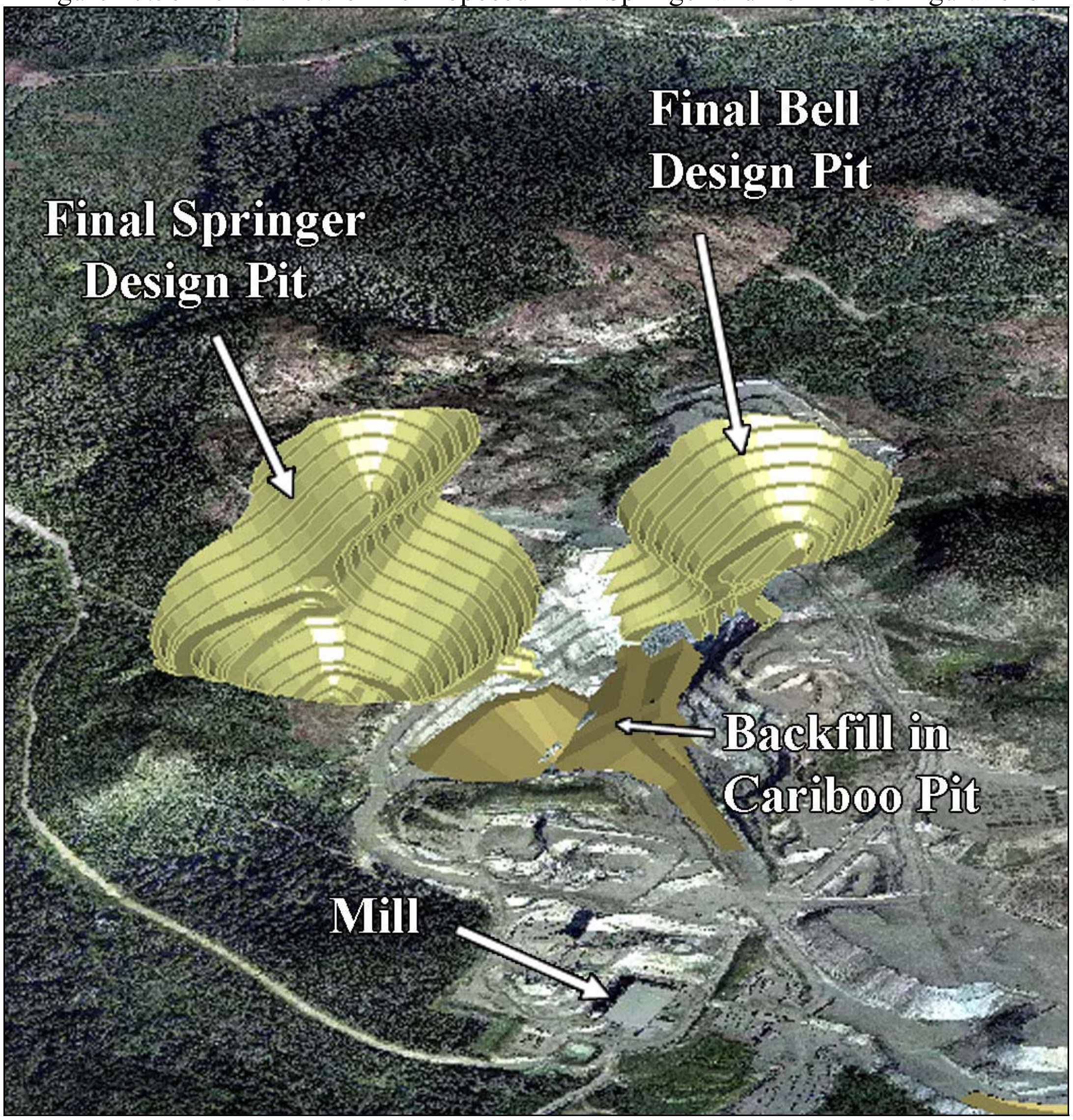
17.5.1 Bell Pit Design

The 9.8 million tonne "horseshoe shaped" pushback of the original Bell Pit is designed with access through the Cariboo Pit. The pit will be deepened 96 metres to elevation 1024 metres. See Figure 17.5b.

Features of the pit include.

- Waste from the west and south of the pit will be disposed of in the North Rock Disposal Site and waste from the east of the pit will go to the Cariboo Pit.
- Access to the pit for ore and approximately half of the waste is through a slot cut into the north end of the Cariboo Pit using a series of fill ramps constructed along the east wall of the Cariboo Pit. The ultimate depth of the slot is at the 1090 metre elevation. This slot access allows the pit design to extend deeper by removing the ramp from the east wall of the pit, widening the bottom benches without pushing out the high wall.

Figure 17.5b Aerial View of the Proposed Final Springer and Bell Pit Configurations

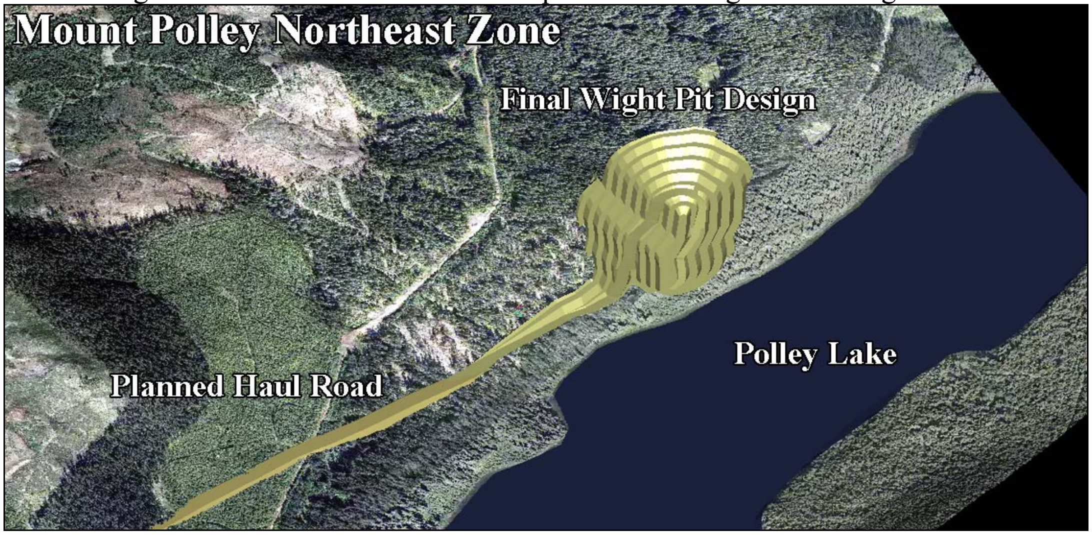


17.5.2 Wight Pit Design

The 6.2 million tonne Wight Pit is situated in the Northeast Zone, 1.5 kilometres northeast of the Bell Pit. Features of the pit include:

- Access to the pit for both ore and waste is via a haul road running south above Polley Lake around the south end of the East Dump and up the existing lower dump access ramp to the crusher. The average grade of the haul road is 5.2%.
- The ore haul is approximately 3.3 kilometres
- Waste will be disposed of in a dump situated to the east of the existing east dump. The waste haul is approximately 1.8 kilometres.

Figure 17.5c Aerial View of the Proposed Final Wight Pit Configuration



17.5.3 Springer Pit Designs

Springer Starter Pit

The Springer Pit lies immediately west of the mined out Cariboo Pit. Prestrip tonnage was lessened by design of a 7.3 million tonne Springer Starter Pit as per Figure 17.5d. Features of the Starter Pit include:

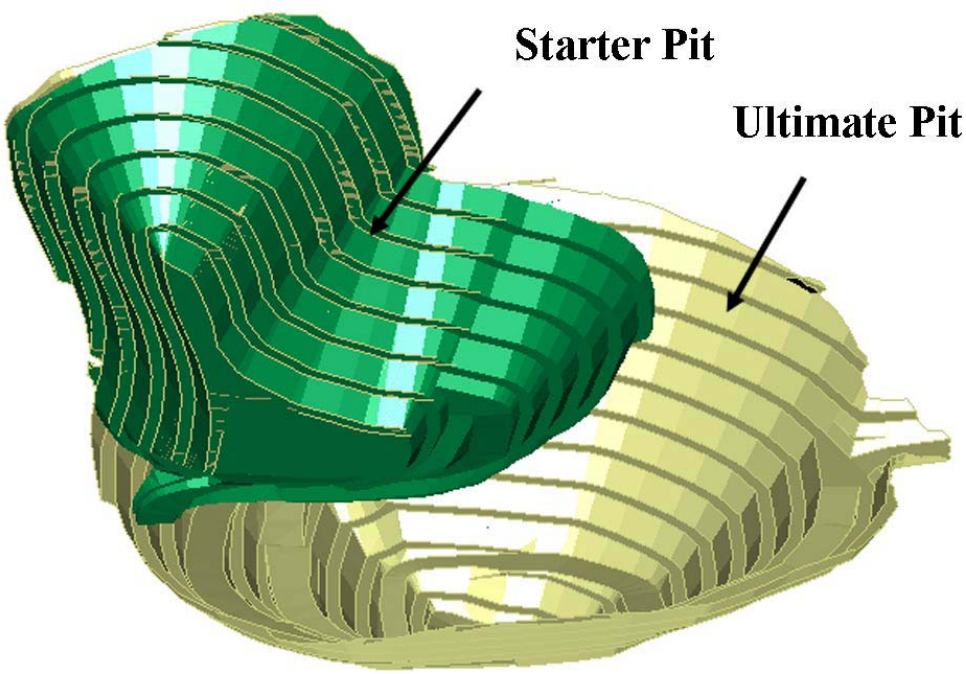
- Waste will be disposed of in the mined out Cariboo and Bell pits.
- Oxide waste that is potentially economic for heap leaching will be stockpiled in the area south of the existing east dump and bounded by the ditch leading to the Southeast Sediment Pond.
- A haulage ramp constructed over original ground on the south side will provide access to the soil stockpile pad, ore haulage to the crusher pocket and waste backfill into the South Cariboo Pit Backfill.

- The high grade North Extension Zone was included in the Starter Pit design.

Springer Ultimate Pit
The 17.4 million tonne pushback is shown in Figure 17.5d, features include:

- Waste disposal from this pit will also utilize the mined out Cariboo and Bell pits with high oxide waste being stored on the oxide stockpile.
- Slot access through the Polley Fault at 1090 metre elevation onto a Cariboo Pit backfill ramp.
- A 27 metre wide haulage ramp suitable for 150 tonne trucks, designed on the south and west side to minimize stripping.

Figure 17.5d Springer Pits



3D View Looking North of the Proposed Springer Pits

17.6 Mine Operations

The mine plan equipment list is on the following page in Table 17.6 Mine operating practices related to equipment selection are explained in the following sections. Actual equipment statistics experienced at Imperial Metals Corporation's mines and equipment performance estimates using standard engineering criteria were used to estimate future equipment needs.

The equipment selection is based on the productivity of the equipment fleet obtained during mining operations at Mount Polley from 1997 through 2001. As well, the higher production requirements of the updated mining schedule resulted in additional equipment requirements. Most of the required equipment has been sourced and in some cases down payments are in place. Funds have been added to the purchase price of the used equipment in order to cover costs for anticipated component replacements.

The haul unit productivity is based on planned hauls from the loading face to either the crusher pocket or waste rock disposal site, calculated on a bench-by-bench basis.

Table 17.6 Mount Polley Mine Plan Equipment List

Mount Polley Mine - Feasibility Study 2004 - Equipment List

		Year 1				Year 2	Year 3	Year 4	Year 5				Year 6	Year 7
Production Equipment	**Prep**	**1**	**2**	**3**	**4**	**1 - 4**	**1 - 4**	**1 - 4**	**1**	**2**	**3**	**4**	**1 - 4**	**1**
Drills														
BE45R Diesel	1	1	1	1	1	1	1	1	1	1				
BE60R Electric	1	2	3	3	3	3	3	3	3	3	2	2	2	2
Shovels														
P&H 2100	1	3	3	3	3	3	3	3	3	3	2	2	2	2
Front End Loaders														
Cat 992C	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cat 994	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Haulage Trucks														
Cat 777B's	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Rental Cat 777's		1												
Cat 785C's		6	11	11	11	11	11	11	11	11	8	8	8	8
Support Equipment														
Cat D10N (Bulldozer)	3	4	4	4	4	4	4	4	4	4	3	3	3	3
Cat D7G (Bulldozer)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cat 824 (Rubber Tire Dozer)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cat 16G (Motor Grader)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cat 14G (1-Motor Grader)	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cat 769 Water Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rental Water Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hitachi 270 Backhoe	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hitachi 400 Backhoe	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cat 966 Utility Loader	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cat 950 Stemming Loader	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Plow and Sand Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gravel Truck	1	1	1	1	1	1	1	1	1	1	1	1	1	1

17.6.1 Drilling

Two electric and one diesel BE45R rotary blast hole rigs drilled 12m – 25cm blast holes during previous operations at Mount Polley. Production blasts were drilled on a staggered 7.5 metre equilateral pattern. Wall cushion blasts reduced powder loads against the highwall and limited wall damage. Productivity averaged 11.3 metres/operating hour in 2000. Smaller down-hole hammer drills were rented as required to pioneer the steep hillsides when new pits were developed. Drill cuttings were sampled and bagged by the driller and delivered to the laboratory for assay.

Rotary tri-cone bit life and penetration was adversely affected by low bailing air delivery to the bit. Studies by bit manufacturers recommended main compressor upgrades to the BE45R drills to increase air-bailing velocity.

Due to the air bailing inefficiency and lower productivity of the BE45R drills, management has decided to upgrade the drill fleet to include three electric BE60R drills. Mount Polley has made a down payment on two of the BE60R drills from another BC mine and is sourcing the third unit. One diesel BE45R drill will be retained as a backup unit. It will also be utilized in areas that are difficult to provide power to the electric drills

Drill productivity for the BE60R drills for purposes of the Feasibility Study has been estimated at 18 metres per operated hour. This is considered a conservative estimate as another operation in similar conditions has averaged over 21 metres per hour over the past year. Drill requirements are based on a 7.0 by 8.2 metre drill pattern, a 12 metre bench height with 2.5 metre sub-drill and ten percent additional holes for re-drills and wall control.

The mine plan requires full time operation of two drills for 75 percent of the time and three drills for 25 percent of the time for the first four and a half years of renewed operations. In the latter half of the fourth year, drill requirements are lessened due to reduced stripping requirements.

17.6.2 Blasting

During previous operations, Orica Canada Ltd., delivered bulk explosive product to the blast hole via a Blendmaster truck. Ammonium nitrate & fuel oil (ANFO), Heavy ANFO (SuperAN 125) and Doped Emulsion (Magnafrac 1161) products were used. Two Pentex 16 boosters provided double primed initiation in each blast hole. Handidet non-electric detonators separated the detonation of each hole by 25 milliseconds. The designed powder factor was 0.25 kilograms of explosive per tonne of blasted rock. A blasted inventory of one million tonnes was maintained.

A two man crew loaded and stemmed the blast holes assisted by a MEMPR approved Caterpillar 950 loader with side-dump bucket. Stemming material (5/8”) was hauled from the road-dressing stockpile.

Orica Explosives Ltd. worked under a five-year contract with one and a half years remaining at suspension of operations. The contract was serviced through a bulk explosive storage facility and office on the Tailings Storage Facility access road. Emulsion was manufactured at the Gibraltar Mine and trucked over Beaver Valley Road. Orica also provided a pneumatic ANFO delivery truck and blast hole dewatering truck for the cost of maintaining the units.

The fragmentation was generally good with no secondary blasting. Oversize ore boulders were stored in the High Grade Stockpile for mechanical breakage with a NTK 20X hammer mounted to a Hitachi 400 excavator. The excavator also backed up the rock breaker located in the primary crusher pocket.

For purposes of the Feasibility Study, Mount Polley Mining Corporation has received a budgetary quote that includes all blasting powder and accessories as well as all down hole blasting services. The quote assumed 45% ANFO, 15% Heavy ANFO (Super AN 2500) and 40% Doped Emulsion (Magnafrac 1171). Costs were based on consumption of explosives at the historical powder factor of 0.25 kilograms per tonne. Costs averaged about $0.147 per tonne mined during the periods of peak production (i.e. years one through four). Unit costs from the quote were used for the financial analysis.

All facilities required by the supplier remain in place from cessation of operations in 2001 and are in good repair.

17.6.3 Loading

Two P&H 2100 Electric Shovels (13 m3 / dipper) and two Cat 992 Wheel Loaders (9 m3 / bucket) handled all the material in the past. The shovels were capable of loading side boarded Caterpillar 777B trucks with four passes. Subsequent to cessation of operations, one of the P&H 2100 Shovels and six of the Cat 777B's were sold. In addition, it was determined that one of the Cat 992 wheel loaders would not be put back in service. As such, current primary loading equipment on site consists of one shovel and one front end loader.

During pre-production and Year 1, Quarter 1, the mine will be steadily increasing the amount of operating loading equipment on site. Starting in Year 1, Quarter 2 the mine will average approximately 28.8 million tonnes per year of total material, not including miscellaneous stockpile rehandle requirements. This is equivalent to 78,900 tonnes per day. The mine plan requires three P&H 2100 shovels and one 23 cubic yard capacity wheel loader to mine the required tonnage during the peak production periods through the first four and a half years of operation. Following the period of peak production, primary loading requirements reduce substantially. One Cat 992 Wheel Loaders (9 m3/bucket) will remain on site as additional back-up and for stockpile rehandle requirements.

The loading equipment productivity was evaluated based on a fully trucked condition with primary loading equipment loading Cat 785C haulage units. Results are shown on the following page in Table 17.6b. Assuming an operating efficiency of 80%, the units should routinely produce an average of 1,610 tonnes per operating hour loading into these haul trucks.

The loading units were scheduled with a conservative physical availability of 83 percent in order to ensure adequate units. The two additional P&H 2100 Electric Shovels have been located in the area and have been priced. A Caterpillar 994 Wheel Loader (23yd3 / 17.6m3 bucket) has also been located and priced. A substantial inventory of replacement components for the shovels is already in place at the mine site.

Imperial Metals

Table 17.6b Loading Equipment Productivity

Loading Equipment Productivity Estimate						
Loading Equipment		**Standard**	**P&H**	**Standard**	**P&H**	**Standard**
Type		**Cat 992C**	**2100**	**Cat 994**	**2100**	**Cat 994**
Material Density						
Banked	(MT/BCM)	2.69	2.69	2.69	2.69	2.69
Swell Factor	(%)	1.5	1.5	1.5	1.5	1.5
Loose	(MT/LCM)	1.79	1.79	1.79	1.79	1.79
	(LBS/LCY)	3023	3023	3023	3023	3023
Loading Unit						
Operating Parameters						
Bucket Size	(LCY)	12.5	17	23	17	23
	(LCM)	9.6	13	17.6	13	17.6
Fill Factor	(%)	85%	85%	85%	0.85	0.85
Material Per Pass	(LCM)	8.1	11.1	15	11.1	15
	(MT)	14.6	19.8	26.8	19.8	26.8
Haulage Unit Type			**Cat 777**		**146 metric ton Truck**	
Truck Factor Rating	(SDT)	95	95	95	161	161
	(MT)	86	86	86	146	146
No. Passes/Truck		5.91	4.35	3.21	7.37	5.45
say....		6	4	3	7	5
Actual Load Per Truck	(MT)	87	79	80	139	134
@ max. 5% overload						
Loading Unit Productivity						
Swing Time	(SEC/PASS)	42	30	42	30	42
	(SEC/LOAD)	252	135	137	210	210
	(MIN/LOAD)	4.2	2	2.1	3.5	3.5
Spot Time	(SEC/LOAD)	36	36	36	36	36
	(MIN/LOAD)	0.6	0.6	0.6	0.6	0.6
Total Load Time	(MIN/LOAD)	4.8	2.6	2.7	4.1	4.1
Productivity, Theoretical,	(MT/HOUR)	1093	1830	1788	2031	1962
(fully trucked)						
Loading Efficiency	(PERCENT)	80%	80%	80%	80%	80%
Productivity per Oper. Hour	(MT/HOUR)	875	1464	1430	1625	1570
Working Hours per Shift	(HOURS)	9.167	9.167	9.167	9.167	9.167
Productivity per Shift	(MT/SHIFT)	8017	13420	13113	14893	14392
(100% Availability)						
Productivity per Year	(MT/YEAR)	5852652	9796440	9572338	10871659	10506225
(100% Availability)						
Physical Availability	(PERCENT)	83%	83%	83%	0.83	0.83
Potential Tonnes Mined/year	(MT/YEAR)	4857702	8131045	7945041	9023477	8720167

17.6.4 Hauling

During previous mine operations, a fleet of up to nine Cat 777B haulage trucks (86 tonnes) hauled material to the gyratory crusher and rock disposal sites. Maximum ramp grades were 10% and widths were maintained to maximize truck productivity and safety. Waste was crushed and screened to provide road-dressing material. Tire life was good and generally affected only by shovel face and ramp cleanup. Tires often achieved full life after run-out on the rear of the truck. Dumps were generally stable and crests were well maintained. A fuel island adjacent to the primary crusher allowed drivers to refuel themselves through "quick-fuel" Wiggins couplers.

As previously noted, six of the nine Cat 777B haulage trucks have been sold. Due to the increased production requirements (i.e. compared to operations in 1997 – 2001) and longer haulage requirements for both waste and ore from the Wight Pit, it was determined that larger haul units would be more productive and cost efficient. The haulage unit chosen has a significant capacity increase compared to the previous units. The three remaining will be retained for stockpile rehandle haulage and as backup units.

Mount Polley contacted two established equipment suppliers to obtain pricing and delivery time for new units. Haul truck requirements during pre-production are adequately handled by the current Mount Polley owned Cat 777B units. Requirements during the first quarter of mine operations are planned to be from the three (3) Cat 777Bs, one (1) rental Cat 777 and six (6) used Cat 785C haulage units, three of which have been located and purchased. The remaining five Cat 785C haulage units will be purchased new and delivered by the second quarter of mine operations.

Steady state operations will require three (3) Cat 777Bs and eleven (11) Cat 785C haul trucks. In the latter half of the fifth year of mining operations, three (3) of the Cat 785C haul trucks may be sold. The remaining fleet will remain intact through the remainder of mine life.

Fleet requirements are based on the loading fleet described previously and estimated haulage cycle times from each mining bench from the respective pit to the ore dump pocket or overburden disposal site. Other time factors added to the cycle time include time lost due to bunching, mismatch (i.e. as loading is based on being fully trucked, there will be truck time lost due to waiting to get loaded), and dumping time at the ore dump pocket and overburden disposal site. A range of productivity rates of truck tonnes hauled per operated hour from the various pits to the disposal sites is shown below:

Table 17.6c Truck Productivity Rates

Pit	Ore Max (tph)	Ore Min (tph)	Overburden Max (tph)	Overburden Min (tph)
Wight	261	196	327	252
Bell	552	391	851	412
Springer	538	262	780	309

Fleet availability for the new Cat 785C haulage units was set at 90% for the first year, reducing to 88% in the second year and ultimately to 86% at the end of mine life. This is considered a conservative estimate in that it is about the same historical availability achieved with the older Cat 777B haulage units during previous mining operations.

17.6.5 Support Operations

Previously, pit operations were supported by a Caterpillar equipment fleet consisting of a 16G grader, D10N, D8R & D8K tracked dozers, 824 rubber tired dozer with cable reeler and a 769 water truck and three small loaders. A Peterbuilt fuel truck supplied fuel to the support equipment and water for dust suppression on the drills. A 4160-volt power line originated at the primary crusher, supplying power to the electric drills, shovels and dewatering pumps.

In addition, the Tailings Storage Facility was supported by a Hitachi 270 excavator with cleanup and rock buckets, a Hitachi 400 excavator with cleanup and rock buckets, thumb, rake and rock hammer and a D7G tracked dozer with blade and bush rake. The mine access roads were maintained with a 14G grader. These units also supported the mine operations as required.

During future operations, other than the bulldozers, the support fleet will be similar to mine operations in 1997 through 2001. The decision was made to upgrade the bulldozer fleet. This was considered necessary due to the larger trucks that will be utilized and increased tonnage moved on a daily basis. Three D10N bulldozers have been sourced and a down payment has been made. These units will supplement the existing D10N resulting in a fleet of four (4) D10N track bulldozers and one (1) track D7G bulldozer. The remaining equipment remains essentially the same with the addition of a low bed and tractor for moving support equipment to different pit locations (will result in reduced track wear) and an additional rental water truck during summer operations due to the increased haulage requirements.

17.6.6 Human Resources

Previously, mining operations proceeded on a 24-hour basis, seven days per week utilizing four crews working a 12-hour shift, four days on, four days off. Manpower levels in Mine Operations reached 70 hourly and six staff employees. The Engineering Group consisted of 10 people including engineers, geologists, technologists and environmental staff.

Mount Polley plans to change the shift schedule for future mining operations. It is planned that operations crews will be made up of four crews working a 10.5 hour shift, four days on, four days off. The purpose of this schedule change will be to increase the efficiency of the operation. In-pit blasting will be carried out between shifts and fuel/lube will also be carried out between shifts to the extent possible.

Mine operations will consist of approximately 92 production, six supervisory and eight engineering, geology and survey personnel.

18 Mineral Processing and Metallurgical Testing

18.1 Metallurgy

18.1.1 Summary

The metallurgical performance after recommencement is expected to be more varied than that seen in the past. The average mill feed grade from the new Wight Pit is much higher than previously experienced, with little or no "oxide copper" content and significant amounts of silver. The Springer Pit will supply more traditional feed grades, but with elevated oxide copper content, particularly on the upper benches. On the other hand, metallurgy for the Bell Pit is expected to be similar to that achieved prior to shutdown. Finally, ore from the stockpiles, mostly derived from the exhausted Cariboo Pit, should conform to the metallurgical performance previously experienced.

Initially, ore supply will come from the Bell Pit and stockpiles, with Wight Pit product being phased in as stripping progresses and ore becomes available.

18.1.2 Wight Pit

Laboratory testing has been completed on a composite sample representing the first six months of ore to be mined from the Wight Pit. Additional samples from different areas of the zone are still being examined, with the ultimate objective of developing a metallurgical performance model similar to that for the Springer Pit. Based on results to date, the following conclusions can be drawn:

18.1.2.1 Grind / Throughput

- Bond work index tests show that the Wight ore is somewhat softer than that from the other pits, with a ball mill work index of 17.0 kwh/tonne. Additional samples have been submitted to Lakefield Research for both rod mill and ball mill work index testing.
- Laboratory flotation tests have revealed that excellent recovery can be achieved at a rougher feed target P_{80} of 190µm, with a mass pull of 12-15 percent. This large amount of relatively coarse rougher concentrate must then be reground to a P_{80} of 30µm to achieve desired concentrate grade at an acceptable overall recovery. Modelling of the grinding circuit shows that even with the diversion of the 1800 hp BM #3 or 4000 hp PM #3 for regrind, with good classification 20,000 tpd can be achieved. The existing small regrind mill may be used to provide additional capacity.

18.1.2.2 Flotation

Based on locked cycle testing at G&T Metallurgical:

- Overall recovery of 89.9% Cu, 90.1g/t Au into a 27.3% Cu concentrate from a 1.46% Cu 0.53g/t Au head. The test program included re-grinding 100% of the rougher concentrate cleaning and a cleaner scavenger, with scavenger tails to final tails. The above results are based on two cleaning stages only.
- Further test work is underway to optimize the regrind P_{80}. Additional ore samples from outside the initial composite area are also being tested to examine variability
- Modifications required to the existing flotation circuit to accommodate this ore, while maintaining the capacity to treat the other ore types include:

- Use all existing column cells (four rougher and two cleaner) in the cleaner circuit, along with existing cleaner scavenger bank. Canadian Process Technologies has reviewed the data and indicates that the capacity will be adequate.
- Convert the existing oxide circuit to a second stage rougher circuit to treat first stage rougher tailings.
- Install four-1000 m^3 OK38 cells obtained from Similco Mines to replace the existing 12 ft ø column cells as the first stage of rougher flotation. Split rougher flotation into two parallel circuits each consisting of two OK38s and one existing bank of 10 Agitair 1000 ft^3 cells. This will maintain existing capacity and at the same time permit part of the flotation circuit to be available for maintenance whenever part of the grinding circuit is shut down. The existing 12 ft ø rougher column cells will then be converted to cleaner column cells.
- Set-up for sulphidization and oxide copper flotation in both the 2nd and 3rd stages of the Agitair rougher banks if oxide head grade so warrants.

18.1.2.3 Dewatering

Meeting the maximum design target of 20,000 tonne/day mill feed at 1.0% copper will result in concentrate production twice that previously seen at Mount Polley. In order to accommodate the higher feed grade a used 33ftø-high capacity thickener will be installed prior to start of operations, and both of the existing 15ftø thickeners retained.

Testing of concentrate from lab flotation tests was performed by Larox Inc. in it's lab in Finland. This yielded a filtration rate of 500 kg/m^2/hr, a significant improvement over past performance. Unfortunately, because of the high concentrate production rate even at 90% availability it would require a minimum of four of the existing Larox PF25 units to handle the tonnage. Alternatively, a single Larox PF84/96 would be adequate. Another choice would be a Lasta MCFH 1500x1500x42. The latter two units are of improved design, incorporating hydraulic actuation. Experience elsewhere has shown this significantly reduces maintenance requirements. The Lasta rated capacity of 153 m^2

handily exceeds the 81.6 m2 required to filter the Mount Polley design production of 41.6 mt/hr. The installation of a Lasta MCFH 1500x1500x42 has been included in the budget of this study, for installation prior to year three of operations.

18.1.3 Springer Pit

For metallurgical purposes, the Springer Pit should be considered in three separate sections. In the upper levels much of the copper content is oxidized, and conventional mill recovery is low. During the plant test, shortly before operations ceased, only 12% overall copper recovery was achieved. Much of this material is better suited to the bio-leach process that is currently being studied. What was previously considered the deep Springer now forms a middle layer, and is much more amenable to recovery in a conventional flotation plant. The new deep Springer Zone is still in the exploration stage. Preliminary metallurgical testing has shown this to be free milling ore with little or no oxide content.

18.1.3.1 Grind / Throughput

- Comparative work index tests show that the sulphide ore from the deep central Springer is essentially the same hardness as ore from the former Cariboo Pit (18.1 kwh/mt for Springer, 18.4 kwh/mt for Cariboo).
- The plant test run of upper Springer ore with high (70%+) oxide content attained a sustainable throughput of 25,000 tpd. Comparative work index tests support this conclusion with test results of 13.8 kwh/mt.
- Comparative work index tests on Springer ore with a 41% oxide ratio yielded a work index of 17.5 kwh/mt, suggesting that throughput rate cannot be inferred (other than in a very general sense) from oxide ratio.
- There is some indication that recovery of Springer ore may be more sensitive to flotation feed size variation than was the case with Cariboo ore, potentially affecting concentrate grade as well as recovery.

In combination, the above suggest that throughput rate will vary with feed type, with a probable average of 18,000 tpd for high sulphide ore (<0.20 oxide ratio) and around 22,500 tpd for high oxide ore (0.20 to 0.50 oxide ratio). Target grind remains at a P_{80} of 170µm (65% minus 200 mesh) for all ore types; the achievement of which will ultimately dictate throughput rate.

18.1.3.2 Flotation

Based on laboratory testing, a model has been developed to predict mill performance over the range of oxide ratio from the upper and middle of the ore body. There is currently insufficient data to assess performance of the new lower section. The tables below show copper and gold recoveries predicted by this model.

Predictive Formula for Springer Pit

Copper Recovery   90.36 – 106.88 x Oxide Ratio

	+ 42.91 x Non-Sulphide Copper Head
Gold Recovery	47.89 + 0.00524 x (Predicted Copper Recovery)^2

Based on extensive laboratory testing, the formulae hold for oxide ratios between four percent and 76% with coefficient of correlation of 0.971 for copper and 0.921 for gold. Incorporation of feed iron into the model improves the confidence interval slightly, but as the iron assay is unavailable for much of the proposed pit, this approach was discarded.

Target concentrate grade will remain unchanged at 25% to 26% total copper.

Figure 18a Copper Recovery

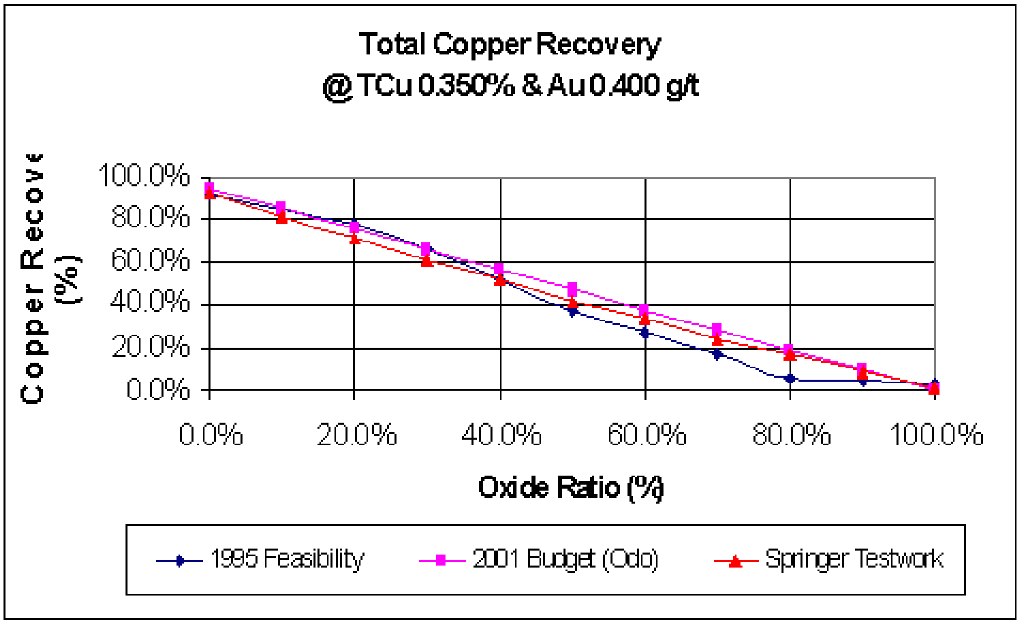
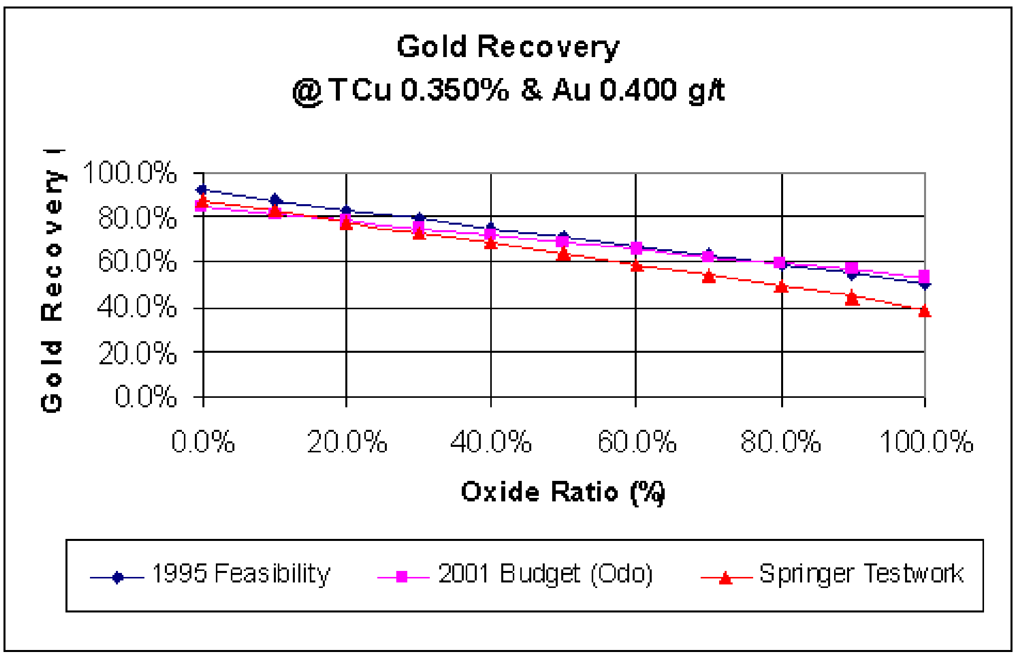


Figure 18b Gold Recovery



18.1.3.3 Dewatering

All indications are that the Springer ore contains significant amounts of fine clays, particularly in the higher oxide zones. These may be expected to impede the dewatering process. Work will need to be done to optimize flocculant type and consumption as well as filter media. Expansion of dewatering to handle Wight Pit head grades will eliminate equipment capacity as an issue.

18.1.4 Bell Pit

Significant quantities of ore from the Bell Pit were milled prior to shutdown. Initial problems with respect to achieving target concentrate grade due to the flotation of pyrite were addressed with pH control in flotation.

18.1.4.1 Grind / Throughput

Between July and September 2001, a number of days can be positively identified when the mill processed straight Bell Pit ore. Average throughput rate achieved was lower than that seen for Cariboo Pit ore, due to a combination of higher work index (ore from the southern part of the pit) and high head grade, which created overloads in flotation and/or dewatering if processed through grinding at too high a rate. A review of operating data indicates that the latter was the primary limiting factor on throughput, particularly if the head exceeded 0.45% copper. Circuit enhancements to deal with the much higher Wight Pit feed grade will eliminate this as an issue. A comparative work index test on a July 2001 mill feed sample of Bell Pit ore yielded a result of 19.6 kwhr/mt. Geology indicates that the expected ore will be similar to that received in August and September 2001, with low pyrite content and softer than that received earlier in the year. A sample from a stockpile of admittedly high grade (1.11% Cu) material from the last bench mined prior to suspension tested at 14.3 kwhr/mt. On this basis, Bell Pit ore should be able to be milled at a rate of 18,000 tpd.

18.1.4.2 Flotation

Based on historical plant results, expect the tabulated average recovery.

Table 18.1 Flotation

Item	Recovery
Total Copper	81.4%
Non-Sulphide Copper	59.7%
Gold	73.5%

Target concentrate grade will remain unchanged at 25% to 26%.

18.1.4.3 Dewatering

Bell ore was relatively free of clays and other fines, and should not present any particular problems for dewatering. Excellent dewatering results were attained with high pyrite Bell concentrates during 2001.

18.1.5 Stockpile ore

The bulk of the ore on the Low and High Grade Stockpiles came from the Cariboo Pit before it was exhausted. Metallurgical performance is expected to conform to the 2001 budget model.

The revised milling circuit developed to accommodate the Wight Pit ore will still be able to match prior treatment practice for this ore. However, laboratory testing is underway to determine metallurgical response under the same regime proposed for Wight and Bell ores. Various blends of the ore types are also being tested to determine whether blending or batching is the most cost-effective treatment option.

18.2 Existing Plant at Shutdown

Mining and milling operations were suspended in September 2001 due to continued low copper and gold prices. Orderly shutdown procedures were followed, and the mine has been maintained on standby pending an improvement in metal prices. Accordingly, work was performed cleaning out the gyratory pocket, surge bins, tanks and process lines.

18.2.1 Crushing Plant

All large openings in the crusher buildings were sealed off.

The gyratory crusher pocket is completely cleaned out with the crusher mantle sitting in the lowered position.

The secondary screen assembly has been removed from the crusher building and is located in the warehouse yard.

All the take-up pulleys were raised and the gearboxes filled with oil. All belts remain in place and will be removed, rolled and stored in the spring to prevent any deterioration. Any tail pulley, slide-type tensioners were loosened.

The main process and potable water lines to the crusher are isolated. The firewater and sprinkler system is drained and isolated. A Fire System procedure has been drafted and will be used in case of a fire.

18.2.2 Grinding Circuit

The steel charge in all mills has been removed and stored. While part of the removed grinding media has been since disposed of, an estimated 200 metric tonnes of grinding balls and 200 tonnes of grinding rods are stored outside on the cement pad at the east side of the flotation mill building.

All grinding pumps were drained with spool pieces and casing bolts removed.

All primary and secondary cyclones were left in place.

The pinion bearings on all mills were filled with grease.

All mill gear grease spray pumps were flushed and filled with ATF oil, wrapped in plastic.

The feed end bearings were removed, except on RM #2, PM #1, PM #2 and PM #3. These mills were blocked in saddles.

The discharge end bearings were removed, except on RM #2, PM #1 and PM #2. These mills were blocked in saddles.

The feed and discharge end trunnions were blocked on all mills.

The oil was pumped from the trunnion base on all mills and lube pumps were capped.

The motor bearings on all mills were blocked.

18.2.3 Flotation Circuit

All flotation cells were flushed and drained.

All pumps were drained with spool pieces and casing bolts removed.

The cell mechanisms were pumped full of grease and the drive belts removed or loosened.

18.2.4 Reagent System

All the holding and mix tanks were completely drained and flushed, except for the MIBC tank. All other reagents are appropriately stored.

Table 18.2 Reagents

Reagent	On Hand (kg)	Location
MIBC (frother)	1,050	Double walled tank (outside east-side of flotation building)
Dowfroth 250 (frother)	2,800	2 totes & 4 drums in flotation basement, 2 drums in warehouse compound
Aerofloat 208 (promoter)	1,140	1 tote in flotation basement
SPRI 156	850	1 tote in flotation basement
S 8913 (promoter)	1,338	6 drums in warehouse compound
Total	7,178	

18.2.5 Dewatering Circuit

The concentrate thickeners and stock tanks were completely drained and flushed.

All slurry and water lines have been drained.

Both filter cloths were removed and discarded.

18.2.6 Potable Water

The tank is fed from two deep well pumps, which run continuously with pump protection units in their control circuits. The pumps are two different sizes, supplying either 75 usgpm or 150 usgpm. The pumps are controlled manually. The potable water is stored in a holding tank beside the process water tank. Any overflow from the potable water tank flows into the process water tank. Internal potable water pumps distribute water throughout the mill and crusher building.

During shutdown, the internal distribution pumps were replaced with a smaller system because of the low water demand. This system must be restored to the original design prior to the start-up.

18.2.7 Fire Protection

Water for the fire system is supplied from a reserved section in the lower part of the process water tank. The reserve volume is 108,000 usgal. The protection system in the mill is a wet system kept pressurized by a jockey pump to 100 psi, with hydrant locations throughout the mill building and surrounding areas. A wet sprinkler system is installed in the offices and dries. If system pressure drops due to discharge of the system, the electric firewater pump will start to maintain a pressure of 100 to 110 psi. The system has a backup diesel pump in case of power failure.

The crusher has a separate dry system fed from the main system. If a pressure drop occurs, the control valve will open, flooding the system and causing the fire pump to start up.

All firewater lines have been drained for shut down so that they would not freeze up. The hydrant on the bottom floor at the east end of the office block has been opened to prevent water hammer if the fire pump is started. The firewater pump is set up for manual start in case of fire.

The system will have to be restored to its original state on restart of the mine.

18.2.8 Fire Alarm System

The fire alarm system in the mill utilizes an Edwards ESA integrated fire alarm panel located in the mill control room with an annunciating panel in the electrical shop. The unit is set up with 25 alarm zones and three trouble zones. Smoke detectors, heat detectors, and manual pull stations activate the alarm zones. The tamper switch position and pump running contactor activate the trouble zones. The alarm output consists of bells and strobes throughout the mill and office buildings. The tamper switch trouble zone has been disabled because of the open hydrant mentioned above.

The system will have to be restored to its original state on restart of the mine.

18.3 Plant Rehabilitation and Modifications

18.3.1 Crushing Plant

18.3.1.1 Gyratory Crusher

This 42” x 65” crusher is in good condition. The eccentric bushing was replaced in August 2001. When the plant was shut down, this unit was drawing higher than normal amperage. An inspection of the pinion assembly as well as the eccentric bushing, hourglass bushing and main shaft sleeve will be done prior to start-up.

The surge bin liners are mainly worn out and will be replaced as necessary. The concave liners will need to be replaced within six months of start-up.

Both of the 500 horsepower motors have been sent out for repairs. One had a broken shaft; the other a cracked drive end bell.

18.3.1.2 Rock Breaker

This unit (Model S-54 2000-ft lb.) was installed in July 2001. The ring gear base bolts failed twice during normal operation, causing the boom section to fall into the crusher pocket. The problem stems from simultaneous application of both hammer and boom hydraulic pressure in a mistaken effort to break up the oversize faster. The controls will be modified to prevent pressurizing the hammer and boom section at the same time. East-West limits will be installed at the same time. In order to eliminate a potential fire hazard the hydraulics, currently located beside the breaker, will be relocated down one floor, and the present wooden enclosure eliminated.

18.3.1.3 Coarse Ore Feeders

There was damage to #3 feeder when the feeder detached from the feed chute. The feeder was replaced, but the whole structure will be inspected prior to start-up.

The VFD for #1 vibrating feeder, which was relocated to other service, will be replaced.

18.3.1.4 Triple Deck Screen

The 8' x 20' triple deck screen was taken out after the plant was shut down. The ¾" bottom deck screens were removed. The deck will be refurbished before it is put back into service. Consideration will be given to installing a coarser middle deck in an effort to minimize blinding and assure a better quality pebble supply for the pebble mills

18.3.1.5 7' Standard Cone Crusher

This unit is in satisfactory condition.

18.3.1.6 8'x20' Single Deck Screens (3)

These units are in satisfactory condition. A stock of wire mesh screen cloths varying in size between $^5/_8$" to $^7/_8$" will be acquired. More work is necessary to identify the optimum screen size and material.

18.3.1.7 7' Shorthead Tertiary Cone Crushers (3)

Both #1 and #3 cone crushers have developed significant cracking in the main frame. One will be replaced with spare main frame available on site, and the other repaired.

All broken cluster bolts on the tertiary cone crushers will be replaced.

18.3.1.8 Conveyors

The following table provides a description of the current condition and required maintenance of the conveyors.

Table 18.3 Conveyor belts currently in place

#	Condition
1	Belt in good shape
2	Patch holes, replace pinion thrust bearing in gearbox
3	Belt in good shape
4	Repair top cover, re-line feed chute and replace skirting
5	Replace section of belt, replace return rollers and refurbish scrapers
6A	Belt in good shape, modify head pulley with ceramic-lagging to prevent slippage
6B	Repair holes, modify head pulley with ceramic-lagging to prevent slipping
6C	Replace belt
7	Belt in good shape, replace head pulley
8	Replace belt or replace 50'section of belt, repair rollers and scrapers
9	Belt is presently joined with mechanical clips, should be vulcanized. This belt currently is a limit on throughput. The use of a wider belt or increase speed of conveyor should be investigated.
10	Belt OK, modify head pulley with ceramic lagging to prevent slipping
12	Belt OK, but must be aligned (interference with frame)
14	Replace belt, replace head pulley
15A	Replace belt
15B	Replace belt
15C	Belt in good shape

18.3.1.9 Fine Ore Bin

This area is generally in satisfactory mechanical condition, though where the lower sections of the tube feeders are worn they will be replaced. The openings above the feeder to #10 conveyor, which were covered with $^{3}/_{8}$" thick steel plates to eliminate tramp material, will be re-opened.

18.3.1.10 Dust Collection System

The system was performing satisfactorily at shutdown. The make-up air heater will be inspected prior to startup.

Consideration was initially given to extending the system to include the Primary Dump Pocket. As the crusher building is essentially wide open at the dump pocket end, dust ends up being distributed throughout the building, and heating can become an issue in winter months. The solution adopted will be the removal of the building cladding from both sides of the dump pocket, along with sealing off the remainder of the building behind the primary control room. This will both reduce dust retention in the dump pocket area and improve heat retention in the remainder of the building during winter months.

18.3.2 Grinding Circuit

The grinding requirements to process Wight ore dictate changes to the existing circuit. The most significant of these is the conversion of #3 Ball Mill for use as a regrind mill. Circuit modelling has shown that even with this change previous throughput rates can be maintained provided that cyclone operating variables are optimized to reduce overgrinding and make maximum use of the capacity in each stage of the circuit.

A common problem with most of the mills has been with the trunnion insert liners. The liners are designed as wear parts to protect the trunnion itself from internal erosion by abrasive slurry. Feed end liners have been worn due to the high charge levels maintained in the mills. Discharge end liners suffer from slurry leaking into the void space between the liner and trunnion. The feed end problem will be dealt with by simply lowering the charge level in the mills. The question of the potential benefits of higher levels and power draw will be reassessed after the cyclone optimization program is complete. For the discharge end, the access route for slurry is thought to be through the trunnion insert liner seal area, caused by ineffective liner design or the delayed replacement of the inner row of the discharge head liners. Grouting of the void between the trunnion and liner using a pourable liner setting compound such as Nordbak can be used to eliminate the problem, though it will increase the difficulty of trunnion liner changes.

18.3.2.1 13.5' x 18' Rod Mill #1

The feed end trunnion is leaking oil. The seal will be repaired or replaced. The discharge end trunnion liner is leaking slurry. The joint between the head and trunnion liners will be sealed.

The feed end-head liners (inner & outer rows) will also be replaced. These liners are in stock.

The feed spout is not centered with the mill seal opening. This will be corrected. The slurry line will be modified to permit the use of the same parts as on Rod Mill #2, reducing the spares inventory.

18.3.2.2 13.5'x18' Rod Mill #2

The trunnions on this mill require the same work as Rod Mill #1.

The feed end-head liners (inner & outer rows) will also be replaced. The required liners are on site.

As with Rod Mill #1, the feed spout should be centered with the mill seal opening.

18.3.2.3 13.5'x28' Ball Mill #1

There are no liner problems with this mill. The discharge launder is badly worn and will be replaced.

18.3.2.4 13.5'x28' Ball Mill #2

There are no liner problems with this mill. The discharge launder is worn and will be replaced.

18.3.2.5 13.5'x18' Ball Mill #3

There are currently no liner problems with this mill. The discharge end liners will be modified during the next liner change out, in order to protect the discharge trunnion. This design has already been applied to # 1 and # 2 Ball Mills with good success. A trommel screen will also be installed.

This mill was the original regrind mill when the plant was constructed, and was converted to a primary mill in order to improve throughput once it was determined to be excessive as a regrind mill. It will be returned to its original service as Regrind Mill #1.

18.3.2.6 17'6"x24' Pebble Mill #1

All of the feed end liners are worn and will be replaced. A trommel screen will be installed to protect downstream equipment from tramp oversize material.

The discharge launder is badly worn and will be rebuilt and relined.

18.3.2.7 17'6"x24' Pebble Mill #2

All of the feed end liners are worn and will be replaced. Once in operation, alternative grate designs will be pursued in an effort to reduce tramp oversize in the discharge. A trommel screen will be installed, and the discharge launder replaced.

18.3.2.8 16'6"x32' Pebble Mill #3

As with the other pebble mills, the feed end liners will be replaced, a trommel screen installed, and the discharge launder rebuilt.

A spare ring gear will be purchased for this mill.

18.3.3 Primary Grinding Circuit Operation

Each primary grinding line employs four 30" cyclones for product classification. Operating results were not ideal. In an effort to improve throughput a 50" cyclone was installed on each primary circuit. The result was a coarser product size without achieving an increase in throughput. These units will be removed prior to startup.

A series of test programs over past years have shown the throughput may be increased by improving cyclone efficiency. As mentioned in the reports; Mount Polley, Technical & Operating Review Report, October 1999, prepared Morrison Knudsen, and Svedala, September, 1998, improved throughput and less overgrinding of fines could be achieved if operation of the primary cyclones is improved. Tests by on-site personnel during the last months prior to shutdown yielded essentially the same results. A review of these tests as well as operating data indicate the primary cyclones were being operated at too high feed densities to allow proper classification. This mode of operation was necessary to maintain desired throughput with the then current cyclone configurations.

On startup, the two changes will be adopted to improve primary cyclone efficiency. First, operating feed densities will be reduced, and pump speeds adjusted as required to compensate for the increased flows. Second, tests will be conducted to determine the optimum cyclone apex and vortex finder sizes required at these new densities so as to maximize throughput while producing an acceptably sized feed for the secondary grinding circuit. Based on the tests conducted prior to shutdown, it is anticipated that these changes could result in an increase in throughput of approximately 1000 tonnes per day.

18.3.4 Secondary Grinding Circuit Operation

The original set-up for three pebble mills in the Secondary Grinding Circuit had only two cyclopaks. Currently, each has its own cluster of 20" cyclones. Each cluster has a mixture of 20" standard body and 20" long body cyclones.

The partitions in the underflow launders of cyclopaks #2 and #3 originally served to split the discharge between the three mills. This arrangement is now redundant. The presence of these partitions restricts operating flexibility as they prevent the use of all attached cyclones. They will be removed.

The operating characteristics of the D-20B and D-20LB cyclones are not the same. The D-20B typically produces a finer product at a lower throughput rate. During the Springer Pit trial run this limitation became evident as the Secondary Circuit rather than the Primary was the constraint on plant throughput. All three pebble mill cyclone clusters will be fully equipped with Krebs D-20LB cyclones. There are presently nine D-20B cyclones to be changed out.

Pebbles for the mills are supplied from the secondary screen in the crushing plant. The minus four inch to plus two inch material is conveyed to the pebble stockpile. The addition of 2½" balls to the pebble charge had been adopted in an effort to increase power draw. They were considered to be necessary due to the poor primary cyclone performance. This is also referenced in the Mount Polley, Technical & Operating Review Report, October 1999, prepared by Morrison Knudsen.

It was observed prior to shutdown that the pebble size distribution contained a significant amount of misplaced (-2") material. This material does not itself serve as pebbles, while at the same time it presents an insolvable grinding problem for the proper media present. Pebble consumption over the last six months of operation averaged only 2.6% of new feed by weight.

For proper operation of the secondary circuit it will be important that the pebble screening be optimized to produce a consistent grinding media. The pebbles must be well sized, with an absolute minimum of undersize. A test procedure for monitoring pebble quality will be developed and introduced in the crushing plant. In addition, the pebble handling system will be reviewed to ensure that the formation of chips and broken pebbles is minimized. These changes should allow for a reduction or the elimination of ball addition to the pebble mills.

The maintenance of desired charge level in the pebble mills was also an issue, as was the discharge of significant quantities of coarse rock and balls, due either to worn grates. The first remedial step will be to refit the mills with trommel screens to eliminate downstream wear and sanding issues. Revised grate designs will be considered.

The present arrangement for pumping the pebble mill discharge is a cause of significant operating delays due to sanding and pump isolation problems. A single pump box feeds pumps #426, #427 and #428 (secondary cyclone feed pumps). The design is essentially a horizontally split box, with the three pumps drawing from the lower section and control of the feed to each by a vertical dart valve. Problems include an uneven distribution of feed to each pump, high wear at the pump inlets, and sanding out of the system most times when a pump is isolated. The horizontal divider will be removed, with knife-gate valves on the pump inlets used for on/off flow control. Additionally, the feed pipe from the primary cyclone overflow will be relocated and modified to allow for an even distribution of feed to the sump.

18.3.4.1 Grinding Pumps

The lack of standardized pump assemblies was a maintenance and inventory issue prior to shutdown. The replacement of the 16” GIW primary cyclone feed pump on # 1 and # 2 ball mills with 14”x12”x36” LSA pumps has demonstrated a significant reduction in both power consumption and maintenance costs. This program will be extended to include the remaining primary cyclone feed pumps, secondary cyclone feed pumps #426, #427, #428 as well as #3 ball mill cyclone feed pumps #429 and #430. Initially, one pump will be installed at BM #1 so that both grinding circuits have one available. Ultimately, changeover will help to standardize all pumping components in the grinding circuit and reduce the overall pumping and inventory costs.

18.3.4.2 Regrind Mill (original)

This mill will be replaced as the primary regrind mill by ball mill #3, becoming regrind mill #2.

The mill is in good shape, requiring no major work.

As regrind mill capacity is expected to be the limit on throughput with Wight ore, this mill will be put back into service as a regrind mill in the future once sufficient familiarity with treating the ore has been attained to indicate the best application.

18.3.5 Flotation Circuit

The high head grades expected with the Wight ore will require changes to the existing flotation circuit. The circuit is being redesigned to handle a 1.0% copper head. In the main, this requires a significant increase in cleaner circuit capacity. Laboratory testing, however, indicates that current rougher residence time must also be maintained.

The method that will be adopted to achieve these aims is to shift all of the column cells to the cleaning circuit. Typically, column cells do a better job cleaning than mechanical cells. The existing mechanical cleaner-scavenger bank will be retained. The four OK-38 cells available from Similco will be installed to replace the resulting deficiency in roughing capacity. In addition, the opportunity will be taken to split the rougher circuit into two parallel streams, allowing both for better maintenance opportunity and for a better match of residence time and throughput rate if operating at reduced tonnage for maintenance in the grinding circuit or due to excessively high mill feed grade.

18.3.5.1 Flotation Column Cells

Many of the existing “Spar Jet” air spargers are broken or plugged. This is mainly due to slurry entering the sparger orifice when air pressure is lost. Prior to shutdown, #1 rougher column was successfully retrofitted with the “Slam Jet” modification designed to close the orifice upon the loss of air pressure. The remainder of the flotation column cells will be retrofitted which will enhance operations.

18.3.5.2 Mechanical Flotation Cells

All the mechanical cells have been inspected for wear. Many show significant signs of wear on the stator vanes and impellers. A number of cells are missing inter-cell baffles and many cell mechanisms must be adjusted for proper clearances. Level control mechanisms will also be inspected. The replacing remaining flap gates flow control valves will be replaced with darts.

Prior to shutdown, a project was underway to revise the mechanism with the dual objective of standardization and elimination of turbulence at the surface. One section of four cells in one bank will be so converted, permitting direct testing against the other bank to determine payback rate.

18.3.6 Dewatering Circuit

As with the flotation cleaner circuit, the high head grade of the Wight ore requires extensive modification. First, a ten meter Enviroclear high capacity thickener has been acquired to supplement the existing thickening capacity. Included will be an automated dry flocculant mixing system, which will insure a correctly mixed product at a minimal cost.

Filtration capacity will be enhanced prior to year three by the addition of a rebuilt Lasta MCFH 1500 x 1500 x 42/42 filter press. This unit has a capacity of 1000 tonnes of concentrate per day by itself. The combination of the additional thickening and filtering capacity will ensure that dewatering will not limit throughput at the design head grade.

The recycling of filtrate and thickener overflow will also be revised. Previously most of the water was returned to the regrind feed. While the relatively high amount of entrained high grade solids made this a logical return point, the excessively low percent solids in the regrind feed reduced efficiency. With the additional thickening capacity to ensure overflow clarity, this water will be returned to the head of the grinding circuit, displacing other water additions.

18.3.7 Infrastructure

Within three months of start-up, a complete set of rod mill shell lifters should be ordered, utilizing a 4" lift profile. A 10-12 week delivery can be expected. Some spare liners are in stock in case of premature failure.

The current high-pressure trunnion bearing lube pumps used on all grinding mills should be replaced with low-pressure, high volume pumps better suited for a flood-type application.

A lime slaking system will replace the temporary hydrated lime distribution system installed during the last year of operation to treat Bell pit ore. The original distribution loop was inadequately drained during shutdown. Long sections froze and shattered. Much of the loop will have to be replaced before it can be used. A slaking system for bulk quick lime will be installed to provide an adequate volume at a reduced unit cost.

As a first step toward controlling reagent addition by circuit assays, which typically reduces consumption while improving recovery, the reagent addition system will be modified from manual gravity feed to use metering pumps. These can subsequently be connected to the MMI, and use OSA assays and feed tonnage to set reagent flows, enabling dynamic adjustment in response to changes in process variables.

One of the more important components in attaining production targets is the ability to accurately measure performance. The large month-end concentrate reconcilations experienced during 2001 indicate that considerable improvement is still needed in the sampling system. There are a number of issues. Most importantly, from the point of view of a sampling specialist both the feed and concentrate samplers would be considered unacceptable. The main flaw is sample segregation by size, as the former is cut from a low-pressure pipe after a long horizontal run that promotes segregation, and the latter off the side of a pump box with no mixing. Both can be easily repaired.

Concentrate pumping, specifically pumps 526, 527 and 528, will also be reviewed. The present system is overly complicated, with multiple routes to various locations and problems with air locking and pump capacity. The installation of a new pump box utilizing the existing pumps and the elimination of some of the pipe lines will enhance control while minimizing limitations on flotation machine operation.

18.3.8 Assay Office

The assay office is generally in good shape, however, some work is required on the exhaust system. At present, the acid scrubber discharge is combined with the gold assay furnace discharge. The ideal solution would be to separate the two. If a way cannot be found to do this economically, the system should at a minimum be balanced so that the required amount of air is extracted at each pick-up point. A make-up air system, preferably clean and heated, is also required in order to minimize the infiltration of mineralized dust into the Assay Lab due to the negative pressure created by the exhaust system.

The dust collection system in the bucking room also requires balancing. The four main dust hoods have been rebuilt, as the former design combined with the air draw promoted sample segregation.

The on-stream analyzer (OSA) has been drained, cleaned and de-energized. The x-ray tube has been shipped to Outokumpu Mintec at Mississauga for proper storage. The spare tube was already in storage there. The PDP –11 computer, which controls the operation of the analyzer, is in poor shape, and this model is no longer supported by Digital Equipment Corporation. It will be replaced with a compatible unit based on a modern PC.

19 Civil

19.1 Tailings Storage Facility and Ancillary Works

19.1.1 System Configuration

The system is comprised of the following:

- A pipeline system conveys the tailings slurry via gravity from the Mill Site to the Tailings Storage Facility. This system includes movable discharge sections with one end dump discharge to distribute the tailings along the embankment crest.
- A make-up water supply system provides extra water to the Tailings Storage Facility. This system comprises an intake and pump at Polley Lake and a pipeline to convey water to the Tailings Storage Facility. The water is discharged into the Tailings Storage Facility near the west abutment of the Perimeter Embankment. It is not anticipated that this system will be required in the future. Any make-up water required will come from pit water.
- A Mill Site Sump and Southeast Sediment Pond provide additional make-up water to the system by collecting drainage from the Mill Site and East Rock Disposal Site. Mill Site runoff is directed from the Mill Site Sump into the tailings line near the mill. Flows from the Southeast Sediment Pond enter the system at the Reclaim Booster Pump Station or at T-2 Tailings Dropbox.
- A reclaim water system comprised of a barge mounted pump station in an excavated channel, a booster pump station and a pipeline for recycling process water to the Mill, is used to remove water from the Tailings Storage Facility for use in the milling process.
- Graded earthfill and rockfill embankments with internal drains retain the tailings solids in the Tailings Storage Facility. The embankments have been raised in stages by a combination of centerline and modified centerline approaches.
- A foundation drain and pressure relief well system located downstream of the Main Embankment prevents the build up of pore pressure in the foundation and collects seepage from the base of the Tailings Storage Facility. The flows are directed to a decant manhole near the Main Embankment Collection Pond.
- Seepage collection ponds are located downstream of the Main and Perimeter Embankments to store water collected from the embankment drains and from local runoff. Water from the ponds is pumped back to the

Tailings Storage Facility during operations, but was discharged during the shutdown period.

- Instrumentation in the tailings, embankments and foundations, including vibrating wire piezometers, survey monuments, slope inclinometers and the measurement of drain flows is used to monitor the performance of the Tailings Storage Facility.
- A system of groundwater wells installed around the Tailings Storage Facility is used for groundwater quality monitoring.

Knight Piésold Ltd., has been the geotechnical engineering consultant for the Tailings Storage Facility, providing design, technical specifications, contract documents, construction supervision and quality assurance/control, reviews of instrumentation and monitoring records and annual inspections.

The Tailings Storage Facility starter dam and ancillary works construction was completed in March 1997. The system went into operation with storage of the 1997 spring freshet. Milling operations directed tailings slurry to the Tailings Storage Facility, from June 1997 to suspension of operations in the fall of 2001. The Tailings Storage Facility currently stores supernatant and 27 million dry tonnes of tailings. The Tailings Storage Facility is designed to store the water required for mill processing water.

19.1.2 System Care and Maintenance

Long term stability and surface runoff controls were enhanced before suspension of operations of the Tailings Storage Facility.

Mount Polley tailings are non-acid generating. The water management plan reduces volumes of water that must be stored in the impoundment by limiting surface runoff to the facility. The Tailings Storage Facility does not have a spillway or permit to release water to the environment; water is stored for use in milling operations. After closure a spillway will have to be constructed.

19.1.3 Cariboo Pit Reservoir

The Cariboo Pit and Tailings Storage Facility are reservoirs for the current positive water balance under care and maintenance. Make-up water will be taken from the Cariboo Pit and no further make-up water should be required from Polley Lake.

Effluent Permit PE 11678 was amended for discharge of tailings impoundment supernatant to Cariboo Pit. Pumping systems remain operational allowing surplus water within the Tailings Storage Facility to be directed into Cariboo Pit as necessary. Water from the Tailings Storage Facility was discharged into the Cariboo Pit reservoir during the spring 2004 freshet to the 1092 elevation.

A hydro geological study by Golder Associates Ltd., predicts groundwater seepage to exceed pit recharge. The highest water elevation expected is 1094 metres, less than the pit rim elevation of 1125 metres. Discharging of pit water from the Cariboo Pit is not expected.

19.1.4 Tailings Storage Facility

The Stage 3A/B construction in Years 2000 & 2001 included raising the Main, Perimeter and South Embankments to elevation 942.5.

A five metre high downstream buttress has been constructed at the Main Embankment to enhance embankment stability. This buttress is located from the valley bottom to elevation 920 metres. The Perimeter Embankment stability was enhanced by rockfill placed during construction of the Stage 3B raise. The downstream filter and transition zones were fully lifted to elevation 942.5 to stabilize the glacial till core before construction operations were suspended in August 2001.

The present configuration provides storage for one metre of freeboard, 24 hour PMP, 1.0 million cubic metres of supernatant and room to store 1.3 million dry tonnes of tailings. These determinations were based on a survey of the tailings surface after suspension of milling operations.

Stage 3C (elevation 945.0m) raise will be constructed during August/September 2004 and will provide containment for an additional 7.5 million dry tonnes. This will provide ample tailings storage for the first year of operations. Remaining stages up to the 960.5 elevation will occur on an annual basis ensuring there is surplus containment for dry tailings, freeboard and storm events for the following year of mining activities. Tailings Storage Facility construction to the Embankment Cap (elevation 961.0m) provides containment for a total of approximately 70 million dry tonnes of tailings.

The cost of construction was estimated to average $0.25 per tonne of ore milled and was arrived at from costs experienced in earlier stages of construction in conjunction with supplementary work performed by Mount Polley mining equipment.

19.1.5 Make-Up Water System

The Tailings Storage Facility has operated under a negative water balance during mill operations. Water was diverted from upper catchment areas and water was annually pumped from Polley Lake during spring freshet to make-up the difference. In the future water required for make-up will come from the partially flooded Cariboo Pit. The water balance estimates show that during operation the water balance will be in balance with possible periods of surplus or deficit depending on annual precipitation.

19.1.5.1 Southeast Sediment Pond

A perimeter ditch will be re-constructed below the toe of the East Rock Disposal Site (RDS) with provision for the ditch to remain operational after RDS re-sloping. This is required to include collection of run-off from the expanded overburden disposal site due to placement of overburden from the Wight pit. The ditch will route surface runoff to the Southeast Sediment Pond. A 10" HDPE pipeline currently directs water from a decant manhole into the Booster Pumphouse Sump for pumping to the Reclaim Water Tank (during normal operations) or alternatively to the T-2 Dropbox and on to the Tailings Storage Facility via the tailings pipeline (as is presently the case during care and maintenance). The system remains fully functional.

19.1.5.2 Mill Site Sump

The Mill Site Sump collects water from the mill yard area including;

- Mill site surface runoff via a yard perimeter ditch.
- Groundwater from dewatering wells located in the yard. Water is discharged on surface and routed to drainage ditches.
- Mill building weeping tile routed to a PVC line buried in the yard.
- Sewage from the dry via a PVC line, through a manhole in the yard.
- Assay lab scrubber gray water through the sewer line.
- Employee parking lot runoff via a drainage ditch.

A 30 hp submersible pump, located in the Mill Site Sump decant manhole pumps directly into the tailings pipeline. The system remains fully functional.

19.1.5.3 Diversion Ditches

The West Diversion Ditch was constructed to route surface runoff away from the Tailings Storage Facility and into Southwest Edney Creek Catchment (Tributary 2). Runoff flows east of the Rock Borrow were directed to the Perimeter Collection Pond. The original drainage can be re-established should make up water be required.

19.1.5.4 Polley Lake

The Polley Lake pump and diesel fuel tank have been removed but are available for replacement if necessary. The pipeline was dismantled and a portion relocated and flanged for pumping supernatant from the mill to the Cariboo Pit. The intake structure remains in Polley Lake. The Ministry of Water, Land and Air Protection water license for Polley Lake, permitting the removal of 1,000,000 cubic metres of water per year for use in the milling process remains active.

19.1.6 Reclaim System

The reclaim water system consists of a seven kilometre 24" diameter HDPE pipeline transferring tailings impoundment supernatant from the reclaim barge through the booster pump house to the process water tank at the mill.

Prior to suspension of milling operations, occasional high water levels in the booster pump house sump were eliminated by installation of an amplifier in the wireless control system for the reclaim barge pumps. The reclaim barge sparging system was charged with a submersible pump, to keep the barge ice-free throughout the winter months. The booster pump house sump was dewatered. Electrical power remains on.

The system has no deficiencies and can be reactivated with minimum work.

19.1.7 Tailings Pipeline

The tailings system presently consists of a seven kilometres, 24" diameter HDPE pipeline gravity feeding tailings slurry from the mill to the Tailings Storage Facility.

Prior to suspension of milling operations, the entire length of 22" DR 17 HDPE pipeline between Chainage 53+10m (T-2 Dropbox) to Chainage 63+60m (above the cap magazine) was replaced with 550 meters of 24" DR 9 plus 500 meters of 24" DR 15.5. The original HDPE had experienced internal wear in the invert portion of the pipe. Most noticeable wear occurred downstream of the butt-welds and had been repaired with full wrap couplers.

Occasional tailings overflow from T-2 Dropbox into the T-2 Overflow Pond was minimized by installation of APCO S-404WA pressure relief valves on the tailings pipeline below the Dropbox. Trapped air within the tailings pipeline was eliminated and flow dynamics improved.

Upon suspension of mill operations, tailings were excavated from the T-2 Overflow Pond and pipeline containment ditch at Bootjack Creek crossing. The HDPE pipeline below the upper dump valve (Elevation 960.0 metres) was flushed, unbolted and stored on the embankment core. The knife gate valves were opened at 960 metres elevation; the care & maintenance point of discharge.

Prior to mill startup, the 910 metres of tailings line from Chainage 44+00 (north abutment of the Perimeter Embankment) to Chainage 53+10 (T-2 Dropbox) should be rotated. Additional APCO S-404WA valves should be installed to completely eliminate any tailings overflow from the T-2 Dropbox to the T-2 Overflow Pond.

19.2 Fresh Water

During the care and maintenance period, the potable water and process water tanks remain in service to maintain adequate water volume for fire protection and service on-site personnel. Fresh water is supplied from groundwater wells R97-1 & R95-7 and piped through a buried six inch PVC to the Concentrator. Overflow from the process water tank has been directed to the Mill Site Sump.

During milling operations, adequate fresh water volumes were supplied by the two-groundwater wells at a steady flow of approximately 250 USGPM. Fresh water from wells was used for mill pump gland water, heat exchangers and dry facilities.

Groundwater well R97-3 located on Bootjack Road at 10.5 km was pump tested at 200 USGPM. This well can be piped into the system, if required.

The Ministry of Water, Land and Air Protection have issued additional water licenses for Polley Lake permitting fresh water removal. These include;

- 24,143 cubic metres per month for use year round.
- 25,000 cubic metres per month from May to October for dust control.
- 1,000 cubic metres per month for use year round for potable water.

To date, the fresh water supply from groundwater wells R97-1 & R95-7 has been adequate.

19.3 Mine Water

The Cariboo Pit has water storage capacity for in excess of three million cubic metres to elevation 1094 metres, the level at which recharge and seepage is expected to balance. The water elevation at year end 2001 was 1061 metres; the pit contained 500,000 cubic metres. Currently water elevation in the Cariboo Pit is at 1092 elevation, and contains approximately 2.5 million cubic metres of water.

During mining operations, the Cariboo Pit dewatering system consisted of a 4160v-550v portable transformer unit, two Flygt BS2201HT-58 hp high head submersible pumps one acting as an in-line booster and 6" HDPE pipeline. When operational, the system could pump approximately 600 USGPM over an estimated total dynamic head of 140 metres.

The Bell Pit was dewatered with the Polley Lake make-up water pump, a skid mounted centrifugal pump powered by Caterpillar diesel into a six inch HDPE pipeline.

Dewatering in the Wight Pit is anticipated to require a similar configuration as what was used in the Cariboo pit. This will be supplemented by dewatering wells located behind the east high wall of the pit. Capital for cost of dewatering wells and ancillary supplies has been included in the financial analysis. In addition, operating costs were increased while mining in the Wight Pit to account for additional power requirements.

All previously used system components are stored on-site.

19.4 Materials Inventory Control

The infrastructure for materials storage and control consists of various offices, buildings and yards under the direction of the Purchasing and Warehouse Department. Shipping and receiving will be managed through central offices located in Warehouse #1 immediately adjacent to the Mill Building. Consumables and small high-turnover items will be stored on shelving within Warehouse #1.

Warehouse #2 is a cold storage building with concrete floor and sturdy steel shelving. The facility is suitable for dry storage of mechanical parts on pallets or in crates and pit dewatering supplies.

Warehouse #3 is a cold storage building similar to Warehouse #2. It is located adjacent to Warehouse #2 and will be used for additional mechanical parts storage.

A fenced yard is maintained adjacent to the pit office. The area will contain large consumables such as cutting edges and drummed products.

A laydown yard was constructed adjacent to the East RDS. Materials were stored on used truck tires and pallets. A large inventory of used mining and milling equipment parts and refurbished larger components (buckets, racking, drill steel, etc.), is currently stored at this location.

A number of steel storage containers provide safe dry storage of smaller “hard to find” electrical and mechanical parts and environmental supplies.

20 Regulatory Issues

This section will provide an over-view of the existing state of the permits and reclamation at Mount Polley mine. In addition, it will outline the expected changes that will be required upon re-opening of the mine. Existing environmental programs will be included as well as any associated costs, where necessary.

20.1 Permits

All permits that were obtained for operation of the Mount Polley mine are listed in Appendix A which outlines the history of the various permits as well as the existing state of each permit. A detailed outline of the major permits required for operation is as follows:

20.1.1 Permit M-200 – Work Systems Approval

The Ministry of Energy and Mines, Mines Branch, Energy and Minerals Division issued this permit. It was last amended on May 30, 2001. This permit allows for open pit mining, disposal of waste in designated rock disposal sites, construction of the Tailings Storage Facility (TSF), characterization of waste rock, soil and tailings, monitoring of drainage from various mine components and all aspects of reclamation.

The latest update of May 30, 2001 permitted the construction of the TSF to 945-metre elevation. Presently, the TSF is at 942.5 metre elevation. Previous amendments permit the disposal of waste into the East rock disposal site (RDS), the North RDS and the backfill of the Cariboo Pit. Further, any potentially acid generating material (PAG) is permitted for disposal in the Cariboo Pit below the flood elevation of 1130 metre elevation.

An amendment to allow for mining of the Wight Pit and to place waste into the East RDS will be submitted.

20.1.2 Mining Permit Amendment Application

A Mining Permit Amendment to Permit M-200 application is currently in process and will be submitted to regulatory authorities. At the start of the application process, meetings were held with Ministry of Mines and Energy personnel and other stakeholders. Based on the limited amount of additional disturbance associated with the Wight Pit and ancillary facilities, only an amendment to Mount Polley's existing permit is required.

Principal issues addressed and discussed in this amendment application include: an archaeological assessment on the areas to be disturbed, impacts to fish and wildlife, a soil survey of the areas to be disturbed, ARD (acid rock drainage) potential/water quality issues and other basic issues with respect to the mine and milling operational plans.

20.1.3 Permit PE 11678 – Effluent Permit

The Ministry of Water, Land and Air Protection issued this permit. It was last amended on February, 2002. This permit covers all aspects of surface water, groundwater, biological and hydrological monitoring. It also includes any climatology collected onsite as well as the discharge of tailings to the TSF.

The latest amendment changed the operational monitoring program to a care and maintenance-monitoring program. Thus, monitoring has been decreased while the mine is idle. The most significant change is the suspension of the biological monitoring program that is conducted once every three years. At present, it has only been conducted once while in operation. When Mount Polley Mine reopens, this program will be reinstated. In addition, new Federal Metal Mining Effluent Regulations (MMER, formerly MMLER) were implemented in 2002. These regulations include new Environmental Effects Monitoring (EEM), which is the Federal equivalent of the Provincial Biological Monitoring Program. The pre-existing biological monitoring program at Mount Polley will be revised to meet the new Federal EEM program once the mine reopens.

With respect to the discharge of tailings to the TSF, we are presently permitted for the disposal of 20,000 tonnes per day (tpd). Any increase less than or equal to 10% of the existing discharge will require a simple permit amendment. However, an increase of greater than 10% of the existing discharge will require an amendment that must be advertised for 30 days in the BC Gazette and the Williams Lake Tribune. Feasibility forecasts for mill throughput indicate an average annual discharge of less than the currently allowable figure however; therefore no issues exist for reopening.

Water discharge amendments were applied for under this permit for three specific locations:

- The two seepage collection ponds at the TSF
- The drainage from the East RDS
- The drainage from the North RDS

A permit allowing discharge from seepage collection ponds was granted for the care and maintenance period.

Mount Polley Mining Corporation is proceeding with site-specific water quality studies and future application to the Ministry of Water, Land and Air Protection to direct further surface runoff away from the Tailings Storage Facility and to discharge water from the TSF. These studies are given high priority.

The discharge permits are not required prior to final closure operations.

20.1.4 Permit PR 14590 – Solid Waste Disposal

The Ministry of Water, Land and Air Protection issued this permit under the Waste Management Act. It allows for the disposal of solid waste to the landfill, with the exception of lunchroom waste, which must be stored in bear proof bins and removed from the site. In addition, it outlines the recycling of metal, oil, grease, cardboard and rubber. This permit will be maintained throughout the care and maintenance period. No amendments are required upon reopening.

20.1.5 Permit PA 15087 – Air Discharge

The Ministry of Water, Land and Air Protection issued this permit under the Waste Management Act. It allows for the discharge of Assay lab exhaust. It will be maintained during the care and maintenance period. No amendments are required for this permit upon reopening.

20.1.6 Permit PE 15968 – Discharge of Biosolids

The Ministry of Water, Land and Air Protection issue this permit under the Waste Management Act. It allows for the storage and discharge of biosolids from the Greater Vancouver Regional District (GVRD) at Mount Polley mine. This permit will be maintained during the care and maintenance period. No amendments are required upon reopening of the mine should we decide to receive more product.

20.2 Reclamation

Reclamation at Mount Polley to date has mostly consisted of reclamation research. Two phases of research have been initiated, which include the tops of the RDS and the slopes of the RDS. This has been conducted on the 1170 metre platform and slope of the East RDS. Results have been excellent and are presented each year in the Annual Reclamation and Environmental Report.

Some reclamation has been conducted in the form of resloping of the 1150 East RDS. Approximately 2.24 ha have been resloped to date. In addition, approximately 5.83 ha of the 1170 RDS have been resloped and reclaimed.

The Ministry of Energy and Mines reclamation costing spreadsheets were used to create the estimated cost of reclamation. Mount Polley Holding Company Limited has pledged to the Province of British Columbia a total of $1,900,000 as security for reclamation. The security is comprised of a cash deposit of $529,433 with the balance totaling $1,370,567 secured by certain mining equipment and supplies inventory at the Mount Polley mine.

Table 20.2 summarizes the reclamation costs at the end of 2001. Appendix B summarizes the reclamation costs at the end of the mine life. The estimated costs for reclamation are $2,748,996 at the end of the minelife and this is the maximum level reached. This is based on using the Cariboo and Bell pits for in-pit overburden storage from the Bell and Springer, North RDS for Bell overburden storage and East RDS as the waste disposal location for Wight Pit overburden storage. All costs for performing reclamation at the mine site were budgeted separately in the financial model for years six and seven of mining.

Table 20.2 Mount Polley Reclamation Costs to December 2001

Mount Polley Reclamation Costs to December 2001								
	AREA (ha)				RECLAMATION PRESCRIPTION			
Mine Activity	**Total**	**Perm.**	**Current**	**To be**	**Site**	**Revegetation**	**Maintenance**	**Total**
Category	**Disturbed**	**Disturb.**	**Reclaimed**	**Reclaimed**	**Prep.**			**Cost**
AREA DISTURBANCE								
Resloped Dump	23.77	4.72	2.24	16.81	$82,470	$74,486	$7,620	$164,576
RDS Tops	46.31	0	5.83	40.48	$79,606	$75,495	$16,192	$171,293
Pit Lakes & Surfaces	32.15			32.15	$14,510	$10,573	$0	$25,082
Pit Walls	10.74			10.74	$0	$0	$0	$0
Roads	41.83			41.83	$27,679	$28,646	$6,144	$62,469
Mill Site	19.66			19.66	$26,626	$36,666	$0	$63,292
Tailings Dam Slopes	19.87			19.87	$50,000	$0	$0	$50,000
Tailings Dam Surface	165.71			165.71	$456,213	$274,307	$56,340	$786,860
Stockpile Pads	23.56			23.56	$0	$43,939	$9,424	$53,363
Linear	8.83			8.83	$14,157	$16,468	$3,532	$34,157
Other	53.96			53.96	$106,088	$100,635	$21,584	$228,308
TSF - Ancillary Areas	38.41			38.41	$19,551	$51,469	$0	$71,020
TOTAL	**484.80**	**4.72**	**8.07**	**472.01**	**$876,900**	**$712,685**	**$120,836**	**$1,710,421**
LUMP SUM ITEMS								
Solid Waste Disposal								$50,000
Engineering								$120,000
Post Closure Costs (General Site Monitoring)								$5,000
Present Value								$166,667
TOTAL								**$2,052,087**

21 Capital Cost Estimate

21.1 Capital and Initial Mill Charge Cost Estimate

The mine plan capital cost is applied to the cash flow in Section 9 *Financial Analysis*.

All capital costs include an allowance for dismantling, shipping and erection. Funds have also been included for initial maintenance costs for houred-out components that must be replaced immediately. Explanations for Mine Capital Costs are listed below:

Drills: Three replacement used BE60R drills have been budgeted for performing blast hole drilling for mine operations. These drills are required to provide the increased productivity necessary to support the loading operation. A down payment has already been made for two of the three drills.

Shovels: Two additional used P&H 2100 shovels have been budgeted for purchase in addition to the operational shovel currently at the mine site. These three units will be the prime loading units for mining operations. These shovels have been identified and are located at another mine in BC.

Haulage Units: Eleven Cat 785C haul trucks have been budgeted to perform ore and overburden haulage activities at the mine site. These haulage units will be assisted by three (3) Cat 777B haul trucks currently owned by Mount Polley. Capital cost for these units is based on quotes from equipment suppliers on a lease-purchase arrangement.

Six of the eleven required trucks assumed to be used trucks. Three of the six have been secured.

Bulldozers: Three (3) D10N bulldozers have been budgeted for mining operations. These will supplement the existing Cat D10N bulldozer currently owned by Mount Polley. A down payment is already in place for these units.

Front End Loader: Purchase of a used 23 cubic yard front end loader has been budgeted. This unit will supplement the electric shovels as a back up unit and also be utilized in many of the areas where ramps are being excavated. This unit is available and has been located and a quote received that is the basis for the capital cost.

Support: A tractor with low bed will be purchased for moving track equipment around the property. This is necessary due to the extended distance of the Wight pit from the rest of the operation. In addition, pickups and service truck will be necessary for personnel to perform their work.

Cranes: Both a 27t and 120t crane will be purchased to assist maintenance in equipment erection and ongoing mining activities. Both units are available and quotes received.

Maintenance Items: Purchase of a pipe welder has been budgeted for use on the tailings dam. Previous experience during operations resulted in considerable rental costs for this unit deeming purchase of a pipe welder a more attractive option.

Replacement of **shop doors and lube relocation** will be performed in order to provide adequate room for entry of the 150t haul trucks into the shop complex and perform maintenance on these units.

Additional **fuel storage** is required due to the amount of equipment that will be operating on a daily basis.

Warehouse relocation will place the warehouse immediately adjacent to the mine/mill maintenance complex.

Mine maintenance software represents software costs to purchase a planned maintenance/accounting/purchasing system. The previous system is outdated and not supported.

Inventory replacement is estimated cost to build up site inventory to support the mine and mill equipment and personnel operating on site.

Mine Items: Costs for the **Wight pit, haul road and disposal site** represent costs to prepare these areas for mining activities. There are additional costs included in operations to supplement this amount.

Wight pit dewatering represents capital costs to be incurred to ultimately reduce water inflow into the pit. Costs are considered adequate to perform well drilling and piping as well as other preventive and dewatering activities.

Trailing cable and light plants are necessary to provide cable for the two additional shovels and provide additional light for mine operations respectively.

Power line to Springer and Wight pits includes all power line and ancillary costs to provide power to these pit areas. **A telephone landline** has been quoted and budgeted due to the poor reliability of the present system.

Tailings Storage Facility has been budgeted for 2004 and successive years. Capital costs for this item are staged in order to contain the tailings for the succeeding year of mining and provide storage in the event of a designed storm event.

An increase in the **Reclamation Bond** is budgeted due to the additional disturbance to be incurred with the mining of the Wight pit.

Spare Ring Gear: A spare ring gear is required for number (3) pebble mill. This has been identified as a critical spare for mill operations.

OK 38 Cells: Will be required for additional flotation capacity in anticipation of increased head grades from the Wight pit. These cells have already been purchased. The budget includes an allowance for installation of the cells.

#3 Thickener: Will be required for additional dewatering capacity in anticipation of increased head grades from the Wight pit. The thickener has already been purchased. The budget includes an allowance for installation of the thickener.

Filtering: This represents costs to purchase and install additional filtering capacity required as a result of the high head grades that will be experienced from the Wight pit.

This unit has been located and a quotation received. The budget includes an allowance for installation of the filter prior to year three.

Lime Silo/Slaker: The lime silo and slaker are required in order to provide improvements in pH control for the Bell and Wight pit ore types. The lime silo and slaker have already been purchased. The budget includes an allowance for installation of the silo/slaker.

Assay Lab Ventilation: Upgrades to the current system are required to provide enhanced ventilation in the assay lab.

Off-site Concentrate Storage: This represents anticipated costs to erect concentrate storage facilities to facilitate the shipment of concentrates to smelters.

Detailed capital and pre-production operating cost estimates are contained in Appendices D through G.

22 Operating Cost Estimate

22.1 Mine Operating Cost Estimate

Mine operating costs were estimated for pre-production through to the end of current mine life in year seven. As expected, unit costs are high during pre-production due to the small amount of tonnes mined and comparatively high equipment hours for opening up the Bell and Wight pits for future mining activities.

Unit mine operating costs during year one are elevated, principally due to the ramp-up of operations and resulting lower total tonnes mined. In addition, approximately 1.4 million tonnes of previously stockpiled ore is rehandled during quarters one and two.

From the third quarter of Year one through the second quarter of year four, peak production rates are maintained with resulting lower unit costs. From the second half of year five through the end of mine life the overburden stripping has "caught up" with ore stripping resulting in a low strip ratio. Unit mining rates will be somewhat elevated (though total mining dollars spent will be considerably lower) due to longer hauls and higher fixed unit costs. During the first quarter of year seven, approximately 380,000 tonnes of stockpiled ore will be rehandled in addition to other mining costs for an elevated unit cost.

Equipment and supply operating costs are based on real data as available from Mount Polley's previous and current operating experience and adjusted for increased fuel prices, power rates and supply prices for parts and consumables. Unit costs for other equipment were obtained from equipment suppliers.

Table 22.1 Unit mine operating costs per total tonne mined by period

Period	Prep	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Tonnes X 1000	573	25,705	28,811	28,742	28,525	20,269	8,293	1,365
$/tonne	$4.22	$1.18	$1.11	$1.04	$1.00	$1.14	$1.76	$2.40

22.2 Mineral Processing and Administration

Mineral processing unit costs are slightly higher during Year 1 that includes reduced mill tonnage throughput due to ramping up at the start of operations and slightly reduced throughput of the Wight Pit ore. Following completion of the Wight Pit in Year 3, Quarter 3 mill throughput is estimated at a steady state seven million tonnes per year.

Administration costs will also be affected by the slightly reduced tonnage during the first couple of years. In addition, recruiting costs were substantially elevated during Pre-production and the first two quarters of year one due to mine start-up. Head Office costs are included with Administration for calculating the annual cost per tonne.

Table 22.2 Annual unit costs/tonne milled for Mineral Processing and Administration

Period	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Tonnes X 1000	6,725	6,869	6,825	7,000	7,000	7,000	1,300
Mill $/t	$3.81	$3.75	$3.77	$3.68	$3.61	$3.61	$3.61
Admin $/t	$0.74	$0.69	$0.69	$0.68	$0.66	$0.63	$0.63
Total	$4.55	$4.44	$4.46	$4.36	$4.27	$4.24	$4.24

Operating costs were based on real data as available from Mount Polley's previous and current operating experience and adjusted for increased costs due to inflation and availability. Current costs were obtained from suppliers and used for all reagents, grinding media and power.

22.3 Off-Site Concentrate Handling Charges

Table 22.3 Off-Site Handling Charges

Cost Distribution		
Inland Freight/Port Charges	63.65	Cdn$/wt
Ocean Freight	45.00	US$/wt

22.4 Concentrate Treatment Charges

22.4.1 Copper Terms

Concentrate Grade:	26%
Copper Payable:	96.5% of full copper content, or one (1) unit deduction whichever is greater
Treatment Charge:	US$50.00/wmt
Refining Charge	US$0.05/lb
Price Participation:	None

22.4.2 Gold & Silver Terms

Table 22.4 Gold Payable

Gold Grade Range in Concentrate g/dmt		
Lower Limit	Upper Limit	% Payable
0	10	0
10	20	97
20	40	97.25
40	70	97.5
>70	N/A	97.75

Refining Charges: US$ 6.00 / oz

Silver: 90% payable

Refining Charge; US$ 0.40 / oz

23 Financial Analysis

The financial analysis of the project incorporates the following assumptions:

- The project is 100% equity financed
- Tax rates used are those expected to be in effect at the time of the project being operational, i.e. Year 0 = Year ended December 31, 2004; Year 1 = Year ended December 31, 2005; etc.
- The project is contained in a single purpose entity, Mount Polley Mining Corporation, and therefore the project incorporates, Mount Polley Mining Corporation's tax pools at December 31, 2003 and, Mount Polley Mining Corporation's estimated operating, exploration and development expenditures, aggregating $7.5 million, expected to be incurred during calendar year 2004 that are not included in this Feasibility Study.
- A concentrate loan facility to advance cash against concentrate at the dock will be used to finance working capital. The Statement of Cash Flows presents this by recording cash flow from production as the concentrate is produced.

The mining plan in this report is based on resources in place in September 2001 when operations were suspended together with additional resources that were outlined by exploration carried out in the period August 2003 through May 2004. Exploration on the property is ongoing and continues to outline additional resources which will be incorporated in future mine plans at the appropriate time.

It is assumed that any additional reclamation bonding requirements will be secured by pledging mining equipment to the Province of British Columbia.

The Statement of Cash Flows for the Base Case is found in table 23c. The Base Case uses the following price and exchange rate assumptions:

Table 23a Base Case Price and Exchange Rate Assumptions

PRICE AND EXCHANGE RATE- Base Case	
Copper (US$/lb)	1.10
Gold (US$/oz)	400.00
Exchange (US$/$Cdn)	0.75
Silver (US$/oz)	5.00

The Internal Rate of Return (IRR) of the project was determined at three levels:

- Net mine operating margin before capital and taxes
- Net mine cash flows before taxes
- Net mine cash flows after taxes

On a stand alone basis, the mine restart project has a pre tax internal rate of return of 103% and a net present value discounted at 5% of $107 million, at current metal prices (June 2004 average). (Copper US$1.22/lb, gold US$392/oz and silver US$5.86/oz coupled to an exchange rate of $0.737 US dollar to Canadian dollar.) See table 23b below for copper metal price sensitivity.

Table 23b Copper Metals Price Sensitivity

Copper Metal Price Sensitivity Table		
Copper Price US$/lb	Pretax Net Present Value Discounted at 5% ($millions)	Pretax Internal Rate of Return
1.00	34.9	39%
1.10	67.8	69%
1.20	100.7	97%
1.30	133.6	125%
1.40	166.5	153%
Gold at US$392/oz		
Silver at US$5.86/oz		
Exchange rate of $0.737 (US$ to Cdn$)		

Table 23c Statement of Cash Flows

STATEMENT OF CASH FLOWS Mount Polley Mine Plan Feasibility Study 2004	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	TOTAL
STATEMENT OF CASH FLOWS									
Months of Mill Production		12	12	12	12	12	12	3	75
Marketable Copper Production in lbs		43,348,511	60,249,450	77,224,595	34,320,199	37,283,699	39,973,205	6,699,376	299,099,035
Marketable Gold Production in oz		47,259	57,936	64,875	52,811	49,724	51,061	8,488	332,153
Marketable Silver Production in oz		209,522	283,504	416,527	58,855	46,017	47,255	7,855	1,069,535
Concentrate Produced in DMT		78,650	109,315	140,114	62,270	67,646	72,526	12,155	542,677
GROSS REVENUE		89,097,747	119,651,069	148,295,103	78,854,248	81,533,627	86,200,407	14,409,079	618,041,279
Treatment and Transportation		19,126,192	26,517,106	33,941,513	15,208,804	16,451,326	17,618,956	2,952,283	131,816,179
NET REVENUE AT MINE GATE									
NET REVENUE	**-**	**69,971,554**	**93,133,963**	**114,353,591**	**63,645,444**	**65,082,301**	**68,581,452**	**11,456,795**	**486,225,100**
Mine Costs	2,416,381	30,229,118	31,934,979	29,909,071	28,634,159	23,057,613	14,615,836	2,753,172	163,550,329
Milling Costs	2,923,841	25,651,344	25,749,448	25,749,448	25,749,448	25,255,044	25,255,044	4,689,607	161,023,224
Reclamation Costs	-	-	-	-	-	-	2,061,750	687,250	2,749,000
Administration Costs	977,910	4,943,462	4,747,100	4,732,100	4,743,624	4,630,212	4,372,508	811,587	29,958,503
Sumitomo Cond. Loan Repayment		1,166,667	1,166,667	1,166,667	1,166,667	1,166,667	466,667	-	6,300,000
	6,318,132	61,990,591	63,598,194	61,557,286	60,293,898	54,109,536	46,771,805	8,941,616	363,581,056
NET MINE OPERATING MARGIN BEFORE CAPITAL AND TAXES									
	-6,318,132	**7,980,964**	**29,535,769**	**52,796,305**	**3,351,547**	**10,972,765**	**21,809,647**	**2,515,179**	**122,644,045**
NPV @ 5%	98,187,612	*IRR*	*240%*						
Capital Expenditure	13,616,910	9,343,000	7,157,520	5,692,000	3,956,000	3,099,000	2,477,000	-4,850,000	40,491,430
Reclamation Bond	-	-	-	-	-	-	-	-1,379,433	-1,379,433
Working Capital	-	-	-	-	-	-	-	-	-
	13,616,910	9,343,000	7,157,520	5,692,000	3,956,000	3,099,000	2,477,000	-6,229,433	39,111,997
NET MINE CASH FLOWS BEFORE TAXES									
NET CASH FLOWS	**-19,935,042**	**-1,362,036**	**22,378,249**	**47,104,305**	**-604,453**	**7,873,765**	**19,332,647**	**8,744,612**	**83,532,048**
NPV @ 5%	62,922,809	*IRR*	*64%*						
BC Mineral Tax @ 2%		184,953	616,049	1,081,259	92,364	244,789	447,526	52,304	2,719,244
BC Income Tax @ 16.5%		-	1,542,603	6,305,515	-	942,315	2,311,480	-	11,101,912
Federal Income Tax @ 22.12%		-	2,125,574	10,072,097	-	1,489,853	3,676,840	-	17,364,363
	-	184,953	4,284,225	17,458,871	92,364	2,676,956	6,435,847	52,304	31,185,518
NET MINE CASH FLOWS AFTER TAXES									
NET CASH FLOWS	**-19,935,042**	**-1,546,989**	**18,094,025**	**29,645,434**	**-696,818**	**5,196,810**	**12,896,800**	**8,692,309**	**52,346,529**
NPV @ 5%	38,011,529	*IRR*	*45%*						
COST OF PRODUCTION PER UNIT									
Cu Prod. Cost w/Au ($US/lb)		**1.06**	**0.78**	**0.61**	**1.05**	**0.88**	**0.66**	**0.19**	**0.84**
Gold Prod. Cost w/Cu ($US/oz)		**396.54**	**97.20**	**-148.55**	**386.10**	**261.25**	**81.59**	**-298.11**	**193.41**

23.1 Project Sensitivity to Economic Variables

The sensitivity of the project to economic variables was determined by applying changes of 10% from the Base Case and graphing the change in IRR at the three levels presented in the Statement of Cash Flows. Economic variables shown include copper price, gold price, exchange rate and mill head grade.

See Appendix C:
Graph 1 – Net Mine Operating Margin Before Capital and Taxes
Graph 2 – Net Mine Cash Flow Before Taxes
Graph 3 – Net Mine Cash Flow After Taxes

23.2 Project Sensitivity to Operating Variables

The sensitivity of the project to operating variables was determined by applying changes of 10% from the Base Case and graphing the change in IRR at the three levels presented in the Statement of Cash Flows. Operating variables shown include capital costs, operating cost, mill throughput, and mill recovery.

See Appendix C:
Graph 4 – Net Mine Operating Margin Before Capital and Taxes
Graph 5 – Net Mine Cash Flow Before Taxes
Graph 6 – Net Mine Cash Flow After Taxes

24 Interpretation Conclusions

The following is a list of general conclusions:

- The discovery of the Northeast Zone is the most significant event in the history of the Mount Polley property since the original discovery. With an average copper grade of 0.8 to 1.0%, (three times that of the other zones), the Northeast Zone improves the economics of reopening the mine by a very significant margin.
- The geology and mineralization of the Springer and Bell deposits are well understood. The experience gained during the five years of planning and mining the adjacent Cariboo pit was well utilized in the preparation this report.
- The database used to support the mineral resources in this report is supported by over four years of good to excellent reconciliation between block model grades and those found while mining the Cariboo and Bell Pits.
- After the mine suspension in September of 2001, orderly shutdown procedures were followed, and the mine is now maintained on standby, pending the expected reopening.
- The 2004 feasibility study presented in this report shows that a restart of operations is viable at current prices.

Appendixes

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Appendix A: Permits

MOUNT POLLET MINE: GOVERNMENT PERMITS, LICENSES AND APPROVALS				
MINISTRY / BRANCH	**DESCRIPTION OF REQUIREMENT**	**DATE OF APPLICATION**	**PUBLICATION OF NOTICE**	**NUMBER (DATE ISSUED)**
Ministry of Energy & Mines	Mine Development Approval			Oct. 6, 1992
Ministry of Energy & Mines	Work System and Reclamation Program			
Ministry of Energy & Mines	**Primary Issuance of Permit** • Interim Reclamation Plan	06-Apr-95	April 12 &13, 1995 (BC Gazette) (Williams Lake Tribune)	Permit M-200 Aug. 3, 1995
Ministry of Energy & Mines	**1st Amendment** • Name Change	23-Apr-96		Permit M-200 13-Jun-96
Ministry of Energy & Mines	**2nd Amendment** • Tailings Construction Approval to an Elevation of 934 metres			Permit M-200 23-Sep-96
Ministry of Energy & Mines	**3rd Amendment** • Final Reclamation Plan a. Work Systems b. Land and Water Course Protection. c. Final Reclamation Plan Document	23-May-97	• April 30, 1996 (W. Lake Tribune) • May 2, 1996 (BC Gazette) • May 1, 1996 (Cariboo Observer)	Permit M-200 11-Jul-97
Ministry of Energy & Mines	**4th Amendment** • Tailings Construction Approval to an Elevation of 940 metres	Feb-98		Permit M-200 07-Apr-98
Ministry of Energy & Mines	**5th Amendment** • Tailings Construction Approval to an Elevation of 944 metres			Permit M-200 Jun-00
Ministry of Energy & Mines	**6th Amendment** • Continuation of 5th amendment for TSF & changes to ML/ARD Conditions			Permit M-200 Aug-00

Appendix A: PERMITS Continued

Ministry of Energy & Mines	**7th Amendment** • Tailings Construction Approval to an Elevation of 945 metres			Permit M-200 May-01
Ministry of Energy & Mines	Mining Lease	9-May-96	• May 23,1996 (BC Gazette) • May 21 & 28 and June 4 & 11 (W. Lake Tribune)	Mining Lease No. 345731 22-Aug-96 Exp 2026
Ministry of Energy & Mines	Variances from Mine Act: 1. Hours of Work 2. Multiple Benching 3. Mine Dumps			
Ministry of Energy and Mines	Approval to Operate Borrow Pits 1. Filter Sand Pit 2. Rock Pit	03-Oct-96		07-Oct-96
Ministry of Energy and Mines	Explosives Storage and Use Permit	May-97		Permits: No. 1189 & No. 1190 04/06/1997
Ministry of Water, Land & Air Protection (Pollution Prevention)	Temporary Approval for Discharge during Construction 1. Discharge from the SESP to Polley Lake seasonal drainage course. 2. Discharge from the MSS to Mine Drainage Creek. 3. Discharge from the MESP to Edney Creek Tributary.	19-Mar-96 19-Mar-96 29-Mar-96		Approval AE-14591 issued for period: July 1, 1996 to September 30, 1997
Ministry of Water, Land & Air Protection (Pollution Prevention)	Effluent Permit: 1. Approval of Works. 2. Mill Site Runoff into Tailings Impoundment. 3. North and Southeast Waste Dumps underflow into Tailings Impoundment.	28-Mar-96	□ □	Permit PE 11678: • **Primary Permit** 30-May-97 • **1st Amendment**

Appendix A: PERMITS Continued

	4. Open Pit Dewatering into Tailings Impoundment. 5. Sewage Effluent into Tailings Impoundment. 6. Special Waste Consignor.			20-Oct-97 • **2nd Amendment** Jan-00 • **3rd Amendment** Feb-02 ID: BCG, 01559
Ministry of Water, Land & Air Protection (Pollution Prevention)	Air Emission Permits 1. Crushing and Screening Plant 2. Sample preparation laboratory fume hoods 3. Diesel generators 4. Reagent fans 5. Mill exhaust fans		□ □	Permit PA 15087
Ministry of Water, Land & Air Protection (Pollution Prevention)	Solid Waste Disposal Permit 1. Garbage and refuse disposal in the East Dump	25-Mar-96	□	Permit PR 14590 18-Mar-97
Ministry of Water, Land & Air Protection (Water Management)	Water Licenses: 1. To withdraw 1,000,000 m^3 / year from Polley Lake for process water from March 1 to June 1. 2. To withdraw 24,143 m^3 / month from Polley Lake for fresh water year round. 3. To withdraw 25,000 m^3 / month from Polley Lake for dust control May-October. 4. To withdraw 1100 m^3 / month from Polley Lake for potable water. 5. To withdraw 450,k m^3.	August 22,1996 August 22,1996		Conditional Licenses: 101763 and 111741

Appendix A: PERMITS Continued

		August 22,1996 August 22,1996 November, 1998		Approval 5003839
Ministry of Water, Land & Air Protection (Fish & Wildlife)	Approval for Construction of Bootjack Dam	Sept. 25, 1996		
Ministry of Water, Land & Air Protection (Fish & Wildlife)	Approval for Culvert Installations: 1. Tailings Road & Polley Intake Road crossing of Bootjack Creek. 2. Bootjack Forestry Road crossing of small creeks	02-Apr-96		
Ministry of Water, Land & Air Protection (Fish & Wildlife)	No Shooting Area			
Ministry of Water, Land & Air Protection	Land Tenure 1. Transmission Line License of Occupation 2. Tailings Dam License of Occupation	13-May-96 22-Mar-96		
Ministry of Forests	Road Permits 1. Construct, modify, use and maintain Morehead - Bootjack Road. 2. Relocation of Bootjack-Morehead Connector Forestry Road. 3. Use of Gavin Lake Forestry Road during construction.	01-Apr-96 12-Apr-96		Road Use Permit No. 01-5654-96 June 1, 1996. Road Permit No. 8783 June 1, 1996.
Ministry of Forests	License to Cut 1. Mill Site, Mine Site, Tailings Dam and Road.	30-May-96		• L43050

Appendix A: PERMITS Continued

	2. Transmission Line Horsefly District & Williams Lake District			01-Jun-96
	3. Polley Lake Intake Road within mineral claims & Filter Sand Borrow Area.	13-Sep-96		• L43102
	4. Bootjack Dam and Rock Borrow Pit			26-Aug-96
	5. Polley Lake Intake Road between Polley Lake & Bootjack Creek			
	6. Powerline to Barge Channel and Seepage Collection Ponds. Glacial Till Borrow Pit at Tailings Dam.	03-Sep-96		• L43205
	7. Full area of the East Dump, SE Sed. Pond & Perimeter Ditch.			28-Aug-96
	8. West side of the Tailings Dam to the final construction elevation of 965m.			
		04-Oct-96		• L43255 04-Sep-96
	<u>Burning Permit</u>	10-Dec-96		• L43050 Amended: 10-Oct-96
		Jan 15 & 21, 1997		• L43255 Amended: 23-Dec-96
		11-Feb-97		• L43050 Amended: 03-Feb-97
		25-Feb-97		
Ministry of Health	<u>Final Certificate</u> 1. Waterworks system for supply of potable water.			
Ministry of Transportation and Highways	<u>Approval</u> 1. Access to Likely Road.			Permit No. 04-017-12194
	2. Road relocation on Gavin Road at 0.75 km.			Gavin Lake Road #1291

Appendix A: PERMITS Continued

Department of Fisheries and Oceans	Polley Lake Water Intake Structure			
Radio Licensing Canada	Radio Frequency Permit			# 080116784
Municipal Affairs	Fuel Storage Permits	03-May-96		File No. 1700-5 19-Jun-96

Appendix B: Reclamation Cost Estimate (end mine life)

Mount Polley Mine

Mine Activity Category	AREA (ha) Total Disturbed	Perm. Disturb.	Current Reclaimed	To be Reclaimed	RECLAMATION PRESCRIPTION Site Preparation	Revegetation	Maintenance	Total Cost
AREA DISTURBANCE								
Dump Face Resloping	40.91	0	0	40.91	$124,947	$159,958	$16,364	$301,270
RDS Tops	113.41	0	5.86	107.55	$211,551	$200,581	$43,020	$455,152
Pit Lakes & Surfaces	37.37	0	30.68	6.69	$12,303	$8,965	$2,676	$23,944
Pit Walls	21.13	0	21.13	0	$0	$0	$0	$0
Roads	48.36	25.36	0	23	$41,446	$42,895	$9,200	$93,541
Mill Site	20.21	0	0	20.21	$26,394	$37,692	$0	$64,086
Tailings Impoundments	37.34	0	11.2	26.14	$101,417	$13,724	$10,456	$125,597
Tailings Dam Surface	218.77	0	0	218.77	$549,140	$331,535	$67,816	$948,492
Stockpile Pads	30.42	0	0	30.42	$0	$56,733	$12,168	$68,901
Linear	6.21	0	0	6.21	$9,075	$11,582	$2,484	$23,141
Other	34.44	0	0.51	33.93	$66,740	$63,279	$13,572	$143,592
TSF - Miscellaneous Areas	2.57	0	2.57	0	$0	$0	$0	$0
Exploration	0	0	0	0	$0	$0	$0	$0
Leach Pads	34.85	0	0	34.85	$80,680	$64,995	$13,940	$159,615
Master 14				0	$0	$0	$0	$0
TOTAL	**645.99**	**25.36**	**71.95**	**548.68**	**$1,223,694**	**$991,939**	**$191,696**	**$2,407,329**
LUMP SUM ITEMS								
Solid Waste Disposal								$50,000
Engineering								$120,000
POST CLOSURE COSTS								$5,000
Present Value								$166,667
TOTAL								**$2,748,996**

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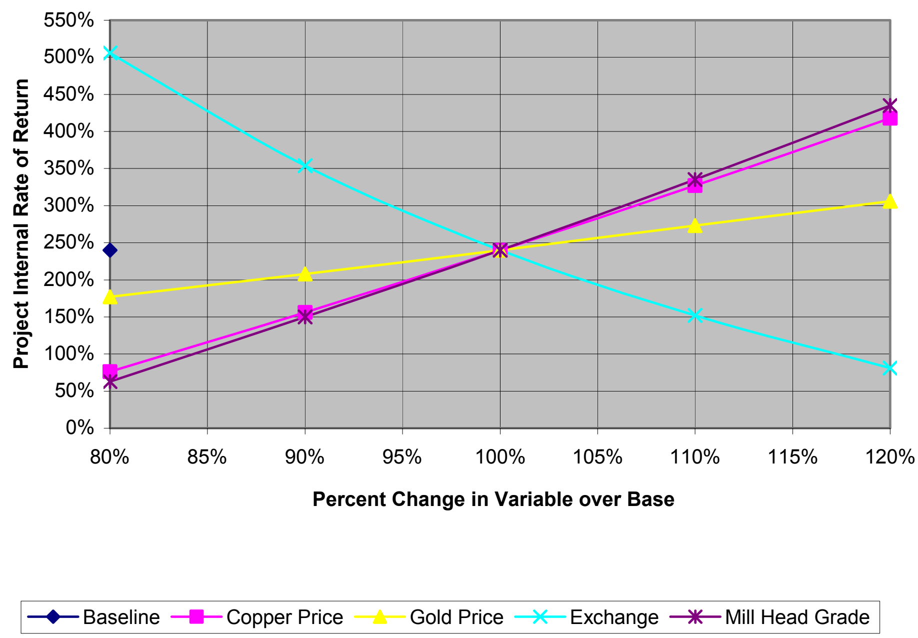
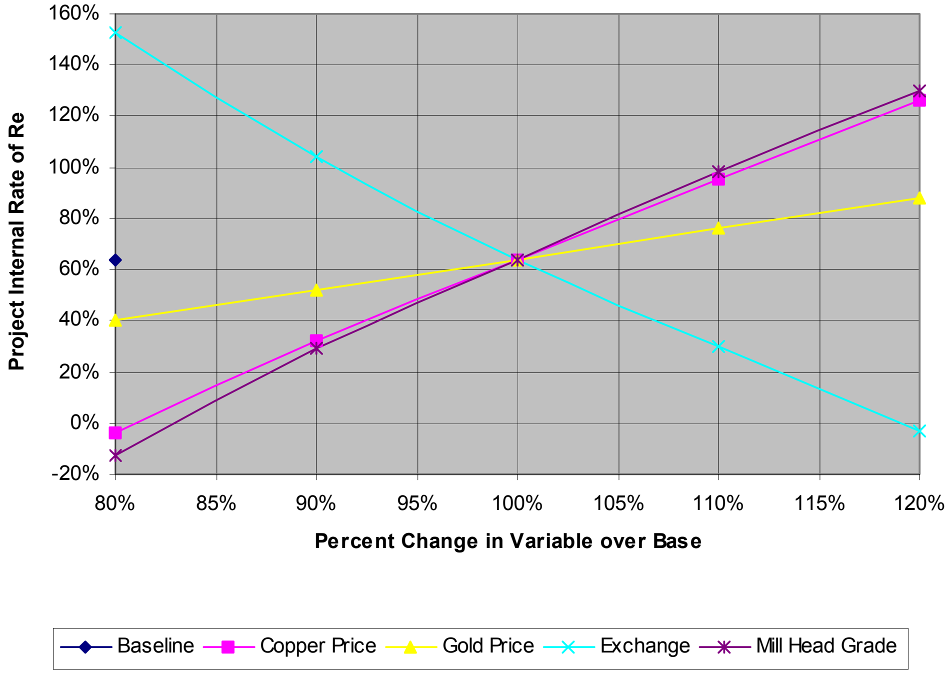
Appendix C: Financial Analysis Graphs

Graph 1 - Project Sensitivity to Economic Variables - Net Mine Operating Margin Before Capital and Taxes

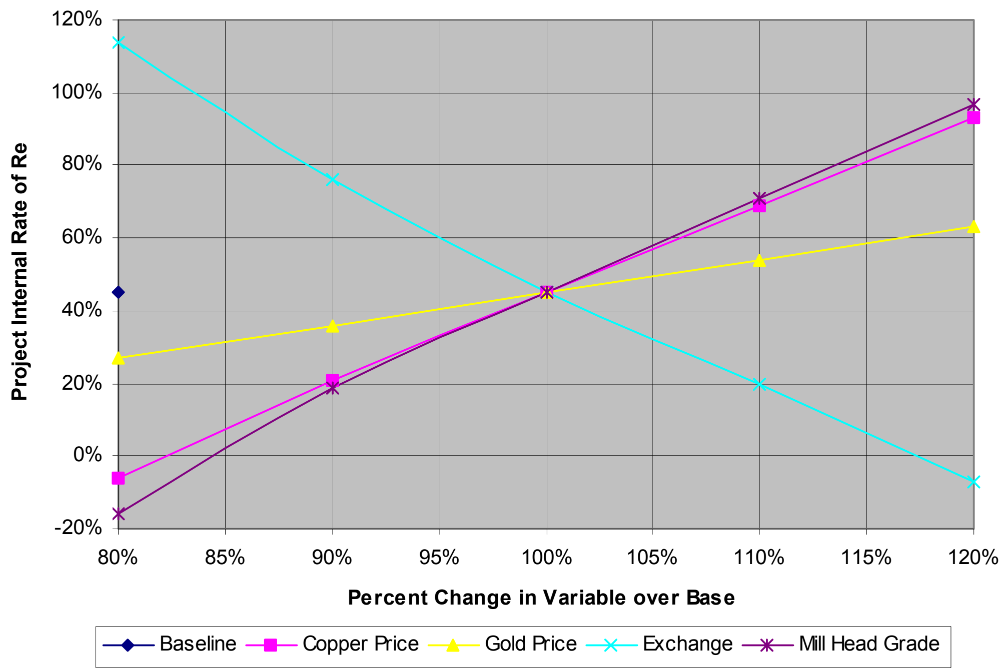


AMEC010495_0133

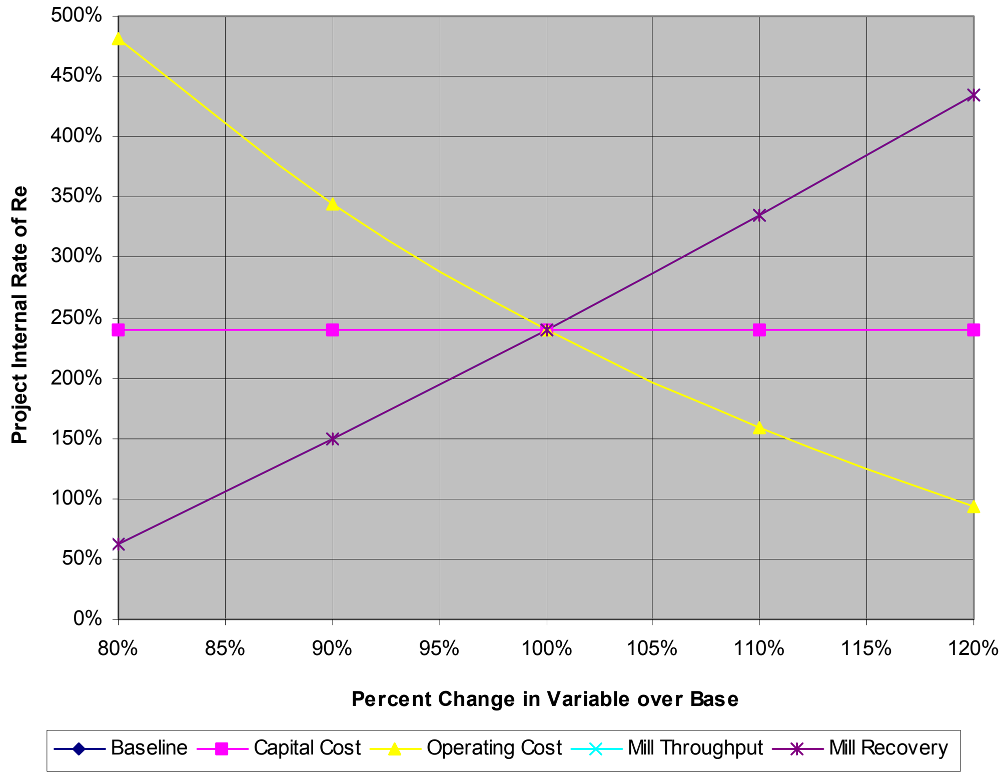
Graph 2 - Project Sensitivity to Economic Variables - Net Mine Cash Flow Before Taxes



Graph 3 - Project Sensitivity to Economic Variables - Net Mine Cash Flow After Taxes

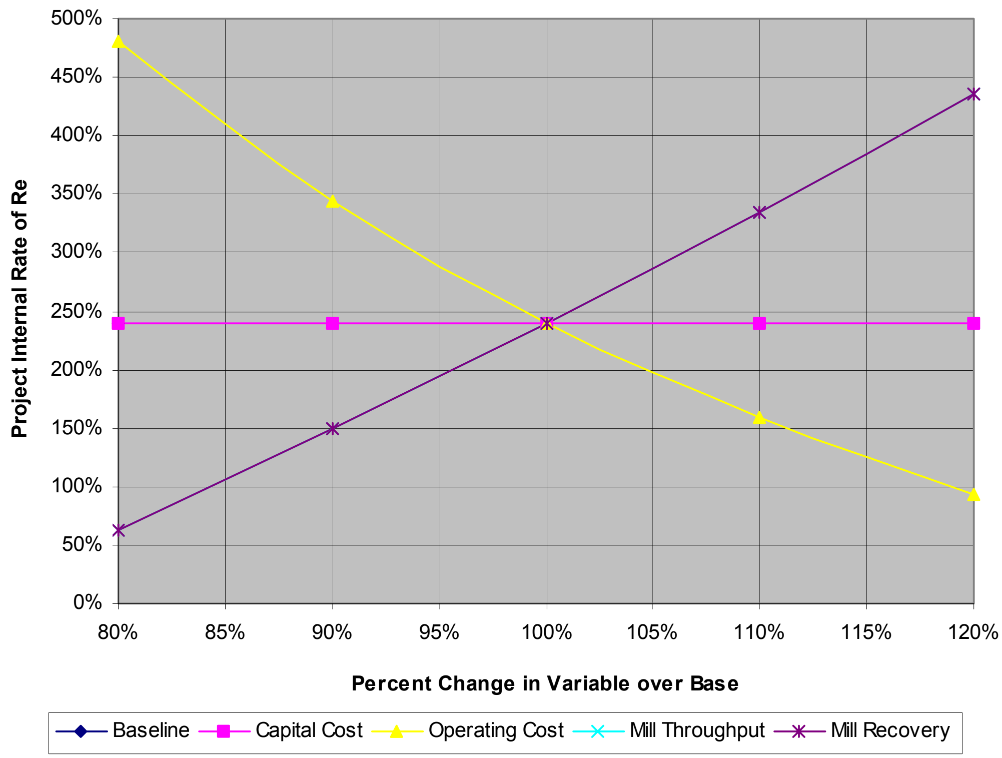


Graph 4 - Project Sensitivity to Operating Variables - Net Mine Operating Margin
Before Capital and Taxes



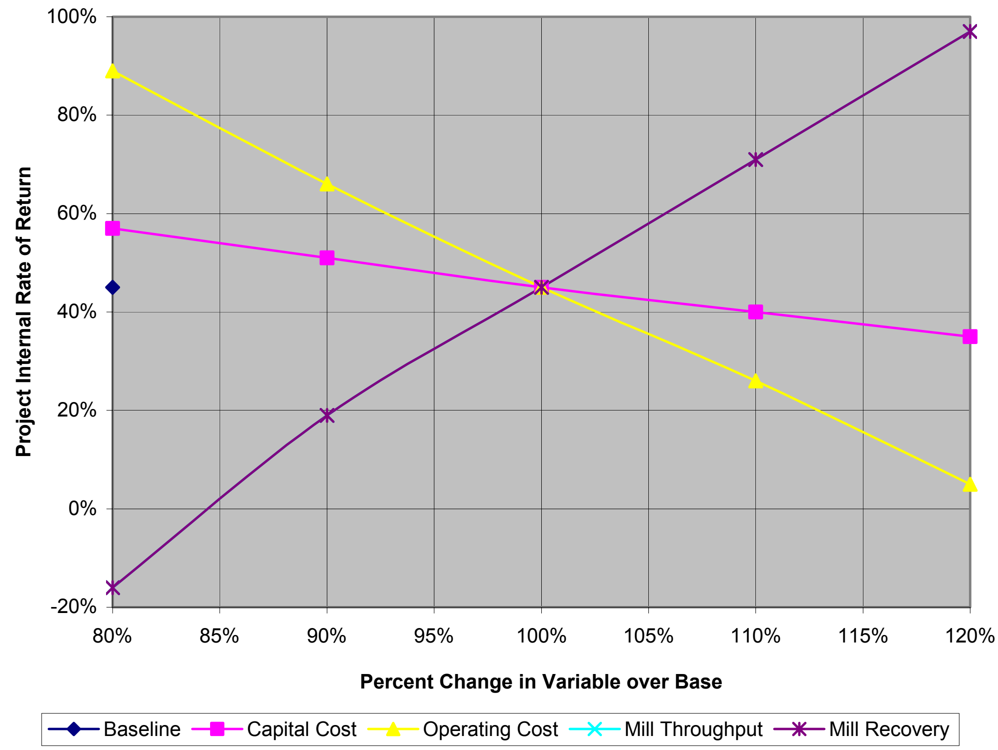
AMEC010495_0136

Graph 5 - Project Sensitivity to Operating Variables - Net Mine Cash Flows Before Taxes

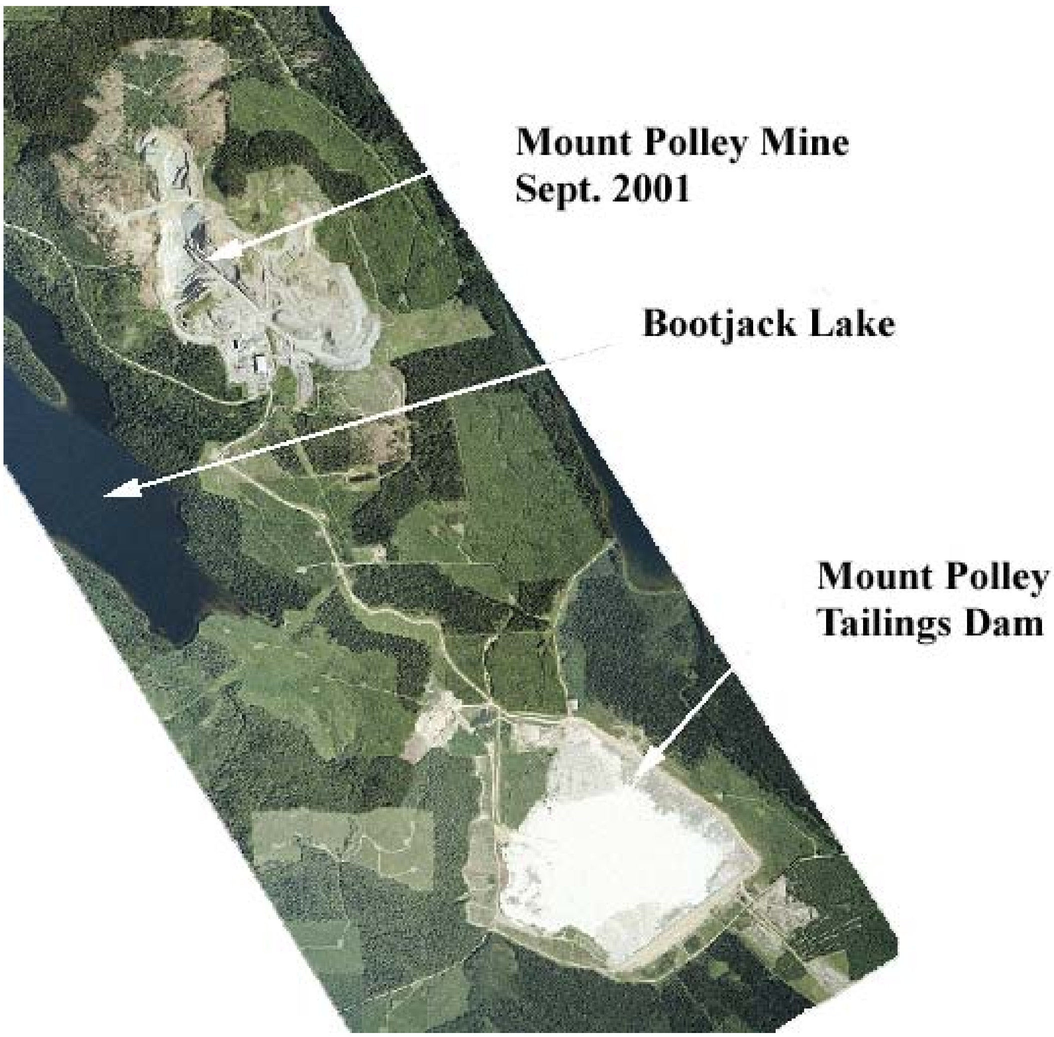


AMEC010495_0137

Graph 6 - Project Sensitivity to Operating Variables - Net Mine Cash Flows After Taxes

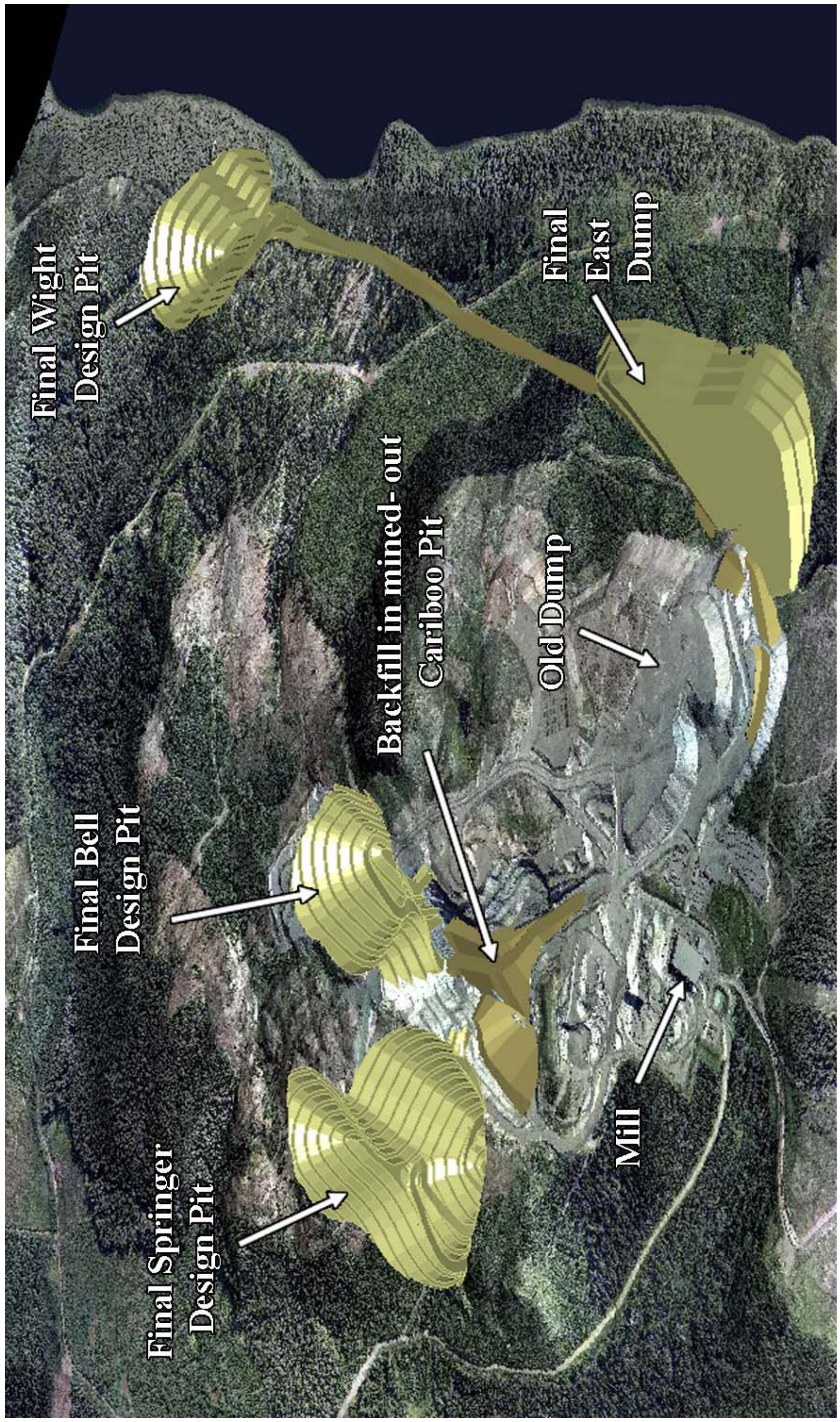


Appendix D: Air Photos




POLLEY LAKE
EAST DUMP
LOW GRADE STOCK PILE
SOUTHEAST ZONE
CARIBOO PIT
BELL PIT
NORTH DUMP
MILL
BOOTJACK ROAD
HIGH GRADE STOCK PILE
SOIL STOCK PILE
SPRINGER ZONE
BOOTJACK LAKE


TILL BORROW AREA
MAIN EMBANKMENT
PERIMETER EMBANKMENT
MT. POLLEY MINE TAILINGS DAM
ROCK BORROW PIT
BARGE CHANNEL


Final Wight Design Pit
Final East Dump
Backfill in mined-out Cariboo Pit
Old Dump
Final Bell Design Pit
Final Springer Design Pit
Mill

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