MPMC00132

Annual Environmental

and

Reclamation Report 2006

For Submission to:

Ministry of Energy, Mines and Petroleum Resources
and
Ministry of Environment

Prepared by:

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Environmental Department

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1.0 INTRODUCTION

Imperial Metals Corporation is 100% owner/operator of the Mount Polley Mine, an open pit copper-gold mine, located approximately 60 km northeast of Williams Lake, B.C. (Figure 1). Access to the mine site from 150 Mile House is north along secondary highway No. 115 for 60 km to Morehead Lake and South from the Bootjack Lake turn-off for another 12 km on the site access road to the property. The mine is positioned on a ridge dividing the Polley Lake / Hazeltine Creek and Bootjack Lake / Morehead Creek watersheds, both of which are tributaries of the Quesnel River.

A Reclamation and Closure Plan for the Mount Polley Project was approved by the Ministry of Energy, Mines and Petroleum Resources (previously the Ministry of Energy and Mines) resulting in the issuance of Permit M-200 in July of 1997. The M-200 permit was last amended in 2006, approving the tailings storage facility stage 5 construction. Previously in 2005 amendments included approval of the haul road to the Tailings Storage Facility and the Southeast Zone works. The mine received a Ministry of Environment effluent permit PE 11678 (previously the Ministry of Water, Land and Air Protection) issued under the provisions of the "Waste Management Act" in May of 1997 and last amended in May 2005. This permit authorizes the discharge of concentrator tailings, mill site runoff, mine rock runoff, contaminated soil, open pit water, and septic tank effluent to a tailings impoundment. The 2005 amendment also permits the discharge of effluent from the Main Embankment Seepage Collection Pond. There was no discharge from this location in 2006.

Mount Polley open pit mine is on a phased development schedule, ultimately involving the creation of six and possibly seven pits. The current project infrastructure consists of the mill site, three open pits, three rock disposal sites and a tailings storage facility, as well as the main access road, power line, tailings pipeline and sediment and seepage control ponds. Construction activities in 1995 consisted primarily of clearing the mill site. Construction of the whole facility began in 1996, and the mill was commissioned in June 1997. The first full year of mining and milling took place at Mount Polley in 1998. The mine suspended operations in October 2001. The mine re-opened in December 2004, with mill production recommencing in March of 2005.

All data collected throughout each year under permit PE 11678 is submitted in an Annual Environmental Report by April 30th of the year following the reporting period. This includes a report on the construction and performance of the tailings impoundment and dam, reclamation activities, and an evaluation of the impacts of the operation on the receiving environment. For the M-200 permit, an Annual Reclamation Report outlining the results of all geological characterization, material characterization test work, and water quality monitoring is submitted by March 31st of each year. Also provided in this report are details of the reclamation plan and a summary of the disturbance and reclamation activities for the previous years and for five subsequent years. Since the reporting year 2000, these two reports have been combined into one for submission to the Ministry of Energy, Mines and Petroleum Resources and to the Ministry of Environment in order to satisfy the requirements of the respective permits. This reporting format of a combined report for both Ministries has been continued for the 2006-reporting year.

1.1 RECLAMATION OBJECTIVES

In accordance with the BC Mines Act and the Health, Safety and Reclamation Code for Mines in British Columbia, the primary objective of the Reclamation Plan is to *"return all mine-disturbed areas to an equivalent level of capability to that which existed prior to mining on an average property basis, unless the owner, agent or manager can provide evidence which demonstrates to the satisfaction of the chief inspector the impracticality of doing so*".

To support mine planning, operations and reclamation, a comprehensive environmental baseline-monitoring program was designed and carried out in 1995 and 1996 to expand upon previous studies conducted in 1989/1990 (HKP

1996b, c, 1997; Blashill, 1996, 1997; ITM 1997). The environmental baseline studies document pre-development land use and conditions of the aquatic and terrestrial ecosystem. This provides the foundation upon which the operational and post–closure monitoring programs are based and reclamation activities are developed, such that the land may be returned to its original capability once mining has ceased. Environmental monitoring is ongoing, fulfilling both the requirements of the M–200 permit by the Ministry of Energy, Mines and Petroleum Resources and the effluent permit PE 11678 by the Ministry of Environment.

For the Mount Polley project area, the primary end land uses of the reclamation plan are wildlife habitat and commercial forestry. Reclaimed areas will be capable of supporting secondary uses of the wildlife resource, such as hunting, guide-outfitting, trapping and outdoor recreation. Perpetuating, and, if possible, enhancing biodiversity is an important wildlife consideration. The following goals are implicit in achieving this primary objective:

- Long-term preservation of receiving water quality within and downstream of the receiving environment of the decommissioned operations;
- Long-term stability of engineered structures, including the rock disposal sites, tailings storage facility and open pits, as well as all exposed erodible materials;
- Natural integration of disturbed lands into surrounding landscape and, to the greatest possible extent, restoration of the natural appearance of the area after mining ceases;
- Establishment of a self-sustaining vegetative cover, consistent with the end land uses of wildlife habitat, commercial forestry, and outdoor recreation; and
- Removal and proper decommissioning of all secondary access roads, structures and equipment that are not required after the mine closes.

To achieve these goals, reclamation planning must be flexible enough to allow for modifications to the mine plan, and to incorporate results from ongoing reclamation research programs into the plan. For instance, in 1998, reclamation research test plots were established on the East 1170 rock disposal site to monitor the effects of soil thickness and various other parameters on plant growth. Plots comprising new treatments were added to the trial in 1999, and some of the plots that were planted in 1998 were repeated in the 1999 plots with the original prescriptions. In 2000, Phase II of the Reclamation Research program was initiated, with additional plots established on re-sloped areas of the 1170 rock disposal site. These research initiatives have been monitored and reported on in this 2006 report.

1.2 ENVIRONMENTAL MONITORING

The main objective of the environmental monitoring program is to evaluate all data collected, so that site-specific objectives can be developed, which would focus on protecting the environment. Sampling procedures follow those that are described in the "British Columbia Field Sampling Manual for Continuous Monitoring plus the Collection of Air, Air Emission, Water, Wastewater, Soil, Sediment, and Biological Samples" 2003 edition and the Mount Polley "Quality Assurance/Quality Control Manual".

Water sampling and analysis is conducted throughout the year at surface and groundwater locations specified in Table 1 and at times specified in Table 2 of Permit PE 11678. The locations of all surface and groundwater monitoring sites are shown in Figure 2. Flow measurements are recorded at surface water stations specified in Section 3.3 of permit PE 11678. Static water levels are also recorded in groundwater monitoring wells at the time of sampling.

A new weather station was purchased in 2005, which continuously measures daily precipitation (non freezing months only), and temperature; this data is downloaded on a monthly basis. Weekly evaporation rates are measured on site with an evaporation pan (non freezing months only) and are saved at the mine site along with the precipitation and temperature data for summarization at year-end. During the winter, snow pack measurements are taken at the end of each month. Additionally, this data is used to update the water balance on a monthly basis.

At such time that the mine discharges under the current permit or under a new discharge permit a biological monitoring program in accordance with the Metal Mining Effluent Regulations will be developed.

Mount Polley continues to recycle used materials including waste oil, scrap steel, batteries, paint-cans and beverage containers. In 2006 Mount Polley donated its beverage container recycling funds to Big Brothers and Big Sisters of Williams Lake. As part of promoting our habitat stewardship initiatives, the mine discourages bear presence; in 2006 there were no bear encounters, or mortalities.

In 2006, Mount Polley received approximately 9,500 tonnes of sulphur product as part of a federal clean up initiative from the Greater Vancouver area. This project allows for environmental clean up activities to take place, it recycles contaminated soil and it recovers copper effectively from a particular ore type, which was historically difficult to do.

2.0 ENVIRONMENTAL PROTECTION & RECLAMATION PROGRAM

2.1 RECLAMATION FACILITIES AND STAFF

During operations, the Mount Polley reclamation research program and annual reclamation initiatives are under the direction of the Environmental Superintendent, who reports to the General Manager. The environmental technologist, environmental technician, the survey crew, and the engineering department also contribute to reclamation activities undertaken at Mount Polley.

Some programs also draw on the advice of reclamation specialists, including government and industry staff, Professional Agrologists, Registered Professional Foresters and Professional Geologists. Some of this work includes: soils inventory; soil classification and mapping; and waste characterization.

In-house reclamation activities conducted by Mount Polley include:

- Drafting and surveying;
- Site preparation, and land contouring;
- Installation of diversion ditches, drainage works, sediment control and settling ponds;
- Placement of stockpiled materials on reclamation sites;
- Seeding of domestic grass-legume cover crops; and
- Monitoring/Reporting.

Mount Polley also has much of the heavy equipment necessary to carry out the reclamation activities, such as bulldozers, backhoes and haulage trucks, and will rent additional equipment, such as hydro seeders, harrows, plows and diskers, as they are needed.

Since operations restarted in December of 2004 minimal reclamation has taken place due to increasing and continuing development. It is anticipated that 10 ha of the East rock disposal site will be reclaimed in 2007.

2.2 RECLAMATION ACTIVITIES – 2006

2.2.1 STABILITY OF WORKS

2.2.1.1 ROCK DISPOSAL SITES

Examinations are made in accordance with section 6.12.1 of the "Health, Safety and Reclamation Code for Mines in British Columbia". A variance was granted by MEM on February 9, 2001. Mount Polley operates in accordance with the terms and reference of this variance. The rock disposal sites that are monitored are the East rock disposal site, the North rock disposal site, Northeast Zone rock disposal site and the Cariboo Pit rock disposal site.

2.2.1.2 TAILINGS STORAGE FACILITY AND ASSOCIATED WORKS

The last inspection of the tailings storage facility and associated works took place in December 2006 by AMEC Earth and Environmental Limited. AMEC's findings are documented in a report found in Appendix 1 entitled, *"FINAL REPORT DAM SAFETY REVIEW DECEMBER 2006" (Ref. No. VM00448)*. This report was submitted to the Ministry of Energy, Mines and Petroleum Resources in December of 2006.

2.2.2 RE-VEGETATION TREATMENTS & FERTILIZER APPLICATIONS

Some exploration work, in the form of trenching, was conducted in the summer and fall of 2006 in the area referred to as the Southeast Zone. When the sampling of the trenches was complete, they were re-contoured and seeded with a vegetative mixture that has been typically used at the Mount Polley site since 1997. No fertilizer was placed on these trenches.

The total area that has been seeded/planted throughout the minesite is 73.23 Ha, while the area fertilized is 66.54 Ha. This data is summarized in Table 3.2

2.2.3 ROCK DISPOSAL SITE RECLAMATION

No reclamation was conducted on the East, North, Northeast Zone or Cariboo Pit rock disposal sites at Mount Polley during 2006.

2.2.4 WATERCOURSE RECLAMATION

No further changes to the watercourses at the Mount Polley mine site were made during 2006. All diversion ditches and pipelines continue to operate as designed. The focus in 2006 was to mitigate potential sediment loading from the Wight Pit to Polley Lake, all measure were effective for this instance.

2.2.5 PIT RECLAMATION

No reclamation was conducted on the Cariboo, Bell or Wight Pits at Mount Polley during 2006. The existing pits will remain un-reclaimed, so that mining can continue.

2.2.6 TAILINGS STORAGE FACILITY RECLAMATION

No reclamation was conducted at the tailings storage facility in 2006.

2.2.7 ROAD RECLAMATION

No reclamation of roads was conducted during 2006.

2.2.8 SECURING OF MINE OPENINGS

As the Mount Polley Mine consists exclusively of open pits, there are no mine openings to secure.

2.2.9 METAL UPTAKE IN VEGETATION

Metal uptake analysis was completed on the research plots located on the East rock disposal site. This analysis is documented in the attached report titled: *" Vegetation Metal Survey "* which can be found in Appendix 2.

2.2.10 CHEMICAL, REAGENT OR SPILL WASTE DISPOSAL

Waste oil and grease was generated at Mount Polley during 2006. As a result, Sumas is scheduled on a routine basis to remove the waste.

2.2.11 ACID ROCK DRAINAGE/ METAL LEACHING PROGRAM

The ARD/ML monitoring program for the Mount Polley Mine re commenced in 2005 with mine restart, and continued through 2006. It characterizes all material types that will be handled during the mine life. Mount Polley's LECO analytical machine allows the mine to best manage mine waste by directing it to proper storage sites, or to construction usage when required. The following sub-sections cover general discussions regarding the present program.

2.2.11.1 WASTE ROCK

Bell Pit, Wight Pit, East Cariboo Pit, and Springer Pit:

On each bench, a sample of cuttings was collected from each blast hole and analyzed for total copper, non-sulphide copper, iron, and gold. Blast hole pattern was 7.4m burden by 8.5m spacing. Bench height is typically 12 meters. Areas of ore and waste were identified by indicator kriging and assigning assay values, mill head value, etc using an inverse distance calculation. The Mine Geologist then established ore/waste boundaries based on the calculated mill head values. For purposes of ARD-ML monitoring, only waste areas were sampled. Samples collected were a composite of 5 blast holes. In areas of suspect or likely potential acid generating, at least 20% of the blast holes were sampled. Each month, approximately five composite blast hole samples were collected for non-acid generating or probable non-acid generating material. Test results are listed below.

All waste material in the Wight Pit was designated as non-acid generating. Approximately 14,062,378 tonnes of non-acid generating rock were used in roads, at the tailings storage facility, and in dump construction. 869,168 tonnes of overburden was placed in the till dump.

In the Bell Pit, there is a pyrite rich (up to 5% Py) section on the northeast side of the pit. Previous and current testing substantiates this material as potential acid generating. 747,880 tonnes of potential acid generating material from this area of the pit was placed in the PAG dump (Cariboo Pit). 5,472,362 tonnes of non-acid generating rock were place in waste dumps and used for road construction. Material designation is stored in the block model.

From, the East Cariboo Pit, some 208,688 tonnes of rock was designated non-acid generating and used in road construction (leach pad access) and delivered to the waste dumps.

Initial stripping of the Springer Pit started with 270,608 tonnes of rock being designated non-acid generating. This material was deposited in the Cariboo Pit.

The following table shows break down of material by pit and bench.

2006

	Bench	Nag	Pag	OB	Waste
Wight Pit	1008+	20,051	0	0	20,051
	1008	126,471	0	0	126,471
	996	442,536	0	0	442,536
	984	1,118,863	0	0	1,118,863
	972	1,807,063	0	0	1,807,063
	960	2,351,026	0	0	2,351,026
	948	3,115,386	0	57,318	3,172,704
	936	2,843,198	0	16,576	2,859,774
	924	1,466,683	0	721,564	2,188,247
	912	497,429	0	73,710	571,139
	900	219,512	0	0	219,512
	888	54,160	0	0	54,160
WP Total:		*14,062,378*	*0*	*869,168*	*14,931,546*
Bell Pit					
	1190	90,511	0	0	90,511
	1180	89,954	0	0	89,954
	1168	166,479	769	0	167,248
	1156	111,473	54,420	0	165,893
	1144	507,513	261,377	0	768,890
	1132	1,801,599	183,764	0	1,985,363
	1120	1,807,804	55,667	0	1,863,471
	1108	893,777	191,883	0	1,085,660
	1096	3,251	0	0	3,251
BP Total:		*5,472,362*	*747,880*	*0*	*6,220,242*
Cariboo East Pit					
	1160	208,688	0	0	208,688
Springer Pit		0	0	0	0
	1160	61,440	0	480	61,920
Total:		*270,128*	*0*	*480*	*270,608*
PIT TOTAL:		*19,804,868*	*747,880*	*869,648*	*21,422,396*

The following table shows all pit blast hole samples analyzed for ABA. Those highlighted in yellow are designated potential acid generating and the corresponding material was sent to the PAG dump.

Date	sampleID	totalSulphur	AP	totalCarbon	NP	NPR	Pit/Bench/Pattern	Blast Holes
19-Jan-06	M 79467	0.92	28.59	1.07	89.17	3.12	B1144-16	1588,1605,1606,1614,1616
19-Jan-06	M 79468	1.11	34.69	0.22	18.50	0.53	B1144-16	1515,1545,1547,1571,1572
19-Jan-06	M 79469	0.07	2.09	0.11	9.08	4.34	B1132-4	1269,1270,1271,1272,1273
19-Jan-06	M 79470	0.71	22.19	1.17	97.50	4.39	W936-14	743,744,745,762,776
22-Feb-06	M79471	0.55	17.19	1.50	125.00	7.27	W1008-5	174,176,191,195,196
22-Feb-06	M79472	0.52	16.38	0.83	69.08	4.22	W924-10	1028,1026,2027,2028,3019
22-Feb-06	M79473	0.79	24.75	1.26	105.00	4.24	W984-12	451,452,465,466,478
22-Feb-06	M79474	0.04	1.28	0.28	23.42	18.28	W936-18	925,927,928,730,941
22-Feb-06	M79475	0.69	21.47	1.23	102.50	4.77	W996-12	201,209,210,221,222
22-Feb-06	M79201	0.03	0.88	0.05	4.50	5.14	B1132-5	1281,1282,1283,1284,1246
22-Mar-06	M 79203	1.24	38.75	0.51	42.59	1.10	B1144-20	2060,2061,2062,2063,2064
22-Mar-06	M 79204	2.41	75.31	0.43	35.58	0.47	B1144-20	2071,2072,2073,2074,2075
22-Mar-06	M 79205	1.09	34.06	1.04	86.67	2.54	W984-14	610,611,612,613,614
22-Mar-06	M 79208	0.67	20.91	0.86	71.75	3.43	W924-13	95,96,97,98,99
11-Apr-06	M79209	1.07	33.44	0.22	17.92	0.54	B1132-10	586,539,492,491,452
11-Apr-06	M79210	0.05	1.59	0.11	8.92	5.59	B1132-11	2036,2037,2038,2040,2041
11-Apr-06	M79211	0.83	25.78	1.16	96.67	3.75	W996-15	711,712,725,726,272
28-Apr-06	M79416	0.50	15.69	0.60	50.08	3.19	W912-07	1161,1162,1163,1165,1264
28-Apr-06	M79417	0.95	29.66	1.27	105.83	3.57	W984-19	30017,30018,30019,30020,30021
28-Apr-06	M79418	0.04	1.28	0.09	7.42	5.79	B1132-13	2075,2076,2077,2078,2079
28-Apr-06	M79419	0.04	1.09	0.14	11.33	10.36	B1132-16	647,595,597,549,551
24-May-06	M79420	1.07	33.44	0.24	19.67	0.59	B1132-17	2141,2142,2143,2144,2145
24-May-06	M79421	0.47	14.59	0.84	70.25	4.81	B1132-17	3112,3113,3114,3115,3116
24-May-06	M79422	0.62	19.25	0.87	72.58	3.77	W912-12	2560,2561,2660,2661,2662
24-May-06	M79423	1.32	41.25	1.11	92.50	2.24	W960-18	608,609,610,708,709
24-May-06	M79424	0.86	26.97	1.51	125.83	4.67	W972-15	611,612,711,712,715
24-May-06	M79425	0.99	30.97	1.41	117.50	3.79	W984-20	2203,2304,2405,2506,2607
14-Jun-06	M79212	0.49	15.28	0.71	59.00	3.86	B1132-19	308,208,108,3070,3071
14-Jun-06	M79213	0.07	2.19	0.32	26.75	12.23	B1132-19	102,103,104,105,106
14-Jun-06	M79214	0.08	2.53	0.10	8.42	3.33	B1120-06	742,743,744,745,746
14-Jun-06	M79215	0.06	1.91	0.07	6.08	3.19	B1120-07	335,336,337,338,339
14-Jun-06	M79216	0.93	29.00	1.40	116.67	4.02	W960-20	822,923,1024,1125,1126
14-Jun-06	M79217	1.19	37.19	1.24	103.33	2.78	W972-18	1631,1630,1629,1628,1627
14-Jun-06	M79218	1.06	33.13	1.33	110.83	3.35	W972-19	2330,2329,2328,2327,2326
28-Jun-06	M79219	0.90	28.00	0.73	60.50	2.16	B1120-08	2956,2957,2958,2959,2960
28-Jun-06	M79220	0.12	3.63	0.43	35.58	9.82	B1120-09	2441,2442,2443,2444,2445
28-Jun-06	M79221	0.71	22.03	1.66	138.33	6.28	W960-22	1231,1332,1337,1433,1534
17-Jun-06	M79166	0.79	24.59	0.33	27.75	1.13	B1120-10	1969,2069,2169,2269,2369
17-Jun-06	M79167	0.06	1.75	0.05	4.42	2.52	B1120-11	257,358,360,864,965
17-Jun-06	M79168	0.16	4.84	0.41	34.08	7.04	B1120-12	20198,20199,20201,20202,20203
17-Jun-06	M79169	0.45	14.03	1.67	139.17	9.92	W912-18	20018,20019,20020,20021,20022
17-Jun-06	M79170	1.15	35.94	1.34	111.67	3.11	W960-24	1440,1441,1542,1643,1744
17-Jun-06	M79171	1.23	38.44	1.39	115.83	3.01	W972-21	2119,2120,2121,2122,2123
18-Sep-06	M82476	0.01	0.38	0.17	14.25	38.00	S1145-01	915,916,917,918,919
18-Sep-06	M82477	0.01	0.22	0.05	3.92	17.90	S1145-01	1311,1412,1511,1612,1816
18-Sep-06	M82478	0.03	0.94	0.15	12.42	13.24	B1108-01	1914,1915,1916,1917,1918
18-Sep-06	M82480	0.03	0.97	0.22	18.25	18.84	B1120-18	20013,20014,20015,20016,20020
18-Sep-06	M82481	0.08	2.34	0.19	15.42	6.58	B1120-19	30100,30101,30105,30106,30107
18-Sep-06	M82483	1.55	48.44	1.66	138.33	2.86	W948-19	2271,2272,2273,2276,2371
18-Sep-06	M82484	1.10	34.38	1.52	126.67	3.68	W948-20	2167,2168,2267,2268,2367
18-Sep-06	M82488	1.22	38.13	1.16	96.67	2.54	W960-30	221,222,322,323,331
18-Sep-06	M82489	0.74	23.13	1.24	103.33	4.47	W960-31	1056,1057,1058,1059,1060
25-Oct-06	M82496	0.61	19.16	0.37	30.83	1.61	B1108-06	2161,2261,2361
25-Oct-06	M82497	0.08	2.50	0.14	11.83	4.73	B1108-05	1034,1035,1036,1037,1038
25-Oct-06	M82498	1.00	31.13	1.36	113.33	3.64	W948-27	356,357,358,359,360
25-Oct-06	M82499	0.18	5.66	0.54	45.25	8.00	W948-26	614,615,616,617,618
25-Oct-06	M82500	0.63	19.63	0.98	81.92	4.17	W948-25	2078,2079,2080,20812082
22-Nov-06	M82301	0.85	26.63	0.35	29.25	1.10	B1108-09	1659,1559,1459,1359,1156
22-Nov-06	M82302	0.11	3.47	0.06	4.92	1.42	B1108-09	752,753,854,954,955
22-Nov-06	M82303	0.09	2.69	0.06	5.17	1.92	B1108-11	30077,30078,30079,30080,30081
22-Nov-06	M82304	0.04	1.19	0.09	7.17	6.04	B1108-10	20148,20149,20150,20151,20152
22-Nov-06	M82305	1.26	39.38	1.26	105.00	2.67	W948-28	528,529,530,531,532
22-Nov-06	M82307	0.96	29.94	1.16	96.67	3.23	W948-34	10063,10064,10065,30053,30054
22-Nov-06	M82308	0.90	28.22	1.50	125.00	4.43	W936-22	1285,1286,1287,1288,1289
22-Nov-06	M82309	0.82	25.75	1.33	110.83	4.30	W936-21	2700,2800,3000,3100,3200
22-Nov-06	M82310	1.58	49.38	1.76	146.67	2.97	W936-19	2392,2393,2394,2395,2396
20-Dec-06	82311	0.24	7.63	0.72	60.33	7.91	W936-24	1000,1001,1002,1003,1004
20-Dec-06	82312	0.61	18.91	1.42	118.33	6.26	W936-25	3104,3105,3202,3203,3205
20-Dec-06	82313	0.70	21.94	1.47	122.50	5.58	W936-26	1501,1502,1503,1504,1505
20-Dec-06	82314	0.42	13.03	1.03	85.83	6.59	W936-28	872,873,874,875,876
20-Dec-06	82315	0.37	11.63	0.78	64.83	5.58	W936-30	20223,20225,20226,30157,30158
20-Dec-06	82316	0.07	2.25	0.06	4.83	2.15	B1108-12	10109,10110,10111,10112,10113
20-Dec-06	82317	0.06	2.00	0.05	4.25	2.12	B1108-12	10140,10141,10142,20134,20135

73 samples were collected from the *Mined Pits*; sample had a mean NPR value of 5.3 and a range of NPR values from 0.47 to 38.0.

22 samples were collected from the *Bell Pit*; sample had a mean NPR value of 6.23 and a range of NPR values from 2.12 to 18.84.

38 samples were collected from the *Wight Pit*; sample had a mean NPR value of 4.81 and a range of NPR values from 2.24 to 18.28.

2 samples were collected from the *Springer Pit*; sample had a mean NPR value of 27.95 and a range of NPR values from 17.9 to 38.0.

The following table is a subset of samples that were designated PAG.

10 samples were collected from the *Bell Pit;* sample had a mean NPR value of 1.04 and a range of NPR values from 0.47 to 1.92.

Date	sampleID	totalSulphur	AP	totalCarbon	NP	NPR	Pit/Bench/Pattern	Blast Holes
22-Mar-06	M 79204	2.41	75.31	0.43	35.58	0.47	B1144-20	2071,2072,2073,2074,2075
19-Jan-06	M 79468	1.11	34.69	0.22	18.50	0.53	B1144-16	1515,1545,1547,1571,1572
11-Apr-06	M79209	1.07	33.44	0.22	17.92	0.54	B1132-10	586,539,492,491,452
24-May-06	M79420	1.07	33.44	0.24	19.67	0.59	B1132-17	2141,2142,2143,2144,2145
22-Mar-06	M 79203	1.24	38.75	0.51	42.59	1.10	B1144-20	2060,2061,2062,2063,2064
22-Nov-06	M82301	0.85	26.63	0.35	29.25	1.10	B1108-09	1659,1559,1459,1359,1156
17-Jun-06	M79166	0.79	24.59	0.33	27.75	1.13	B1120-10	1969,2069,2169,2269,2369
22-Nov-06	M82302	0.11	3.47	0.06	4.92	1.42	B1108-09	752,753,854,954,955
25-Oct-06	M82496	0.61	19.16	0.37	30.83	1.61	B1108-06	2161,2261,2361
22-Nov-06	M82303	0.09	2.69	0.06	5.17	1.92	B1108-11	30077,30078,30079,30080,30081

2.2.11.2 Low Grade Stockpile

At 2006 year end, the low-grade stockpile was estimated to contain 967,112 tonnes of ore grading 0.225% Cu, 0.310 gm/t Au, and 4.50% Fe. This includes 877,072 tonnes of ore placed before 2005 (re-startup), and 90,040 tonnes of ore placed in 2006.

2.2.11.3 Rock Borrow Pit

No rock was extracted from the rock borrow in 2006.

2.2.11.4 Tailings

Representative composited tailings samples were collected to represent the tonnage of tailings deposited to the tailings storage facility, samples were collected and analyzed for the month of March, April, June, September, November and December. Table 4 – shows a summary of the ABA data for each of these samples. No mineralogical analyses were conducted on tailings material in 2006. From March to December 2006, X,XXX,XXX tonnes of tailings were deposited into the TSF. The composite tailings sample had a median NPR value of 5.1 and a range of NPR values from 2.7 to 6.9.

2 samples were collected from the *Springer Pit*; sample had a mean NPR value of 27.95 and a range of NPR values from 17.9 to 38.0.

2.2.11.5 Soils and Till

In 2006, 869,168 tonnes of soil / till were stockpiled from the Wight pit.

2.2.11.6 Field Grab Samples

18 sample were collected from the *Wight Pit Haul Road* to the tailings storage facility; samples had a mean NPR value of 8.2 and a range of NPR values from 3.3 to 20.3.

10 samples were collected from the *Bell Pit Dump*; sample had a mean NPR value of 14.6 and a range of NPR values from 6.3 to 31.9.

10 samples were collected from the *Wight Pit Dump*; sample had a mean NPR value of 10.2 and a range of NPR values from 2.9 to 31.9.

13 samples were collected from *the Tailings C zone*; sample had a mean NPR value of 4.82 and a range of NPR values from 2.02 to 9.38.

2.2.11.6 Geological Characterization

Mount Polley ore bodies are alkalic porphyry copper-gold deposits hosted within

Jurassic - Triassic Polley Stock that intrudes the Nicola Group volcanic rocks. The Polley Stock is a northwesterly, elongated body approximately five kilometers long and extends from Bootjack to Polley Lakes in the east west direction. The stock is a multi-phase pluton with composition ranging from diorite -to- monzodiorite -to- monzonite. It is variable altered and brecciated. Felsic (plagioclase phyric) and mafic (augite phyric) dykes occur as late stage intrusive phases. Late brittle faults offset lithologies, alteration, and mineralization.

Lithologies

Volcanics: These volcanic and volcaniclastic rocks are the oldest on the property, form part of the Nicola Group, and are Upper Triassic in age. They consist mainly of andesitic basalt or augite phyric alkali basalt, and volcanic breccias. Volcanic rocks do not make up a significant component of material from the pits.

Diorite: The diorite occurs mainly in the western section of the Bell Pit and is bluish-grey, fine to medium grained and equigranular to weakly porphyritic. Phenocrysts are plagioclase, minor augite, and occasional magnetite, biotite, calcite, and apatite.

Monzonite: The monzonite unit is greyish white to pinkish grey or greenish grey, medium to coarse grained, and equigranular to weakly feldspar phyric. Predominate feldspars are orthoclase and albite. Accessory minerals include magnetite, augite, biotite, calcite, apatite, and epidote. This unit is variably flooded with potassic alteration and epidote. This unit is variable brecciated and hosts copper / gold mineralization.

Potassium feldspar phyric dykes: These dykes are pinkish orange to orangish grey. The matrix is fine to medium grained, orangish grey and composed largely of potassium feldspar. The phenocrysts are elongated subhedral to euhedral plagioclase laths up to 10mm long. These dykes are often planar occurring in various orientations and filling fractures of the brecciated monzonite. They vary in width from fractions of a metre to 5 meters wide.

Augite Phyric Dykes: These dykes are distinctive dark green with a fine to medium grained mafic matrix and scattered up to 3mm augite phenocrysts (up to 8% of rock) and occasionally up to 2% euhedral magnetite phenocrysts. Dykes are generally planar in form and tend to fill fractures and faults. They are occasionally exhibit orange potassic alteration.

Alteration and Mineralization:

Brecciation and hyrothermal alteration variably affected the Polley Stock and the surrounding Nicola Group volcanics. Alteration can be described in terms of a potassic core enveloped by a propylitic zone. In core of the system, intense potassic alteration is accompanied by variable strong albite, magnetite, and actinolite alteration. Propylitic alteration (calcite – chlorite – minor pyrite) occurs near the perimeter of the system.

Mineralization is variable. In the Bell Pit, chalcopyrite is the dominant sulphide. In the northeast corner of this pit, there is a pyrite zone, where up to 5 % pyrite occurs. From an ABA point of view, this material is generally potentially acid generating. Ore waste contacts in the Bell Pit are generally gradational. The west contact is lithologically controlled by a diorite contact. In the Wight Pit, chalcopyrite and bornite are the main sulphides accompanied by locally minor pyrite. The mineralizing solutions were deficient of sulphur. Wight Pit ore is particularly high in silver (compared to Bell Pit ore).

Structures

Faults recognized to date are late and brittle. Two dominate fault sets have been recognized. One is a north-north-east trending, steeply dipping set. The other is a west northwest trending, also steeply dipping. Both fault sets offset and terminate the ore.

2.2.11.7 Drainage Monitoring Program

For the M-200 permit, water samples are collected from drainage originating from

Tailings Supernatant Pond (E1), and the Main Embankment Seepage collection Pond (E4). Composite samples of the foundation drains (E5) of the tailings storage facility are collected twelve (12) times per year. These samples are analyzed for total metals using ICP scan and for conventional parameters such as nutrients, pH, and alkalinity. Results are shown in Tables 1.3-1 to 1.3-2.

2.2.11.8 ARD/ML Research - Kinetic Testing

Kinetic information is a critical part of drainage chemistry prediction that provides a measure of the dynamic performance or "reactivity" of the material being tested. Steve Day of SRK has been retained by Mount Polley Mining Corporation to interpret results of the kinetic-testing program and suggest other recommended testing, if required.

Six humidity cell tests are currently operating at Cantest (formerly Vizon SciTec Inc.). Four tests were started on July 19, 2004 on the Northeast Zone samples, providing 80 weeks of data at the time of this report. These tests contain the following drill core samples of waste rock and ore:

HC2 – Plagioclase Phric Monzodiorite (PPp) 31576

HC3 – Breccia(chloritic) (BXc) 32491

HC4 – BX Breccia ore 31943

HC5 – PPp ore on both side(will probably go to mill) 32519

Two more tests were started on September 26, 2005 for the Southeast Zone and thus only 18 weeks of data was available from these tests at the time of this report. These tests contain drill core chips from the following samples:

HC6 – Monzonite SE-05-17 Comp #1

HC7 – Monzonite SE-05-30 Comp

The following summarized a report by SRK Consulting , a full report can be found in Appendix 3.

2.3 SURFACE WATER MONITORING

Surface water sampling and analysis was conducted in accordance with sub-section 3.1 of the Mount Polley Effluent Permit PE 11678. Grab samples were taken from sampling locations and at a frequency listed in Table 1 of the permit and analyzed for the parameters listed in Table 2.

The calibration, sampling, filtering, preservation and shipping procedures used for the monitoring program are outlined in the "Quality Assurance/ Quality Control Manual 2003". The sampling program included monthly sampling at six sites (E1, E4, E5, W4, W8 and W8z), quarterly sampling at six sites (W1, W3a, W5, W7, W12 and W13), bi-annual sampling at one site (W11) and three sites (W4, W8 and W8z) are sampled intensively (once a week for 5 weeks) during spring freshet and fall low flows. Samples were submitted to Maxam Analytics Inc (January through May) and to ALS Environmental (June through December) for analysis of: physical parameters (turbidity, total suspended solids, total dissolved solids, and hardness); anions and nutrients (alkalinity, sulfate, total nitrogen, nitrate plus nitrite, ammonia and ortho-phosphorus): total metals: and dissolved metals.

2.3.1 SITE E1 – TAILINGS SUPERNATANT

Tables 1.1-1 and 1.1-2 summarize the results of the water quality data for 2006 for site E1 (Tailings Supernatant). Some of the parameters from these data sets have been graphically represented from the year 1997 to 2006, and can be found in figures 1.1-1 and 1.1-2. Finally, the analytical reports for the 96-hour LC_{50} toxicity (rainbow trout) tests can be found in APPENDIX 5 of this report. A few key parameters are discussed in the following paragraphs.

Dissolved Sulphate values reached a high of 303 mg/L at the end of 2006.

Increased Sulphate values are likely a result of mining the Wight Pit and water transfer from the Cariboo Pit to the Tailings Storage Facility. In 2006 the Nitrate and Nitrite values ranged from 0.63 mg/L in June to 1.95 mg/L at year-end. Total suspend solids have been traditionally high at this site, due to the continuous depositions of the tailings. In 2006 the TSS ranged between 178 mg/L in March, and 4.1 mg/L in October.

In 2006, the maximum total and dissolve copper value were 0.0418 mg/L and 0.0019 mg/L respectively, with a mean of 0.01566 mg/L (total) and 0.00103 mg/L (dissolved).

2.3.2 SITE E4 – MAIN EMBANKMENT SEEPAGE POND

Tables 1.2-1 and 1.2-2 summarize the results of the water quality data from 2006 for site E4. Further, figures 1.2-1 and 1.2-2 contain the graphical representation of selected parameters from the year 2001 to 2006. Finally, the analytical reports for the 96-hour LC_{50} toxicity (rainbow trout) tests can be found in APPENDIX 5 of this report; all toxicity results were non-lethal (i.e. no mortality observed in any test results).

This is the only site where there is a permitable discharge from the mine site; however, since the mine recommenced operation in 2005, there has been no discharge from this site.

Although there was no discharge from E4 in 2006 the following will compare the permit requirements from the discharge permit to samples taken in 2006.

- The discharge limit for non-filterable residue (TSS) is 25 mg/L. All samples taken in 2006 were below this discharge limit except for in April when a maximum value of 30 mg/L was observed.
- Nitrate (as nitrogen) has a discharge limit of 10 mg/L for this site. All samples taken in 2006 were below this discharge limit The maximum value reported was in November at 1.75mg/L.

- Ortho-phosphorus (as Phosphorus) has a discharge limit of 0.05 mg/L for this site. All samples taken in 2006 were below this discharge limit. The maximum concentration was 0.034 mg/L.
- Dissolved sulphate has a discharge limit of 200 mg/L for this site. All samples taken in 2006 were below this discharge limit. The range of values for sulphate in 2006 was of 77.4 mg/L to 178 mg/L.
- Total copper (T-Cu) has a discharge limit of 0.020 mg/L for this site. All samples taken in 2006 were below this discharge limit. The maximum concentration was 0.0122 mg/L.
- Total iron (T-Fe) has a discharge limit of 1.0 mg/L for this site. All samples taken in 2006 were below this discharge limit. The maximum value for total iron was 2.34 mg/L.
- Total selenium (T-Se) has a discharge limit of 0.01 mg/L for this site. All samples taken in 2006 were below this discharge limit. The maximum value for total selenium was 0.0051 mg/L.

2.3.3 SITE E5 – MAIN EMBANKMENT DRAIN COMPOSITE

Tables 1.3-1 and 1.3-2 summarize the results of the water quality data from 2006 for site E5. Further, figures 1.3-1 and 1.3-2 contain the graphical representation of selected parameters from the year 2000 to 2006.

Dissolved sulphate values ranged from 139 mg/L in July to nearly 180 mg/L in December. Nitrate plus nitrite values ranged from 0.125 mg/L in September to 1.31 mg/L in November. In 2006, the maximum total and dissolve copper value were 0.0077 mg/L and 0.0014 mg/L respectively. Since 2001, molybdenum has increases from 0.002 to 0.156 mg/L in February of 2006; the average total molybdenum for 2006 was 0.133 mg/L.

2.3.4 SITE W1 – MOREHEAD CREEK

Tables 1.4-1 and 1.4-2 summarize the 2006 results of the water quality data for site W1. Further, figures 1.4-1 and 1.4-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Dissolved sulphate values ranged between 2.28 mg/L in May to 11.1 mg/L in November. Levels of Nitrate and Nitrite ranged between 0.005 mg/L in August to 0.122 mg/L in November. Finally, total copper values ranged between 0.003 mg/L in March to 0.006 mg/L in May.

2.3.5 SITE W3a – MINE DRAINAGE CREEK AT MOUTH

When the baseline-monitoring program was established for the year 1995, a sampling location for Mine Drainage Creek was put in just below the mine site and it had the site code of W3. This site was monitored during the baseline periods of 1995 and 1996. In addition, when the operational monitoring program started in 1997, this same location was sampled until April 2000. Starting in May 2000, the sampling location for Mine Drainage Creek was moved to a new location named Mine Drainage Creek at Mouth and it had the site code of W3a. The new location is at the end of the creek, just before it enters into Bootjack Lake. All data after May 2000 was sampled from this new location.

When the mine began operations in 1997, the water from the site that normally fed into this creek was intercepted and collected, in order to minimize the water from the operations entering this system. As a result, the original sampling location (W3) had a significant decrease in flow volume, so much so that samples could only be collected during spring runoff, and sometimes during fall turnover. So, in spring 2000, it was decided to move the sampling location to the end of the creek (W3a). Flow volume at this location occurred year round, so more samples could be collected throughout the year from this creek system.

Tables 1.5-1 and 1.5-2 summarize the results of the water quality data from W3a for 2006. Further, figures 1.5 and 1.5-1 contain the graphical representation of selected parameters from 1997 to April 2000 for W3 and from May 2000 to 2006 for site W3a. A few key parameters are discussed in the following paragraph.

In 2006 sulphate values ranged from 10.5 mg/L in May to 23.4 mg/L in July. Nitrate plus nitrite values ranged from 0.065 mg/L in May to 0.69 mg/L in October. Total copper ranged between 0.015 mg/L in October to 0.028 mg/L in July; both of these values are below the mean baseline value of 0.0348 mg/L, but since the baseline values where collected further upstream in the creek system at site W3, it is not surprising that the T-Cu values further downstream in the creek system have a lower concentration. Further, since the water from the mine site continues to be diverted from reaching this creek system, none of the water with higher concentrations of copper that originated at the ore body is able to raise the copper concentrations in the creek at this site. That is, by diverting and using the water from the ore body, copper concentrations in this creek system have decreased to below baseline values.

2.3.6 SITE W4 – NORTH DUMP CREEK

Tables 1.6-1 and 1.6-2 summarize the results of the water quality data from 2006 for site W4. Further, figures 1.6-1 and 1.6-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraphs.

Dissolved sulphate values for 2006 ranged between 9.9 mg/L in April to 75.8 mg/L in December; all samples are below the (AWQC) Maximum value of 100 mg/L. It should be noted that there is runoff from the North rock disposal site that drains into this creek system. Site W4 is presently sampled monthly, as well as for five consecutive weeks during spring runoff and during fall low flows, so there is excellent cover of monitoring at this location.

Nitrate plus nitrite values have mostly remained flat throughout the monitoring period of this site, with the exception of the 2006 November sample (which spiked at 1.98 mg/L) it is believed that this is a result of winter sampling and should be viewed with caution.

Total copper values have always remained below the mean baseline of 0.035 mg/L throughout the operational and post-operational monitoring period. The maximum value in 2006 was 0.0112 mg/L.

In 2006, total iron ranged between 0.015 mg/L in December to 0.308mg/L in April; this April data is a result of spring freshet and is similar to data collected during spring freshet in previous years.

2.3.7 SITE W5 – BOOTJACK CREEK ABOVE HAZELTINE CREEK

Tables 1.7-1 and 1.7-2 summarize the results of the water quality data from 2006 for site W5. Further, figures 1.7-1 and 1.7-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Dissolved sulphate values for 2006 have ranged between 4.6 mg/L in May and 32.3 mg/L in November. Nitrate plus nitrite values ranged between 0.06 mg/L in August and 1.02 mg/L in November. Total copper values have remained very consistent throughout the monitoring period of 1997 to 2006, with all but one sample falling between the range of 0.001 mg/L and 0.014 mg/L. Only one sample in 1999 had a value outside this range at 0.0258 mg/L. In 2006, total copper values maxed at 0.0056mg/L; averaging at 0.0046 mg/L.

2.3.8 SITE W7 – UPPER HAZELTINE CREEK

Tables 1.8-1 and 1.8-2 summarize the results of the water quality data from 2006 for site W7. Further, figures 1.8-1 and 1.8-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraphs.

Dissolved sulphate typically ranged between 2 mg/L and 15.6 mg/L throughout the monitoring period of 1997 to 2006. Values in 2006 ranged from 10.7 mg/L in March and May to 15.6 mg/L in November. Nitrate plus nitrite has typically ranged between 0.005 mg/L and 0.25 mg/L, with a peak of 0.414 mg/L in December 1998. Most values are very close to the mean baseline of 0.041 mg/L. In 2006, the values ranged from 0.014mg/L in August to 0.25mg/L in November.

Non-filterable residue (TSS) has always been around or less than the method detection limit of 4 mg/L, with some peaks around 19 mg/L in 1998 and March 2002. For 2006, one sample had a maximum concentration of 10.5 mg/L, but the average value was mg/L.

Total copper values ranged between 0.0018mg/L in August and 0.0031 mg/L in November.

Total iron has ranged as high as 1 mg/L (2000), but typically fluctuates between 0.1 mg/L and 0.5 mg/L. For 2006, one sample was as high as 0.46 mg/L, but levels have returned back to below mean baseline concentrations of 0.12 mg/L.

2.3.9 SITE W8 – NORTHEAST EDNEY CREEK TRIBUTARY

Tables 1.9-1 and 1.9-2 summarize the results of the water quality data from 2006 for site W8. Further, figures 1.9-1 and 1.9-2 contain the graphical representation of selected parameters from 1997 to 2006. This site is downstream of the permitted discharge location at station E4 (main embankment seepage pond); however there was no discharge from E4 in 2006. A few key parameters are discussed in the following paragraphs.

In 2006, the maximum sulphate concentrate was 21.3 mg/L in November, which is consistent with samples taken at that time of the year in previous years. The average sulphate value for this site in 2006 was 5.75 mg/L.

Nitrate plus nitrite ranged from 0.01 mg/L in May to almost 0.7 mg/L in November, averaging at 0.19 mg/L for 2006.

The maximum value for total copper at W8 reached 0.034 mg/L in November, however this value is two orders of magnitude higher than typical values and may be the result of winter sampling (possible contamination from ice breaking tools) and should be viewed with caution. The other samples ranged from 0.0004 mg/L in September to 0.0075 mg/L in December; averaging at 0.0025 mg/L.

Total iron ranged from 0.031 mg/L in September to 0.42 mg/L in March.

2.3.10 SITE W8z – SOUTHWEST EDNEY CREEK TRIBUTARY

Tables 1.10-1 and 1.10-2 summarize the results of the water quality data from 2006 for site W8z. Further, figures 10.1-1 and 10.1-2 contain the graphical representation of selected parameters from 1997 to 2006. *It should be noted that this is a control site, as it is not downstream of any Mount Polely mine component.* A few key parameters are discussed in the following paragraph.

In 2006 dissolved sulphate values ranged from 0.5 mg/L in April to 17.9 mg/L in February. Additionally, nitrate plus nitrite values ranged from 0.0025 mg/L in October to 1.2 mg/L in November. Finally, T-Cu values ranged between 0.0026 mg/L in July to 0.0057 mg/L in November.

2.3.11 SITE W11 – LOWER EDNEY CREEK U/S OF QUESNEL LAKE

Tables 1.11-1 and 1.11-2 summarize the results of the water quality data from 2006 for site W11. Further, figures 1.11-1 and 1.11-2 contain the graphical representation of selected parameters from 1997 to 2006. *It should be noted that this site is a far-field site, selected for comparisons to the sites downstream from the mine disturbance. As with the control site W8z, it is not likely to show any effects from the mine operations.* A few key parameters are discussed in the following paragraph.

Dissolved sulphate values have typically been below 12 mg/L and this trend continued in 2006, the peak value for 2006 was 9.9 mg/L. Additionally, Nitrate plus nitrite values have typically remained around the mean baseline of 0.039 mg/L, with a peak of 14.4 mg/L in 1999. For 2006, values were less than the mean baseline, with a high of only 0.011 mg/L. Finally, total copper values have risen as high as 0.00612 mg/L, as they did in 1997. However, throughout 2006, total copper values barely exceeded the mean baseline level of 0.0022 mg/L, with a high of 0.0023mg/L.

2.3.12 SITE W12 – 6K CREEK AT ROAD

Tables 1.12-1 and 1.12-2 summarize the results of the water quality data from 2006 for site W12. Figures 1.12-1 and 1.12-2 contain the graphical representation of selected parameters from 1997 and 1999 to 2006. A few key parameters are discussed in the following paragraph.

Dissolved sulphate values have nearly all been below 8 mg/L, with most samples keeping close to the mean baseline of 3.6 mg/L. Samples from 2006 did however exhibit a maximum value of 15.6mg/L. Additionally, Nitrate plus nitrite values always remained below 0.22 mg/L, and all samples for 2006 continued to be well below this maximum. Finally, total copper values have typically been at or below the mean baseline of 0.011 mg/L, and for samples in 2006, levels were all below this mean baseline, reaching no higher than 0.008 mg/L.

2.3.13 SITE W13 – 9.5K CREEK ON BJFSR

Tables 1.13-1 and 1.13-2 summarize the results of the water quality data from 2006 for site W13. Figures 1.13-1 and 1.13-2 contain the graphical representation of selected parameters from 2000 to 2006. *It should be noted that this site was added to the monitoring program to find any effects that may come from the mining of the Springer Pit. This pit is in the early stages of development and has not yet impacted the water quality at*

W13. A few key parameters are discussed in the following paragraph.

Dissolved sulphate values typical range from 1.5 mg/L to 2.0 mg/L. In 2006, the maximum sulphate value was 54.2 mg/L, it should be noted however that this sample was collected from a pool of water within the stream when flows were almost zero; the flow at this site is very low, averaging at less than 1 liter per second. Additionally, Nitrate plus nitrite values for 2006 have all been below 0.01 mg/L. Finally, total copper values have ranged between 0.012 mg/L in November and 0.0225 mg/L in March.

2.4 GROUNDWATER MONITORING

Groundwater sampling and analysis was conducted in accordance with sub-section 3.1 of Effluent Permit PE 11678. Groundwater samples were taken from sampling locations and at a frequency listed in Table 1 and analyzed for the parameters listed in Table 2 of the permit.

The sampling, filtering, preservation and shipping procedures used for the monitoring program are outlined in the "Quality Assurance/ Quality Control Manual 2003". Field pH, temperature and conductivity were measured at the time of sampling using a WTW Multimeter.

In 1995, groundwater-monitoring well 1995 series were installed in the vicinity of the open pits and mill site. Two of these wells (95R-4, 95R-5) continue to be monitored. In 1996, the B.C. Ministry of Water, Land and Air Protection requested the establishment of additional monitoring wells down-gradient from the pit, rock disposal site and tailings storage facility, in order to sample aquifers in both surficial deposits as well as bedrock. They included the establishment of background wells up gradient of any potential impacts by mining activities. Nine groundwater-monitoring locations were established in 1996: six of these sites are multi-level, consisting of "A" (deep) wells and "B" (shallow) wells, while the remaining three sites monitor a single depth. A commitment to install three additional multi-level monitoring locations along the southeast embankment of the tailings storage facility was made in 1996. These wells were installed in 2000. The locations of the monitoring wells are shown in Figure 2.

Objectives of the groundwater-monitoring program include the following (Knight Piésold Ltd., 1996):

- To determine the direction and volume of groundwater flow from the mine site and other disturbed areas to receiving waters.
- To identify the locations of all surficial and deep groundwater aquifers underlying the mine site and their points of discharge to surface water.
- To establish background groundwater quality in aquifers prior to mine development; and
- To calculate seepage and groundwater contamination dilution ratios in surface receiving waters in order to minimize impacts.

Samples were submitted to ALS Environmental for water chemistry analysis, including: physical parameters (turbidity, total suspended solids, total dissolved solids, and hardness); anions and nutrients [alkalinity, sulfate, nitrate, nitrite, and ammonia (N)]; and dissolved metals.

2.4.1 95R-4 (Springer Pit Well)

95R-4 is located at10 km on the Bootjack forest service road. Table 2.1 summarizes the results of the water quality data from 2006 for this well. Figures 2.1-1 and 2.1-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite peaked at the end of 2002 at nearly 0.04 mg/L, but has since dropped back to around baseline levels of 0.004 mg/L, (which is the method detection limit of this parameter). The 2006 nitrate plus nitrite value was 0.005 mg/L. Dissolved sulphate continues to be below the mean baseline value of 17.4 mg/L, with the 2006 value being 16.7 mg/L. Finally, dissolved metal concentrations remained relatively flat throughout the monitoring period of 1995 thru 2006.

2.4.2 95R-5 (Lower Southeast Rock Disposal Site Well)

95R-5 is located along Polley Lake forest service road, Northwest of the east rock disposal site and immediately east of the northeast zone soil stockpile location. Table 2.2 summarizes the results of the water quality data from 2006 for this well. Figures 2.2-1 and 2.2-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite levels has exceeded the baseline sample of 0.010 mg/L on two occasions, once in 2005 (0.011mg/L) and in 2006 where the value rose to 1.07mg/L. Dissolved sulphate has risen in 2006 to mg/L. Finally, dissolved metal concentrations remained relatively flat throughout the monitoring period of 1995 thru 2006.

2.4.3 GW96-1a (Tailings Storage Facility North Well – Deep)

GW96-1a is located down gradient of the seepage collection pond of the Perimeter Embankment. Table 2.3 summarizes the results of the water quality data from 2006 for this well. Figures 2.3-1 and 2.3-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has fluctuated over the monitoring period as high as nearly 0.20 mg/L in 2004. For 2006, the level was less than the method detection limit of 0.005 mg/L. Dissolved sulphate values have remained very consistent throughout this time frame, fluctuating between 45 mg/L and 60 mg/L. In 2006, Sulphate concentration dropped to 24 mg/L. Dissolved copper, has risen some from time to time over the monitoring period, from lows reaching down to the method detection limit of around 0.0001 mg/L in 1998 to around 0.04 mg/L during 2001. In 2006, copper dropped to 0.00027 mg/L. Finally, all other dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.4 GW96-1b (Tailings Storage Facility North Well – Shallow)

GW96-1b is located down gradient of the seepage collection pond of the Perimeter Embankment. Table 2.4 summarizes the results of the water quality data from 2006 for this well. Figures 2.4-1 and 2.4-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has remained at or below the baseline value of 0.041 mg/L for the entire monitoring period, with the exception of one sample in 1998 and one in 1999. Generally, dissolved sulphate concentrations have been steady ranging around 30 mg/L; however, in August of 2006 sulphate rose to around 65 mg/L. Finally, dissolved metal concentrations rose in 2006, the source of water is likely to originate from the Perimeter Embankment Seepage pond.

2.4.5 GW96-2a (Tailings Storage Facility East Well – Deep)

GW96-2a is located approximately 900 m Southeast from the GW96-1 monitoring wells and is designed to monitor any groundwater effects from the tailings storage facility on Hazeltine Creek. Table 2.5 summarizes the results of the water quality data from 2006 for this well. Figures 2.5-1 and 2.5-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has remained flat throughout the monitoring period of 1997 to 2006, with a range of only 0.004 mg/L to 0.025 mg/L. 2006 dissolved sulphate was steady at between 20 mg/L and 30 mg/L. Finally, all other dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.6 GW96-2b (Tailings Storage Facility East Well – Shallow)

GW96-2b is located approximately 900 m Southeast from the GW96-1 monitoring wells and is designed to monitor any groundwater effects from the tailings storage facility on Hazeltine Creek. Table 2.6 summarizes the results of the water quality data from 2006 for this well. Figures 2.6-1 and 2.6-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite levels have nearly always been at just above the method detection limit of 0.005 mg/L and this trend continued for 2006. Generally, dissolved sulphate has remained very flat, with a range of only 2 mg/L to 20 mg/L. There has been a steady increase above to 10 mg/L to 20 mg/L since 2004. Finally, all other dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.7 GW96-3a (Tailings Storage Facility Southeast Well – Deep)

GW96-3a is located down gradient of the seepage collection pond of the Main Embankment. Table 2.7 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.7-1 and 2.7-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraphs.

Average pH has fluctuated significantly, from 6.6 to 12.5 over the monitoring period of 1997 to 2006. This parameter has been graphed with dissolved aluminum, so as to show the relationship between the levels of dissolved aluminum and pH in any given sample.

Nitrate plus nitrite has usually remained below 0.1 mg/L, with only one sample in late 1999 peaking at nearly 0.26 mg/L. Further, dissolved sulphate has fluctuated significantly over the monitoring period of 1997 to 2006, ranging from 25 mg/L to 325 mg/L. In 2006, the sulphate values ranged from 35.9 mg/L in November to 82 mg/L in July.

Dissolved copper seems to have risen some over this monitoring period, moving from 0.001 mg/L to around 0.003 mg/L (peak 0.0045 mg/L in 2004). However, all other dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006. Dissolved copper dropped in 2006 to 0.00122 mg/L.

It should be noted that this well has a very slow recharge rate, and in some cases, it is not possible to purge the well more than once in order to collect a sample in a timely manner. As a result, the results from this well should be viewed with caution and should be evaluated in connection with data from other wells in the vicinity of the tailings storage facility. The sampling schedule for 2007 will be altered to better capture fresh ground water samples from this well, as discussed with Ministry of Environment staff in January 2007.

2.4.8 GW96-3b (Tailings Storage Facility Southeast Well – Shallow)

GW96-3b is located down gradient of the seepage collection pond of the Main Embankment. Table 2.8 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.8-1 and 2.8-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has remained at or near the method detection limit of 0.005 mg/L for nearly all of the monitoring period, with the only exception in late 1999, where the sample had a value of around 0.075 mg/L. Further, dissolved sulphate has remained flat, averaging between 6 mg/L and 8 mg/L, including the 2006 values. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006, with the exception of Iron, which ranged from 0.03 mg/L in June to 0.128 mg/L in August.

2.4.9 GW96-4a (Tailings Storage Facility Southwest Well – Deep)

GW96-4a is located down gradient of the south and main embankments. Table 2.9 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.9-1 and 2.9-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraphs.

Nitrate plus nitrite has remained very flat, at or below the method detection limit of 0.005 mg/L, there was a slight increase in June of 2006 to 0.0118 mg/L. Further, dissolved sulphate has continued the trend since 1999 of keeping below about 5 mg/L; 2006 values were 2.29 mg/L and 2.4 mg/L.

Dissolved copper typically remained below 0.0024 mg/L, with only one exception. At the end of 2002, one sample had a value of 0.0054 mg/L, but this level returned back to the previous range below 0.0024 mg/L in 2003. Dissolved copper decreased to below baseline concentrations in 2006 with values less than 0.0015 mg/L. All other dissolved metal values, remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.10 GW96-4b (Tailings Storage Facility Southwest Well – Shallow)

GW96-4b is located down gradient of the south and main embankments. Table 2.10 summarizes the results of the water quality data from 2006 for this well. Figures 2.10-1 and 2.10-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraphs.

Nitrate plus nitrite has remained below the mean baseline of 0.013 mg/L, with only one exception in 1999, which had a value of 0.031 mg/L. Both 2006 values were below the method detection limit of 0.005 mg/L. Further, dissolved sulphate has remained at or below the mean baseline of 2.5 mg/L for the entire monitoring period. However, sulphate did spike in 2005 to 8mg/L but did return to below baseline values. The 2006 values were both below 2 mg/L.

Dissolved copper typically remained close to the mean baseline of 0.0005 mg/L throughout the monitoring period. However, two samples, each at the end of 2002 and 2003 were slightly elevated, with 0.0022 mg/L in 2002 and 0.0014 mg/L in 2003. In 2006, copper values ranged between 0.0003 mg/L and 0.0011 mg/L. All other dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.11 GW96-5a (Tailings Storage Facility Control Well – Deep)

GW96-5a is located at the north end and upstream of the tailings storage facility and is monitored as a control site. Table 2.11 summarizes the results of the water quality data from 2006 for this well. Figures 2.11-1 and 2.11-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraphs.

Nitrate plus nitrite had a peak of 0.267 mg/L in 1998, but since that time and throughout 2006, nearly all samples have been below 0.02 mg/L. Dissolved sulphate in 2006 measured below baseline of 15 mg/L. There has only been one exception of a value over 30 mg/L, in 2001, which had a value of 115 mg/L. This data point is expected to be a sampling or analytical data error, as it is one order of magnitude larger than the more typical values from this well.

Dissolved copper typically remained close to the mean baseline of 0.004 mg/L throughout the monitoring period. However, one sample in 2002 had a value of 0.0071 mg/L. Dissolved copper values for 2006 were both less than 0.0034 mg/L. All other dissolved metal concentrations, remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.12 GW96-5b (Tailings Storage Facility Control Well – Shallow)

GW96-5b is located at the north end and upstream of the tailings storage facility and is monitored as a control site. Table 2.12 summarizes the results of the water quality data from 2006 for this well. Figures 2.12-1 and 2.12-2 contain the graphical representation of selected parameters from 1998 to 2001 and for 2006. This well had been damaged in 2001 and no samples could be collected between 2002 and 2005. This well was repaired in 2006 and sample collection has resumed.

2006 values are similar to values collected in previous years with the exception of dissolved molybdenum, which increased to 0.0093 mg/L.

2.4.13 GW96-6 (Southeast Rock Disposal Site Well)

GW96-6 **was** located down gradient of the East rock disposal site. Table 2.13 summarizes the results of the water quality data from 2006 for this well. Figures 2.13-1 and 2.13-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph. This well was deactivated in the fall of 2006 and no further samples will be collected from this well. A replacement well will be installed as discussed with Ministry of Environment staff in January 2007.

Nitrate plus nitrite has ranged from the method detection limit of 0.005 mg/L to 0.075 mg/L. Values for this parameter in 2006 were also within this range at 0.031 mg/L. Dissolved sulphate has remained constant, with averages around 25 mg/L. Dissolved copper, aluminum, molybdenum and iron all showed spikes in 2002, but have all flattened out since that date.

2.4.14 GW96-7 (Southeast Sediment Pond Well)

GW96-7 is located down gradient of the Mill Site, half way down the tailings access road, near the booster pump station. Table 2.14 summarizes the results of the water quality data from 2006 for this well. Figures 2.14-1 and 2.14-2 contains the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has been moving between 0.005 mg/L and 0.014 mg/L throughout the monitoring period, in 2006 this concentration peaked just above 0.1mg/L. Dissolved sulphate has remained constant with averages around 25 mg/L, the 2006 value was 28 mg/L. All dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.15 GW96-8a (Bootjack FSR @ 11 K Well – Deep)

GW96-8a is located on Bootjack forest service road at 10.75 km. Table 2.15 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.15-1 and 2.15-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has been below 0.1 mg/L, including 2006, with only two samples in 1998 and 1999 that exceeded this concentration, up to nearly 0.2 mg/L. Further, dissolved sulphate has remained constant with concentrations ranging between 8 mg/L and 12 mg/L. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.16 GW96-8b (Bootjack FSR @ 11 K Well – Shallow)

GW96-8b is located on Bootjack forest service road at 10.75 km. Table 2.16 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.16-1 and 2.16-2 contain the graphical representation of selected parameters from 1997 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has fluctuated from 0.005 mg/L to 0.15 mg/L throughout the monitoring period, and this trend continued in 2006. Further, dissolved sulphate has narrowed its range somewhat, moving from lows of 2 mg/L and highs of 13 mg/L to a tighter range of 8 mg/L to 11 mg/L since early 2003. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 1997 thru 2006.

2.4.17 GW96-9 (Tailings Storage Facility Southeast Pressure Well)

GW96-9 **was** located south of the Main Embankment. There is no table summarizing the results of the water quality data from 2006 for this well as it was deactivated in the spring of 2006. Figures 2.17-1 and 2.17-2 contain the graphical representation of selected parameters from 1997 to 2005. A few key parameters are discussed in the following paragraph.

The deactivation of this well was discussed with Ministry of Environment staff and it was decided that this well would either be replaced with another well (outside of the tailings storage facility final toe) or with a surface water sampling station (as this well was placed to sample a near surface aquifer).

2.4.18 GW00-1a (Tailings Storage Facility Northwest Well – Deep)

GW00-1a is located downstream of the South Embankment at the tailings storage facility. Table 2.18 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.18-1 and 2.18-2 contain the graphical representation of selected parameters from 2000 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has always been at the method detection limit of 0.005 mg/L, and this level continued for 2006. Further, dissolved sulphate has decreased from averages of 330 mg/L in 2000 to 230 mg/L in 2006. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 2000 thru 2006.

2.4.19 GW00-1b (Tailings Storage Facility Northwest Well – Shallow)

GW00-1b is located downstream of the South Embankment at the tailings storage facility. Table 2.19 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.19-1 and 2.19-2 contain the graphical representation of selected parameters from 2000 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has always been at the method detection limit of 0.005 mg/L including sample taken in 2006, with the exception of one sample taken in 2005, which reached 0.008mg/L. Further, dissolved sulphate has remained constant at around 10 mg/L. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 2000 thru 2006.

2.4.20 GW00-2a (Tailings Storage Facility West Well – Deep)

GW00-2a is located downstream of the South Embankment at the tailings storage facility. Table 2.20 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.20-1 and 2.20-2 contain the graphical representation of selected parameters from 2000 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has risen to a high of slightly above 0.020 mg/L in 2003 and 2005, however in 2006 its value decreased back to below the method detection limit (0.005 mg/L). Further, dissolved sulphate has decreased from averages as high as 30 mg/L in 2000 to about 10 mg/L in 2006. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 2000 thru 2006.

2.4.21 GW00-2b (Tailings Storage Facility West Well – Shallow)

GW00-2b is located downstream of the South Embankment at the tailings storage facility. Table 2.21 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.21-1 and 2.21-2 contain the graphical representation of selected parameters from 2000 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has risen from the method detection limit of 0.005 mg/L in 2000 to a high of 0.012 mg/L in 2004 and back down to below method detection limit in 2006. Further, dissolved sulphate has decreased from averages as high as 18 mg/L in 2000 to values around 5 mg/L in 2006. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 2000 thru 2006.

2.4.22 GW00-3a (Tailings Storage Facility Southwest Well – Deep)

GW00-3a is located downstream of the South Embankment at the tailings storage facility. Table 2.22 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.22-1 and 2.22-2 contains the graphical representation of selected parameters from 2000 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has always been at the method detection limit of 0.005 mg/L, including data collected in 2006; there was an exception in 2005 when values reached just over 0.016 mg/L. Further, dissolved sulphate has decreased from averages as high as 100 mg/L in 2000 to below 10 mg/L in 2003. In 2005 and 2006, the sulphate has settled at values below 20 mg/L. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 2000 thru 2006.

2.4.23 GW00-3b (Tailings Storage Facility Southwest Well – Shallow)

GW00-3b is located downstream of the South Embankment at the tailings storage facility. Table 2.23 summarizes the results of the water quality data from 2006 for this well. Further, figures 2.23-1 and 2.23-2 contain the graphical representation of selected parameters from 2000 to 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite has risen from the method detection limit of 0.005 mg/L in 2000 to a high of 0.012 mg/L in 2004. In 2005 the Nitrate plus nitrite dropped back to 0.0016mg/L. 2006 values have dropped to below the method detection limit of 0.005 mg/L. Further, dissolved sulphate has decreased from as high as 12 mg/L in 2000 to around 6 mg/L in 2006. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 2000 thru 2006.

2.4.24 GW05-01 (Wight Pit/Polley Lake Interface Well)

GW05-01 is located between the Wight Pit and Polley Lake; it was established in 2005 to capture groundwater as it moved from Polley Lake towards the Wight Pit. This well is continuously pumped as groundwater is returned to Polley Lake. Table 2.24 summarizes the results of water quality data from 2006 for this well. Further, figures 2.24-1 and 2.24-2 contain the graphical representation of selected parameters from 2005 and 2006. A few key parameters are discussed in the following paragraph.

Nitrate plus nitrite ranges between the method detection limit of 0.005 mg/L to 0.836 mg/L. Further, dissolved sulphate ranges from 62.7 mg/L to 111 mg/L. Finally, all dissolved metal concentrations remained relatively flat throughout the monitoring period of 2006.

2.5 CLIMATOLOGY

As a requirement of Effluent Permit PE 11678, the collection of detailed meteorology data is required. The main objective of the meteorology data collection program is to provide site-specific precipitation and evaporation data for use in water balance prediction. Mount Polly has in operation an automated weather station, which collects temperature (at 3 meter elevation) and precipitation at half hour intervals. Evaporation levels are measured on a weekly basis with an evaporation pan. 2006 was a relatively dry year; only 582 mm of precipitation fell at the site versus an average amount of 742 mm. The amount of evaporation was 387 mm versus an average of 423 mm.

2.5.1 TEMPERATURE – MINIMUM, MAXIMUM and AVERAGE

Mount Polley climate data are shown for the months of January thru December in Figure 4.1 thru 4.5. Please refer to these tables to view the monthly minimum, maximum, and average temperatures; and the daily average temperature. The mean low temperature was –5.2 degrees Celsius in February while the mean maximum temperature was recorded at 14.5 degrees Celsius in August.

2.5.2 PRECIPITATION

Mount Polley precipitation data are shown for the months of January to December in Figure 4.1 thru 4.5. Refer to these tables to view the monthly precipitation values and the daily precipitation values. Out of the non-freezing months September had the highest recorded rainfall with 58.4 mm of precipitation. August was the driest month with only 19.2 mm of precipitation.

2.5.3 EVAPORATION

Mount Polley's Evaporation rates are shown in Figure 4.6; refer to this figure for monthly evaporation rates (non-freezing months only). The amount of evaporation for 2006 was 387 mm versus an average of 423 mm. July had the greatest evaporation level at over 100 mm and October had the lowest level at under 30 mm.

2.5.4 WATERBALANCE

Table 4 (2 pages) contains the water balance spreadsheet for the 2006 period. A review of the water balance is included in the Annual Tailings Inspection report, referred to in section 2.2.1.2. In 2005, a water balance was developed for the Mount Polley Mine site to aid in water planning and to predict water surplus or deficit volumes after the resumption of the operations in 2005. This water balance updates an earlier water balance by adding new development areas (including Springer Pit, Wight Pit and the Northeast rock disposal site, updating precipitation estimates, and modifying other aspect of the water balance to match the new mine plan. On December 31st, 2006 the inventory of water stored in the tailings storage facility was 3.5m m3.

2.6 HYDROLOGY AND HYDROGEOLOGY

Seven surface water sites were monitored for flow discharges throughout 2006 in the vicinity of the Mount Polley mine site. Monthly discharge graphs (Figures 3.1 thru 3.7) were generated for each of the monitoring stations listed below: W1a, W3a, W4, W5, W7, W8 and W12. Flow levels were determined by recording staff gauge readings and applying a formula (determined in previous years) that gave a stage discharge curve for each monitoring site. Flow measurements were measured with a rental flow meter in the fall of 2006 and compared with staff gauge readings. Staff gauges were covered in snow and ice from January to April and in November and December. Continuous water level data is recorded at Station W7 on Hazeltine Creek from approximately March to November of each year.

In addition to these surface water sites, there were 22 groundwater wells that were monitored for static water levels throughout 2006, also in the vicinity of the Mount Polley minesite. Graphs have been generated and are discussed in sub-section 2.6.8.

2.6.2 SITE W1a – UPPPER MOREHEAD CREEK

Figure 3.1 shows the flow measurement comparisons from 1997 to 2006. Spring freshet flows where below the volumes seen in 1999 thru 2001, but above the low flow year of 1998. Flows after spring freshet were in line with those seen in most of the previous years at this monitoring location.

2.6.2 SITE W3a – MINE DRAINAGE CREEK AT MOUTH

From 1995 through 1999, water volumes were monitored on this creek at site W3, which is located just downstream from the mine site. Starting in 2001, water volumes were monitored from a new location on this creek, labeled W3a. This location is at the end of the creek, immediately before it empties into Bootjack Lake. Figure 3.2 shows the flow measurement comparisons for monitoring site W3, with data from 1995 and 1997 to

2001 as well as the flow measurement comparisons for monitoring site W3a, with data from 2001 and 2006.

Since the data from W3a can really only be compared to the data collected from previous years at the same location, water volumes from 2004 will be compared to the only other data from this site, which is from 2001. Peaks in 2006 occurred in May.

2.6.3 SITE W4 – NORTH DUMP CREEK

Figure 3.3 shows the flow measurement comparisons from 1995 and 1997 to 2006. As was the case for site W1a, water volumes during the spring freshet period for 2006 were lower than for those in 1999 thru 2001, but were higher than those seen in the low flow year of 1998. Water volumes for the remained of the year were similar to previous years; the overall flow pattern was high during the spring, low for the summer and high during the fall.

2.6.4 SITE W5 – BOOTJACK CREEK ABOVE HAZELTINE CREEK

Figure 3.4 shows the flow measurement comparisons from 1995 and 1997 to 2006. Water volumes were recorded to be very low in 2006; this location will need to be recalibrated.

2.6.5 SITE W7 – UPPPER HAZELTINE CREEK HYDROGRAPH

Figure 3.5 shows the flow measurement comparisons from 1995 and 1997 to 2006. This is a continuous flow measurement station, when temperatures are above freezing. Flows in 2006 were not similar to any of the previous years. Generally the runoff early in March was similar to previous years, but then the volume of water dropped off and was extremely lower than average.

2.6.6 SITE W8 – NORTHEAST EDNEY CREEK TRIBUTARY

Figure 3.6 shows the flow measurement comparisons from 1995 and 1997 to 2006. Water volume and distribution were similar compared to previous years. There appear to be a reduced flow in the fall.

2.6.7 SITE W12 – 6K CREEK AT ROAD

Figure 3.7 shows the flow measurement comparisons from 1997 to 2006. Overall, all flows for the year was low which represents the climatic conditions.

2.6.8 GROUNDWATER STATIC WATER LEVELS

Figure 3.8 contains the static water levels for the wells 95R-4 and 95R-5, for the period 1996 to 2006.

- For well 95R-4, the static water level has been consistently around 11 meters, with only one exception in June 2000, when it was at 0 meters. As for well 95R-5, the static water level has been shifting between 2 meters and 0 meters, with no specific trend.

Figure 3.9 contains the static water levels for wells GW96-1a/1b, GW96-2a/2b, GW96-3a/3b and GW96-4a/4b for the period 1996 to 2006.

- For well GW96-1a, the static water level has been mostly between 15 meters and 20 meters, but has dropped as low as 40 meters in spring 2001 and as high as nearly 0 meters in summer 2001. As for well GW96-1b, the static water level has been very consistent at 13 meters, with a movement to nearly 0 meters in the summer of 2001. This peak matches perfectly with those seen in the twin well GW96-1a. In 2006 GW96-1b had a value of 15 meters.
- For well GW96-2a, the static water level has been mostly at 30 meters, with only a few exceptions. In the summers of 2001 and 2006, the static water level moved to 30 meters, which is typical. As for well GW96-2b, the static water level has been very consistent at 15 meters, with a movement to nearly 5 meters in the summers of 2001 and 2006. These peaks match perfectly with those seen in the twin well GW96-2a. In 2006 GW96-2b was 17

meters.

- For well GW96-3a, the static water level has fluctuated wildly, with a range of 42 meters to nearly 0 meters. In 2006 the water level was at 0 meters. As for well GW96-3b, the static water level has been very consistent at 0 meters, with a movement to nearly 3-5 meters in the summers of 2001 and 2006. These peaks match with similar peaks for wells GW96-1 and GW96-2.

- For well GW96-4a, the static water level has ranged from 0 meters down to nearly 4 meters. The most recent readings in 2006 are around 4 meters. As for well GW96-4b, the static water level has matched the static water level pattern of its twin well GW96-4a almost perfectly. The most recent values for 2006 are also around 3 meters.

Figure 3.10 contains the static water levels for wells GW96-5a/5b, GW96-6, GW96-7, GW96-8a/8b and GW96-9 for the period 1996 to 2006.

- For well GW96-5a, the static water level has been mostly between 5 meters and 0 meters, but has dropped as low as 13 meters in winter 2001. As for well GW96-5b, the static water level has been very consistent between 3 meters and 0 meters. No data points exist after 2001, as this well was damaged around this time. This well was repaired in 2006 and now has data points which range from 0 meters to 2 meters.

- For well GW96-6, the static water level has been nearly always been at 0 meters, but it has dropped as low as 15 meters, as it did in spring 2000.

- For well GW96-7, the static water level has been very constant between 5 meters and 2 meters. The most recent values in 2006 were around 3.51 meters.

- For wells GW96-8a and GW96-8b, the static water level for both wells has always been 0 meters, and this continued for 2006.
- For well GW96-9, the static water level has ranged from 0 meters down to nearly 2.5 meters. The most recent readings in 2006 are around 0.2 meters. Groundwater well GW96-9 was deactivated in the spring of 2006 during the commencement of the tailings storage facility stage 5-construction phase, as it was within the final toe design of the dam. This 6.1m deep well was established to capture a near surface aquifer and was supplemental well to wells GW96-3a/b and GW96-4a/b. There will not be any 2006 or future samples for this well.

Figure 3.11 contains the static water levels for wells GW00-1a/1b, GW00-2a/2b and GW00-3a/3b for the period 2000 to 2006.

- For well GW00-1a, the static water level has fluctuated between 8.5 meters and 0.5 meters, with the most recent values in 2006 at 4.5 meters. As for well GW00-1b, the static water level has been much flatter, ranging from 3.0 meters to 0.5 meters.
- For well GW00-2a, the static water level has remained fairly flat, with a range of about 6 meters to 3 meters. As for well GW00-2b, the static water level has followed its twin well GW00-2a almost perfectly, where the trend is only 0.5 meters lower than the deep well. This well static water level reached 9.0 meters in August of 2006.
- For well GW00-3a, the static water level has fluctuated somewhat, with the majority of the samples between 6 meters and 4 meters, but with several samples in 2002 and 2006 as low as 19 meters. As for well GW00-3b, the static water level has been very consistent at within the range of 6 meters to 4 meters.

2.7 RECLAMATION RESEARCH – 2006

Field reclamation research was conducted in 2006, results can be found in Appendix 2. Further, the research test plots on the 1170 rock disposal site will be maintained, and re-evaluated in 2007 to determine optimum soil thickness.

3.0 MINING PROGRAM

A detailed Mine Plan was presented in the Reclamation and Closure Plan submitted to MEM and approved under Permit M-200.

3.1 SURFACE DEVELOPMENT TO DATE

3.1.1 AREAS OF DISTURBANCE TO END OF 2006

Since mining operations ceased in 2001, there was almost no new disturbance created up to 2004. The only exception is the exploration work in the Northeast Zone that was conducted toward the end of 2003. The disturbed areas map (Figure 3) has been updated from a 2006 fall aerial photograph to include 2006 disturbance areas.

At the end of 2006, the total disturbed area in all categories was 684.22 Ha. Surface areas of the various disturbed reclamation units are outlined in Table 3.2 and are detailed by mine component in Table 3.1.

3.2 SURFACE DEVELOPMENT IN 2006

As discussed in the previous section, since mining operations ceased in 2001, almost no new disturbance was created in 2004. In 2006, the following changes are as follow:

- For the Waste Dumps in 2006, a decrease of 40 ha took place, the difference is accountable by more accurate estimates in 2006 as a result of the new aerial photography.

- For the Tailings Ponds, there was no it significant increase in disturbance. The dam was raised by placing a till cap from 944 to 948m.

- Pit Areas generally stayed the same.
- For roads, approximately 8 ha was disturbed.

3.3 PROJECTED SURFACE DEVELOPMENT FROM 2006 TO 20011

3.3.1 AREAS OF DISTURBANCE

Tables 3.3 have been completed to demonstrate the projection of further disturbance for the next five years and mine life.

3.3.2 SALVAGING AND STOCKPILING OF SURFICIAL MATERIALS

Soil salvage is a critical component of reclamation planning, as it will provide the soil material necessary to reclaim the mine site for desired end land uses. In 1997, Mount Polley prepared a Soil Salvage and Stockpile Protocol, SSSP-97, which addressed site-specific criteria relating to soil management.

In 2006, 425,000 cubic meters was salvaged from the Wight (North East Zone) pit, which contributes to a total of 2,900,00 cubic meters in storage held at Mount Polley, see table 3.6. This amount over 615 ha yields a nominal 47cm of soil in storage for each hectare disturbed.

3.3.3 DRAINAGE CONTROL / PROTECTION OF WATERCOURSES

Knight Piésold (Ref. No. 1624/1, 1995) has developed an overall water management plan for the project. Further on going environmental studies were done in 2006, which includes the development of site-specific water quality objectives, this information can be found in APPENDIX 4.

4.0 FUTURE RECLAMATION PROGRAMS

4.1 RECLAMATION RESEARCH FOR 2007

In 2007 reclamation research will involve evaluating the 1170m dump plots, and establishing a plan from the results. Additional Metal update will be done.

5.0 RECLAMATION COST PROJECTIONS

Detailed cost projections for the end of 2006 have been completed. The summary tables and detailed categories of disturbance can be found in APPENDIX 6 - RECLAMATION BOND COSTING – 2006.