9.0 ENVIRONMENTAL MANAGEMENT PROGRAM

9.1 Metal Leaching and Acid Rock Drainage Prediction and Prevention Plan

9.1.1 Acid Rock Drainage Potential

In 2006, prior to implementation of the 10,000 tonne bulk sampling program, Prize contracted Lorax to conduct metal leaching and acid rock drainage potential studies for the Yellowjacket Zone. The primary objective of the study was to assess the potential for acid rock drainage and metal leaching associated with the weathering of geological materials produced during the bulk sampling of the Yellowjacket Zone. 23 samples for study were selected from three drill holes in order to obtain a good representation of the waste and ore material removed from the bulk sample pit, as well as to characterize material that may be removed during subsequent development of the Yellowjacket Zone. This was achieved through static geochemical test work involving acid-base accounting and solid-phase metal analysis.

Acid-base accounting (ABA) involves a suite of static tests that are utilized as predictors for acid drainage potential. Measurements included in ABA static tests are acid potential (AP) and neutralizing potential (NP) of a sample. An accounting technique is used to compare the AP and NP with standard criteria thereby indicating the theoretical acid generation potential of a sample.

Results of the ABA work conducted by Lorax in 2006 (see Appendix 3) can be summarized as:

- Paste pH values indicate samples from the bulk sample pit were not actively producing acidic drainage prior to sampling;
- Total sulphur concentrations from the area of the bulk sample pit are very low – ranging from below detection (<0.02%) up to a maximum of 0.07% in andesite with the majority being below detection;
- Neutralizing potential – all samples collected have net potential ratio (NPR) values greater than 4, with the majority between 100 and 1000, indicating that none of these samples will produce acid drainage (see Table 9-1).

The net potential ratio (NPR) is calculated by dividing the NP of a sample by its AP and is often used to assess the likelihood of a sample to generate acidic drainage. The province of British Columbia has developed and adopted a scheme to evaluate the likelihood that a sample will generate acid, based on its NPR value (Table 9-1).

Table 9-1
British Columbia Acid-Base Accounting Screening Criteria (from Price, 1997)

POTENTIAL FOR ARD	CRITERIA	COMMENTS
Likely	NPR < 1	Likely ARD generating unless sulphide minerals are non-reactive
Possibly	1 < NPR < 2	Possibly ARD generating if NP is insufficiently reactive or is depleted at a faster rate than sulphides
Low	2 < NPR < 4	Not potentially ARD generating unless significant preferential exposure of sulphides along fracture planes, or extremely reactive sulphides in combination with insufficiently reactive NP
None	**NPR > 4**	

9.1.2 Metal Leaching

In 2006, prior to implementation of the 10,000 tonne bulk sampling program, solid phase metals data were collected in conjunction with ARD work on selected drill core samples referenced in the preceding section.

Solid-phase metals data are used to identify which metals are enriched in the various waste materials. This information can be used in combination with ABA to establish the geochemical properties of the lithologies at the Yellowjacket Zone. Table 9-2 presents a summary of the minimum, maximum, and median metal abundances obtained from aqua-regia digestion of the main lithologies from drill holes near the proposed bulk sample pit. The degree of enrichment of an element over crustal abundance can be used as a general indicator of the metals that could be of potential concern, and which should be scrutinized in leaching tests during future development at the Yellowjacket Gold Project.

However, solid-phase metal concentrations well above crustal abundance do not conclusively indicate that the metal will be leached at a high rate from the material. Rather, the rate of metal leaching is related to the metal's mineralogical association and the aqueous geochemistry of the infiltrating waters.

An indicator of significant solid-phase enrichment is assigned arbitrarily herein to be values greater than or equal to three times the crustal abundance. These values are indicated as shaded cells in Table 9-2. Values for elements that were indicated to be present in concentrations below detection were set at detection in order to maintain a conservative analysis. For a complete listing of Yellowjacket Zone solid-phase metals data, refer to Appendix 3.

Table 9-2
Minimum, Maximum, and Mean Metal Concentrations for Yellowjacket Zone Samples near the Bulk Sample Pit

LITHOLOGY	As (ppm)	Co (ppm)	Cr (ppm)	Ni (ppm)	Sb (ppm)	Se (ppm)	Th (ppm)
Andesite (N=5)							
Min	0.7	27.3	255.0	82.5	012	0.1	0.2
Max	81.3	77.4	567.1	508.0	1.70	0.4	14.7
Median	5.3	33.6	394.9	108.4	0.18	0.1	10.3
Basalt (N=5)							
Min	0.1	21.2	127.5	39.0	0.05	0.1	0.1
Max	11.4	40.3	475.4	242.1	0.46	0.1	17.2
Median	4.3	32.1	388.8	154.8	0.32	0.1	1.7
Diabase (N=1)	0.4	22.1	64.0	23.8	2.20	0.1	0.1
Fault Zone (N=1)	1.9	33.6	488.9	130.7	0.10	0.1	16.3
Serpentinite (N=3)							
Min	1.3	57.0	857.4	874.5	0.10	0.1	<0.1
Max	15.0	85.6	993.2	1391.2	0.40	0.1	<0.1
Median	7.1	81.9	942.1	1371.2	0.33	0.1	<0.1
Ultramafic (N=8)							
Min	0.9	41.7	519.7	617.8	0.0	0.1	<0.1
Max	127.2	65.6	1238.0	1387.4	4.0	0.3	2.2
Median	62.25	53.45	661.6	1003.8	0.9	0.2	<0.1
Average Crust *	**1.8**	**25.0**	**102.0**	**84.0**	**0.2**	***0.05***	**1.2**
Andesite	2.9	1.3	3.9	1.3	0.9	2.0	8.6
Basalt	2.4	1.3	3.8	1.8	1.6	2.0	1.4
Diabase	0.2	0.9	0.6	0.3	11.1	2.0	0.1
Fault Zone	1.1	1.3	4.8	1.6	0.7	2.0	13.6
Serpentinite	3.9	3.3	9.2	16.3	1.7	2.0	0.1
Ultramafic	34.6	2.1	6.5	11.9	4.4	4.0	0.1

**Average crustal values from Price (1997); Values in italics from CRC (1985)*

Table 9-2 indicates that arsenic, cobalt, chromium, nickel, antimony, selenium, and thorium are present in elevated concentrations in Yellowjacket Zone samples. However, while most of these elements are only enriched in one or two of the units (e.g. As in ultramafic; Co in serpentinite; Ni in serpentinite and ultramafic; Sb in diabase and ultramafic; Se in ultramafic; Th in andesite and the fault zone), Cr (chromium) is consistently elevated in all lithologies, except for the diabase sample indicating that this element is potentially of more general concern than those elements that appear to be elevated in individual units.

It is important to note the characteristics of the host lithologies, which are predominantly mafic to ultramafic rocks and contain normal background levels that are traditionally high in chromium, nickel, cobalt, arsenic, antimony and selenium. The measured elevated levels for these elements probably represent background values in this lithologic package.

Tailings generated from processing of this material will be deposited, along with process plant discharge supernatant solution, to the tailings storage facilities. As well, the proposed development plan states that any waste rock generated as a result of resource extraction will be backfilled into the open pits and be flooded.

9.1.3 Mitigation

Additional test work is currently being conducted to refine criteria for identifying potentially problematic material for selective handling. These criteria will list parameters, and/or site specific indicators of geochemical characteristics that identify the relative potential for metal leaching and/or acid generation.

Material, which in the future may be identified as having some potential for acid generation or more potential for metal leaching than previously seen, can be managed by storing underwater in the flooded mined-out portion of the pit areas. The mine plan calls for all mined waste material to be returned to the flooded pit within two years of extraction.

Data collected to date show that NPRs indicate the waste materials are non-acid generating. Although some metal values measured in certain lithologies have higher background levels than crustal averages, they do reflect backgrounds in this system. Routine monitoring will ensure that any metal leaching or acid generating potential values higher than current levels or recommended guidelines will be identified and the subject material removed to underwater storage.

9.1.4 Monitoring Program

Supplemental static and kinetic test work is currently underway and will be conducted in some detail over the initial year of operations. Previous geochemical characterization of Yellowjacket Zone lithologies indicates that waste materials are non-acid generating, but neutral-drainage metal leaching may be an issue.

During the bulk sampling program, approximately 10,000 tonnes of mineralized material was extracted, of which only 4,200 tonnes was processed. Therefore, existing mineralized rock, waste and tailings materials are available for collection and analysis. Examination of existing waste materials that have been generated using the same techniques to be used in future mining operations is advantageous because it provides site specific information on the actual materials that will be generated during these operations.

FIGURE 9-1: Photo Of Kinetic Test Bins

Field-based kinetic tests will be conducted in order to collect and monitor the quality of contact water draining from the waste stockpiles at the Yellowjacket site

Field leach bin experiments closely resemble actual conditions present with natural waste piles, including site-specific climatic conditions, scale, grain size, and water-rock ratios (Lorax, 2009).

The on-going waste material sampling program for 2009 will comprise:

- 15 samples representative of existing materials produced during the bulk sample program, including both ore and waste rock (~5 kilograms each);
- 30 samples from exploration drill holes representative of material to be extracted during future development at the Yellowjacket Gold Project (2 to 4 kilograms each); and
- 3 samples of tailings generated from the processing plant (2 to 4 kilograms each).

The proposed 2009 waste characterization plan can be found in Appendix 9 – 2009 Yellowjacket Water Quality and Waste Sampling Program, Technical Memorandum, Lorax Environmental Services Inc.

Due to the fact that the mine footprint is located on highly porous and permeable placer gravels, the collection of drainage supernatant from stockpiled waste and mineralized materials is not possible. Therefore, field based kinetic tests will be conducted in order to collect and monitor the quality of contact water draining from the waste stockpiles at the Yellowjacket site (see Figure 9-1). Upon completion of the static and kinetic testing, an annual report will be produced by Lorax that summarizes all previous data together with recommendations for the following years' monitoring.

9.2 Water Course and Water Quality Protection

9.2.1 Site Drainage

In 2006, BGC developed hydrology information for the Pine Creek Diversion. The report indicated that the mean annual discharge of Pine Creek through the project area was 4.6 m^3/s, and in typical years the flow rate varies from 1.5 m^3/s to 12 m^3/s. It is anticipated that the project will not adversely affect this flow regime given the small size of the project area, being less than 2 km^2 of the approximate 500 km^2 drainage basin.

To date a site water balance has not been undertaken due to limited information regarding quantity of flows through the surficial materials. Investigative work completed on the Project area show that the hydraulic conductivities (K) values are 10^{-6} m/s in the upper coarse-grained surficial unit and 10^{-8} m/s in the lower fine-grained surficial unit and shallow bedrock.

There is currently a small surface flow originating along the southern boundary of the work area. This appears to be seepage coming through the surficial materials from the original Pine Creek channel. This small flow is currently being routed along the south limits of the pit expansions and is noted in this application as a seepage diversion ditch.

It is anticipated given the results from the Bulk Sample Waste Characterization program in 2006 that there will be no potential water quality impacts to the flow regime. Additional assessments are being undertaken in 2009 to confirm this assumption.

9.2.2 Water Quality Protection and Monitoring

The 2009 proposed water quality monitoring and surveillance program during on-going operations includes a regular water quality sampling program with annual reporting. The water quality monitoring program will be implemented to follow an established plan for sampling frequency, locations and parameters agreed upon by Lorax, regulatory agencies and stakeholders.

For a complete review of the proposed program see Appendix 10 – 2009 Yellowjacket Water Quality Monitoring: Memorandum, Lorax Environmental Services Inc.

Water quality monitoring stations will be established at pre-existing sample sites PC-1, PC-2 and PC-5 (for site locations see Table 10-1 and Figure 9-2). Sampling at PC-3 will be discontinued and a new site (PC-6) established 200 metres downstream of the project area. As well, PC-BSPit will sample water that infiltrates into the open pit, and PC-SP will sample supernatant water from the sedimentation ponds. The current discharges from site are largely indicative of what will be encountered from future development.

Collection of water from these locations will help to characterize site water as well as determine the degree of impact (or lack thereof) associated with current drainages from the Yellowjacket Gold Project. Sampling at each of these sites will be conducted monthly, except during freshet when samples will be collected weekly (Table 9-3). This will ensure that all possible flow conditions are captured to most effectively evaluate the impact of the Yellowjacket Gold Project on the receiving environment.

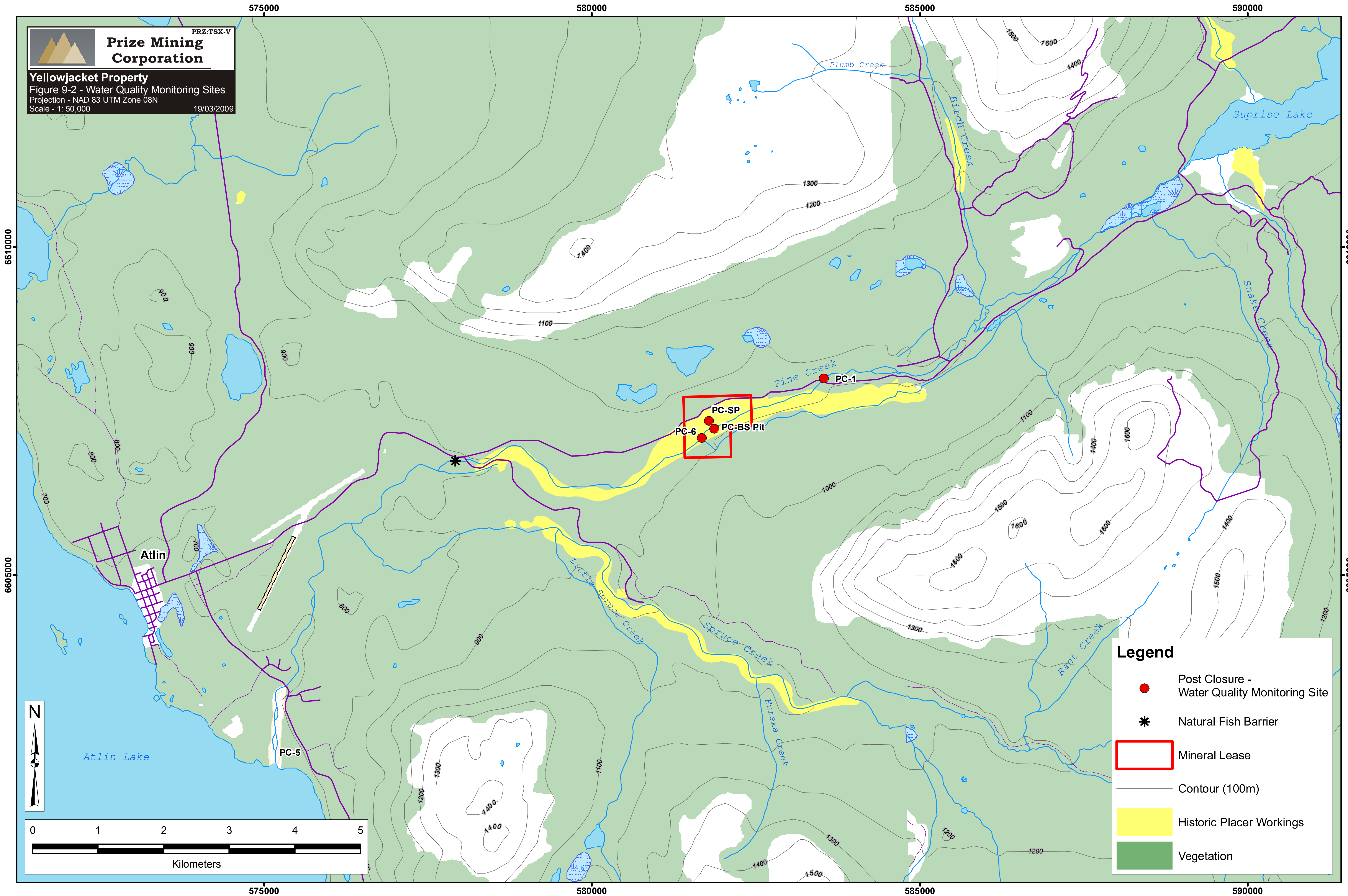
PRZ:TSX-V
Prize Mining Corporation
Yellowjacket Property
Figure 9-2 - Water Quality Monitoring Sites
Projection - NAD 83 UTM Zone 08N
Scale - 1: 50,000
19/03/2009
575000
580000
585000
590000
6610000
6605000
Plumb Creek
Birch Creek
Suprise Lake
Snake Creek
Pine Creek
PC-1
PC-SP
PC-BS Pit
PC-6
Atlin
Little Spruce Creek
Spruce Creek
Eureka Creek
Rant Creek
Atlin Lake
PC-5
N
0
1
2
3
4
5
Kilometers
Legend
Post Closure - Water Quality Monitoring Site
Natural Fish Barrier
Mineral Lease
Contour (100m)
Historic Placer Workings
Vegetation

Table 9-3
2009 Yellowjacket Gold Project
Surface Water Quality Program Sampling Schedule

MONTH	PC-1	PC-6[1]	PC-2	PC-5	PC-BSPit	PC-SP
MARCH 2009	X	X	X	X	X	
APRIL 2009	X	X	X	X	X	
MAY 2009	X[2]	X[2]	X[2]	X[2]	X	X
JUNE 2009	X	X	X	X	X	X
JULY 2009	X	X	X	X		X
AUGUST 2009	X	X	X	X		X
SEPTEMBER 2009	X	X	X	X	X	X
OCTOBER 2009	X	X	X	X		X
NOVEMBER 2009	X	X	X	X		X
DECEMBER 2009	X	X	X	X	X	
JANUARY 2010	X	X	X	X		
FEBRUARY 2010	X	X	X	X		

1 PC-6 is located approximately 200 metres downstream of the Yellowjacket Gold Project site
2 Sampling frequency is weekly during freshet