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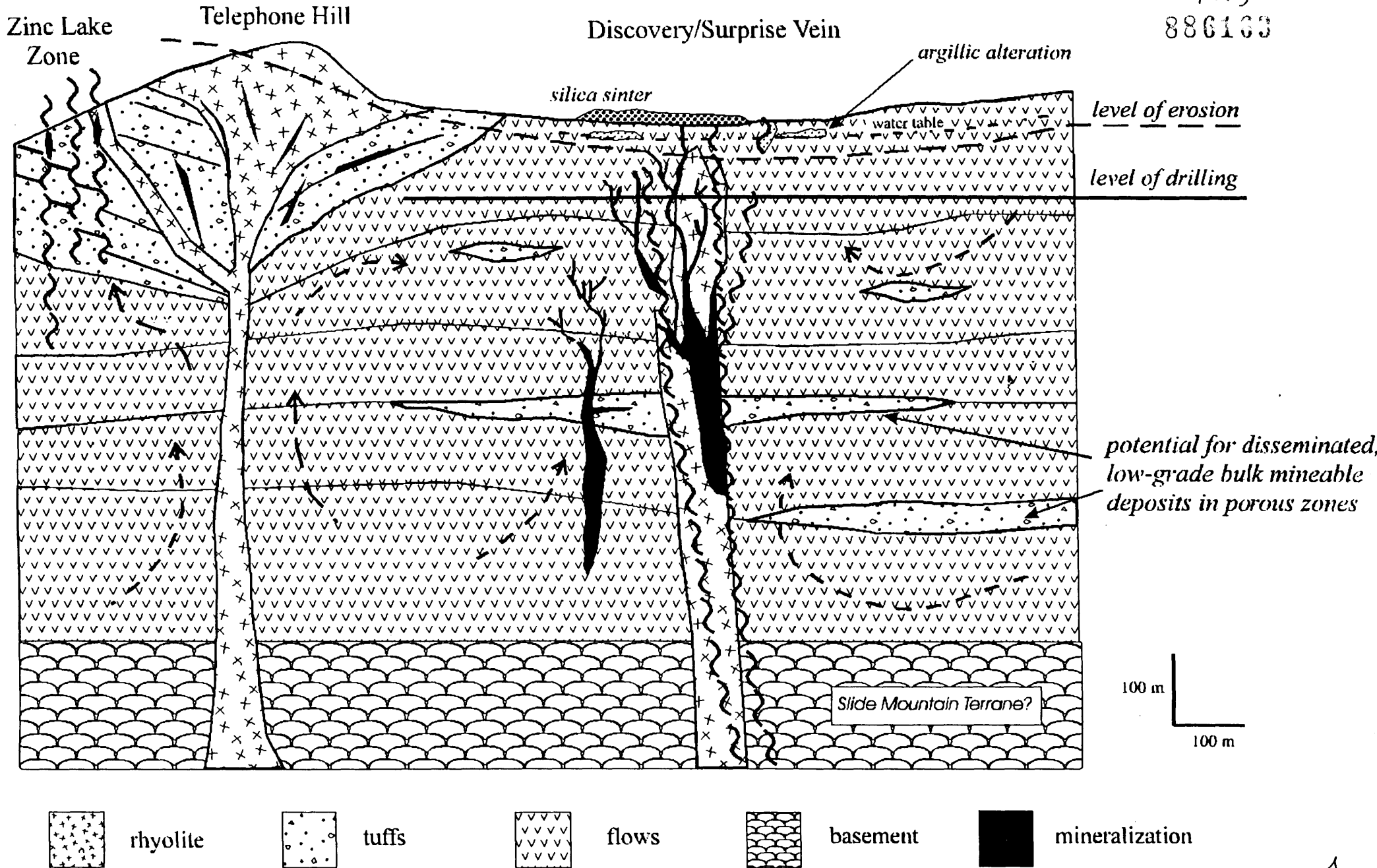


Figure 13: Schematic cross-section of mineralization styles on the Nizi Property (see caption on preceding page).

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(98, 400)  
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controlled by a pressure decrease associated with dilatency in faults.

- (6) Preservation of the Nizi volcanic sequence from erosion probably occurred by normal faulting that down-dropped the sequence into a graben-like structure. The Gully Zone area is a region of probable normal faulting suggesting that a regional normal fault may be located nearby, perhaps in the river valley to the west.

No sinter deposits or acid-sulphate alteration cap that would define the paleo-surface of the Nizi hydrothermal system have been identified. The characteristics of Type 1 mineralization, that is, angular stockworks and hydrothermal breccias of microcrystalline quartz showing few void-textures, suggest rapid precipitation following hydrofracturing at shallow depths. In addition, the presence of hypogene hematite (if correct) would also support shallow erosion levels.

## RECOMMENDATIONS

Continued exploration on the Nizi property is recommended. Phases 1 and 2 should be carried out as soon as weather permits. Phase 3 is dependent, in part, on the results of Phases 1 and 2 and should be carried out in early August after the results of Phases 1 and 2 are interpreted.

### Phase 1: Gamma Ray Spectrometry, Short Wave Infrared Reflectance (SWIR) and Soil Geochemistry Surveys

Mineralization is associated with potassic (K-feldspar-quartz-sericite-chlorite) alteration. Therefore, alteration mapping of the property is strongly recommended. Two methods of alteration mapping are applicable. Firstly, either a ground or airborne, gamma ray spectrometry survey needs to be conducted. This should help define areas of potassic alteration. Secondly, a Short Wave Infrared Reflectance (SWIR) survey would permit identification of alteration minerals in hand sample that normally, are impossible to identify without using X-ray diffraction or other laboratory techniques. Portable SWIR units such as the PIMA II (available through Petrascience Consultants of Vancouver) allow identification *in the field* of common alteration minerals such as clays, zeolites, hydroxides, sulfates, smectites and carbonates. Use of a portable SWIR on outcrop and drill core samples would allow three-dimensional alteration mapping on the Nizi Property. The key areas to be surveyed are the Telephone Hill – Zinc Lake Zone and the areas underlain by soil anomalies I through IV. If the exploration budget permits, airborne gamma ray spectrometry and SWIR surveys of the entire property and bordering regions should be considered. The Canada Centre for Remote Sensing has developed an airborne SWIR system known as the SWIR Full System Imager (e.g. Hauff et al. 1996).

Soil geochemistry surveys over anomalies I through IV should be carried out to confirm their location and extent. It is recommended that a flag grid is established with a 50-metre line spacing and sampling at every 25 metres. This would require approximately 700 samples. Using a GPS and a base station set up on the property, the grid can then be located in real world coordinates. Soil samples should be analysed for gold, silver, arsenic, antimony, mercury and thallium. In addition, recent work by Newmont at their Yanacocha Mine in northern Peru and by Barrick Gold at the Pierina deposit in central

Peru, indicate that sulphur or sulphate analyses are useful for identifying hypogene alteration above epithermal deposits (G. Salazar, personal communication, 1998). Therefore, soil and rock samples collected on the Nizi property should be analysed also for sulphur and/or sulphate.

Soil and rock sampling at the base and in small gullies that dissect the cliff on the northern side of the Telephone Hill area is recommended. This region remains under prospected, partly due the exposure of most outcrops in cliff faces. Flow domes and surrounding tuffaceous volcanics are well known hosts to structurally controlled silver deposits in South America (e.g. Cunningham et al., 1991). Thus, anomalous silver values obtained for Type 1 and Type 2 mineralization drill hole NZ-97-19 may be significant.

Soil and rock sampling in the area near the creek (UTM location 499650 E and 6537990 N) down slope from the Discovery Vein should also be carried out. The anomalous metal values reported for this area (Augsten, 1987; see Appendix 1) may simply reflect slumping of mineralized rock and soil from the Discovery Vein area but could also reflect mineralization at depth in the system.

### Phase 2: Trenching and mapping

Once the soil anomalies are defined, trenching using a heli-portable backhoe, would be useful to uncover more outcrop or sub-crop and better assess the cause of the anomalies. Better mapping of the surface exposures of rhyolite around Telephone Hill is required before any drilling takes place in this area. As much of the exposure of tuffs and rhyolite is along the north-facing cliff, employing a mountaineer and using a GPS in combination with a laser range finder should permit better mapping of geologic contacts in outcrop. In particular, the surface exposure of the rhyolitic volcanics and investigation of possible normal faulting is needed. Trenching on the grassy southwest-facing slope that obscures much of the Telephone Hill rhyolite should expose more outcrop.

### Phase 3: Diamond Drilling

Further diamond drilling on the Nizi property is recommended. Figure 14 shows the locations of the proposed drill holes for the Discovery Vein, Telephone Hill and Zinc Lake Zone areas. Location of the proposed holes for the Hill Zone area are shown on Figure 6.

#### *Discovery/Surprise Vein Area*

The priority target for diamond drilling is the Discovery/Surprise Vein area because this region has proven gold mineralized stockworks over an area of 100 by 175 metres to a vertical depth of 120 metres. In addition, rhyolite has been cored to a vertical depth of 220 metres in Gold Giant's drill hole NZ-92-2.

The main ore zone in adularia-sericite type epithermal deposits may be present at depths up to 1000 metres although such estimates have limited use because the vertical extent of a given district is variable and defining the top and bottom of the ore deposits can be difficult. Sillitoe (1997) estimates bonanza ores at depths of about 300 to 350 metres below the top of the stockworks. Assuming that the Discovery Vein stockworks represent the upper portion of a larger vein system, it is recommended drilling at the

Discovery Vein be aimed at testing vertical depths of at least 350 metres. Two deep diamond drill holes, NZ-98-20 and NZ-98-21, are proposed for the Discovery/Surprise Vein area (Table 8; Figures 11 and 14) that should test for mineralization to depths of 350 and 470 metres, respectively.

#### *Telephone Hill*

Further drilling in the Telephone Hill is warranted. Drill hole locations should be determined in part on the results of mapping, trenching and sampling of Phase 1 and 2 exploration. Two drill hole locations (NZ-98-22 and 23) are listed in Table 8 and shown on Figures 12 and 14 to test the rhyolitic flow dome(s) as currently mapped in this area.

#### *Zinc Lake Zone*

Only one drill hole has been attempted in the Zinc Lake Zone and failed to reach the mineralization (Figure 8 and Appendix 4). Drilling in this area is hindered by topography. However, one drill hole (NZ-98-24) is proposed here that should test the Zinc Lake Zone mineralization to a vertical depth of a least 100 metres (Figures 14 and 15). If results of this hole are favourable, another drill hole may be warranted.

#### *Hill Zone/Gully Zone area*

Drilling in the Hill Zone is recommended pending outcome of the soil sampling and trenching program. If the soil sampling confirms the presence of Anomaly III, then drill holes should be set up to test the anomaly, rhyolite dyke and area underlying the exposed quartz-barite-pyrite stockwork at the Hill Zone.

Three holes are proposed here assuming that drilling might proceed without the benefit of soil sampling and trenching (Table 8; Figure 6 and 16). Hole NZ-98-25 is collared in the mercury Anomaly III as currently located and tests the rhyolite to a vertical depth of 250 metres. Hole NZ-98-26 tests the rhyolite to a depth of 185 metres and the Hill Zone surface mineralization to a depth of 300 metres. Hole NZ-98-27 further tests the rhyolite and the general area of Anomaly III .

#### *Other Targets*

Soil geochemistry anomalies I and II should be considered potential targets until proven otherwise. In particular, Anomaly I should be prospected because silicified, felsic volcanic rock (rhyolite dyke?) and Type 2 veins are present in this area. The inferred fault contact between the Nizi volcanic sequence and Unit 2 diorite that underlies the area of Anomaly I could have provided a conduit for hydrothermal fluids.

Prospecting to the northwest and southeast of the Nizi volcanic sequence as currently defined should be carried out. In particular, the mountain immediately north of the Nizi property should be prospected as bedrock is well exposed in that area. Regional, 1:50,000 scale maps by Gabrielse (1994) show undivided sedimentary and volcanic rocks of the Slide Mountain Terrane underlying this mountain. However, the Nizi volcanic sequence was not differentiated on these maps and may be more extensive than currently defined. The mountain should be prospected below treeline as the regional mappers may not have explored this region.

## BUDGET

Phase 1: Airborne SWIR and gamma ray surveys and soil/rock sampling (10 days).

Airborne SWIR:	60,000.00 (including processing)
<u>Airborne Gamma Ray:</u>	<u>40,000.00 (including processing)</u>
<b>Total:</b>	<b>100,000.00</b>

*Note:* Survey costs are for 185 line kilometres, line spacing of 100 metres and line azimuth of 045° designed to cover the area of Nizi volcanic sequence as currently mapped. Costs include mobilization, demobilization and data processing costs. Gamma ray survey is estimated at \$100.00 per line kilometres and includes EM and MAG surveys. The cost for gamma ray survey alone is approximately \$80.00 per line kilometre.

Grid and Sampling crew:	12,000.00
Analyses (Au, Ag, As, Sb, Hg, Tl, S):	32,000.00
<u>Mobilization/De-mobilization:</u>	<u>16,000.00</u>
<b>Total:</b>	<b>60,000.00</b>

*Note:* Based on 4 person crew for 10 days at \$300.00 per day including camp costs (eg. food, cook, fuel) and 800 samples at \$40.00 per sample.

Phase 2: Trenching and Mapping (4 -7 days)

Back-hoe and operator (4 days):	4,000.00
<u>Geologist (7 days):</u>	<u>2,800.00</u>
<b>Total:</b>	<b>6,800.00</b>

*Note:* Heli-portable backhoes are available through Guaranteed Rentals, Whitehorse, YT (1-867-667-7368) at \$1000.00 per week (plus cost of transportation to and from field site estimated at approximately \$1000.00). Operator costs are \$30.00 per hour. Daily rate for geologist of \$400.00 per day includes camp costs.

Phase 3: Drilling

**Diamond drilling (2720 metres): 847,700.00**

*Note:* Drilling costs are \$ 95.00 per 0.305 metres (= 1 foot) and include drilling equipment and incidental costst, geologist, drillers, helicopter and camp costs.

Therefore, the total cost to complete recommended exploration is **\$1,014,500.00**