Final Report of Stream Sediment, Float, and Bedrock Sampling in the Porcupine Mining Area, Southeast Alaska, 1983-1985

by Jan C. Still, Wyatt G. Gilbert, and Robert B. Forbes

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UNITED STATES DEPARTMENT OF THE INTERIOR

Donald Paul Hodel, Secretary

BUREAU OF MINES

Robert C. Horton, Director

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UNIT OF MEASURE ABBREVIATIONS USED IN THIS REPORT

ft - foot
in - inch
ppm - parts per million

FINAL REPORT STREAM SEDIMENT, FLOAT, AND BEDROCK SAMPLING IN THE PORCUPINE MINING AREA, SOUTHEAST ALASKA, 1983-1985

By Jan C. Still[1], Wyatt G. Gilbert[2], and Robert B. Forbes[2],

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ABSTRACT

As part of a cooperative project during 1983-1985 personnel from the State of Alaska, Division of Geological and Geophysical Surveys and the U.S. Bureau of Mines collected 687 stream sediment, pan concentrate, soil, float, rubblecrop, and bedrock samples in the Porcupine mining area near Haines in Southeast Alaska. More than 460 of the 687 samples collected contained anomalous concentrations of one or more elements, indicating the possible presence of several deposit types. Types include zinc-silver-lead-barium volcanic or sedimentary hosted massive sulfide deposits, gold-silver or base metal vein deposits, and sedimentary hosted large tonnage low-grade gold and gold bearing copper cobalt skarn deposits. Stream sediment samples contained up to 62.25 ppm gold, 10 ppm silver, 1,810 ppm zinc, 2,800 ppm barium, 500 ppm tin, 300 ppm arsenic, 400 ppm nickel, and 30,000 ppm antimony. Bedrock and rubblecrop samples contained up to 24.83 ppm gold, 17.14 ppm silver, 13.4 percent zinc, 940 ppm cobalt, 47 percent barium, 500 ppm tin, 4 percent arsenic, 900 ppm bismuth and 8,000 ppm antimony.

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INTRODUCTION

The mineral development potential of the Porcupine mining area in Southeast, Alaska has been studied as part of a three-year cooperative effort by the U.S. Bureau of Mines (Bureau) and the State of Alaska Division of Geological and Geophysical Surveys (ADGGS). This study has been integrated into the larger Juneau mining district study to be completed in 1989. Figure 1 shows the location of the Porcupine mining area.

As part of the Porcupine mining area study ADGGS and Bureau field crews in 1983, 1984, and 1985 collected 491 bedrock and float samples, 185 stream sediment, 9 pan concentrate, and 2 soil samples. A preliminary report covering 1983 and 1984 work was released in 1984. This final report integrates the earlier data with the 1985 work and summarizes the results of these sampling efforts. Additional reports are in preparation which discuss development potential for lode deposits and placer gold deposits.

The Porcupine mining area is approximately bounded by the Tsirku River to the south and east, by the Alaska-British Columbia border to the west and it extends several miles north of the Haines highway. Samples collected between the Tsirku River and the Glacier Bay National Park boundary, and in the vicinity of Mosquito Lake were also included. Figure 2 shows the area geology (1, 2)[3], while figure 3 shows the area geographic localities.

ACKNOWLEDGMENTS

Merrill Palmer, Jo Jurgeleit, Jim McLaughlin, and Porcupine mining area prospectors and miners all helped with this study as did Brian Jones, Kennecott geologist, and the crew at the Kennecott exploration camp.

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[3]Numbers in parentheses refer to items in the list of references at the end of this report.

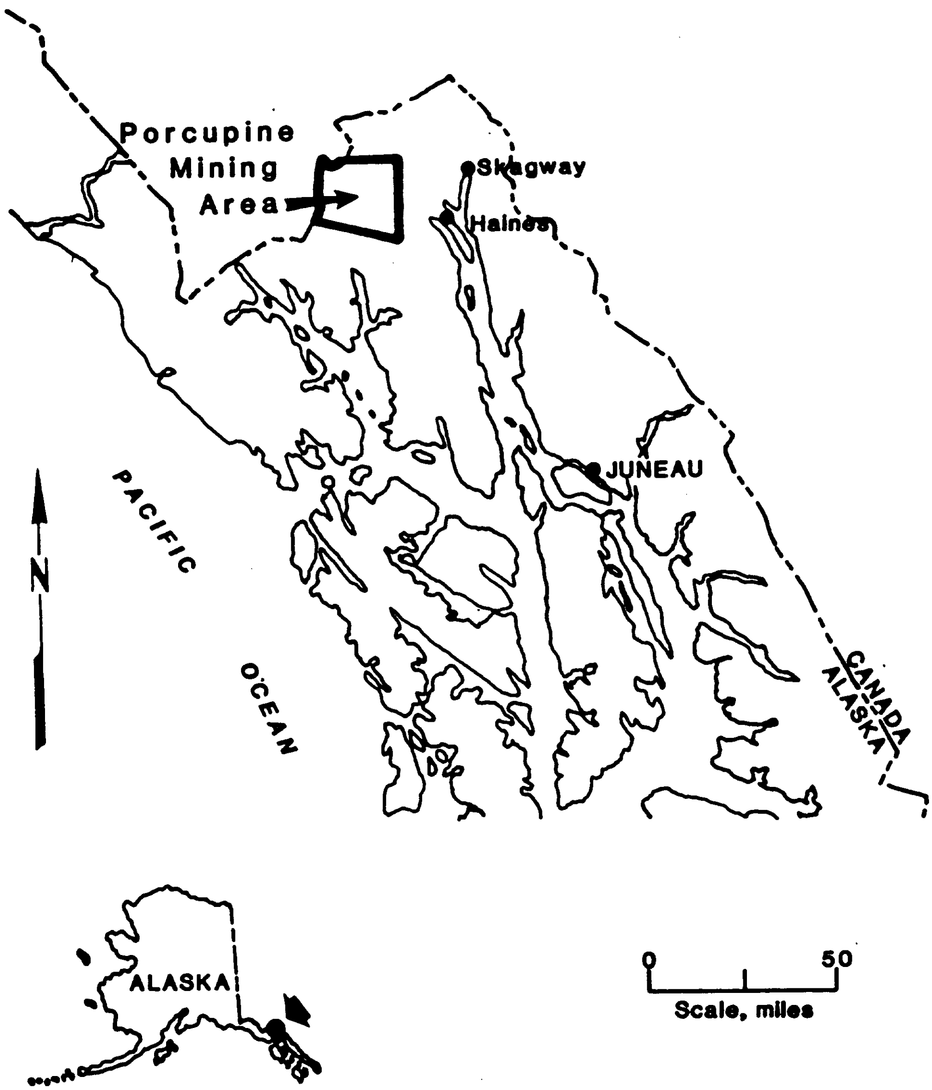
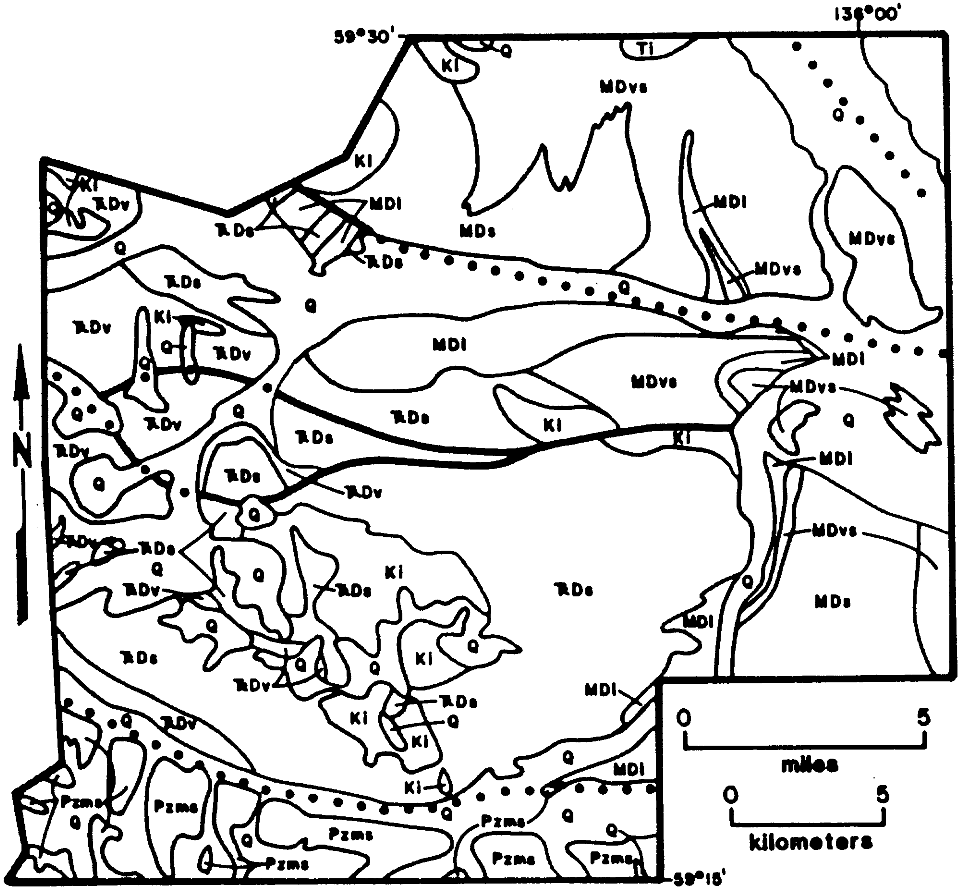


Figure 1. - Location of the Porcupine mining area in the State of Alaska



EXPLANATION

Q	Quaternary Deposits; undifferentiated glaciers, alluvium and glacial deposits.
Ti	Tertiary Intrusions; granodiorite, quartz diorite and diorite.
Kl	Cretaceous Intrusions; granodiorite and diorite.
TRDv	Glacier Creek Volcanics; primarily low-grade metabasalt with subordinate amounts of meta-andesite, metafelsite, metachert and slate.
TRDs	Porcupine Slate; primarily carbonaceous slate, argillite and phyllite with subordinate limestone.
MDl	Porcupine Marble; marble and partially recrystallized limestone.
MDs / MDvs	Boulder Creek - Four Wind Complex; MDs- primarily carbonaceous phyllite with subordinate marble. MDvs- schistose metabasite and metafelsite, phyllite, marble and metachert.
Pzms	South Tsirku Complex; undifferentiated marble, argillite and minor metabasite.
• •——	Fault, dotted where concealed.

FIGURE 2. - Generalized bedrock geologic map of Porcupine Mining Area

[Modified from (1) and (2)]

PHYSIOGRAPHY AND CLIMATE

The physiography of the area is rugged with steep glacier-clad mountains and U-shaped glacier formed valleys, some of which still harbor glaciers. The high point, located in the western part of the area, is 7,434 ft at Mt. Henry Clay, and the low point is in the eastern part of the area along the Klehini River at 200 ft elevation. Timberline is at about 2,000 ft with dense brush and lush forests at lower elevations. The area is at the eastern edge of the St. Elias Mountain Range that partially protects it, with a rain shadow effect, from the wet maritime coastal climate. The average annual precipitation is notably less than that at Haines, which is reported at 60 in a year. Long cold winters with snowfall from October to April characterize the area.

ACCESS

The Porcupine mining area is serviced by an all-weather paved highway that extends from the port city of Haines to the Canadian border station at Camp Pleasant. Dirt roads extend from the highway through Moose Valley and up the Chilkat River, along the lower Little Salmon River, to the placer mining camp at Porcupine and to the mouth of Glacier Creek, where a tractor trail (washed out in places) leads to the base of the Main Glacier Creek deposit at an elevation of 3,400 ft. Another tractor trail (now in a state of disrepair) crosses the Klehini River near the border and climbs the west side of the Jarvis Glacier Valley to a gold prospect located in Canada.

LAND STATUS

Land status of the Porcupine mining area is complex. Much of the mining area is currently managed by the U.S. Bureau of Land Management (BLM) or the State of Alaska and is open to mineral entry. According to BLM records, the area contained 5 patented and 444 unpatented placer claims as of July 22, 1985. BLM land status plats should be checked for detailed site specific information before staking claims. Figure 3 shows geographic place names used in this report.

PREVIOUS WORK

In 1969 and 1970, U. S. Geological Survey (USGS) geologists G. R. Winkler and E. M. MacKevett conducted a geochemical sampling program that included the Porcupine mining area. The results were published in 1970 as USGS OFR 406 (3). A preliminary report covering 1983 and 1984 Bureau and ADGGS sampling in the Porcupine mining area was released in 1985 as Bureau OFR 173-84 (4). A companion to this report titled "Distribution, Analysis, and Recovery of Placer Gold from the Porcupine mining area, Southeast Alaska", was published as Bureau OFR 89-86 (5).

PRESENT STUDY

Geology

Figure 2 shows the geology of the area included in this study. It consists of Paleozoic-Triassic slate, phyllite, metavolcanic rocks, and limestone intruded by Early Cretaceous and Early Tertiary diorite and granodiorite. The Porcupine mining area has been mined for placer gold since the turn of the century and contains a number of massive sulfide zinc-silver-barite deposits (6).

Sampling

Four types of materials were collected for analysis: stream sediment, soil, pan concentrate, and rock (rock samples consisted of bedrock material unless otherwise noted). The rock samples were of several types including channel, chip channel, continuous chip, spaced chip, representative chip, random chip, grab, random grab, and select. Grab samples are randomly collected outcrop or float materials and select samples are grab samples of specific material. Random chip samples consist of small rock fragments broken randomly from outcrop while representative chip samples are used to characterize an outcrop. Spaced chip samples are composed of a series of rock fragments taken at a designated interval and continuous chip samples consist of a continuous series of rock fragments taken from the outcrop. Chip channel samples are taken over a relatively uniform width and depth across the outcrop, while channel samples are from a uniform 4 in wide by 2 in deep cut across the outcrop.

All 1985 samples were prepared and analyzed for gold, silver, copper, lead, zinc, and cobalt by a commercial laboratory in Denver, Colorado. Further 34 element emission spectrometer analysis and x-ray barium analysis were conducted by the U.S. Bureau of Mines, Reno Research Center (samples collected in 1983 and 1984 were handled differently, see Appendix A).

Stream sediment samples were dried and screened, with the minus 80 mesh fraction being retained for analysis. After careful panning in the field the pan concentrate samples were pulverized to a nominal minus 150 mesh. Rock samples were crushed to minus 10 mesh, then using standard splitting techniques a 250 gram aliquot was pulverized to a nominal minus 150 mesh.

An atomic absorption spectrophotometer technique, using sample aliquots of 0.5 gram, was used for determinations of silver, copper, lead, cobalt, and zinc. The sample was put into solution using a hot extraction HNO_3-HCl technique.

The type of analytical technique used for Au depended upon the type of sample. In the case of stream sediment and pan concentrate samples, a 20 gram split, if available, was analyzed using a fire assay-atomic absorption spectrophotometer technique. Rock samples routinely were analyzed in a similar manner.

ESTABLISHMENT OF TRACE ELEMENT THRESHOLD VALUES AND THE INTERPRETATION OF GEOCHEMICAL DATA

The location and definition of geochemical anomalies requires the comparison of analyzed values for stream sediment and bedrock samples with normal or worldwide average abundances of the target elements, as adjusted for local or regional background levels. The selection of a "threshold" value, as the crossover point for anomalies, must also consider the limits of detection for each particular element, and the analytical errors associated with the values produced by the various analytical methods.

Average abundance values used for base line data in this report were those given in Rankama and Sahama (7), Connor and Shaklette (8), and Levinson (9).

In an attempt to compare interregional geochemical background parameters, we have also considered the threshold and background values used in geochemical investigations in adjacent areas by the U.S. Geological Survey (10, 11), including reports on the Granite Fiords, Tracy Arm-Fords Terror, and Glacier Bay areas (12, 13).

Table 1 lists the trace elements that were used in the geochemical survey, along with the worldwide average abundance values in the earths crust, soil, and relevant rock types. Figures 3 through 10 show sample locations.

Analytical Constraints

Several analytical methods were used to determine trace element concentrations in stream sediment and bedrock samples, including emission spectrographic, atomic absorption spectrophotometer, and fire assay techniques. Trace element data must be carefully evaluated in terms of the characteristic detection limits and analytical precision which has been determined for the analysis of various trace elements by the above instrumental methods. In some cases, the average crustal abundance values for certain trace elements are below reliable detection limits for the analytical methods used in this study, and the adjusted anomaly threshold value is based on analytical constraints rather than statistically derived values based on crustal abundance and regional background (see table 2).

Local Versus Regional Geochemical Background

Histograms were constructed from trace element data obtained for stream sediment and bedrock samples, and the statistical parameters of the histograms were compared to similar data derived from geochemical data bases obtained in adjacent areas by the U.S. Geological Survey (e.g. Granite Fiords, Tracy Arm-Fords Terror, and Glacier Bay studies); see table 3.

Comparison of the geochemical data acquired during this study to those reported for other areas in Southeastern Alaska, indicate that the stream sediment samples from the Porcupine mining area are characterized by an unusually high background value for barium. High barium values are due to the dominance of argillaceous bedrock in the headwaters of some of the drainage

TABLE 1. - Average abundance of analyzed trace elements in the earths crust, soil, and selected rock types (values in ppm).

Element	Crust	Soil	Shale	Lime-stone	Basalt	Grano-diorite
Gold (Au)	0.004	-	0.004	0.005	0.004	0.004
Silver (Ag)	0.070	0.100	0.050	1.000	0.100	0.070
Zinc (Zn)	70.000	60.000	100.000	25.000	100.000	60.000
Copper (Cu)	55.000	25.000	50.000	15.000	100.000	30.000
Lead (Pb)	12.500	19.000	20.000	8.000	5.000	15.000
Cobalt (Co)	25.000	9.100	20.000	4.000	50.000	10.000
Barium (Ba)	425.000	580.000	700.000	100.000	250.000	500.000
Tungsten (W)	1.500	-	2.000	0.500	1.000	2.000
Molybdenum (Mo)	1.500	1.000	3.000	1.000	1.000	1.000
Tin (Sn)	2.000	1.300	4.000	4.000	1.000	2.000
Arsenic (As)	1.800	7.200	15.000	2.500	2.000	2.000
Nickel (Ni)	75.000	19.000	70.000	12.000	150.000	20.000
Bismuth (Bi)	0.170	-	0.180	-	0.150	-
Antimony (Sb)	0.200	0.660	1.000	-	0.200	0.200

TABLE 2. - Comparative data showing the effect of detection limits of analytical methods on the derivation of stream sediment anomaly threshold values (values in ppm).

Element	Average Crustal Abundance	Detection Limits	Threshold Values	Threshold Values This Study
Gold	0.004	0.001	0.004	any
Silver	0.070	0.50	0.500	0.500
Zinc	70.000	1.000	70.000	200.000
Copper	55.000	1.000	60.000	100.000
Lead	12.500	1.000	25.000	50.000
Cobalt	25.000	1.000	25.000	50.000
Barium	425.000	50.000	425.000	1,000.000
Tungsten	1.500	5.000	5.000	NA
Molybdenum	1.500	5.000	5.000	5.000
Tin	2.000	100.000	100.000	100.000
Arsenic	1.800	200.000	200.000	200.000
Nickel	75.000	5.000	75.000	100.000
Bismuth	0.170	10.000	10.000	10.000
Antimony	0.200	100.000	100.000	100.000

TABLE 3. - Anomaly threshold values for trace metal concentrations in stream sediment samples taken from the Glacier Bay, Tracy Arm-Fords Terror, and Porcupine mining areas (values in ppm).

Element	Glacier Bay(12)	Tracy Arm-Fords Terror(11)	Porcupine
Gold	0.050	0.100	any
Silver	0.500	0.70	0.50
Zinc	200.000	200.000	200.000
Copper	150.000	100.000	100.000
Lead	50.000	50.000	50.000
Cobalt	70.000	-	50.000
Barium	-	-	1,000.000
Tungsten	-	-	5.000
Molybdenum	7.000	10.000	10.000
Tin	10.000	10.000	10.000
Arsenic	200.000	300.000	200.000
Nickel	150.000	150.000	100.000
Bismuth	-	-	-
Antimony	-	-	100.000(any)

systems, in addition to clastic sediment derived from known volcanogenic barite-sulfide deposits in the area. Therefore, the anomaly threshold values for barium in stream sediments and argillaceous rocks have been increased over those used in previous geochemical surveys of other areas in Southeastern Alaska.

Anomalous Versus Highly Anomalous Trace Element Concentrations

As shown in table 4, two anomaly thresholds have been established for trace element values in specified rock types and stream sediment samples. This system has been previously used by the U.S. Geological Survey in other Southeastern Alaska studies to identify anomalies that are defined by trace element concentrations that are well above anomaly threshold values ("anomalous") versus anomalous values that are at the far end of the distribution curve ("highly anomalous").

Sample Types and the Use of Anomaly Threshold Values

The identification of anomalous trace element values in stream sediment and rock samples, through the use of established threshold values, assumes that the samples are collected without prejudice. Pan concentrates and grab samples which were selected on the basis of visible sulfides and native metals were not included in the sample base that was used for statistical analyses, adjustments of regional or areal background values, and the establishment of anomaly thresholds.

The treatment of analytical data for vein quartz samples requires a different approach, as barren quartz is highly depleted in most trace metals, with many values below average crustal abundance and analytical detection limits. Inspection of trace metal concentrations obtained for vein quartz without visible native metals or sulfides, obtained from the Porcupine mining area, indicates that barren quartz samples included in this study follow the usual depletion pattern, with trace metal values that are frequently below detection limits and/or crustal abundance levels. One approach would be to consider any trace metal concentration which was well above the applicable detectability limit as anomalous. However, many quartz veins sampled by this study contain visible mineralization or staining. Due to insufficient data on background values in vein quartz without visible mineralization or staining, and analytical error, we have elected to use the adjusted values of bedrock thresholds shown in table 4 as threshold values for vein quartz samples.

ANOMALOUS AREAS AND SAMPLES

For the purpose of discussing anomalous areas and samples, the Porcupine mining area is subdivided as follows: (see figure 2)

1. Glacier Creek Volcanics (TrDv): Consisting of metabasalt and subordinate meta-andesite, metafelsite, metachert, and slate that form a volcanic pile located between the Alaska-British Columbia border to the west, Glacier Creek to the east, and Boundary Glacier to the southeast. Also included are the three embayments of volcanic rock that are located north of the Tsirku River and extend as far east as the head of Porcupine Creek.

TABLE 4. -Anomalous and highly anomalous threshold values for trace metals in rocks and stream sediments from the Skagway quadrangle, Alaska (values in ppm).

Element	Argillaceous Rocks		Meta-Sediments (Schists)		Carbonates		Mafic Igneous Rocks		Vein Quartz		Stream Sediments	
	A[1]	HA[2]	A	HA	A	HA	A	HA	A	HA	A	HA
Au	Any	1.0	Any	1.0	Any	1.0	Any	1.0	Any	1.0	Any	0.1
Ag	0.6	3.0	0.5	3.0	1.0	3.0	0.5	3.0	0.6	3.0	0.5	1.0
Zn	200	500	150	500	150	500	160	500	160	500	200	700
Cu	100	400	150	400	75	400	180	400	150	400	100	150
Pb	35	200	50	200	30	200	25	200	50	200	50	100
Co	25	150	50	150	30	150	80	150	80	150	50	N/A[3]
Ba	2500		500		500		1000		1000		1000	2000
W	5		5		5		5		5		5	N/A
Mo	10		10		10		10		10		10	N/A
Sn	10		10		10		10		10		10	500
As	200		200		200		200		200		200	N/A
Ni	100		100		100		100		100		100	400
Bi	N/A		N/A		N/A		N/A		N/A		N/A	N/A
Sb	100		100		100		100		100		100	

[1]Anomalous
[2]Highly Anomalous
[3]Not Applicable

2. Porcupine Slate and Porcupine Marble (TrDs, MDI): Consists predominately of slate, argillite, and phyllite overlying marble and a small portion of the Four Winds Complex north of the Little Salmon River. This area is mostly bounded by the Boundary Glacier and Glacier Creek to the west, by the Tsirku River to the south and east, and by the Klehini River to the north.

3. Boulder Creek-Four Winds Complex (MDs/MDvs): Carbonaceous phyllite, metabasite, metafelsite, marble and metachert. This area is north of the Klehini River and east of the lower (north flowing) Tsirku River.

4. South Tsirku Complex (PzMs): Consists predominately of marble, argillite, and metabasalt. This area is bounded by the Tsirku River to the north and the south edge of the Skagway B-4 quadrangle to the south.

Only the most prominent anomalous areas and samples are discussed. There are numerous anomalous samples and areas throughout areas 1 to 3 listed above, and some of these may prove to be more important than those discussed. The reader is referred to the maps showing locations of anomalous samples (figures 3-10) and the analytical tables located in Appendix A.

Glacier Creek Volcanics

All the known volcanogenic barite-sulfide deposits in the Porcupine mining area are located in the Glacier Creek Volcanics (figure 3, locations A, B, C, D, E, F, and G). These deposits contain zinc, silver, lead, barium, and copper as commodities and also contain trace amounts of gold, arsenic, and tin. Also, located in Canada 50 miles to the northwest in similar volcanic rocks is the Windy Craggy deposit, a world class volcanogenic copper-cobalt-gold massive sulfide deposit (3).

Rock samples from the Glacier Creek Volcanics are anomalous in gold, silver, zinc, copper, lead, cobalt, barium, arsenic, tin, nickel, and antimony whereas stream sediment samples collected in the area are anomalous in gold, silver, zinc, copper, lead, and cobalt. These anomalous samples are mostly from areas that are known to contain mineral occurrences or from the streams that drain them. The most prominent anomalous samples are float samples numbers 253 and 254 collected on the north side of Boundary Glacier. Number 253 is highly anomalous in copper while 254 is highly anomalous in copper and cobalt.

Porcupine Slate and Porcupine Marble

The Porcupine Slate and Porcupine Marble contain three known vein gold prospects (figure 3, locations J, K, and L). Two of these, location J and K, contain significant gold in slate. The area also contains two vein silver-base metal prospects (figure 3, locations M and N), and a copper-cobalt skarn containing traces of gold and arsenic (discovered by this study) (figure 3, location H) hosted in sediments adjacent to a diorite intrusive. The world class Greens Creek volcanogenic gold-silver-lead-zinc-copper deposit hosted in sedimentary, volcanic-associated rocks is located 80 miles to the south. The geologic setting of the area suggests potential for sedimentary hosted volcanogenic type deposits. Glacier, Porcupine, Cahoon, McKinley, Cottonwood, and Nugget Creeks have produced placer gold, and numerous other creeks in the area have placer gold prospects.

Rock samples collected in the area are anomalous in gold, silver, zinc, lead, copper, cobalt, tungsten, molybdenum, tin, arsenic, nickel, bismuth, and antimony, while stream sediment samples are anomalous in gold, silver, zinc, copper, lead, cobalt, barium, tin, arsenic, nickel, and antimony. There are numerous highly anomalous gold and zinc rock and stream sediment samples, both scattered across the area and clustered in specific areas. Areas with a clustering of anomalous and highly anomalous zinc or gold samples are as follows:

1. The belt of rock located in the vicinity of the lower portions of McKinley, Cahoon, and Porcupine Creeks contains three highly anomalous and numerous anomalous bedrock gold samples. This is also reflected in numerous anomalous stream sediment gold samples collected from the area of maximum gold placer production in the Porcupine area.

2. Summit Creek and the headwaters of Nugget and McKinley Creeks and the Little Salmon River contain seven stream sediment samples highly anomalous in zinc. The lower portions of Porcupine Creek and the Porcupine road area also contain numerous highly anomalous zinc stream sediment samples.

Other areas of notable interest are as follows:

3. The area between the Boundary and Tsirku Glaciers contains stream sediment samples highly anomalous in zinc, barium, and tin and a bedrock sample highly anomalous in cobalt (figure 10, sample numbers 147 and 148, and figure 6, sample number 284).

4. Stream sediment sample 161 (figure 9) collected from a stream draining into the north side of the Tsirku River contained 2.1 ppm gold. A float sample of iron-stained quartz (figure 8, sample number 308) and another stream sediment sample (figure 9, sample number 165) from the same stream each contained 0.005 ppm gold.

5. Float and bedrock samples collected at the head of Porcupine Creek in the vicinity of prospect location L (figures 5 and 6, sample numbers 258-274) are highly anomalous in gold, silver, copper, cobalt and are anomalous in tin. Float sample 267 (figure 8), collected at the head of Porcupine Creek, contained 49 ppm gold, 74 ppm silver and 1 percent copper.

Boulder Creek-Four Winds Complex

The Boulder Creek-Four Winds Complex contains a vein gold prospect (figure 3, location I). Big and Little Boulder Creeks have been prospected for placer gold, but production is not significant according to historical records.

Stream sediment samples collected across the area (figure 9, sample numbers 13, 18, 27, 28, 30, and 41) are highly anomalous in gold. Stream sediment samples 14, 20, 44 and 45 (figure 10) are highly anomalous in either lead or copper and are anomalous in cobalt. Float rock samples 34, 35, 38, 47, and 73 (figure 8) are highly anomalous in one or more of the following elements: gold, zinc, copper or cobalt. Bedrock samples (figure 6) collected near Mt. Cheetdeekahya (38, 39), near VABM 4897 (51, 53), near Mosquito Lake (57, 61) and near Muncaster Creek are highly anomalous in one or more of the following elements: zinc, copper, lead or cobalt. Bedrock samples collected across the area are anomalous in gold.

South Tsirku Complex

Prospects are not reported in the rugged glacier clad mountains located between Glacier Bay National Park and the Tsirku River. However, the area is little explored.

Stream sediment samples collected from streams flowing into the south side of the Tsirku River are anomalous to highly anomalous in gold (figure 9, sample numbers 159, 160, 166, 169, and 170.) One sample (160) was also anomalous in tungsten.

CONCLUSIONS

Results of sampling in the Porcupine mining area indicate elevated zinc, gold, and barium values, particularly in the Porcupine Slate and Porcupine Marble area. A large number of samples containing anomalous and highly anomalous values of base metals and gold were collected. Geochemical results indicate that the area may contain a variety of deposit types. These include: zinc-silver-lead-barium volcanogenic massive sulfide, or base and precious metal vein deposits in the Glacier Creek Volcanics, Porcupine Slate, and Porcupine Marble; sedimentary hosted large tonnage low-grade gold deposits in the Porcupine Slate; gold-bearing copper-cobalt skarn deposits in the Tertiary and Cretaceous intrusive contacts; base metal massive sulfide and base and precious metal vein deposits in the Four Winds Complex, and precious metal skarn deposits in the South Tsirku Complex. Much of the area is little explored and constitutes a target for the discovery of new mineral deposits.

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APPENDIX A

Analytical Results, Rock, Rubblecrop, and Float Rock Samples

Analytical Results Table Abbreviations

1. C - continuous chip
   CC - chip channel
   CH - channel
   CR - representative chip
   F - float
   G - grab
   PC - pan concentrate
   R - rubble
   RC - random chip
   RG - random grab
   S - select
   SC - spaced chip
   SS - stream sediment

2. Au, Ag analyses were by fire assay-inductively coupled plasma analysis (ICP), or by fire assay.

3. Zn, Pb analyses were by atomic absorption spectroscopy (AAS) while Cu, Co analyses were by ICP.

4. Ba analysis was by X-ray diffraction.

5. Mo, Sn, As, Ni, Bi, and Sb analyses were by semi-quantitative spectrographic analysis.

1983 - 1984 Sample analyses by U.S. Bureau of Mines, Reno Research Center, Reno Nevada.

1985 Sample analyses by a commercial laboratory in Lakewood, Colorado.

Units of Measure Abbreviations Used

ppm = Parts Per Million   N = Not Detected   % = Percent   - = Not Analyzed

Rock and Mineral Abbreviations Used

az - azurite
ba - barite
calc - calcite
cont - contact
cp - chalcopyrite
fest - iron-stained
gn - galena
gnst - greenstone
graph - graphitic
H_2O - water
hem - hematite
hnbd - hornblende
hornf - hornfels
lmst - limestone
mag - magnetite
mbl - marble
meta - metamorphosed
ml - malachite
moly - molybdenite
musc - muscovite
phy - phyllitic
po - pyrrhotite
py - pyrite
qtz - quartz
sed - sediment
ser - sericite
sl - sphalerite
sulf - sulfide
volc - volcanic

Additional Abbreviations

dissem = disseminated   w/ = with   Fe = iron   st = stained

Porcupine Mining Area Rock, Rubblecrop and Float Rock Samples

Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	Lith. & Remarks
					Atomic Absorption (ppm unless marked %)						Spectrographic (ppm)							
1	4ER189	-	G	N	0.40	65	87	43	4	0.053	-	3	-	N	3	-	N	Altered volc & mbl fe st w/ py
2	191	-	G	N	0.10	51	37	4	9	0.020	-	3	-	N	N	-	N	Fe st argillite w/ some py
3	AJ5SV005	-	G	0.015	0.70	107	228	19	55	0.300	N	N	N	N	100	N	N	Altered gnst w/ py, po
	6	10x10	CR	0.005	0.30	56	151	13	37	0.090	N	N	N	N	60	N	N	Altered volc w/ sparce py, po
4	7	-	R	0.010	0.40	32	48	23	1	0.008	N	N	100	N	20	N	N	Mbl, metased w/ 0.1 ft band of py
5	8	-	F	0.095	122.74	7	6	2.53%	5	0.030	N	N	N	N	7	N	N	Qtz w/ gn
6	9	-	F	N	3.00	2.44%	40	231	14	0.020	N	N	30	N	N	N	N	Qtz w/ sl, gn
7	11	2.50	CR	N	0.80	160	132	26	63	0.030	-	N	N	N	20	N	N	Qtz, altered volc,gossan w/ po
	12	0.60	G	N	0.60	166	220	21	83	0.020	N	N	100	N	30	N	N	Qtz lens w/ po
8	14	2.00	CR	N	0.50	328	41	29	11	1.000	N	N	N	N	10	N	N	Brecciated shale, qtz, schist lens
9	15	-	G	N	0.20	59	36	20	31	0.100	-	N	N	N	30	N	N	Lmst w/ qtz, mariposite, fe st
	16	4.00	CR	N	0.30	121	37	18	6	0.060	-	N	N	N	20	N	N	Shale
10	3S132	-	G	N	N	100	29	N	27	N	-	-	-	-	-	-	-	Andesite
11	133	-	G	N	N	16	5	N	N	-	-	-	-	-	-	-	-	Jasper in andesite w/ mag
12	130	-	G	N	0.44	20	8	N	N	0.020	-	-	-	-	-	-	-	Jasper in andesite w/ mag
13	134	-	RG	N	N	90	160	N	78	-	-	-	-	-	-	-	-	Altered andesite
14	136	-	RG	N	N	140	42	N	74	0.020	-	-	-	-	-	-	-	Diorite w/ mag
15	61	-	G	N	N	N	130	N	47	-	-	-	-	-	-	-	-	Felsite w/ py
	62	-	S	0.013	N	N	49	N	53	-	-	-	-	-	-	-	-	Felsite w/ py
	63	-	G	N	N	N	330	N	30	-	-	-	-	-	-	-	-	Calc vein w/ po
16	60	-	F	0.008	N	410	12	58	40	-	-	-	-	-	-	-	-	Schist w/ po
17	54	-	G	N	0.72	4	16	N	5	-	-	-	-	-	-	-	-	Schist
	55	-	G	0.191	N	N	N	N	1	-	-	-	-	-	-	-	-	Lmst
	57	-	G	N	N	N	15	N	3	-	-	-	-	-	-	-	-	Metased
	58	-	G	N	N	N	25	N	1	-	-	-	-	-	-	-	-	Metased
	59	-	G	N	0.39	N	99	N	34	-	-	-	-	-	-	-	-	Fault gouge
18	51	-	G	0.109	0.41	N	91	N	21	-	-	-	-	-	-	-	-	Metased
	52	-	G	0.316	N	17	170	N	25	-	-	-	-	-	-	-	-	Metased
	53	-	G	0.066	0.47	20	95	N	31	-	-	-	-	-	-	-	-	Gossan
19	88	-	F	N	N	N	340	N	50	-	-	-	-	-	-	-	-	Qtz w/ cp
20	4WG78	-	G	0.010	0.60	231	40	17	5	0.360	-	-	-	-	-	-	-	Fe st hornf, calc, siltstone w/ py
21	74	-	G	0.015	0.70	80	22	33	21	0.450	-	9	-	21	18	-	N	Fe st argillite w/ py
22	202	-	G	N	0.40	44	129	12	15	-	-	26	-	N	57	-	N	Phy black argillite
23	3S091	-	RG	N	N	93	34	66	19	-	-	-	-	-	-	-	-	Schist w/sulf
24	5GV2676	-	G	0.010	0.80	55	98	15	5	0.177	N	N	N	N	N	N	N	Sulf pod in schist
	2677	-	G	N	N	96	6	5	1	0.289	N	N	N	N	N	N	N	Metafelsite w/ sulf
	AJ5WV865	0.30	S	0.010	0.70	54	135	23	4	-	-	-	-	-	-	-	-	Sulf pod in schist
25	AJ5SV319	20.00	CR	N	N	12	N	9	7	0.032	N	N	N	N	N	N	N	Felsic dike
	321	-	CR	N	N	24	36	11	12	0.017	N	N	N	N	N	N	900	Qtz vein
	322	2.00	CR	N	N	80	32	7	17	0.052	N	N	N	N	10	N	2000	Slate

Key to abbreiations on page 17

Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Atomic Absorption (ppm unless marked %) Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
26	325	0.40	C	N	N	16	5	12	7	N	N	N	20	N	10	N	N	Qtz vein
	326	2.00	R	N	N	68	116	18	37	0.070	N	N	N	N	100	N	N	Slate
	327	-	F	0.005	N	51	90	5	13	0.025	N	N	N	N	N	N	N	Qtz vein
27	4WG182	-	G	N	0.30	110	41	8	7	-	-	3	-	N	20	-	N	Slate
28	AJ5SV340	2.00	CR	N	N	83	12	3	2	-	-	-	-	-	-	-	-	Fe st brecciated slate
	341	0.70	CR	N	N	10	55	10	3	-	-	-	-	-	-	-	-	Qtz vein w/ py
29	25	-	CR	N	0.20	44	8	15	3	0.050	-	N	N	N	10	N	N	Qtz , calc, mica
	26	-	F	N	N	43	23	12	5	0.050	-	N	N	N	10	N	N	Qtz , calc, mica
	27	-	S	0.010	0.60	15	168	11	58	0.008	N	N	80	N	20	N	N	Qtz, calc w/ po, sulf
30	4WG187	-	G	0.045	0.10	19	59	4	12	0.014	-	4	-	N	54	-	N	Qtz-calc veinlet in graph phyllite
31	3S038	-	F	0.022	N	N	52	N	12	0.300	N	N	N	N	20	N	N	Qtz vein w/ po
32	36	-	F	0.023	N	23	99	N	29	0.200	N	N	N	N	10	N	N	Shale breccia
	37	-	F	N	N	N	130	N	11	0.300	N	N	N	N	20	N	N	Gossan breccia
	40	-	F	N	0.35	N	110	N	27	0.300	N	N	N	N	10	N	N	Gossan
33	45	-	F	0.017	0.59	170	41	N	10	2.000	N	N	N	N	10	N	N	Qtz w/ inclusions, po
34	47	-	F	2.598	0.47	270	40	N	4	-	-	-	-	-	-	-	-	Argillite w/ po
35	49	-	F	2.182	N	N	16	N	26	0.010	N	N	N	N	30	N	N	Porphyritic andesite
36	5SV2635	-	F	0.005	N	28	49	27	13	0.111	N	N	N	N	N	N	N	Fe st metafelsite w/ dissem po
37	2638	-	G	N	0.30	8	45	18	4	0.108	N	N	N	N	10	N	N	Metafelsite w/ py
38	2636	-	F	0.015	0.40	19	415	27	61	0.055	N	N	N	N	N	N	N	Metafelsite w/ heavy sulf
	2637	-	F	0.025	0.50	34	490	21	94	0.095	N	N	N	N	N	N	N	Metafelsite w/ heavy sulf
	2640	-	G	0.055	1.30	30	107	10	336	0.043	N	N	N	N	N	N	N	Metafelsite w/ 0.2 ft layers sulf
	2641	-	G	N	N	40	84	28	11	N	N	N	N	N	10	N	N	Qtz vein in metafelsite
39	AJ5SV302	1.60	C	0.030	N	61	172	11	22	0.050	N	N	N	N	N	N	N	Qtz vein
	303	0.30	CR	0.010	N	75	755	6	48	0.017	N	N	N	N	N	N	N	Gossan
	5GV2639	-	R	0.005	0.30	13	21	35	11	0.034	N	N	N	N	N	N	N	Metafelsite
40	AJ5SV304	1.00	CR	0.010	N	26	77	9	25	0.152	N	N	N	N	N	N	N	Qtz-ser schist w/ py
41	4WG87	-	G	0.015	0.80	80	44	10	2	0.079	-	5	-	N	12	-	N	Graph mafic schist
42	90	-	G	N	0.10	12	20	4	4	N	-	2	-	N	10	-	N	Qtz vein
43	AJ5WV848	9.00	CR	0.015	0.30	42	25	32	6	0.078	N	N	N	N	N	N	N	Qtz-ser schist w/ sulf
44	851	3.00	F	0.010	N	26	323	9	93	0.007	N	N	N	N	300	N	N	Hornblendite w/ sulf
45	888	-	F	0.040	0.80	182	76	76	23	-	-	-	-	-	-	-	-	Qtz-mica schist w/ sulf
46	889	-	F	N	0.30	27	128	80	11	-	-	-	-	-	-	-	-	Qtz w/ sulf
47	3S010	-	F	N	0.45	870	400	100	16	-	-	-	-	-	-	-	-	Schist w/ fe st
48	3S015	-	F	N	0.47	65	49	N	6	-	-	-	-	-	-	-	-	Phyllite w/ dissem po
49	13	-	C	N	0.39	N	130	N	18	-	-	-	-	-	-	-	-	Qtz vein in phyllite w/ py
50	18	-	F	0.016	0.88	N	140	N	15	-	-	-	-	-	-	-	-	Qtz w/ py
51	5GV2644	-	R	N	0.60	17	182	15	23	N	N	N	60	N	10	N	N	Qtz vein w/ py in vugs
	2645	-	G	0.005	2.50	1120	28	810	12	0.039	N	N	N	N	N	N	N	Felsic schist w/ gn
52	2646	-	G	N	N	89	62	17	18	0.073	N	N	N	N	10	N	N	Fe st felsic schist
53	2647	-	G	0.015	0.80	120	52	400	8	0.066	N	N	N	N	N	N	N	Qtz-schist w/ sulf, feldspar

Key to abbreiations on page 17

Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Atomic Absorption (ppm unless marked %) Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sc ppm	
54	5WV1505	-	G	N	0.40	8	9	19	9	0.011	N	N	N	N	N	N	N	Lmst w/ sulf
55	1502	-	G	N	0.20	83	47	33	13	0.018	N	N	N	N	8	N	N	Schist/slate w/ sulf
56	1506	-	G	N	0.30	7	7	14	7	N	N	N	N	N	N	N	N	Lmst w/ sulf
57	3S233	-	G	N	N	220	190	500	N	N	-	-	-	-	-	-	-	Phyllite w/ py
	234	-	G	N	0.43	140	38	N	120	N	-	-	-	-	-	-	-	Qtz-hnbd phyllite w/ po
58	232	-	G	N	0.95	85	40	N	N	0.020	-	-	-	-	-	-	-	Calc phyllite w/ po, py
59	214	-	G	N	N	49	30	N	N	0.040	-	-	-	-	-	-	-	Lmst w/ py
	215	-	RG	N	N	81	11	N	N	0.030	-	-	-	-	-	-	-	Gneiss
60	180	-	G	N	N	130	27	N	41	N	-	-	-	-	-	-	-	Phyllite
	181	-	F	N	N	120	320	N	57	N	-	-	-	-	-	-	-	Phy- amphibolite w/ po, cp, ml
61	AJ5WV866	0.40	C	N	N	47	8	13	7	-	-	-	-	-	-	-	-	Qtz vein
	867	0.05	G	N	2.40	180	1110	25	262	-	-	-	-	-	-	-	-	Gossan w/ sulf
62	3S182	-	F	N	N	34	N	N	N	N	-	-	-	-	-	-	-	Qtz-calc vein w/ ml
	183	-	G	N	1.44	120	11	N	68	N	-	-	-	-	-	-	-	Calc vein w/ ml, az
63	213	-	G	N	N	190	40	N	51	N	-	-	-	-	-	-	-	Basalt
64	173	-	G	N	N	120	43	N	51	N	-	-	-	-	-	-	-	Amphibolite
65	174	-	G	N	N	83	40	N	N	0.030	-	-	-	-	-	-	-	Hornblendite dike
66	178	-	G	N	N	150	30	N	51	0.020	-	-	-	-	-	-	-	Amphibolite
	179	-	C	0.033	N	19	62	N	N	N	-	-	-	-	-	-	-	Qtz vein w/ cp
67	5GV2573	-	G	N	N	10	51	N	1	-	-	-	-	-	-	-	-	Qtz vein
68	3S172	-	G	N	N	26	N	N	N	0.020	-	-	-	-	-	-	-	Qtz-musc phylite
69	177	-	G	N	N	76	N	N	41	N	-	-	-	-	-	-	-	Amphibolite
70	175	-	G	N	N	180	30	N	N	0.020	-	-	-	-	-	-	-	Metased
71	176	-	G	N	N	120	32	N	N	0.030	-	-	-	-	-	-	-	Metased
72	95	-	G	N	N	24	38	84	45	-	-	-	-	-	-	-	-	Schist
73	97	-	F	0.165	1.88	N	1500	70	360	-	-	-	-	-	-	-	-	Qtz w/ po, cp
74	AJ5WV971	5.00	CR	N	N	19	9	17	N	N	N	N	N	N	8	N	N	Lmst and siltstone
75	970	5.00	CR	N	N	72	13	12	5	0.009	N	N	N	N	N	N	N	Brecciated lmst & schist w/ sulf
	5GV2674	-	G	N	N	51	31	37	6	0.061	N	N	N	N	10	N	N	Felsic schist
76	3S092	-	G	N	N	N	50	47	65	-	-	-	-	-	-	-	-	Schist
	93	-	F	N	N	N	6	N	65	-	-	-	-	-	-	-	-	Qtz vein w/ po
	99	-	G	N	N	150	66	250	49	-	-	-	-	-	-	-	-	Qtz vein w/ sulf
	AJ5WV966	1.00	G	N	N	79	44	14	15	0.032	N	N	N	N	20	N	N	Yellow schist w/ sulf
	967	0.30	CR	N	0.30	18	32	15	11	N	N	N	N	N	10	N	N	Qtz knot in schist w/ sulf
	968	5.00	CR	N	0.70	88	49	26	10	0.135	N	N	N	N	20	N	N	Slate
	969	5.00	SC	N	N	17	7	23	2	0.007	N	N	N	N	N	N	N	Lmst w/ some sulf
77	964	5.00	CR	N	0.20	50	22	17	14	0.025	N	N	N	N	20	N	N	Schist
	965	0.20	CR	N	0.20	6	11	6	4	N	N	N	20	N	10	N	N	Qtz vein
78	962	5.00	CR	N	0.40	69	55	14	12	0.006	N	N	N	N	8	N	N	Schist w/ some sulf
	963	0.20	CR	N	N	6	16	8	5	N	N	N	N	N	N	N	N	Qtz vein
79	961	10.00	CR	N	0.20	40	75	12	11	0.008	N	N	N	N	10	N	N	Schist w/ some sulf

Key to abbreiations on page 17

Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Atomic Absorption (ppm unless marked %) Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
80	1507	-	G	N	N	70	100	6	21	0.026	N	N	N	N	10	N	N	Shale w/ sulf
81	960	5.00	CR	N	N	60	74	8	13	0.028	N	N	N	N	10	N	N	Schist
82	959	5.00	CR	N	0.20	46	128	12	13	0.015	N	N	N	N	10	N	N	Schist w/ some sulf
83	958	5.00	CR	N	0.30	74	61	17	15	0.070	N	N	N	N	20	N	N	Slate w/ dikes & qtz veins
84	3E017	-	G	N	N	56	38	N	N	N	-	-	-	-	-	-	-	Altered dacite w/ py
	5GV2682	-	G	N	N	11	16	6	15	0.018	N	N	N	N	10	N	1000	Metafelsite
85	3E018	-	G	N	N	15	38	N	N	N	-	-	-	-	-	-	-	Qtz w/ py
86	10	-	G	N	N	44	76	N	25	N	-	-	-	-	-	-	-	Lmst
87	11	-	G	0.186	3.69	57	1200	32	180	-	-	-	-	-	-	-	-	Lmst w/ py
88	26	-	G	N	N	110	38	N	41	0.030	-	-	-	-	-	-	-	Andesite w/ py
89	25	-	G	N	N	27	16	N	N	0.040	-	-	-	-	-	-	-	Silicified volc w/ py
90	24	-	G	N	N	150	14	N	35	N	-	-	-	-	-	-	-	Andesite
91	AJ5SV312	0.50	CC	N	0.40	13	10	68	3	N	N	N	N	N	10	N	N	Qtz-calc vein w/ fe st
92	310	-	G	N	N	200	15	42	19	0.116	N	N	N	N	N	N	N	Gnst-andesite
	311	0.25	C	N	N	15	4	86	4	N	N	N	20	N	20	N	N	Qtz vein
93	348	0.50	F	N	1.10	49	194	4	88	-	-	-	-	-	-	-	-	Hornf w/po
	AJ5WV871	-	G	N	0.20	64	132	26	43	-	-	-	-	-	-	-	-	Moly in skarn
	872	1x0.5	G	0.010	0.60	16	379	20	108	-	-	-	-	-	-	-	-	Qtz w/ sulf
94	3S021	-	G	N	N	N	43	N	N	-	-	-	-	-	-	-	-	Schist
	22	-	G	0.008	N	N	16	N	6	-	-	-	-	-	-	-	-	Qtz vein w/ sulf
95	24	-	F	N	N	170	81	N	42	-	-	-	-	-	-	-	-	Qtz and gnst
96	28	-	S	0.590	3.05	130	550	140	11	-	-	-	-	-	-	-	-	Lmst w/ py
97	AJ5SV017	0.50	C	N	0.70	172	107	22	6	0.600	-	N	N	N	20	N	N	Fe st shear zone in lmst
98	3S030	-	F	0.044	2.32	N	570	70	48	-	-	-	-	-	-	-	-	Qtz and calc w/ po
99	33	-	F	0.151	1.54	N	35	55	41	-	-	-	-	-	-	-	-	Shale w/ py
100	57	-	G	N	N	N	15	N	3	-	-	-	-	-	-	-	-	Metased
101	3S255	-	SS	N	N	180	56	N	N	0.050	-	-	-	-	-	-	-	Lmst
102	AJ5SV001	3.00	CR	0.010	0.50	244	27	12	2	0.400	N	N	N	N	8	N	N	Slate
	2	2.00	CR	N	0.20	31	21	15	6	0.200	-	N	N	N	10	N	N	Slate
103	AJ5WV953	5.00	CR	N	N	44	70	15	18	0.051	N	N	N	N	20	N	N	Lmst w/ schist, qtz veins w/sulf
	954	3.00	CR	N	N	33	38	12	16	0.052	N	N	N	N	20	N	N	Qtz veins w/ sulf
104	949	5.00	CR	N	N	8	8	6	2	N	N	N	N	N	10	N	N	Lmst
	950	3.00	CR	N	N	52	42	14	21	0.032	N	N	N	N	30	N	N	Dike
105	3S247	-	F	N	1.94	48	16	150	N	N	-	-	-	-	-	-	-	Calc w/ cp
106	246	-	G	N	1.02	74	16	N	N	N	-	-	-	-	-	-	-	Lmst
107	244	-	G	N	N	210	75	N	46	N	-	-	-	-	-	-	-	Phyllite
108	AJ5WV948	5.00	CR	N	N	10	6	10	N	N	N	N	N	N	N	N	N	Lmst
109	945	1.00	CR	N	N	13	9	6	1	N	N	N	N	N	N	N	N	Lmst
	946	12.00	CR	N	N	76	95	4	29	N	N	N	N	N	70	N	2000	Dike
	947	1.00	CR	N	N	20	10	13	2	N	N	N	N	N	N	N	N	Lmst w/ sulf

Key to abbreiations on page 17

Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Ag ppm	Atomic Absorption (ppm unless marked %) Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
110	943	5.00	CR	N	N	36	10	10	N	N	N	N	N	N	N	N	N	White lmst
	944	5.00	CR	N	N	156	16	12	N	0.005	N	N	N	N	N	N	N	Gray & white banded lmst
111	5GV2675	-	G	N	N	32	96	3	25	0.008	N	N	N	N	20	N	800	Metafelsite w/ py
112	AJ5SV347	5.00	CR	N	N	139	69	9	11	-	-	-	-	-	-	-	-	Hornf or slate
113	3S102	-	G	N	N	74	100	280	84	-	-	-	-	-	-	-	-	Gossan
114	3E031	-	G	N	N	140	32	N	51	0.020	-	-	-	-	-	-	-	Basalt
115	AJ5WV834	0.30	G	N	N	10	4	2	4	N	N	N	20	N	10	N	N	Qtz
116	3S103	-	G	N	N	N	140	86	90	-	-	-	-	-	-	-	-	Amphibolite
117	100	-	G	N	N	N	70	58	61	-	-	-	-	-	-	-	-	Gnst
118	4WG191A	-	G	N	N	92	54	33	22	0.070	-	2	-	N	21	-	N	Gouge w/ sulf
	191B	-	G	N	N	54	10	59	9	0.094	-	N	-	N	6	-	3	Qtz-feldspar dike
119	3E032	-	G	N	N	110	43	N	24	0.010	-	-	-	-	-	-	-	Basalt
120	4WG172	-	G	N	N	50	33	8	4	0.170	-	9	-	17	14	-	N	Fe st hornf argillite
121	170	-	G	N	N	72	50	7	17	0.160	-	3	-	N	25	-	N	Hornf argillite
122	79	-	G	N	N	159	12	5	8	0.170	-	3	-	N	70	-	N	Dark gray siltstone w/ py
123	80	-	G	N	N	7	6	8	1	15.000	-	N	-	N	4	-	N	Fe st gray-green chert w/ py
124	216	-	G	N	N	15	6	7	2	0.012	-	N	-	N	3	-	N	Lmst breccia
125	AJ5WV835	1.00	F	N	N	25	73	18	31	0.006	N	N	400	700	N	700	N	Py boulder
126	AJ5SV024	15.00	CR	N	N	238	46	19	8	0.080	N	N	N	300	20	N	N	Slate w/ 4% py
127	46	-	C	N	N	166	85	17	36	0.080	-	N	N	N	70	N	N	Dike in slate w/ py
128	23	15.00	SC	N	N	61	41	29	2	0.200	N	N	N	N	20	N	N	Fe st slate
129	21	2.00	CR	N	N	84	53	14	24	0.200	N	N	N	N	20	N	N	Fe st slate
	22	-	C	N	N	96	8	25	2	0.200	N	N	N	N	N	N	N	Fe st band w/ clay, gossan, sulf
130	19	-	F	N	N	36	8	116	10	0.300	6	N	200	300	30	N	N	Qtz w/ band of py, gn
131	158	5.00	CR	N	N	172	37	13	3	0.168	N	N	N	N	N	N	N	Slate
132	45	3.00	CR	N	0.30	297	41	13	5	2.000	N	N	N	N	10	N	N	Fe st slate w/ 10% qtz
133	41	10.00	CR	0.010	0.50	272	39	25	4	2.000	N	N	N	N	10	N	N	Fe st slate
	42	-	F	0.030	1.00	78	12	47	15	1.000	N	N	N	400	30	N	1000	Slate w/ 0.05 ft band of py
	43	2.00	CR	N	0.20	145	123	9	22	2.000	-	N	N	N	10	N	N	Dike
	44	-	F	0.415	1.70	60	3	19	20	0.050	-	N	200	40000	20	N	N	Qtz vein w/ dike & large py
134	160	5.00	CR	0.010	0.20	156	34	12	6	0.350	N	N	N	N	N	N	N	Slate w/ py
135	162	3.00	CR	N	0.40	261	53	16	8	0.218	N	N	N	N	90	N	N	Slate
136	5GV2554	-	G	2.595	3.00	381	40	42	43	0.300	6	N	N	N	30	N	N	Slate w/ py bands
	2555	-	G	N	N	233	32	10	41	0.106	N	N	N	N	30	N	N	Felsic dike w/ py
137	2556	-	G	0.040	N	61	18	8	38	0.008	N	N	N	N	N	N	N	Qtz vein w/ py
	2557	-	G	0.005	0.50	65	18	18	39	0.780	N	N	N	N	10	N	N	Shale w/ py
138	2558	-	G	N	N	97	106	9	12	0.013	N	N	N	N	30	N	N	Qtz vein w/ py
	2559	-	G	0.015	N	254	84	11	28	0.200	N	N	N	N	N	N	N	Felsic dike w/ py
139	AJ5SV164	5.00	CR	0.005	N	82	37	7	8	0.087	N	N	N	N	20	N	N	Slate
140	166	4.00	CR	0.005	1.00	314	95	17	19	0.116	N	N	N	N	50	N	N	Slate
141	168	-	CR	N	N	42	13	9	13	0.027	N	N	N	N	50	N	2000	Diorite

Key to abbreviations on page 17

				Fire Assay		Atomic Absorption (ppm unless marked %)				X-Ray	Spectrographic (ppm)							
Map No.	Sample No.	Sample Size Feet	Sample Type	Au ppm	Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	Ba %	W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
142	172	-	CR	N	N	37	40	5	16	0.007	N	N	N	N	70	N	2000	Gabbro & epidote, qtz veinlet
143	111	-	CC	N	0.70	165	73	13	3	-	-	12	-	N	16	-	N	Black slate
144	108	-	CR	N	0.40	60	36	11	14	-	-	8	-	N	16	-	N	Fe st argillite
145	102	-	CC	N	0.30	78	91	4	18	-	-	7	-	N	78	-	N	FE st metased
146	292	0.30	F	6.330	18.20	83	515	8	117	0.024	N	N	100	N	N	N	N	Gossan w/ 20% py
147	246	2.00	CR	N	N	1195	213	8	10	0.106	N	N	40	N	50	N	8000	Slate
	247	0.10	CR	N	0.20	480	75	2	2	0.172	N	N	N	N	30	N	5000	Slate w/ py
148	241	0.20	S	0.010	0.90	58	14	10	19	0.330	N	N	N	N	10	N	N	Slate w/ py
	243	0.40	C	N	0.20	1780	19	8	4	0.019	N	N	20	N	10	N	3000	Qtz-calc vein
	244	1.30	CR	N	0.80	109	66	12	10	0.330	N	N	N	N	8	N	N	Slate
149	237	0.30	C	N	N	48	25	3	7	0.055	N	N	N	N	8	N	N	Qtz-calc vein
	238	2.50	CR	N	N	135	71	9	26	0.320	N	N	N	N	N	N	N	Dike
	239	8.00	CR	N	0.40	138	64	9	5	0.360	N	N	N	N	10	N	N	Fe st slate
	240	0.60	C	N	0.80	62	77	8	4	0.400	N	N	N	N	10	N	N	Fault gouge
150	182	-	CR	N	N	59	21	7	3	0.070	N	N	N	N	N	N	N	Slate w/ dissem py
151	180	-	CR	N	0.90	58	35	15	4	0.098	N	N	N	N	10	N	N	Slate w/ dissem py
152	4W6222	-	G	N	0.70	98	31	14	4	0.097	-	6	-	N	11	-	N	Fe st slate w/ py
153	AJ5SV351	4.00	CR	0.010	N	760	140	11	4	-	-	-	-	-	-	-	-	Fe st slate
154	AJ5WV874	5.00	CR	N	19.00	21	27	1070	3	-	-	-	-	-	-	-	-	Slate
155	AJ5SV178	-	CR	N	0.20	185	65	8	15	0.128	N	N	N	N	40	N	2000	Slate w/ dissem py
156	176	-	CR	N	N	90	77	7	14	0.063	-	N	N	N	20	N	1000	Slate w/ dissem py
157	AJ5WV651	-	G	0.005	0.90	60	98	94	19	-	-	-	-	-	-	-	-	Fe st qtz, Mbl w/ sulf
	652	4.00	CR	0.005	1.80	70	126	265	15	-	-	-	-	-	-	-	-	Fe st slate w/ qtz & sulf
158	AJ5SV174	-	CR	N	N	31	59	6	11	0.018	N	N	N	N	80	N	3000	Diorite w/ trace of py
159	4W6117A	-	G	N	0.60	83	41	10	2	0.280	-	6	-	N	7	-	N	Fe st slate
	117B	-	G	N	N	98	24	3	16	0.049	-	N	-	N	44	-	N	Felsite sill
160	4S144	0.15	CH	0.698	N	58	11	N	130	N	-	N	N	400	40	N	N	Qtz vein
161	145	-	G	1.030	17.14	140	89	24	20	0.053	-	N	N	N	20	N	N	Hornf w/ fine sulf
162	4ER27	-	G	N	0.20	101	58	9	14	0.070	-	N	N	N	19	-	N	Hornf slate & siltstone
163	5GV2540	-	G	N	N	267	140	20	8	0.127	N	N	N	N	10	N	N	Hornf mbl skarn
	2541	-	G	N	N	154	246	12	63	0.056	N	N	N	N	100	N	N	Shattered diorite at cont w/ po
	AJ5WV840	5.00	CR	N	0.30	38	188	3	55	0.055	N	N	N	N	100	N	N	Hornf slate w/ sulf
164	841	2.00	G	N	0.20	30	114	2	7	0.108	N	N	N	N	10	N	N	Diorite
165	842	0.40	R	3.025	0.20	17	154	N	21	0.006	N	N	60	N	10	N	N	Qtz vein w/ vugs & fe st
166	843	-	R	0.010	N	35	41	2	29	0.007	N	N	N	N	200	N	N	Diorite
	844	0.20	R	N	N	12	4	12	3	N	N	N	N	N	N	N	N	Qtz vein
167	AJ5SV184	-	CR	N	0.40	400	51	10	6	0.450	N	N	N	N	20	N	N	Slate
168	5BV2533	-	R	N	0.40	415	36	19	5	-	-	-	-	-	-	-	-	Slate w/ py
	34	-	R	0.025	0.50	117	13	22	13	-	-	-	-	-	-	-	-	Slate w/ py
169	32	-	R	N	0.40	369	42	17	30	-	-	-	-	-	-	-	-	Gossan

Key to abbreiations on page 17

Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Atomic Absorption (ppm unless marked %) Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
170	35	-	R	0.005	0.70	1010	84	32	6	-	-	-	-	-	-	-	-	Slate w/ py
	36	-	R	0.020	0.90	31	5	12	26	-	-	-	-	-	-	-	-	Dacite dike Sulf band in slate
171	AJ5SV249	0.10	CR	N	0.20	203	28	9	2	0.117	N	N	N	N	30	N	7000	Sulf band in slate
172	4S189	2.50	G	24.830	1.27	280	42	N	31	0.119	-	N	N	N	20	N	N	Last band w/ py, sl
	190	-	G	1.369	0.47	650	57	N	89	0.036	-	N	N	N	40	N	N	3 qtz veins w/ sulf
	191	0.40	G	8.959	2.37	9.5%	41	N	230	0.018	-	N	N	800	40	N	N	Qtz w/ py, sl, in tan orange dike
	192	0.40	S	1.669	0.77	13.4%	41	N	20	0.172	-	N	N	700	30	N	N	Sl rich grab, from qtz vein in dike
173	AJ5WV991	5.00	CR	N	1.30	555	98	8	9	0.300	N	N	N	N	20	N	N	Slate
174	989	5.00	CR	N	0.60	142	50	12	6	0.380	N	N	N	N	10	N	N	Slate w/ sulf
175	986	0.20	G	N	N	50	9	4	2	0.113	N	N	N	N	N	N	N	Qtz breccia w/ calc, slate, sulf
176	985	5.00	CR	N	0.50	74	45	21	6	0.164	N	N	N	N	N	N	N	Slate
177	AJ5SV233	3.00	CR	N	0.20	102	44	8	9	0.200	N	N	N	N	10	N	N	Fe st slate w/ sulf
178	4ER47	-	G	N	0.50	210	94	14	14	0.140	-	9	-	N	24	-	N	Hornf argillite w/ py
179	AJ5SV230	0.20	C	N	N	88	18	12	24	0.019	N	N	N	N	20	N	N	Dike & vuggie qtz vein
	231	2.00	C	N	N	31	7	6	39	0.012	N	N	N	N	60	N	N	Dike
	232	10.00	CR	N	0.30	60	49	5	6	0.215	N	N	N	N	10	N	N	Fe st slate
	AJ5WV808	0.20	CR	0.025	N	10	9	4	2	0.028	N	N	N	N	N	N	N	Qtz vein in slate
	809	1.00	C	0.005	0.60	84	36	9	6	0.078	N	N	N	N	8	N	N	Fault zone
180	3S253	-	G	N	N	99	110	N	N	0.080	-	-	-	-	-	-	-	Andesite
181	AJ5WV956	5.00	G	N	N	44	110	8	21	0.099	N	N	N	N	40	N	N	Dike w/ sulf
	957	3.50	G	N	0.20	67	41	19	9	0.430	N	N	N	N	20	N	N	Slate w/ sulf
182	56V2679	-	F	N	0.80	161	400	11	56	0.430	N	N	N	N	100	N	1000	Py layer 0.05 ft thick
183	2680	-	G	0.020	N	41	22	4	3	0.073	N	N	N	N	N	N	N	Metachert w/ py
184	2678	-	G	0.155	N	6	38	4	2	0.005	N	N	N	N	N	N	N	Metachert w/ py
185	2634	-	G	N	N	13	8	22	2	1.110	N	N	N	N	40	N	1000	Felsite w/ dissem sulf
186	4ER05	-	G	N	0.50	670	168	20	11	0.160	-	7	-	N	44	N	N	Hornf black argillite w/ py vein
	AJ5WV820	5.00	CR	N	0.20	86	68	9	13	0.145	N	N	N	N	N	N	N	Slate w/ sulf
187	821	0.50	R	0.015	N	175	54	8	4	N	N	N	30	N	8	N	N	Vuggie qtz
188	822	5.00	CR	N	N	137	57	7	19	0.156	N	N	N	N	N	N	N	Slate
189	823	10.00	G	N	N	35	89	7	26	0.035	N	N	N	N	20	N	N	Amphibolite
190	824	10.00	G	N	N	53	54	4	21	0.027	N	N	N	N	N	N	N	Diorite
191	825	0.40	R	0.440	0.30	9	2	3	6	0.006	N	N	20	N	10	N	N	Vuggie qtz
192	826	3.00	G	0.005	N	52	18	10	12	0.024	N	N	N	N	N	N	N	Doirite w/ sulf
193	827	5.00	G	0.010	N	49	29	3	14	0.021	N	N	N	N	10	N	N	Diorite
194	4ER125	-	G	N	0.90	173	38	8	2	0.260	-	38	-	N	10	-	N	Fe st diorite w/ py
195	124	-	G	0.010	0.30	19	303	4	28	0.011	-	26	-	N	37	-	2	Fe st hornf slate w/ po
196	AJ5WV972	5.00	CR	N	0.20	15	12	5	2	0.112	N	N	N	N	N	N	N	Last w/ qtz knots
197	56V2681	-	G	N	N	45	29	5	10	0.054	N	N	N	N	N	N	N	Metafelsite w/ sulf
198	2663	-	G	N	0.20	57	86	6	38	0.041	N	N	N	N	40	N	N	Felsic schist w/ py
199	3S161	1.00	C	N	N	40	20	N	36	N	-	-	-	-	-	-	-	Qtz vein
	162	-	G	N	N	79	65	N	16	0.050	-	-	-	-	-	-	-	Schist

Key to abbreiations on page 17

Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Ag ppm	Zn ppm	Atomic Absorption (ppm unless marked %) Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	W ppm	Spectrographic (ppm) Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
200	163	-	G	N	N	40	23	N	15	0.060	-	-	-	-	-	-	-	Phyllite
201	164	-	G	N	N	9	8	N	2	N	-	-	-	-	-	-	-	Qtz vein
202	5GV2662	-	G	N	N	37	23	5	20	0.055	14	N	N	N	10	N	N	Felsic schist w/ sulf
203	2664	-	G	N	0.60	22	322	12	64	0.218	N	N	N	N	N	N	1000	Felsic schist
204	3S071	-	F	N	0.40	N	73	N	66	-	-	-	-	-	-	-	-	Qtz w/ po
	72	-	F	N	N	N	110	N	50	-	-	-	-	-	-	-	-	Schist w/py
205	5GV2560	-	G	N	N	49	48	10	N	N	N	N	N	N	10	N	N	Qtz vein
	2561	-	G	N	N	43	9	9	1	N	N	N	N	N	N	N	N	Qtz vein
	2562	-	G	N	N	31	12	7	2	0.005	N	N	N	N	N	N	N	Last
	2563	-	G	N	N	121	4	10	38	0.006	N	N	N	N	20	N	N	Andesite dike
206	3S069	-	G	N	N	N	17	N	34	-	-	-	-	-	-	-	-	Schist
	70	-	G	N	N	N	17	N	3	-	-	-	-	-	-	-	-	Siltstone
207	5GV2564	-	G	N	0.20	38	41	8	29	0.048	N	N	N	N	30	N	N	Diorite w/ sulf
208	3S140	-	G	N	N	140	52	N	130	0.010	-	-	-	-	-	-	-	Phyllite
	141	-	G	N	0.43	48	25	N	31	0.160	-	-	-	-	-	-	-	Qtz
209	137	-	G	N	N	100	58	N	64	0.050	-	-	-	-	-	-	-	Qtz Diorite w/ po
	138	-	S	N	N	110	91	N	63	0.060	-	-	-	-	-	-	-	Andesite w/ py, po
	139	-	SC	N	N	33	29	N	23	N	-	-	-	-	-	-	-	Last
210	5GV2565	-	G	N	N	38	39	7	16	0.007	N	N	N	N	70	N	N	Altered diorite
211	2629	-	G	N	N	110	101	5	33	0.109	N	N	N	N	10	N	N	Felsic schist w/py
212	2628	-	G	N	N	102	200	8	18	0.066	N	N	N	N	30	N	N	Greenschist w/ py
213	2665	-	G	N	N	91	23	6	8	0.040	N	N	N	N	N	N	N	Black phyllite w/ py
	2666	-	G	N	N	26	23	4	7	N	N	N	100	500	20	900	N	Qtz vein in phyllite
214	3S076	-	G	0.014	N	N	7	N	30	-	-	-	-	-	-	-	-	Gnst
215	75	-	G	N	N	210	68	N	21	-	-	-	-	-	-	-	-	Shale w/py
216	5GV2667	-	G	0.015	0.20	54	23	19	13	0.036	N	N	N	N	N	N	N	Py & phyllite
	2668	-	G	N	N	176	59	5	14	0.025	N	N	N	N	10	N	1000	Metafelsite
217	3S217	-	G	N	N	170	14	91	N	N	-	-	-	-	-	-	-	Altered metased
218	216	-	G	N	N	240	62	N	30	0.090	-	-	-	-	-	-	-	Last
219	5GV2669	-	G	N	N	14	19	3	1	0.540	N	N	N	N	N	N	N	White chert w/ py
220	3S068	-	G	N	N	N	49	N	36	-	-	-	-	-	-	-	-	Schist
221	67	-	G	0.018	N	N	20	N	35	-	-	-	-	-	-	-	-	Schist
222	5GV2671	-	G	N	0.20	21	107	3	15	0.018	N	N	N	N	20	N	N	Altered gnst
223	2672	-	G	N	N	79	88	6	12	0.060	N	N	N	N	10	N	2000	Felsic schist
224	3S066	-	G	N	0.39	N	120	N	17	-	-	-	-	-	-	-	-	Metased
225	4ER76	-	G	0.015	0.50	5	31	13	2	0.300	-	25	-	N	6	-	N	Fe st hornf phyllite w/ py & qtz veins
226	AJ5SV228	0.30	CR	N	N	47	15	5	8	0.013	N	N	N	N	10	N	N	Vuggie qtz-calc vein
	229	2.00	CR	N	N	98	37	N	29	0.020	N	N	N	N	10	N	N	Dike
	AJ5WV807	5.00	CR	N	0.80	105	29	11	N	0.210	N	N	N	N	N	N	N	Slate w/ sulf
227	4ER75	-	G	N	0.30	128	65	17	3	0.280	-	12	-	N	21	-	N	Black phyllite w/ qtz veins & py
228	AJ5WV995	5.00	CR	N	0.30	86	24	14	3	0.390	N	N	N	N	N	N	N	Slate

Key to abbreiations on page 17

Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Ag ppm	Zn ppm	Atomic Absorption (ppm unless marked %) Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	W ppm	Spectrographic (ppm) Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
229	994	-	G	N	N	209	61	17	2	0.049	N	N	N	1000	100	N	N	Gossan on slate
230	996	-	F	N	0.30	7	4	9	N	N	N	N	90	N	40	N	N	Qtz
231	4WB143	-	G	0.005	0.20	97	30	5	17	0.080	-	2	-	N	30	N	N	Qtz- felcspar dike w/ po
232	5GV2553	-	G	N	0.20	110	50	9	3	0.137	N	N	N	300	10	N	N	Hornf slate
233	AJ5WV858	2.50	F	N	N	21	6	3	8	0.186	N	N	40	N	N	N	N	Qtz boulder
234	5GV2683	-	G	0.010	0.30	56	166	8	45	0.214	N	N	N	N	30	N	900	Metafelsite w/ py
235	AJ5SV061	-	G	N	N	27	15	10	9	0.068	N	N	N	N	8	N	N	Fe st diorite w/ po
236	60	-	RC	N	N	17	12	7	5	N	N	N	N	N	N	N	N	Qtz w/ 1% sulf
237	4WB152	-	G	0.005	0.50	51	26	21	20	0.028	-	-	-	-	-	-	-	Fe st silicified argillite
238	146	-	G	0.010	0.40	71	18	13	2	0.270	-	6	-	N	11	-	N	Slate
239	150	-	G	0.030	0.60	24	21	12	3	0.200	-	-	-	-	-	-	-	Silicified argillite w/ py
240	AJ5SV058	1.00	CR	N	N	32	61	10	14	0.152	N	N	N	N	10	N	N	Fe st dike w/ po
	59	-	CR	N	N	32	159	15	33	0.096	N	N	N	N	50	N	N	Fe st dike w/ po
241	5GV2548	-	G	N	N	36	13	14	5	0.022	N	N	N	N	6	N	N	Dolomitic lmst
242	AJ5SV056	20.00	F	N	N	26	15	8	12	0.040	N	N	N	N	8	N	N	Fe st dike w/ po
	57	-	G	N	N	52	25	5	13	0.053	N	N	N	N	10	N	N	Fe st slate
243	5GV2552	-	G	N	0.40	565	25	5	7	0.149	N	N	N	N	N	N	N	Fe st H2O seep gossan
244	AJ5SV346	0.40	C	N	0.20	39	38	14	16	-	-	-	-	-	-	-	-	Fe st qtz veins w/ py
245	345	0.30	F	N	N	17	42	20	9	-	-	-	-	-	-	-	-	Fe st qtz veins w/ py
246	AJ5WV868	0.50	F	N	N	14	16	17	N	-	-	-	-	-	-	-	-	Quartzite
	869	0.20	F	N	4.50	1.63%	7	530	N	-	-	-	-	-	-	-	-	Half of a qtz vein w/ gn, sl
	870	-	F	N	N	61	26	5	12	-	-	-	-	-	-	-	-	Qtz w/ sulf
247	4S053	2.00	C	N	N	150	110	N	60	0.090	-	N	N	N	20	N	N	Gnst
	54	-	G	N	N	130	70	41	N	0.180	-	N	N	N	8	N	N	Quartzite & calc & schist w/ ba
	55	-	F	N	0.97	280	410	53	74	0.530	-	N	N	N	80	N	N	Schist
	56	-	G	N	N	45	9	22	N	0.200	-	N	N	400	N	N	N	Sericite schist
248	3E030	-	G	N	N	51	110	N	N	0.080	-	-	-	-	-	-	-	Fe st phyllite w/ py
	4S057	-	R	N	N	27	14	N	N	0.035	-	N	N	N	N	N	N	Qtz-calc vein
	58	-	R	0.012	1.21	57	960	26	330	0.041	-	N	N	N	200	N	N	Qtz-calc vein w/ 0.4 ft po lens
	59A	-	F	N	N	21	14	N	N	47.000	-	N	N	N	N	N	N	Ba in white phyllite
	59B	-	G	N	N	53	8	N	8	2.980	-	N	N	300	10	N	N	White phyllite
	60	-	CR	N	N	110	150	30	58	0.118	-	N	N	N	30	N	N	Gnst (blocky)
249	61	-	F	N	N	67	N	22	N	0.193	-	N	N	300	N	N	N	Greenschist, qtz-calc w/ sulf
250	62	-	G	N	N	210	130	22	56	0.177	-	N	N	N	40	N	N	Fe st andesite
251	63	-	G	N	N	98	31	18	51	0.014	-	N	N	N	20	N	N	Fe st gnst & schist w/ py
252	3E023	-	G	N	N	130	32	N	41	N	-	-	-	-	-	-	-	Basalt
253	20	-	F	N	0.71	160	1390	N	N	N	-	-	-	-	-	-	-	Altered & mineralized volc rock w/ hem
254	21	-	F	0.034	1.18	22	710	N	390	N	-	-	-	-	-	-	-	Qtz vein w/ py, cp, po
255	4ER69	-	G	0.010	0.70	8	335	4	47	N	-	N	-	N	37	-	N	Qtz vein in slate w/ po
256	65	-	G	N	1.00	243	22	16	2	0.073	-	96	-	N	17	-	N	Slate w/ py, cut by felsic sills
257	3E028	-	G	N	N	930	75	N	N	N	-	-	-	-	-	-	-	Basalt
258	4WB158	-	G	N	1.80	8	2010	10	940	0.005	-	3	-	N	116	-	N	Massive sulf lens

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Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Atomic Absorption (ppm unless marked %) Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
259	5GV2570	-	G	N	N	6	224	8	13	N	110	N	N	N	N	N	N	Garnet-heavy sulf skarn
	2571	-	G	0.015	0.40	7	48	5	2	0.007	8	N	N	N	N	N	N	Qtz vein
260	AJ5WV839	-	F	0.410	25.00	97	5500	5	4	N	N	N	30	N	8	N	N	Qtz w/ cp, ml
261	5GV2572	-	G	N	0.50	41	335	3	56	N	N	N	N	N	N	N	N	Sulf bearing skarn
262	AJ5WV838	-	G	N	N	49	149	11	20	0.178	N	N	N	N	30	N	N	Fe st beds in lmst
263	5GV2568	-	G	0.020	1.50	6	57	13	3	N	N	N	N	N	N	N	N	Qtz vein (lower)
	2569	-	G	N	0.30	28	56	12	10	N	N	N	N	N	N	N	N	Qtz vein (upper)
264	4WG156	-	G	0.020	0.10	7	27	4	2	N	-	3	-	N	5	-	N	Qtz vein
265	AJ5SV349	1.00	R	N	N	21	2	127	N	-	-	-	-	-	-	-	-	Fe st qtz vein
	350	0.40	G	N	0.80	373	10	51	16	-	-	-	-	-	-	-	-	Qtz vein
	AJ5WV873	1.40	CR	N	N	5	20	9	2	-	-	-	-	-	-	-	-	Qtz vein
266	5GV2567	-	G	N	0.20	60	373	5	51	0.080	N	N	N	N	30	N	N	Po vein
267	4ER79	-	F	49.000	74.00	32	1.00%	6	33	N	-	14	-	N	11	-	N	Qtz below large inclusion w/ cp, ml
268	5GV2566	-	G	N	0.30	11	249	6	4	0.070	N	N	N	300	10	N	N	Brecciated slate
269	AJ5WV922	-	G	N	0.20	15	363	14	48	-	-	-	-	-	-	-	-	Diorite w/ sulf
270	AJ5SV122	1.00	CR	N	0.30	20	111	9	15	-	-	-	-	-	-	-	-	Skarn zone, mbl, gossan, diorite
	123	1.00	CR	N	N	11	45	8	9	-	-	-	-	-	-	-	-	Skarn zone, mbl, gossan, diorite
271	120	-	G	N	0.60	18	389	10	66	0.060	N	N	N	N	30	N	N	Qtz w/ mag, cp skarn
	121	-	F	N	0.70	12	535	16	174	0.030	N	N	N	N	30	N	N	Mbl, qtz w/ mag, sulf skarn
272	AJ5WV921	-	G	N	0.20	22	49	12	21	-	-	-	-	-	-	-	-	Brecciated igneous rock w/ sulf
273	3E027	-	G	N	N	88	24	N	46	0.030	-	-	-	-	-	-	-	Basalt
274	AJ5SV117	0.75	CC	N	0.30	8	52	12	1	-	-	-	-	-	-	-	-	Fe st qtz vein
	118	2.00	CR	N	N	60	58	7	24	-	-	-	-	-	-	-	-	Basalt or dike
	119	0.40	C	N	0.50	10	160	10	14	-	-	-	-	-	-	-	-	Fe st qtz vein
	AJ5WV918	-	G	N	0.30	45	55	17	25	-	-	-	-	-	-	-	-	Fe st basalt
	919	1.20	C	N	N	2	1	4	2	-	-	-	-	-	-	-	-	Qtz vein
	920	-	G	N	0.50	85	58	16	15	-	-	-	-	-	-	-	-	Fe st slate w/ sulf
275	4S077	1.00	F	N	0.66	23	190	N	76	0.005	-	N	N	N	20	N	N	Qtz boulder w/ 0.1 ft band po
276	72	6.00	G	N	N	84	19	N	7	0.163	-	N	N	N	N	N	N	Fe st shale
277	79	3.50	F	0.058	1.74	26	540	22	450	N	-	N	N	N	300	900	N	Qtz boulder w/ 0.75 ft band po, cp
	4ER71	-	F	0.075	3.00	5	364	5	235	0.006	-	N	-	N	238	-	N	Qtz boulder w/ massive po, cp
278	4S073	1.00	F	N	2.10	23	310	18	130	0.010	-	N	N	N	N	2000	N	Fe st qtz vein w/ 0.4 ft lens po
	74	1.00	F	N	0.42	750	160	N	43	0.023	-	N	200	N	80	N	N	Qtz boulder w/ po, sl
279	81	0.30	F	N	1.33	67	240	45	130	0.071	-	N	N	N	N	N	N	Massive po boulder w/ sparce qtz
280	82	0.70	F	N	2.20	91	230	91	150	0.810	-	N	N	N	N	N	N	Boulder, pink & siliceous w/ bands po
	84	0.90	F	0.300	49.84	6.20%	2.33%	1.18%	8	1.130	-	N	70	N	8	N	N	70% qtz, 30% sulf, po, cp, sl
281	86	0.40	F	N	0.70	380	350	120	120	0.032	-	N	N	N	N	N	N	Qtz boulder w/ po, cp
	90	-	F	N	N	14	69	N	N	N	-	N	60	400	20	N	N	Qtz boulder w/ lens po
282	88	0.40	F	N	0.77	130	350	64	76	0.014	-	N	N	N	N	N	N	Siliceous volc rock w/ lens po
	89	-	F	N	N	72	74	N	11	0.092	-	N	N	300	30	N	N	Po lens in fine grained qtz

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Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Ag ppm	Atomic Absorption (ppm unless marked %) Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
283	AJ5SV211	10.00	R	N	0.30	267	44	2	9	0.310	N	N	N	N	N	N	N	Slate
	AJ5WV982	5.00	CR	N	0.20	262	38	7	4	0.149	8	N	N	N	10	N	N	Fe st slate
284	4ER91	-	G	0.005	0.50	15	218	20	197	N	-	10	-	N	170	-	N	Fe st argillite w/ py on fractures
285	88	-	G	N	0.20	27	40	11	25	0.031	-	3	-	N	15	-	N	Silicified mbl w/ dissem py
286	4WG119	-	G	N	0.10	66	24	9	19	0.110	-	3	-	N	7	-	N	Gossan w/ py, cp
287	120	-	G	0.005	0.20	64	45	10	30	0.037	-	2	-	46	12	-	N	Gossan
288	121A	-	G	0.005	0.50	40	73	5	33	0.044	-	2	-	N	54	-	N	Gossan
289	4ER94	-	G	N	0.20	74	42	6	36	0.084	-	4	-	N	5	-	N	Altered andesite w/ dissem py
290	4WG141	-	G	N	0.20	65	7	9	15	0.060	-	4	-	N	5	-	N	Gossan at cont w/ gnst
291	142	-	G	0.010	0.80	107	39	25	24	11.000	-	4	-	33	24	-	N	Gossan at cont w/ gnst
292	3S295	-	G	-	-	290	95	N	59	N	-	N	N	N	20	N	N	Altered basalt w/ py, mag
	296	-	G	-	-	110	9	28	35	0.330	-	N	N	N	20	N	N	Metased w/ py
	297	-	F	N	N	13	240	N	49	N	-	N	N	N	80	N	N	Qtz vein w/ po, cp
293	298	-	G	N	N	55	N	28	14	0.630	-	N	N	N	N	N	N	Phyllite w/ py
	299	-	F	N	0.10	56	140	41	67	0.460	-	N	N	N	50	N	N	Phyllite w/ po, cp, py
	300	-	F	N	Tr	140	190	32	50	0.260	-	N	N	N	30	N	N	Schist w/ py, mag
294	AJ5SV208	0.50	F	N	0.90	42	214	15	28	0.014	N	N	100	N	40	N	N	Qtz vein w/ po
295	5GV2542	-	G	N	0.40	131	86	11	3	0.450	N	N	N	N	N	N	N	Hornf slate
296	AJ5WV923	-	G	N	0.50	92	31	7	N	0.203	N	N	N	N	10	N	N	Fe st-yellow, slate
	924	0.50	G	N	0.40	28	15	N	N	0.055	N	N	N	N	N	N	N	Fe st qtz w/ sulf
297	AJ5SV124	-	CR	0.005	0.30	54	14	3	7	0.018	N	N	N	N	N	N	N	Diorite
298	125	0.50	C	0.005	N	22	17	2	3	0.028	N	N	N	N	N	N	N	Qtz vein w/ po
	126	3.00	CR	N	0.50	49	29	4	2	0.250	N	N	N	300	10	N	N	Slate w/ sulf
299	4ER64	-	G	N	0.40	53	36	5	4	0.110	-	24	-	N	43	-	N	Fe st hornf slate cut by diorite dikes
300	5GV2543	-	G	N	0.20	136	79	4	2	0.240	N	N	N	N	20	N	N	Hornf slate
301	5WV1511	-	G	N	0.70	281	74	7	9	0.420	N	N	N	N	20	N	N	Slate
	1512	0.30	G	N	0.40	45	3	13	2	0.009	N	N	30	N	10	N	N	Calc band at cont w/ diorite & slate
	1513	-	G	N	0.50	465	51	9	5	0.360	N	N	N	N	20	N	N	Fe st slate
	1514	-	G	N	0.30	44	10	6	5	0.065	N	N	N	N	N	N	N	Diorite
	1515	-	G	N	0.20	43	3	4	3	0.082	N	N	N	N	N	N	N	Diorite
302	AJ5SV079	-	CR	N	N	40	20	5	7	0.134	N	N	N	N	N	N	N	Fe st diorite
	80	-	CR	N	0.40	52	30	7	7	0.280	N	N	N	N	N	N	N	Fe st slate
303	81	0.30	G	N	N	14	8	N	12	N	N	N	N	N	N	N	N	Qtz vein
304	82	-	CR	N	0.50	102	79	5	10	0.156	N	N	N	N	N	N	N	Fe st slate
	4WG131	-	G	N	0.10	84	36	6	5	0.150	-	4	-	N	16	-	N	Fe st argillite
305	AJ5SV077	0.70	C	N	3	62	28	4	7	0.019	-	4	40	600	10	500	N	Qtz vein in slate
306	73	0.05	C	N	0.50	48	108	5	10	0.020	N	N	N	N	N	N	N	Qtz vein w/ sulf in diorite
	74	-	CR	N	0.30	64	25	4	15	0.094	N	N	N	N	8	N	N	Fe st diorite
	75	-	CR	N	0.30	11	18	5	5	0.069	N	N	N	N	N	N	N	Feldspar & qtz at diorite hornf cont
	76	-	CR	N	N	12	13	3	6	0.108	N	N	N	N	N	N	N	Hornf cont
307	5WV1509	-	G	N	N	59	27	4	9	0.197	N	N	N	N	N	N	N	Fe st slate
308	AJ5SV213	0.70	F	0.005	N	11	9	5	N	0.008	N	N	N	N	N	N	N	Fe st qtz vein

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Map No.	Sample No.	Sample Size Feet	Sample Type	Fire Assay Au ppm	Ag ppm	Atomic Absorption (ppm unless marked %) Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
309	78	4.00	CR	N	N	17	32	7	6	0.330	N	N	N	N	10	N	N	Hornf
	5WV1510	-	G	N	N	48	14	4	13	0.133	N	N	N	N	10	N	N	Fe st diorite
310	4WG134	-	G	N	0.30	37	22	4	1	0.260	-	9	-	N	2	-	N	Hornf argillite at pluton cont
311	136	-	G	N	0.50	220	33	4	3	0.340	-	44	-	N	22	-	N	Hornf argillite at pluton cont
312	161	-	G	N	0.30	53	36	8	3	0.180	-	7	-	N	7	-	N	Fe st slate
313	AJ5SV072	-	CR	N	0.70	299	42	7	6	0.115	N	N	N	N	10	N	N	Slate
314	69	0.10	G	N	N	399	114	11	13	0.040	N	N	500	N	60	N	N	Gossan
	70	1.00	CR	N	0.20	110	135	7	43	0.075	N	N	N	N	70	N	N	Dike
	71	2.00	CR	N	0.40	24	14	6	6	0.420	N	N	N	N	N	N	N	Fe st slate
	5WV1508	-	G	N	N	203	52	7	29	0.032	N	N	N	N	40	N	N	Dike & qtz
315	AJ5SV067	2.70	C	N	0.30	41	16	10	6	0.217	N	N	N	N	N	N	N	Slate
	68	1.00	CR	N	0.40	159	130	9	28	0.100	N	N	N	N	200	N	N	Fe st gossan
316	65	2.00	CR	N	N	37	27	4	15	0.088	N	N	N	N	20	N	N	Fe st slate
	66	5.00	CR	N	N	82	27	7	7	0.340	N	N	N	N	10	N	N	Fe st slate
317	62	-	G	N	N	775	135	5	29	0.087	N	N	N	N	70	N	N	Fe st gossan from dike-slate cont
	63	3.00	CR	N	0.30	335	93	5	26	0.072	N	N	N	N	20	N	N	Dike w/ po
	64	3.00	CR	N	N	208	79	10	5	0.224	N	N	N	N	8	N	N	Slate w/ 0.05 ft bands of gossan
318	203	10.00	CR	N	0.60	294	63	5	12	0.208	N	N	N	N	20	N	N	Fe st slate
	204	-	F	N	N	44	17	2	3	0.024	N	N	N	N	N	N	N	Fe st qtz vein w/ ribbon texture
	205	1.50	C	N	N	132	43	3	30	0.143	N	N	N	N	20	N	N	Dike w/ some slate
319	AJ5WV981	3.00	G	0.005	0.30	435	37	12	7	0.241	N	N	N	N	10	N	N	Slate & qtz breccia zone
320	5BV2537	-	G	0.015	0.50	87	68	9	2	-	-	-	-	-	-	-	-	Slate
321	2538	-	R	0.010	0.50	209	64	12	10	-	-	-	-	-	-	-	-	Slate
322	AJ5SV199	0.10	CC	N	N	118	6	2	3	0.036	N	N	N	N	N	N	N	Qtz-calc vein
	200	1.00	CR	N	N	114	44	5	26	0.161	N	N	N	N	50	N	N	Dike w/ po
	201	3.00	CR	0.015	0.20	133	33	4	3	0.240	N	N	N	N	N	N	N	Slate
	202	-	F	N	0.30	84	19	6	2	0.097	-	N	N	N	8	N	N	Vuggie qtz
	AJ5WV977	0.30	CR	N	N	58	18	11	4	0.049	N	N	N	N	N	N	N	Qtz vein in dike
	978	1.65	CR	N	N	144	25	15	20	0.123	N	N	N	N	10	N	N	Dike in slate w/ sulf
	979	1.00	CR	0.015	0.70	343	44	15	2	0.204	N	N	N	N	10	N	N	Slate w/ sulf
	980	-	F	N	0.40	124	23	13	5	0.290	N	N	N	N	20	N	N	Slate w/ sulf
323	5GV2502	-	G	0.110	0.60	378	46	8	5	-	-	-	-	-	-	-	-	Slate
324	4WG122	-	G	N	0.40	27	28	21	30	0.024	-	4	N	190	4	-	N	Altered argillite & mbl
325	123	-	G	N	N	20	35	8	10	0.052	-	N	N	N	1	-	N	Fe st argillite w/ py
326	4ER53	-	G	N	0.20	41	30	5	13	0.011	-	2	N	25	4	-	N	Altered hornf argillite
327	55	-	G	N	0.20	37	40	7	13	0.066	-	2	N	N	18	-	N	Fe st altered diorite & argillite
328	57	-	G	0.005	0.10	44	20	14	21	0.090	-	3	N	N	44	-	N	Fe st crushed last, hornf w/ po
329	4WG195	-	G	N	0.90	207	73	8	10	0.140	-	18	N	N	40	-	N	Hornf argillite
330	AJ5WV997	0.40	F	N	0.40	15	70	9	7	0.020	N	N	N	N	N	N	N	Slate w/ sulf
331	4ER84	-	G	0.010	0.50	90	52	15	11	0.099	-	10	N	N	43	-	N	Fe st mbl w/ py
332	5GV2622	-	G	N	N	50	20	17	N	0.097	N	N	N	N	8	N	N	Hornf argillicous last w/ py
333	4WG159	-	G	N	N	14	20	6	8	0.004	-	2	N	N	10	-	18	Mol w/ py

Porcupine Mining Area Stream sed, Pan, Soil and Seep Samples

				Fire Assay		Atomic Absorption (ppm unless marked %)				X-Ray	Spectrographic (ppm)							
Map No.	Sample No.	Sample Size	Sample Type	Au ppm	Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	Ba %	W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	Lith. & Remarks
1	AJ5SV010	-	SS	N	0.20	73	15	16	9	0.100	N	N	N	N	10	N	N	Area between Jarvis & Glacier Creeks
2	3S165	-	SS	N	N	160	84	20	58	0.030	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
3	166	-	SS	N	N	140	38	N	46	0.030	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
4	167	-	SS	N	N	200	41	24	55	0.030	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
5	168	-	SS	N	N	230	79	41	44	0.050	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
6	169A	-	SS	N	N	170	46	N	35	0.010	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
7	169	-	SS	N	N	250	60	23	32	0.020	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
8	170	-	SS	N	N	-	48	-	29	0.010	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
9	131	-	SS	N	N	200	86	16	47	0.080	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
10	135	-	SS	N	N	220	75	24	41	0.050	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
11	171	-	SS	N	N	180	79	32	54	0.020	-	-	-	-	-	-	-	Area between Jarvis & Glacier Creeks
12	56	-	SS	0.016	1.28	200	66	N	32	-	-	-	-	-	-	-	-	Pleasant Camp Area
13	50	-	SS	0.581	N	62	55	N	21	-	-	-	-	-	-	-	-	Pleasant Camp Area
14	87	-	SS	N	N	68	110	90	49	-	-	-	-	-	-	-	-	Pleasant Camp Area
	89	-	SS	N	N	82	110	100	52	-	-	-	-	-	-	-	-	Pleasant Camp Area
15	90	-	SS	1.151	N	130	90	97	53	-	-	-	-	-	-	-	-	Pleasant Camp Area
16	4W6193	-	SS	N	N	140	56	17	13	0.058	-	-	-	-	-	-	-	Big Boulder Creek
17	173	-	SS	N	N	130	49	17	17	0.054	-	-	-	-	-	-	-	Big Boulder Creek
18	AJ5SV318	-	PC	0.240	N	87	46	42	14	0.069	10	N	N	N	10	N	N	Big Boulder Creek
	323	-	SS	N	0.30	175	39	86	19	0.061	N	N	N	N	50	N	N	Big Boulder Creek
19	4W6178	-	SS	N	N	190	74	24	48	0.060	-	-	-	-	-	-	-	Big Boulder Creek
20	AJ5SV324	-	SS	0.020	0.40	239	160	132	34	0.078	N	N	N	N	N	N	N	Big Boulder Creek
21	4W6182	-	SS	N	N	250	100	20	42	0.054	-	-	-	-	-	-	-	Big Boulder Creek
22	185	-	SS	N	N	150	79	17	21	0.054	-	-	-	-	-	-	-	Big Boulder Creek
23	3S039	-	SS	0.016	N	100	89	N	29	-	-	-	-	-	-	-	-	Big Boulder Creek
24	41	-	SS	N	0.47	40	110	N	25	-	-	-	-	-	-	-	-	Big Boulder Creek
25	42	-	SS	0.023	0.38	23	96	N	21	-	-	-	-	-	-	-	-	Big Boulder Creek
	43	-	Soil	N	N	58	83	N	28	-	-	-	-	-	-	-	-	Big Boulder Creek
26	44	-	SS	N	0.45	3	120	N	28	-	-	-	-	-	-	-	-	Big Boulder Creek
27	46	-	SS	0.269	N	47	110	N	24	-	-	-	-	-	-	-	-	Big Boulder Creek
28	48	-	SS	62.250	N	44	110	N	24	-	-	-	-	-	-	-	-	Big Boulder Creek
29	AJ5WV845	-	SS	N	N	140	89	25	28	0.039	N	N	N	N	10	N	N	Little Boulder Creek
30	846	-	SS	0.180	N	189	77	21	21	0.055	N	N	N	N	20	N	N	Little Boulder Creek
31	847	-	SS	N	N	184	99	12	23	0.039	-	N	N	N	20	N	N	Little Boulder Creek
32	849	-	SS	N	N	165	81	19	31	0.061	N	N	N	N	20	N	N	Little Boulder Creek
33	850	-	SS	N	N	219	68	28	20	0.042	N	N	N	N	20	N	N	Little Boulder Creek
34	3S016	-	SS	N	N	110	76	N	21	-	-	-	-	-	-	-	-	Little Boulder Creek
35	14	-	SS	N	N	32	78	N	22	-	-	-	-	-	-	-	-	Little Boulder Creek
36	12	-	SS	N	N	N	91	N	32	-	-	-	-	-	-	-	-	Little Boulder Creek
37	11	-	SS	N	N	34	75	N	20	-	-	-	-	-	-	-	-	Little Boulder Creek
38	17	-	SS	N	N	56	85	65	25	-	-	-	-	-	-	-	-	Little Boulder Creek

Key to abbreviations on page 17

Map No.	Sample No.	Sample Size	Sample Type	Fire Assay Au ppm	Ag ppm	Atomic Absorption (ppm unless marked %) Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	Spectrographic (ppm) W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
39	5WV1504	-	SS	N	N	53	31	3	12	0.037	N	N	N	N	N	N	N	Mosquito Lake Area
	5GV2626	-	SS	N	N	60	25	4	6	0.034	N	N	N	N	10	N	N	Mosquito Lake Area
40	2687	-	SS	N	N	109	97	15	25	0.053	N	N	N	N	N	N	N	Mosquito Lake Area
41	5WV1503	-	SS	N	N	110	83	10	20	0.053	N	N	N	N	10	N	N	Mosquito Lake Area
	5GV2627	-	SS	0.125	N	93	41	12	12	0.065	N	N	N	N	10	N	N	Mosquito Lake Area
42	5WV1501	-	SS	N	N	113	68	9	18	0.037	N	N	N	N	10	N	N	Mosquito Lake Area
43	3S231	-	SS	N	0.56	120	51	N	30	N	-	-	-	-	-	-	-	Mosquito Lake Area
44	94	-	SS	0.047	N	170	100	100	71	-	-	-	-	-	-	-	-	Muncaster Creek
45	96	-	SS	0.068	N	170	99	99	70	-	-	-	-	-	-	-	-	Muncaster Creek
	98	-	SS	N	N	140	110	110	73	-	-	-	-	-	-	-	-	Muncaster Creek
46	19	-	SS	N	N	64	60	N	24	-	-	-	-	-	-	-	-	Glacier Creek Area
	20	-	SS	0.406	N	51	56	N	23	-	-	-	-	-	-	-	-	Glacier Creek Area
47	5BV2520	-	SS	0.130	0.20	318	57	23	11	-	-	-	-	-	-	-	-	Glacier Creek Area
48	3S026	-	SS	N	N	270	71	200	37	-	-	-	-	-	-	-	-	Glacier Creek Area
49	27	-	SS	0.022	0.39	490	110	38	26	-	-	-	-	-	-	-	-	Glacier Creek Area
50	29	-	SS	0.101	N	140	76	39	44	-	-	-	-	-	-	-	-	Glacier Creek Area
51	31	-	SS	N	N	150	84	55	49	-	-	-	-	-	-	-	-	Glacier Creek Area
52	32	-	SS	0.033	N	140	79	43	43	-	-	-	-	-	-	-	-	Glacier Creek Area
53	34	-	SS	0.013	N	120	78	N	35	-	-	-	-	-	-	-	-	Glacier Creek Area
54	5BV2512	-	SS	0.040	0.50	237	63	24	23	-	-	-	-	-	-	-	-	Glacier Creek Area
55	2513	-	SS	N	0.40	223	66	14	21	-	-	-	-	-	-	-	-	Glacier Creek Area
56	3S035	-	SS	0.047	N	130	69	N	35	-	-	-	-	-	-	-	-	Glacier Creek Area
57	5BV2511	-	SS	0.005	0.40	238	49	21	24	-	-	-	-	-	-	-	-	Glacier Creek Area
58	3S056	-	SS	0.016	1.28	200	66	N	32	-	-	-	-	-	-	-	-	Glacier Creek Area
59	AJ5SV003	-	SS	N	N	410	55	16	19	0.600	N	N	N	N	30	N	N	Porcupine Road Area
60	3S251	-	SS	N	N	250	38	N	N	0.050	-	-	-	-	-	-	-	Porcupine Road Area
61	250	-	SS	N	N	490	43	N	30	0.040	-	-	-	-	-	-	-	Porcupine Road Area
62	AJ5SV004	-	SS	0.020	0.20	765	17	15	3	0.010	N	N	N	N	N	N	N	Porcupine Road Area
63	3S249	-	SS	0.092	N	1810	32	N	N	N	-	-	-	-	-	-	-	Porcupine Road Area
64	248	-	SS	N	1.13	760	43	N	N	0.040	-	-	-	-	-	-	-	Porcupine Road Area
65	AJ5WV951	-	SS	0.030	N	92	56	15	19	0.059	N	N	N	N	10	N	N	Porcupine Road Area
	952	-	PC	N	N	158	89	10	21	0.083	N	N	N	N	N	N	N	Porcupine Road Area
66	3S245	-	SS	N	4.90	-	-	-	-	0.010	-	-	-	-	-	-	-	Porcupine Road Area
67	252	-	SS	N	N	150	35	N	35	0.020	-	-	-	-	-	-	-	Porcupine Road Area
68	5BV2516	-	SS	N	0.20	223	88	14	24	-	-	-	-	-	-	-	-	Porcupine Road Area
69	2514	-	SS	N	N	127	43	16	18	-	-	-	-	-	-	-	-	Porcupine Road Area
70	2515	-	SS	N	0.20	166	53	21	19	-	-	-	-	-	-	-	-	Porcupine Road Area
71	5GV2659	-	SS	N	0.30	227	36	7	16	0.118	N	N	N	N	10	N	N	Porcupine Road Area
72	2660	-	SS	N	0.20	248	35	11	19	0.142	N	N	N	N	N	N	N	Porcupine Road Area
73	3S243	-	SS	N	N	140	43	N	30	0.060	-	-	-	-	-	-	-	Porcupine Road Area
	AJ5SV048	-	PC	N	0.30	80	26	18	11	0.200	N	N	N	N	20	N	N	Porcupine Road Area

Key to abbreviations on page 17

				Fire Assay		Atomic Absorption (ppm unless marked %)					X-Ray	Spectrographic (ppm)							
Map No.	Sample No.	Sample Size	Sample Type	Au ppm	Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	Ba %	W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
74	3S254	-	SS	N	N	140	43	N	30	0.080	-	-	-	-	-	-	-	Porcupine Creek Area
75	5BV2517	-	SS	0.005	0.20	261	42	20	11	-	-	-	-	-	-	-	-	Porcupine Creek Area
76	2510	-	Soil	N	0.20	152	99	15	42	-	-	-	-	-	-	-	-	Porcupine Creek Area
77	2509	-	SS	0.050	1.00	780	67	19	21	-	-	-	-	-	-	-	-	Porcupine Creek Area
78	AJ5SV047	-	PC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Porcupine Creek Area
79	5BV2508	-	SS	0.030	1.00	975	69	13	30	-	-	-	-	-	-	-	-	Porcupine Creek Area
80	AJ5SV018	-	SS	N	0.20	181	72	18	19	0.200	N	N	N	N	20	N	N	Porcupine Creek Area
	20	-	SS	N	0.30	130	54	17	12	0.200	N	N	N	N	40	N	N	Porcupine Creek Area
81	157	-	SS	N	0.20	115	50	10	11	0.089	N	N	N	N	8	N	N	Porcupine Creek Area
82	5BV2507	-	SS	0.010	1.30	900	98	23	35	-	-	-	-	-	-	-	-	Porcupine Creek Area
83	AJ5SV037	-	PC	N	0.20	92	36	16	11	0.300	N	N	N	N	20	N	N	Porcupine Creek Area
	38	-	SS	N	0.30	143	60	14	12	0.300	N	N	N	N	20	N	N	Porcupine Creek Area
	39	-	SS	N	0.30	113	15	10	12	0.400	N	N	N	N	30	N	N	Porcupine Creek Area
	40	-	PC	N	0.20	124	42	12	10	0.300	N	N	N	N	10	N	N	Porcupine Creek Area
84	159	-	SS	N	0.30	99	41	6	13	0.084	N	N	N	N	N	N	N	Porcupine Creek Area
85	161	-	SS	N	0.20	96	41	7	12	0.073	N	N	N	N	400	N	N	Porcupine Creek Area
86	5GV2598	-	SS	0.015	N	233	36	7	5	0.099	N	N	N	N	20	N	N	Porcupine Creek Area
87	2599	-	SS	N	N	102	45	4	4	0.079	N	N	N	N	N	N	N	Porcupine Creek Area
88	2600	-	SS	N	N	223	45	5	7	0.076	N	N	N	N	N	N	N	Porcupine Creek Area
89	AJ5SV163	-	SS	N	0.20	128	51	11	15	0.073	N	N	N	N	50	N	N	Porcupine Creek Area
90	165	-	SS	N	N	109	52	12	16	0.074	N	N	N	N	40	N	N	Porcupine Creek Area
91	169	-	PC	N	N	51	21	6	13	0.020	N	N	N	N	N	N	N	Porcupine Creek Area
92	5GV2601	-	SS	N	N	92	33	3	3	0.065	N	N	N	N	N	N	N	Porcupine Creek Area
93	AJ5SV170	-	SS	N	N	82	38	7	13	0.067	N	N	N	N	10	N	N	Porcupine Creek Area
94	167	-	SS	N	N	98	49	11	20	0.080	N	N	N	N	10	N	N	Porcupine Creek Area
95	171	-	SS	N	0.30	89	53	3	12	0.092	N	N	N	N	20	N	N	Porcupine Creek Area
96	293	-	SS	N	N	32	32	8	18	0.019	N	N	N	N	30	N	N	Porcupine Creek Area
97	4S203	-	SS	0.148	N	180	50	24	51	0.088	-	-	-	-	-	-	-	Porcupine Creek Area
98	204	-	SS	N	N	120	45	17	16	0.102	-	-	-	-	-	-	-	Porcupine Creek Area
99	205	-	SS	N	N	100	32	N	10	0.096	-	-	-	-	-	-	-	Porcupine Creek Area
100	206	-	SS	0.008	N	100	35	N	9	0.108	-	-	-	-	-	-	-	Porcupine Creek Area
101	AJ5SV248	-	SS	0.015	0.30	243	45	4	17	0.103	N	N	N	300	200	N	20000	Cahoon Creek Area
102	245	-	SS	0.100	0.20	555	39	5	21	0.082	N	N	N	N	200	N	30000	Cahoon Creek Area
103	242	-	SS	0.015	0.70	383	86	10	43	0.128	N	N	N	N	20	N	N	Cahoon Creek Area
104	236	-	SS	0.010	N	68	31	3	17	0.044	N	N	N	N	N	N	N	Cahoon Creek Area
105	181	-	SS	0.025	0.20	34	24	7	18	0.027	N	N	N	N	N	N	N	Cahoon Creek Area
106	4WG223	-	SS	0.021	N	120	23	N	69	0.031	-	-	-	-	-	-	-	Cahoon Creek Area
	179	-	SS	0.065	N	27	26	9	15	0.022	N	N	N	N	N	N	N	Cahoon Creek Area
107	221	-	SS	N	N	100	21	N	61	0.026	-	-	-	-	-	-	-	Cahoon Creek Area
108	AJ5SV177	-	SS	0.015	0.20	24	23	5	12	0.025	N	N	N	N	N	N	N	Cahoon Creek Area

Key to abbreviations on page 17

Map No.	Sample No.	Sample Size	Sample Type	Fire Assay Au ppm	Ag ppm	Atomic Absorption (ppm unless marked %) Zn ppm	Cu ppm	Pb ppm	Co ppm	X-Ray Ba %	W ppm	Spectrographic (ppm) Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
109	4W6220	-	SS	0.023	N	110	29	17	62	0.021	-	-	-	-	-	-	-	Cahoon Creek Area
110	219	-	SS	0.033	N	110	22	N	61	0.030	-	-	-	-	-	-	-	Cahoon Creek Area
111	AJ5SV175	-	SS	0.070	N	24	27	12	12	0.023	N	N	N	N	20	N	N	Cahoon Creek Area
112	173	-	SS	0.225	N	27	23	9	14	0.019	N	N	N	N	N	N	N	Cahoon Creek Area
113	5BV2506	-	SS	N	0.40	590	69	17	17	-	-	-	-	-	-	-	-	McKinley Creek Area
114	2518	-	SS	0.035	1.60	415	87	14	30	-	-	-	-	-	-	-	-	McKinley Creek Area
115	AJ5SV183	-	SS	0.015	0.60	371	62	13	14	0.143	N	N	N	N	20	N	N	McKinley Creek Area
116	5BV2505	-	SS	0.050	0.60	367	71	17	15	-	-	-	-	-	-	-	-	McKinley Creek Area
117	AJ5SV250	-	SS	0.035	0.20	244	47	4	15	0.109	N	N	N	N	80	N	20000	McKinley Creek Area
118	4S192A	-	SS	0.028	N	240	31	N	22	0.102	-	-	-	-	-	-	-	McKinley Creek Area
	193A	-	SS	0.048	N	310	45	20	47	0.095	-	-	-	-	-	-	-	McKinley Creek Area
119	AJ5WV816	-	SS	0.020	N	210	44	7	14	-	-	-	-	-	-	-	-	McKinley Creek Area
120	818	-	SS	N	N	229	46	6	15	0.100	N	N	N	N	30	N	N	McKinley Creek Area
121	992	-	SS	0.010	0.20	177	41	14	12	0.098	N	N	N	N	20	N	N	McKinley Creek Area
122	990	-	SS	N	N	97	27	3	10	0.077	N	N	N	N	20	N	N	McKinley Creek Area
123	988	-	SS	0.005	N	545	74	3	14	0.240	N	N	N	N	50	N	N	McKinley Creek Area
124	987	-	SS	0.010	N	45	17	N	6	0.051	N	N	N	N	10	N	N	McKinley Creek Area
125	984	-	SS	0.055	N	130	19	13	25	-	-	-	-	-	-	-	-	McKinley Creek Area
126	5GV2597	-	SS	0.030	N	26	14	5	3	0.034	N	N	N	N	10	N	N	McKinley Creek Area
127	AJ5SV234	-	SS	0.015	0.40	710	92	11	24	0.194	N	N	N	N	50	N	N	McKinley Creek Area
128	225	-	SS	0.020	0.70	730	99	13	16	0.222	N	N	N	N	20	N	N	Little Salmon River Area
129	4ER123	-	SS	N	0.49	790	100	24	71	0.177	-	-	-	-	-	-	-	Little Salmon River Area
130	122	-	SS	N	0.40	340	64	N	21	0.193	-	-	-	-	-	-	-	Little Salmon River Area
131	AJ5WV973	-	SS	0.020	0.20	110	63	3	21	0.029	N	N	N	N	30	N	N	Little Salmon River Area
132	4ER115	-	SS	0.032	N	470	78	N	61	0.115	-	-	-	-	-	-	-	Little Salmon River Area
133	3S073	-	SS	N	N	92	64	N	29	-	-	-	-	-	-	-	-	Little Salmon River Area
134	74	-	SS	N	N	N	42	N	23	-	-	-	-	-	-	-	-	Little Salmon River Area
135	143	-	SS	N	0.36	210	77	N	59	0.040	-	-	-	-	-	-	-	Little Salmon River Area
136	AJ5WV993	-	SS	0.005	N	48	9	12	N	0.014	N	N	N	N	N	N	N	Summit Creek Area
137	AJ5SV226	-	SS	0.010	1.20	1190	103	8	15	0.195	N	N	N	N	20	N	N	Summit Creek Area
138	227	-	SS	N	N	1150	9	11	N	0.017	N	N	N	N	N	N	N	Summit Creek Area
139	5GV2632	-	SS	N	0.60	1100	110	13	7	0.192	N	N	N	N	20	N	N	Summit Creek Area
140	2630	-	SS	N	0.40	850	102	13	9	0.220	N	N	N	N	100	N	N	Summit Creek Area
141	2631	-	SS	N	0.60	1620	78	33	13	0.100	N	N	N	N	100	N	N	Summit Creek Area
142	AJ5WV857	-	SS	0.005	0.40	570	84	14	16	0.168	N	N	N	N	30	N	N	Summit Creek Area
143	975	-	SS	N	0.50	535	70	10	14	0.166	N	N	N	N	20	N	N	Summit Creek Area
144	AJ5SV369	-	SS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Summit Creek Area
145	AJ5WV974	-	SS	0.025	0.30	385	44	8	16	-	-	-	-	-	-	-	-	Summit Creek Area
146	5GV2658	-	SS	N	N	106	86	17	26	0.071	N	N	N	N	10	N	N	Summit Creek Area

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				Fire Assay		Atomic Absorption (ppm unless marked %)				X-Ray	Spectrographic (ppm)							
Map No.	Sample No.	Sample Size	Sample Type	Au ppm	Ag ppm	Zn ppm	Cu ppm	Pb ppm	Co ppm	Ba %	W ppm	Mo ppm	Sn ppm	As ppm	Ni ppm	Bi ppm	Sb ppm	
147	4S069	-	SS	N	N	240	22	N	30	0.059	-	N	N	N	N	N	N	North of Tsirku Glacier
	70	-	SS	N	N	78	6	N	22	0.030	-	N	500	N	N	N	N	North of Tsirku Glacier
	71	-	SS	N	N	800	110	53	65	0.280	-	N	N	N	60	N	N	North of Tsirku Glacier
148	75	-	SS	N	10.00	780	120	N	33	0.078	-	N	N	N	30	N	N	North of Tsirku Glacier
149	76	-	SS	N	0.76	400	78	N	22	0.164	-	N	N	N	50	N	N	North of Tsirku Glacier
150	78	-	SS	N	N	350	92	22	44	0.140	-	N	N	N	20	N	N	North of Tsirku Glacier
151	80	-	SS	N	1.30	320	65	N	22	0.131	-	N	N	N	20	N	N	North of Tsirku Glacier
152	83	-	SS	N	0.86	190	49	N	25	0.094	-	N	N	N	20	N	N	North of Tsirku Glacier
153	85	-	SS	N	0.66	270	65	30	52	0.105	-	N	N	N	30	N	N	North of Tsirku Glacier
154	87	-	SS	N	0.84	230	63	N	29	0.104	-	N	N	N	20	N	N	North of Tsirku Glacier
155	AJ5SV206	-	SS	N	N	137	58	13	16	0.070	N	N	N	N	20	N	N	Tsirku River Area
156	207	-	SS	N	0.30	127	54	9	14	0.063	N	N	N	N	20	N	N	Tsirku River Area
157	209	-	SS	N	0.40	160	62	10	19	0.082	N	N	N	N	10	N	N	Tsirku River Area
158	210	-	SS	0.005	0.20	191	58	6	16	0.085	N	N	N	N	N	N	N	Tsirku River Area
159	296	-	SS	0.015	N	48	29	10	10	0.040	N	N	N	N	N	N	N	Tsirku River Area
160	297	-	SS	0.160	N	55	32	12	13	0.065	10	N	N	N	N	N	N	Tsirku River Area
161	4S183	-	SS	2.504	0.35	240	51	24	48	0.083	-	-	-	-	-	-	-	Tsirku River Area
162	AJ5SV295	-	PC	N	N	190	36	8	11	0.169	N	N	N	N	10	N	N	Tsirku River Area
163	298	-	SS	N	N	80	37	13	14	0.048	N	N	N	N	8	N	N	Tsirku River Area
164	294	-	PC	N	1.30	211	38	80	10	0.113	N	N	N	N	N	N	N	Tsirku River Area
165	212	-	SS	0.005	0.80	540	96	17	19	0.178	N	N	N	N	30	N	N	Tsirku River Area
166	299	-	SS	0.005	N	77	39	13	15	0.055	N	N	N	N	N	N	N	Tsirku River Area
167	4S182	-	SS	0.039	N	140	51	N	6	0.083	-	-	-	-	-	-	-	Tsirku River Area
168	181	-	SS	N	N	240	40	N	13	0.106	-	-	-	-	-	-	-	Tsirku River Area
169	AJ5SV300	-	SS	0.010	N	190	68	25	23	0.041	N	N	N	N	10	N	N	Tsirku River Area
170	AJ5WV998	-	SS	0.025	N	40	39	8	26	0.026	N	N	N	N	N	N	N	Tsirku River Area
171	4ER208	-	SS	N	N	120	37	N	22	0.137	-	-	-	-	-	-	-	Cottonwood Creek
172	AJ5SV235	-	SS	0.005	0.40	234	61	7	16	0.182	N	N	N	N	20	N	N	Cottonwood Creek
173	4S180	-	SS	N	N	260	45	N	16	0.221	-	-	-	-	-	-	-	Cottonwood Creek
174	4WG225	-	SS	0.010	0.69	1000	110	24	35	0.168	-	-	-	-	-	-	-	Nugget Creek Area
175	226	-	SS	0.007	N	120	32	N	51	0.054	-	-	-	-	-	-	-	Nugget Creek Area
176	4S179A	-	SS	N	N	460	100	N	72	0.186	-	N	N	N	70	N	N	Nugget Creek Area
	179B	-	PC	0.027	N	400	87	38	57	0.220	-	N	N	N	50	N	N	Nugget Creek Area
177	AJ5SV344	-	SS	N	1.10	800	131	52	21	-	-	-	-	-	-	-	-	Nugget Creek Area
178	AJ5WV999	-	SS	0.010	N	51	36	5	33	0.024	N	N	N	N	20	N	N	Takhin River Area

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