MINERAL ASSESSMENT

of the

LIME PEAK - MT. PRINDLE AREA, ALASKA

Various chapters of
this report were authored by

T.E. Smith, G.H. Pessel, M.A. Wiltse, R.J. Newberry, L.E. Burns, R.R. Reifenstuhl, S.E. Rawlinson, M.D. Albanese, R.C. Swainbank, D.N. Solie, P.J. Burton, and T.B. Weglarz

edited by

T.E. Smith, G.H. Pessel, and M.A. Wiltse

Fairbanks, Alaska
1987

Dear Reader:

The attached report, 'Mineral Assessment of the Lime Peak-Mt. Prindle Area', edited by Smith, Pessel, and Wiltse and including the work of many coauthors, was produced under the provisions of a grant from the U.S. Geological Survey. This publication is a companion effort to adjunct reports being completed by the U.S. Geological Survey and the U.S. Bureau of Mines.

The reports by the three agencies were produced in response to a priority need for an assessment of the mineral potential of the White Mountains National Recreation and Steese National Conservation Areas. The series of reports on the Steese-White Mountains area represents an excellent example of a cooperative effort by three government agencies directed toward a common goal; I am very pleased with the role that the Alaska Division of Geological and Geophysical Surveys has played in this project.

We welcome reader comment and response to the various aspects of this report.

Sincerely,

Robert B. Forbes

Robert B. Forbes
Director and State Geologist

EXECUTIVE SUMMARY

Mineral Endowment

Mineral assessment investigations in the Lime Peak - Mt. Prindle area have documented a high favorability for lode mineral deposits. The studies, carried out by the Alaska Division of Geological and Geophysical Surveys (ADGGS), are part of a broader cooperative effort by ADGGS, the U.S. Geological Survey, and the U.S. Bureau of Mines to assess mineral potential in the White Mountains National Recreational Area and the Steese National Conservation Area. Matching funding for the ADGGS studies was provided through a grant from the U.S. Geological Survey.

Lode mineral deposits that are present or are likely to be present in the study area fall into two categories: those which are related to plutonic rocks and those which are stratabound.

Plutonic-related deposits are associated with:

1) The Hope granite suite, which forms three large plutons in the study area and is very similar to productive tin granites elsewhere in the world. The three plutons have associated mineral occurrences and alteration zones that contain local tin concentrations in the range of 0.1 to almost 2 percent. The Lime Peak intrusive system includes six prospect areas, and is the most favorable of the three Hope Suite plutons for potential economic deposits of tin, with associated silver, tantalum, and tungsten.

2) Small syenite bodies near the western edge of the study area are similar to nearby syenites in the Livengood Quadrangle that host uranium- and rare earth-bearing veins.

3) Unexposed intrusive rocks similar to the Pinnell Trail monzogranite are thought to be associated with numerous small tungsten/gold skarns in the Table Mountain area.

4) Moderately alkalic felsite dikes and stocks in the Hope Creek - Table Mountain area appear to be genetically linked to gold enrichment in adjacent sulfide-bearing hornfels (up to 0.5 ppm) and in sulfide-tourmaline-quartz veins (up to 120 ppm).

Stratabound lode mineral potential is confined to the Cleary sequence(?), a volcanogenic unit that has a spatial correlation with gold placer deposits in the study area.

Probabilistic estimates were made for lode mineral resource potential in the Lime Peak - Mt. Prindle area by comparing various attributes of the observed geology, geochemistry, and mineralization with similar, well-studied mining districts worldwide. This methodology gives a range of potential resources at various levels of certainty. The results indicate that three-quarters of the potential mineral resource is in tin-silver deposits, and about one-quarter is in gold deposits.

The quantitative estimates suggest a fair probability (50%) that the Lime Peak - Mt. Prindle area contains as much tin and silver as moderate-sized producing tin districts worldwide. (320,000 tons of tin, and about 10 million ounces of silver- a gross metal value of $3 billion at current commodity prices). A small probability (5%) exists that the study area contains three times that amount of tin and silver. Approximately two-thirds of the tin-silver endowment is associated with

six prospect areas in the Lime Peak pluton; the remainder of the endowment is distributed through other parts of the Lime Peak pluton, the Quartz Creek pluton, and the Mt. Prindle pluton.

The bulk of uranium and rare earth potential is confined to the syenite intrusives at the western edge of the study area. At a 50 percent probability, the syenites would contain at least 250 tons of uranium and 520 tons of rare earth elements (approximately $40 million current gross metal value).

Lode gold endowment is mostly restricted to a belt along the southern part of the study area, and is present primarily in quartz-tourmaline vein associated occurrences and alkalic-igneous rock related deposits, with a small contribution from stratabound deposits and skarns. Most of the endowment potential is in large volume, low-grade, disseminated and vein-aggregate deposits. Gold content of the favorable areas at the 50 percent probability level is equivalent to a large Alaska gold district (1.5 million ounces, $675 million current gross metal value). A low probability (5%) exists that the area could contain ten times as much gold.

Geology of Project Area

The bedrock underlying the Lime Peak - Mt. Prindle area consists of a metamorphosed stratigraphic sequence of Proterozoic(?) to Ordovician age that was subsequently intruded by an alkalic igneous suite at about 85 to 90 Ma, and by the Hope granitic suite at 57 to 66 Ma. The metamorphosed stratigraphic sequence includes the following units, from oldest to youngest:

1) The Fairbanks schist(?)- approximately 5,000 meters of pelitic schist with minor calcsilicate schist, chlorite schist, and marble. The unit is exposed in a ENE- trending antiform in the southern part of the study area, and is thought to be of Proterozoic age.

2) The Cleary sequence(?)- a unit characterized by graphitic schist and quartzite, graphite-bearing pelitic schist, white felsic schist, and white laminated or banded metaquartzite; about 500 meters thick, interlayered in the upper part of the Fairbanks schist(?). The unit is mineralized with arsenopyrite(?), pyrite, and chalcopyrite and is considered to be Proterozoic in age.

3) The "grit-metagrit sequence"- about 6,000 meters of pelitic rocks with distinctive interlayered beds of quartz granule conglomerate and quartzite with minor amounts of chloritic greenschist, marble, calcschist, and metagraywacke. The unit is regionally metamorphosed from weakly recrystallized slate and phyllite in the north to coarse-grained schists in the south. The sequence is thought to represent the inner-fan and proximal mid-fan portions of a submarine fan system, with channel and overbank deposits making up the bulk of the rocks.

4) The "maroon and green grit"- approximately 1,700 meters of clastic rocks, very similar in lithology and origin to the "grit-metagrit sequence," but with abundant and distinctive interbeds of maroon and green phyllite and slate. Minor amounts of marble are also present. The Cambrian-Precambrian trace fossil, *Oldhamia*, has been collected from this unit.

5) The Fossil Creek volcanics- A belt of limey shale, siltstone, mafic volcanic rocks, and pyritic black chert and slate is exposed in the northernmost part of the project area, south of Beaver Creek. The unit is about 1,300 meters thick and represents the lower part of the Fossil

Creek Volcanics, a unit well-exposed in the Livengood Quadrangle to the west of the study area, where Ordovician megafossils have been recovered.

Measurable structures in the bedrock units suggest three episodes of folding: 1) an early, north-vergent isoclinal event with northeasterly trending axes and accompanying thrust faults of minor offset, 2) a fold event with NE-trending axes that produced tight, asymetric and chevron folds, and 3) a late folding event that produced broad, open, synformal and antiformal warps. Despite the small-scale structural complexity resulting from the multiple fold events, a generalized structural cross-section suggests a large, over-turned, north-verging, and somewhat faulted anticline north of Lime Peak; a broad open synclinorium south of Lime Peak; north-dipping strata between Mt. Prindle and upper Bear Creek; and an ENE-trending anticlinorium in the oldest rocks, with the axis in the Pinnell Trail - Table Mountain area.

The regionally metamorphosed and folded bedrock units in the project area have been intruded by three, large, multiphase, biotite granite bodies, which are informally known as the Hope granitic suite, and include the Lime Peak, Quartz Creek, and Mt. Prindle intrusive bodies. All three plutons have been dated at about 57 to 66 Ma by potassium/argon methods, and all are differentiated, composite intrusions. The general intrusive pattern was 1) an early coarse-grained seriate or seriate/porphyritic phase, 2) a later, fine-grained, equigranular to equigranular/porphyritic phase which cross-cuts the early rocks, and 3) a late phase consisting of fine- or medium-grained equigranular granites with pale, brownish, zinnwaldite mica that occurs in the Lime Peak and Mt. Prindle systems. Rhyolite porphyry dikes and breccia dikes comprise the latest magmatic event, and intrude the Hope granitic suite rocks and adjacent country rock. The Hope suite granitic rocks strongly resemble plutons known to be associated with major tin deposits elsewhere in the world, based on textural, mineralogical, major oxide, normative composition, trace element, and alteration criteria.

In addition to the large plutons of the Hope granitic suite, five other types of intrusive rock are present in the Lime Peak - Mt. Prindle area. They include 1) an 85 to 90 Ma old alkalic suite of hornblende quartz monzonite, lamprophyre, and syenite, 2) the Pinnell Trail monzogranite, 3) felsite dikes and stocks that appear to be associated with the alkalic suite, 4) sills and dikes of gabbro and minor amounts of ultramafic rock in the northwest part of the area, and 5) gabbro dikes that intrude the Hope suite granitic rocks. The slightly alkalic felsite bodies are thought to be genetically associated with gold occurrences in the southern part of the study area.

Surficial deposits produced mainly from mass-wasting processes mantle much of the bedrock in the Lime Peak - Mt. Prindle area. Glacial, glacio-fluvial, and fluvial processes have also contributed to local surficial deposits. Bedrock-rubble colluvium and solifluction lobes include reworked drift in cirque valleys, and are present on high, steep slopes. Drift with morainal form is present in the highest elevation cirque valleys. Low-slope colluvium and alluvial-fan deposits are present on lower slopes and along the flanks of larger stream valleys. Alluvium and outwash are present in small terraces and along active stream channels.

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CHAPTER 1

INTRODUCTION

by

T.E. Smith and M.A. Wiltse

PURPOSE AND SCOPE OF PROJECT

The mineral resource appraisal presented in this report was undertaken at the request of the Alaska State office, U.S. Bureau of Land Management (BLM) and the Alaska mining industry. The Steese National Conservation Area (SNCA-North, SNCA-South) and the White Mountains National Recreational Area (WMNRA) were established by the Alaska National Interest Lands Conservation Act (ANILCA) of 1980. Section 1010(a) of ANILCA mandates that the U.S. Department of Interior complete a mineral appraisal of impacted lands prior to adopting final management plans for the respective areas. The information contained in this report will be considered by BLM in their preparation of a revised management plan for the Steese and White Mountains Areas.

AREA OF STUDY

The responsibility for new mineral assessments in the Steese-White Mountains Area was shared by the Alaska Division of Geological and Geophysical Surveys (ADGGS) and the U.S. Geological Survey (USGS). The area selected for study includes approximately 1.24 million acres of WMNRA and northwestern part of SNCA-North (fig. 1.1). Through numerous discussions with the interior Alaska business community and BLM, it was decided to focus the appraisal efforts on management areas having current land classifications most restrictive to mineral exploration and development - namely the primitive and semi-primitive portions of WMNRA and SNCA-North. The ADGGS team concentrated on a 550 square mile area in the west-central Circle Quadrangle and centered on the boundary between SNCA-North and WMNRA. The ADGGS area of responsibility is referred to in this report as the Lime Peak-Mt Prindle area. This area is located approximately 75 miles northeast of Fairbanks, Alaska, and includes parts of the Circle B-4, B-5, B-6, C-4, C-5, C-6 15-minute Quadrangles. The study area was previously known to contain tin, uranium, tungsten, and gold occurrences.

FUNDING

A Congressional appropriation to support the ADGGS investigations in the Lime Peak-Mt Prindle area was provided through Public Law 99-190, with the provision that the appropriation be administered by the U.S. Geological Survey and be "...used for State of Alaska assistance to the [U.S.] Geological Survey." Pursuant to the intent of P.L. 99-190, the ADGGS was assigned a $460,000 grant (USGS Grant No. 14-08-0001-G-1276) to complete the mineral assessment studies reported in this document. The grant monies were utilized primarily for direct non-salary project expenses such as helicopter support, analytical services, travel, and supplies. The ADGGS matching contribution to the project included salaries and benefits for most project personnel, miscellaneous supplies, and facility expenses - totalling approximately $450,000.

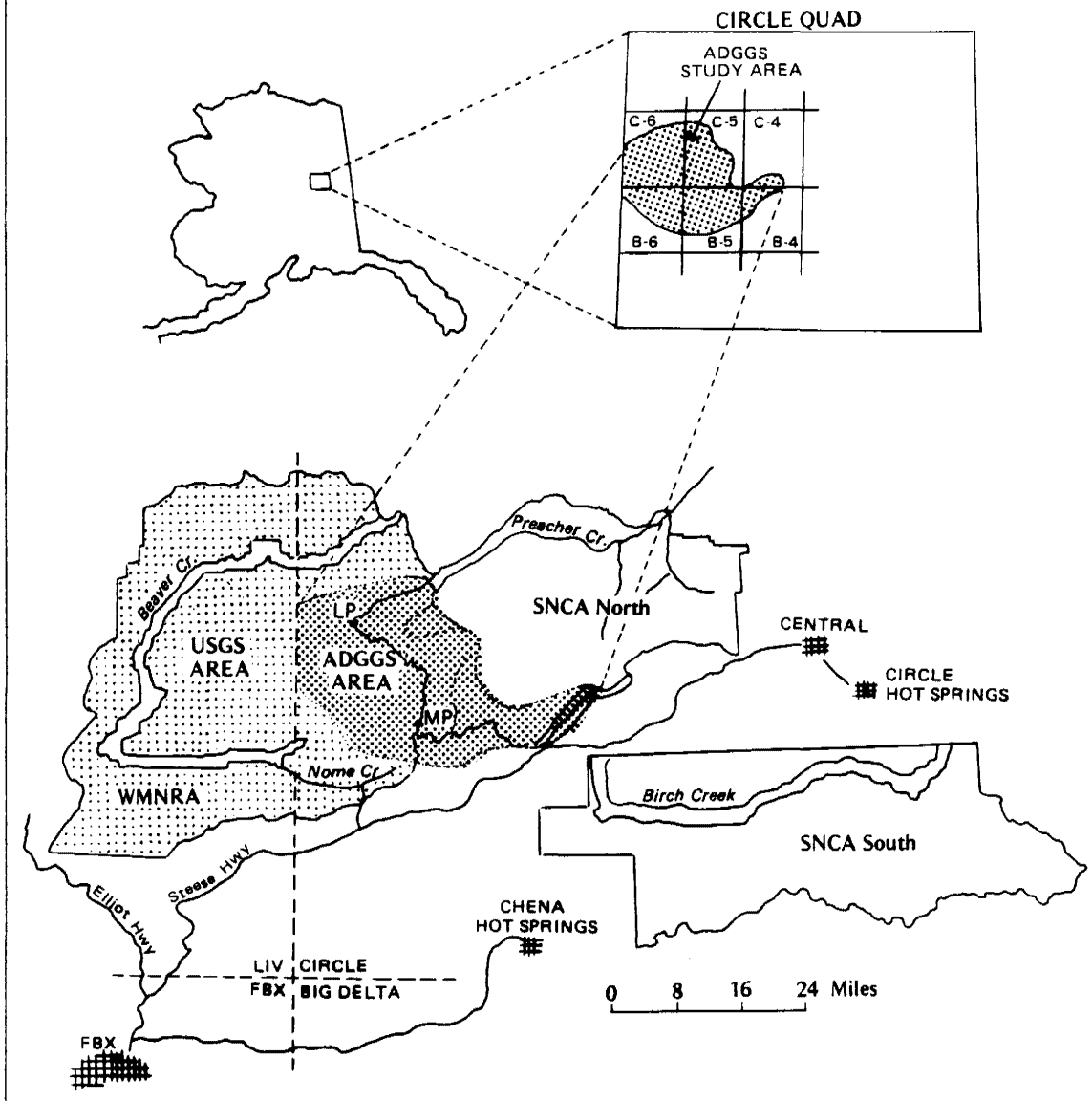


Figure 1.1 Location of appraisal areas in west-central Circle Quadrangle (ADGGS) and east-central Livengood Quadrangle (USGS). Area of study includes the White Mountains National Recreational Area (WMNRA) and western part of Steese National Conservation Area (SNCA-North). The ADGGS study area referred to in this report as the Lime Peak-Mt. Prindle area (LP,MP) totals about 550 square miles and lies approximately 75 miles northeast of Fairbanks.

METHODOLOGY

The assessment methodology followed by the ADGGS team (fig. 1.2) closely paralleled other similar projects previously undertaken by ADGGS. Initial activities on the Lime Peak-Mt Prindle area began in February, 1986, with a compilation of geological and mineral data available at the time. During phases I and II of the project, data stack elements were compiled at a 1:63,360 scale, and a comprehensive project library and bibliography was assembled and analyzed.

Field work necessary to prepare a detailed, uniform geologic and geochemical data base for the area was completed during the period July 10 - August 27, 1986. Brief supplemental studies were conducted during June 15-27, 1987. The 1986 field operations were based at a 28-person camp in upper Nome Creek (fig. 1.3). The camp was located in a section of flattened dredge tailings and was accessible via secondary road from mile 56, Steese Highway. Two Hughes 500D helicopters under contract from Temsco Helicopters provided daily air transport to the project area north of Nome Creek.

Objectives of the 1986 field work were twofold: (1) to prepare detailed bedrock and surficial geologic maps of the area at a scale of 1:63,360 (1 in. = 1 mile), based on closely spaced foot traverses, and (2) to collect a comprehensive suite of geochemical stream sediment and heavy mineral samples across the project area. In addition, mineral occurrences noted during the regional mapping were mapped and sampled in greater detail - at scales ranging from 1 in. = 100 ft to 1 in. = 1,000 ft. The 1987 field activities were scheduled to determine sources of geochemical anomalies found in geochemical samples during analysis and statistical interpretation of the 1986 sample data.

The winter season of 1986-87 and most of the 1987 summer were spent in data analysis, report preparation, and resource analysis (phase IV and V, fig. 1.2) in anticipation of transmitting the final report and recommendations to the BLM during September, 1987.

PERSONNEL

The field team was made up of nearly equal numbers of ADGGS staff and University of Alaska (UAF) faculty and students. Geological studies were done mainly by the ADGGS staff and UAF faculty; drainage geochemical sampling was performed primarily by UAF student interns. Table 1.1 shows principal activities and affiliations of the various team members.

PREVIOUS STUDIES IN PROJECT AREA

Geological Investigations

Most previous geological investigations in the Lime Peak-Mt. Prindle area have been regional in scope (map scales 1:250,000 or smaller) or topical in nature, concentrating on mineral occurrences, specific intrusive bodies, and so forth. Exploratory surveys in the early 1900s are summarized by Prindle (1906, 1913) and by Mertie (1937) in his classical treatise on the Yukon-Tanana region.

New information on the regional geology has become available recently through publication of the USGS Circle Quadrangle AMRAP series, a folio of reports and maps summarizing regional

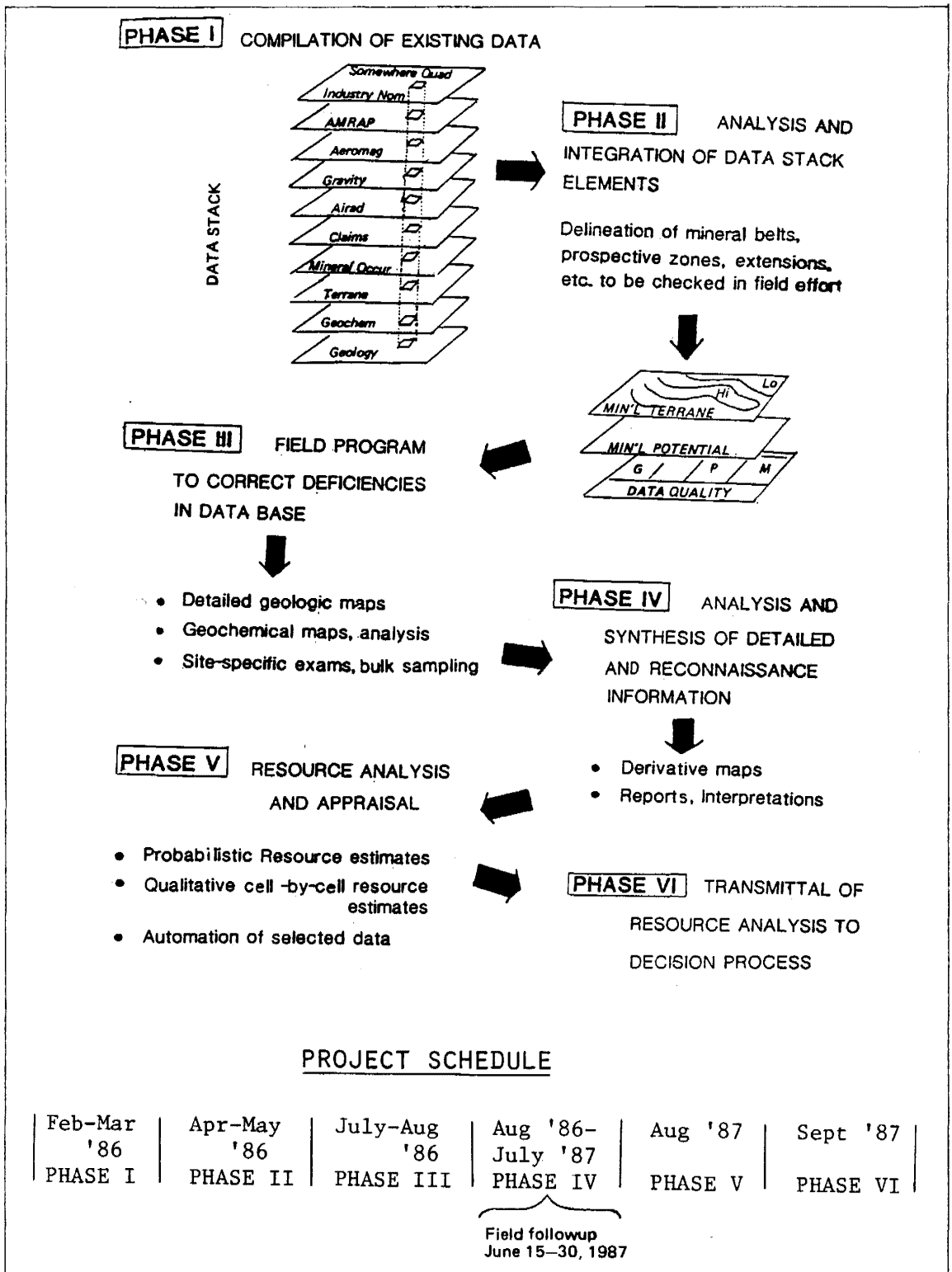


Figure 1.2 Sequence and schedule of mineral appraisal efforts in Steese project.

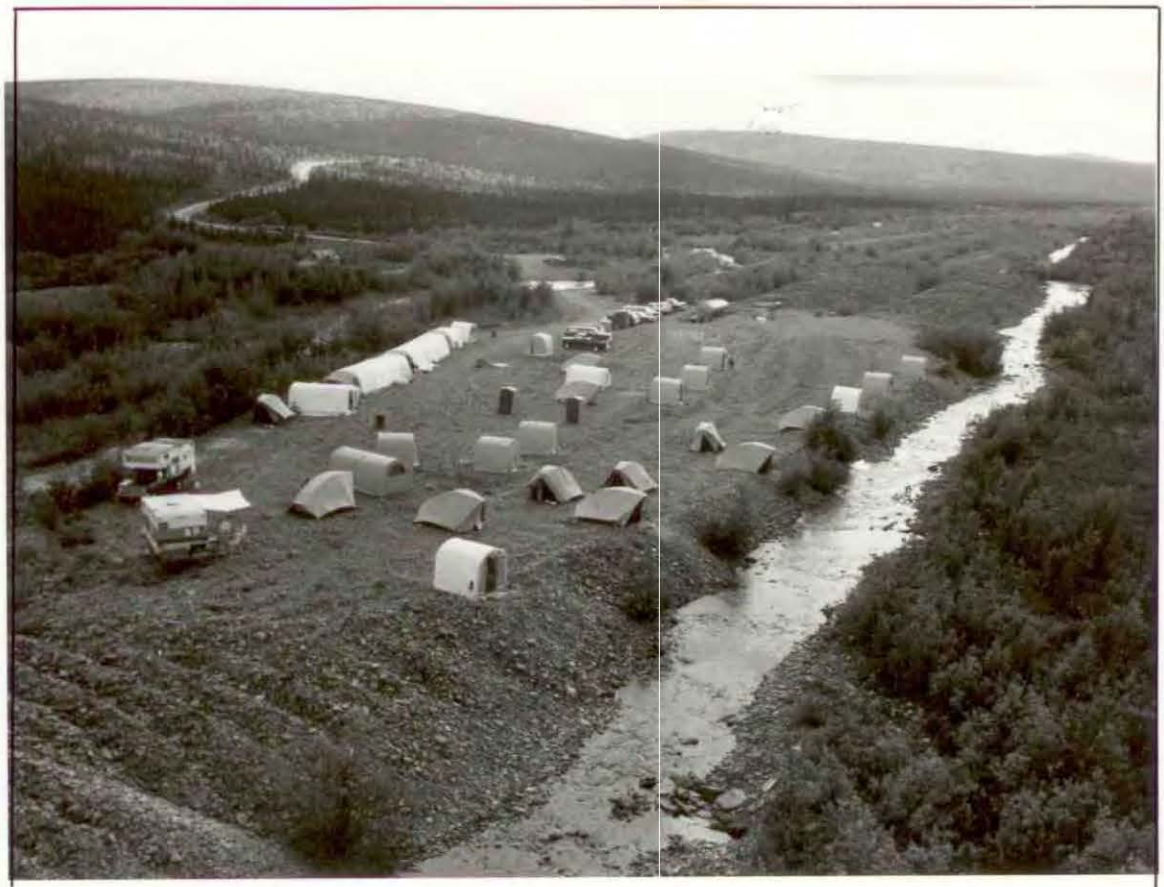


Figure 1.3 Twenty-eight person ADGGS base camp on leveled dredge tailings in upper Nome Creek valley, July-August 1986. Helipad and fuel storage tanker at far end of camp. Road in background joins the Steese highway at mile 56. View southwest down Nome Creek valley.

geology (Foster and others, 1983, 1987), and interpretations of gravity, aeromagnetic, and landsat data (Cady and Barnes, 1983; Cady and Weber, 1983; Simpson, 1983).

Petrological studies of the Mt. Prindle and Lime Peak intrusive systems are reported by Holm (1973), Warner and others (1986) and Menzie and others (1986). The glacial geology of the Mt. Prindle area was published by Weber and Hamilton (1984). Metamorphic petrology of the metasedimentary basement sequence was discussed by Burack (1983) and Burack and others (1984) for the Table Mountain area and by Laird and Foster (1984, 1986) for the area between the Lime Peak and Quartz Creek intrusive bodies.

Table 1.1 Principal activities and affiliations of Steese project personnel. The 10 individuals noted by an asterisk continued with the project through the winter season.

STEESE PROJECT PERSONNEL

Geological mapping	Geochemical survey	Logistics
T.E. Smith[1]*	A.A. Bakke[3]	G. Dahlen[4]
G.H. Pessel[1]*	T.B. Weglarz[3]*	D. Gordon[4]
M.A. Wiltse[1]*	S.E. Cutler[3]	R. Swanson[4]
M.D. Albanese[1]*	J.W. Harris[3]	A.L. Rowe[5]
R.R. Reifenstuhl[1]*	P.B. O'Sullivan[3]	C. Silfrenius[5]
L.E. Burns[1]*	J.O. Keener[3]	
S.E. Rawlinson[1]*	C.A. Petersen[3]	
D.D. Adams[1]	R.A. Leveille[3]	
D.R. Hickmott[1]		
D.N. Solie[1]		[1]State employee
T.A. Little[1]		[2]University faculty
R.J. Newberry[2]*		[3]Student intern
R.C. Swainbank[2]*		[4]Temsco Helicopters
P.J. Burton[2]*		[5]DNR volunteer

Mineral Investigations

Much of the previous literature on the Lime Peak-Mt. Prindle area was devoted to its mineral resource potential. Summaries and listings of mineral occurrences in the region can be found in Eberlein and others (1977), Eberlein and Menzie (1978), Cobb (1976), Saunders (1967) and Burton (1984). Accounts of early placer mining in the Faith-Hope-Charity Creek basin and in Bachelor Creek are included in Ellsworth (1912, 1913) and are listed in Eberlein and others (1977). As a component of the USGS AMRAP folio, Menzie and others (1983) outline metallogenic tracts and their potential for various deposit types.

Uranium-bearing springs were discovered in 1977 by the U.S. Bureau of Mines in Little Champion Creek (Barker and Clautice, 1977), leading to intensive industry exploration of the region for uranium, thorium, and rare earths. Industry groups participating in the effort included Resource Associates of Alaska, Resource Exploration Consultants, Cominco American, Mapco, Inc., Range Minerals, and Anaconda. During this exploration activity it was recognized that several of the intrusive complexes had potential for lode tin occurrences. Site specific investigations of tin

potential in the Lime Peak system are reported by Burton and others (1984), Warner and others (1986), and Menzie and others (1986). Lode gold occurrences in the Table Mountain area are documented by Burack (1983) and Menzie and others (1987). Radioactive mineral occurrences in the Roy Creek syenite body, just west of the project area, are discussed in detail by Burton (1981).

Geochemical studies

Several previous reconnaissance geochemical programs have involved the Lime Peak-Mt. Prindle area. Hinderman and others (1982) summarized the results of National Uranium Resource Evaluation (NURE) studies which included geochemistry of stream sediment, rock, soil, and water samples and airborne radiometric surveys of the Circle Quadrangle. The NURE survey identified anomalous uranium in the sediments and pan concentrates of streams draining the Lime Peak, Quartz Creek and Mt. Prindle plutons.

The USGS AMRAP investigations have produced reports and tabulations of chemical analyses for stream sediments and heavy mineral concentrates (O'Leary and others, 1986; Tripp and Crim, 1983); these maps show high tin values for streams draining the Lime Peak pluton. Jones and others (1983) use stream sediment trace element geochemistry as the basis for statistical discrimination between tin- and uranium-bearing plutons in the Circle Quadrangle. Foster and others (1984) provide 31-element geochemical analyses and locations for 1,682 rock samples collected in the Circle Quadrangle. Of these, 727 are considered to be mineralized. The reports of Burton and others (1985) and Warner and others (1986) contain useful geochemical data for local areas in and near the Lime Peak pluton. The Union Carbide Company conducted a stream sediment geochemical survey in parts of the Circle Quadrangle.

ACKNOWLEDGEMENTS

The mineral assessment studies reported in this volume could not have been completed without the cooperation and support of numerous individuals, groups, and agencies. Various committees of the Fairbanks Chamber of Commerce and Alaska Miners Association (AMA) were enthusiastic proponents of mineral appraisals in the project area. Roger Burggraf, president of AMA and Del Ackels, vice-president of Circle mining district, provided continuous support and liaison with individual miners, claim holders, and industrial groups. We are grateful for the support of numerous miners who allowed access to their claims; their ideas and experience in the region were invaluable to the completion of this study. The discussion, counsel, and advice of numerous individuals at interagency planning meetings are gratefully acknowledged - special thanks are due R.G. Schaff and R.D. Reger (ADGGS); T.P. Miller, B.L. Reed, and W.D. Menzie (USGS); R.B. Hoekzema (USBOM); George Schmidt, Earl Boone, T.C. Mowatt, and Vic Ross (BLM) for their help in formulating the appraisal plan. Harold and Gerald Hassel and R.L. MacIntosh generously allowed ADGGS to establish camps on their mining claims in the Nome Creek and Faith Creek valleys (fig. 1.3).

Scientists from various U.S. Interior Department agencies were especially helpful in initiating the ADGGS project. Florence R. Weber (USGS) has provided field maps, unpublished notes, considerable personal knowledge, and enthusiasm for our studies of the Lime Peak area. W.D. Menzie, R.B. Tripp and R.M. O'Leary (USGS) contributed prepublication copies of reports on the regional geochemistry and Lime Peak intrusive system. Our chapter on regional geology greatly benefitted from discussions with S.P. Gordy and Grant Abbott (Geological Survey of Canada).

Mary Keskinen (UAF) generously provided assistance on petrography of the metamorphic rocks. Discussions of the Lime Peak tin occurrences with J.D. Warner and J.C. Barker (USBOM) were helpful in guiding our studies; we are grateful for the use of their unpublished data and reports on the area. The Union Carbide Company generously allowed access to unpublished geochemical data from the Circle Quadrangle.

During the 1986 field season, valuable field conferences were held with geologists D.D. Keill, T.C. Mowatt, P.J. Bissonnette (BLM), and with R.B. Hoekzema and S.A. Fechner (USBOM). The field visitations and interest shown by agency managers are sincerely appreciated; they are Donald Grybeck (USGS), J.D. Juilland and E.J. Boone (BLM), and Pedro Denton and R.D. Reger (ADGGS/DOM). Project personnel are deeply appreciative of the support and encouragement necessary to complete the project provided by State Geologist Robert B. Forbes, who assumed directorship of ADGGS in the spring of 1987, a time when the project was half complete.

The credit for the timely assembly and production of this report is largely due Gail D. March; we are grateful for her keen editorial eye and pioneering efforts in processing this text through the new ADGGS "desk-top" publishing system.

FORMAT OF REPORT

This contract report is structured as two volumes - one of text and data listings (vol. 1), the other as a series of 1:63,360 scale maps illustrating the geology, geochemistry, and metallogeny of the Lime Peak-Mt. Prindle area (vol. 2). The chapters in each volume were prepared by various individuals on the project team. Each chapter was designed and formatted to stand alone, although whenever possible cross-references to other parts of the report are included and unnecessary redundancies of subject material are omitted.

Because of the urgency surrounding completion of the contract report and its submittal to the BLM planning process by September 1987, the report has not received the editorial attention normally given formal ADGGS publications. The printed maps in volume 2 were, however, assigned a ADGGS Report of Investigations number in anticipation that the text will eventually be processed as a formal publication.

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CHAPTER 2

REGIONAL GEOLOGY

by

G.H. Pessel, R.R. Reifenstuhl, and M.D. Albanese

with a section on

Regional Structure

by

Richard C. Swainbank

INTRODUCTION

General

The Lime Peak-Mt. Prindle study area is located in the Yukon-Tanana Uplands, about 75 miles northeast of Fairbanks, Alaska (fig. 2.1). Uplands topography consists primarily of gently rolling hills, generally mature topography, and a few mountainous areas of moderate relief. Thick soil and extensive vegetation result in generally poor exposure of bedrock.

The area is part of the Yukon-Tanana terrane (Tempelman-Kluit, 1976; Weber and others, 1985); Jones and others, 1981; Jones and others, 1984). In Alaska, the Yukon-Tanana terrane (fig. 2.2) is composed of a least two sequences of metamorphic rocks with protoliths of Paleozoic and possibly Late Precambrian age (Weber and others, 1985, based on pers. comm. with Cynthia Dusel-Bacon). These two sequences consist of: 1) quartz mica schist, quartzite, grit, maroon and green phyllite and slate, and black arenaceous limestone; and 2) quartzite, mica schist, marble, and metamorphosed mafic and ultramafic igneous rocks. These metamorphic rock sequences were formerly known collectively as the Birch Creek Schist, and believed to be Precambrian in age (Mertie, 1937).

Regional Tectonic Setting

The Yukon-Tanana terrane is bounded on the north and northeast by the Tintina Fault, an extension of the Rocky Mountain Trench, and on the south and southeast by the Denali Fault system, a curvilinear lateral-slip fault which is one of the major structural features in central Alaska.

Figure 2.1 shows the regional setting of the Lime Peak-Mt. Prindle area relative to three major faults in Interior Alaska, the Kaltag Fault, the Tintina Fault and the Denali Fault. Movement on all of these faults is predominantly right-lateral. Roddick (1967) postulated some 250 miles of right-lateral movement on the Tintina Fault in the Yukon Territory, although Foster and Keith (1987) estimate considerably less movement on the various splays of the fault in Alaska. Forbes and others (1973) and Smith and others (1974) postulate about 250 miles of right-lateral movement on the Denali Fault. Movement on the Kaltag Fault is also right-lateral according to Patton and Hoare

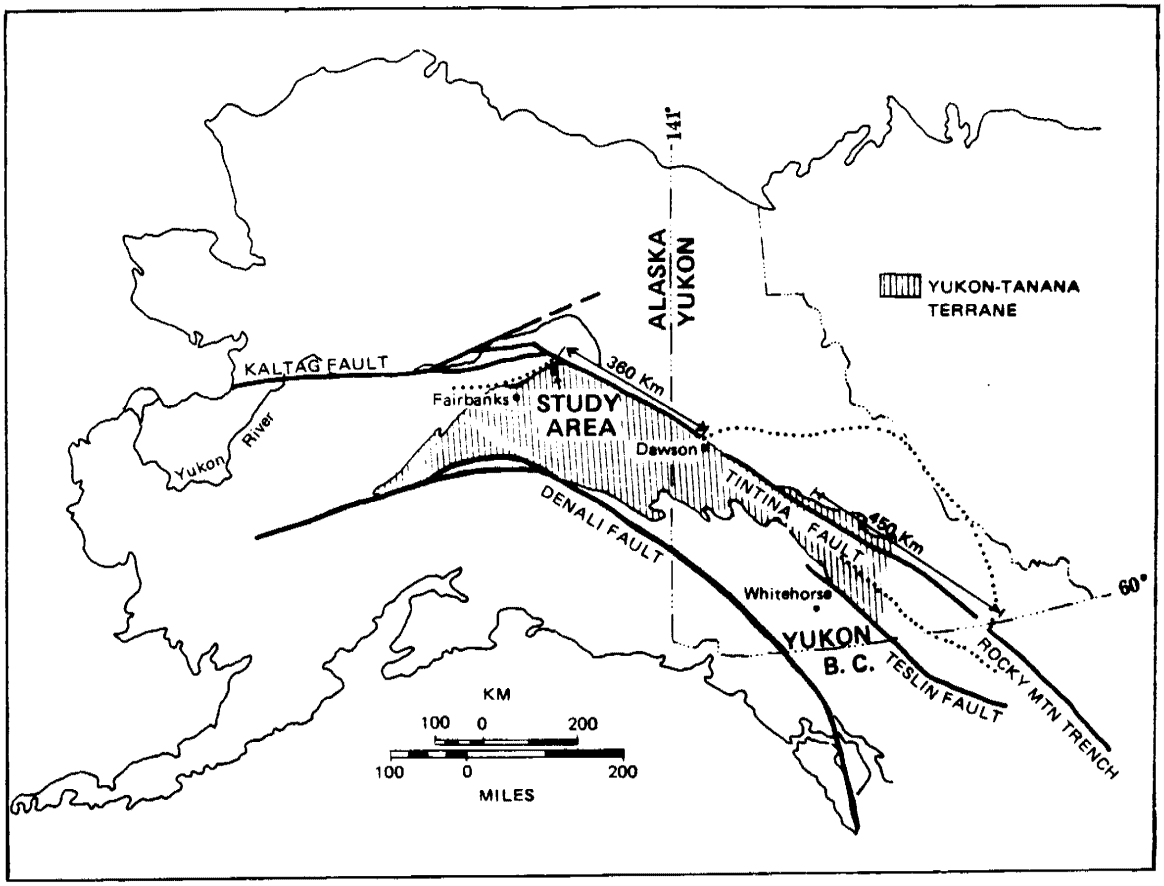
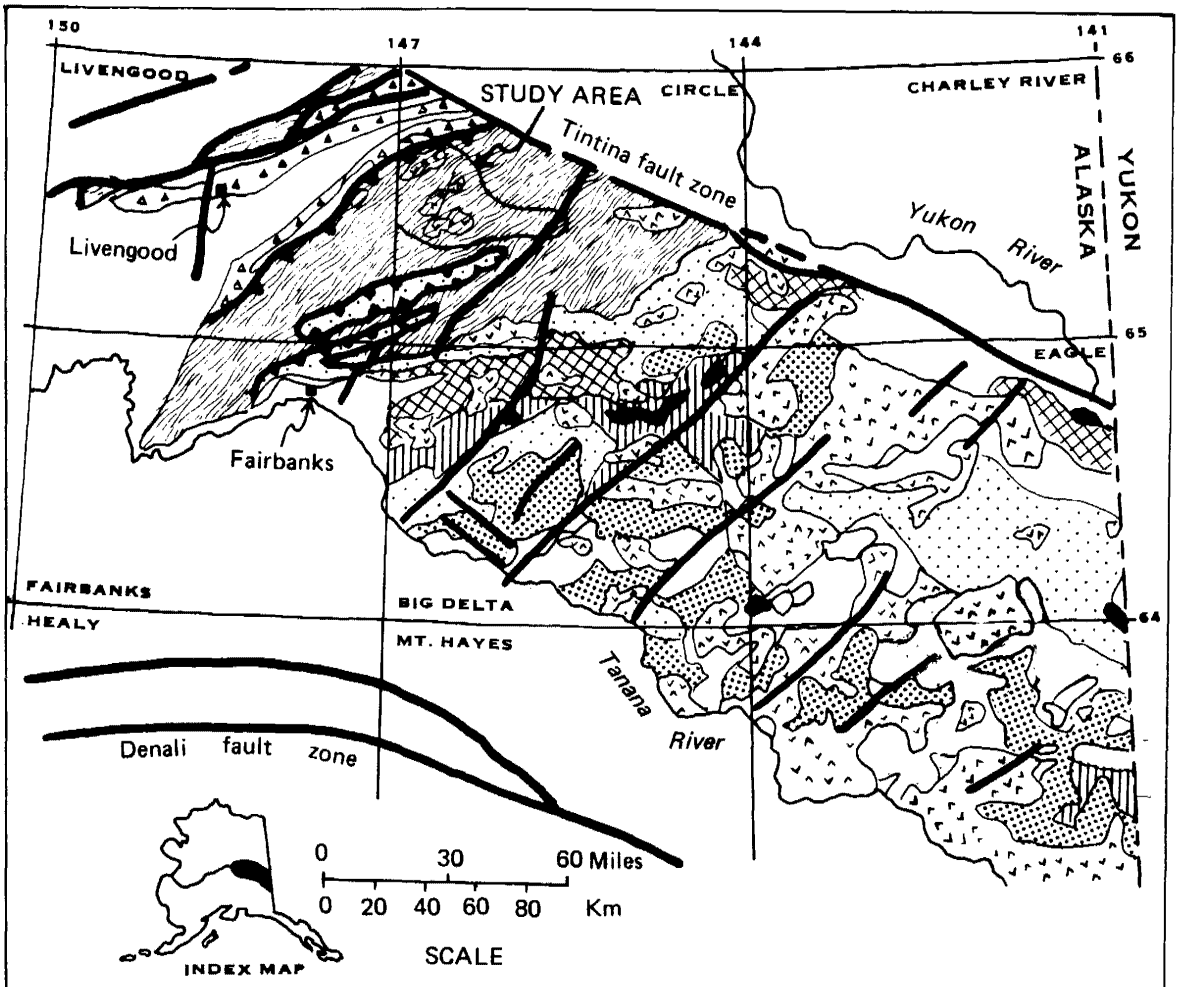


Figure 2.1 Tectonic setting of study area within the Yukon-Tanana terrane. Dotted line represents assumed continuation and offset of facies boundary separating the Selwyn and Mackenzie fold belts in Canada; in Alaska dotted line distinguishes the Yukon-Tanana terrane from Proterozoic and Paleozoic strata north of Fairbanks. Modified from Jones and others, 1981 and Templeman-Kluit, 1976.

(1986), amounting to 40 to 80 miles since Cretaceous time. Recent movement on the Kaltag Fault has produced up to 1 1/2 miles of offset on river drainages (Patton and Hoare, 1986).

The study area is situated close to a transition in trend on the Tintina Fault, from its mainly northwest-southeast trend, to northeast-southwest in the vicinity of the Kaltag Fault. As mapped by Foster and others (1983), the six mile-wide fault zone marking the west-northwest-trending Tintina Fault is approximately 15 miles east-northeast of Lime Peak.

The regional structural strike of this northern part of the Yukon Crystalline terrane is easterly or northeasterly, and the majority of known faults trend subparallel to the structural grain according to geologic mapping (Foster and others, 1983) and geophysical interpretations (Cady and Barnes, 1983; Cady and Weber, 1983). Few northwest trending faults are known, but folds in the central part of the Lime Peak - Mt. Prindle area have northwesterly-trending axes.



EXPLANATION

Silurian and Ordovician	Chert, dolomite, siliceous slate, basaltic volcanic rocks, and orthoquartzite	Paleozoic and (or) Precambrian	Paragneiss and orthogneiss; amphibolite facies, (including some contact metamorphosed rocks) and augen gneiss
Late Paleozoic	Volcaniclastic rocks, greenschist, greenstone, minor marble. Greenschist facies. Cataclastic rocks common	Cambrian and Precambrian	Quartz mica schist, quartzite, grit, maroon and green slate, black arenaceous limestone
Middle and early Paleozoic	Black quartzite, black slate/phyllite, calcphyllite, marble--mostly greenschist facies but grades to amphibolite facies in a few places	Tertiary and Mesozoic	Mostly granodiorite and quartz monzonite, but includes a few other felsic or intermediate intrusive igneous rocks
Paleozoic and (or) Precambrian	Quartzite, mica schist, marble, metamorphosed mafic and minor ultramafic igneous rocks--mostly amphibolite facies, but includes minor eclogite	Permian and pre-Middle Devonian(?)	Ultramafic rocks, shale, and chert

Figure 2.2. Generalized geology of the Yukon-Tanana upland. Modified from Weber and others, 1985.

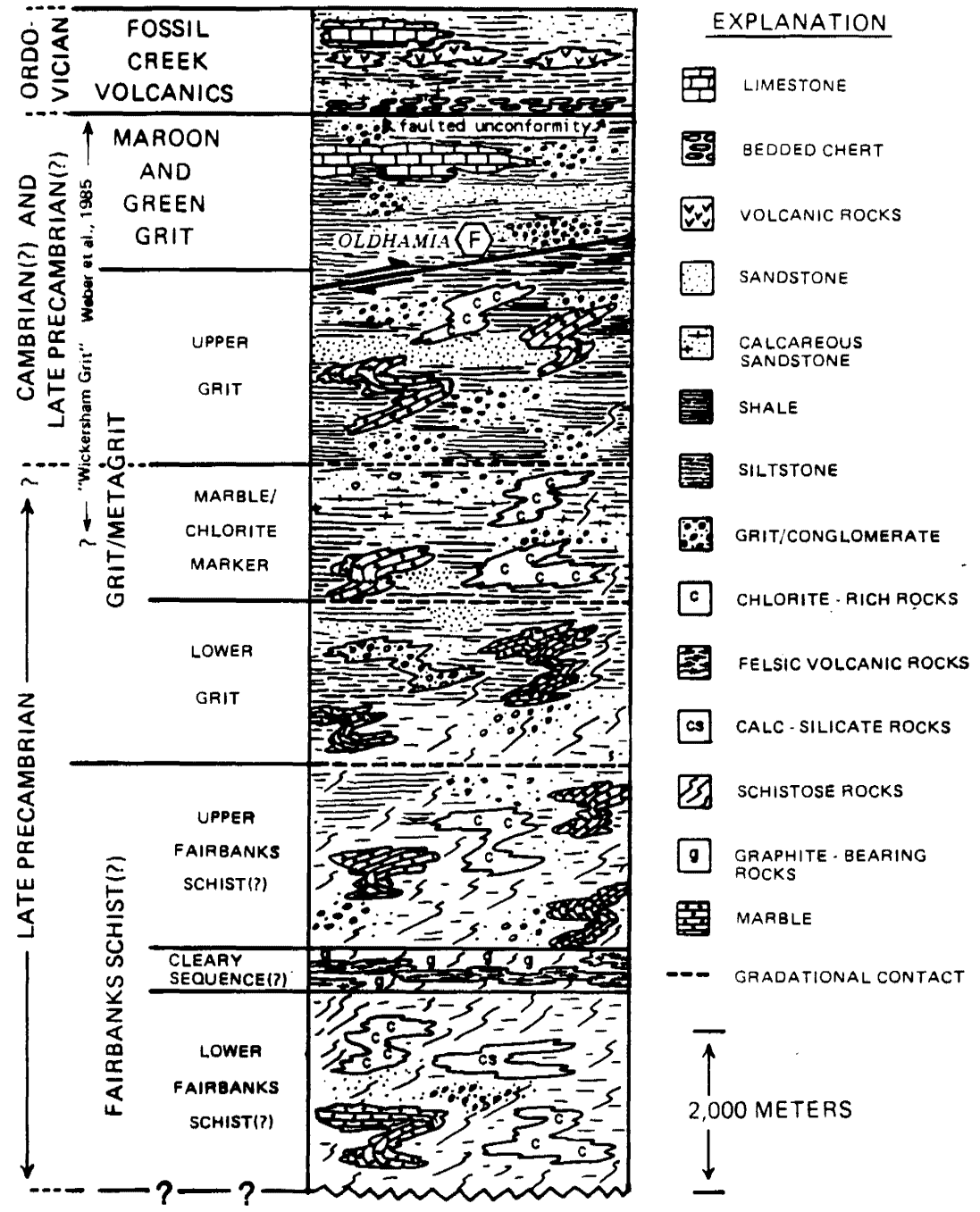


Figure 2.3 Generalized stratigraphic section for the Lime Peak-Mt. Prindle area, east-central Alaska. Thickness estimates are based on interpretive cross sections (pl. 2-1B, this report). Units are locally thickened by intraformational folding. Metamorphic grade and textural development increases down section from slates and phyllites in "maroon and green grit" to well developed schistose fabric in Fairbanks schist(?).

Stratigraphy

Most of the study area is underlain by a series of Late Proterozoic and early Paleozoic sedimentary and metasedimentary rocks. The regional stratigraphic strike is approximately east-northeast, with the oldest rocks in the southern and southeastern part of the area. Four major sequences make up the sedimentary/metasedimentary rocks (fig. 2.3) and include from the oldest: 1) pelitic schists of the Fairbanks schist(?), 2) pelitic schists, pelites, quartzitic sandstones, grit, meta-sandstone and meta-grit of the "grit-metagrit sequence," 3) phyllite, shale, siltstone, quartzitic sandstone and grit of the "maroon and green grit sequence," and 4) shales, limey shales, and limestones of the Fossil Creek Volcanics.

Metamorphism

A regional metamorphic gradient from slightly-altered rocks and lowest-grade greenschist facies in the northwest part of the study area, to upper-grade greenschist and amphibolite facies in the southeast is superimposed on the sedimentary rocks. The regional strike of the metamorphic isograds differs slightly, but significantly, from the regional strike of stratigraphic units.

Stratigraphic markers are largely missing or vague within the clastic and meta-clastic sedimentary rocks, and the most obvious mappable field characteristic tends to be the metamorphic grade and texture. For this reason, metamorphic grade, from phyllitic rocks of lowest greenschist facies, to semischist, to pelitic schist of the upper greenschist and lower amphibolite facies, as well as stratigraphic units are shown on the accompanying maps (pl. 2-1A). The deviation of the metamorphic textural zones and isograds from the stratigraphic strike is clearly reflected in the map patterns.

Previous workers (Foster and others, 1983), have postulated thrust faults separating rocks of different metamorphic grade. Detailed mapping of the protoliths and metamorphic textures appears to indicate that the metamorphic gradient is gradational over the study area.

Igneous Rocks

Igneous rocks of the study area are described in detail in chapter 3 of this volume.

Three large Tertiary granitic plutons (Hope Granite Suite) intrude the sedimentary and metasedimentary rocks of the study area. Rhyolite porphyry dikes associated with the Tertiary plutons are common in the vicinity of the plutons, and cut both the plutons and the surrounding country rock. Large contact aureoles of hornblende hornfels surround the Tertiary plutons.

Small plutons, dikes, and hypabbyssal rocks present in the area range from Cretaceous to Tertiary in age. Rock types include monzogranite, lamprophyres, hornblende quartz monzonite, syenite, felsite, and gabbro. Small gabbroic and ultramafic dikes and sills of probable Paleozoic age intrude sedimentary rocks in the northwestern part of the study area.

Structure

Structure in the study area is dominated by relatively flat-lying east-northeast striking schistosity, resulting from regional metamorphism. Bedding is more obvious in the northwest, where the regional metamorphism is weakest. The structure is complicated by asymmetric secondary folding at various orientations. A third set of broad folds is superimposed on the schistosity and bedding, and approximately parallels the dominant schistosity.

Thrust faulting of relatively minor displacement is probably related to deformation during regional metamorphism. High-angle faulting striking north to north-northeast and northeast is relatively young and produces displacements generally less than 1000 meters. The high-angle faults displace both the sedimentary/metasedimentary rocks and the younger plutonic rocks.

A simplified map of the major structures and stratigraphic units is shown in figure 2.4. Regional structure is discussed in a separate section of this chapter.

SEDIMENTARY AND METASEDIMENTARY ROCKS

Fairbanks Schist(?)

Pelitic schists of the Fairbanks schist(?) underlie most of the southeastern portion of the study area.

Occurrence

The Fairbanks schist is an informal name used by Robinson (1982) for pelitic schists of probable Proterozoic age in the Fairbanks area. In the Lime Peak-Mt. Prindle study area, schists assigned to the Fairbanks schist(?) are known to be relatively contiguous with the Fairbanks schist in the Fairbanks area (T.E. Smith, pers. comm., 1986).

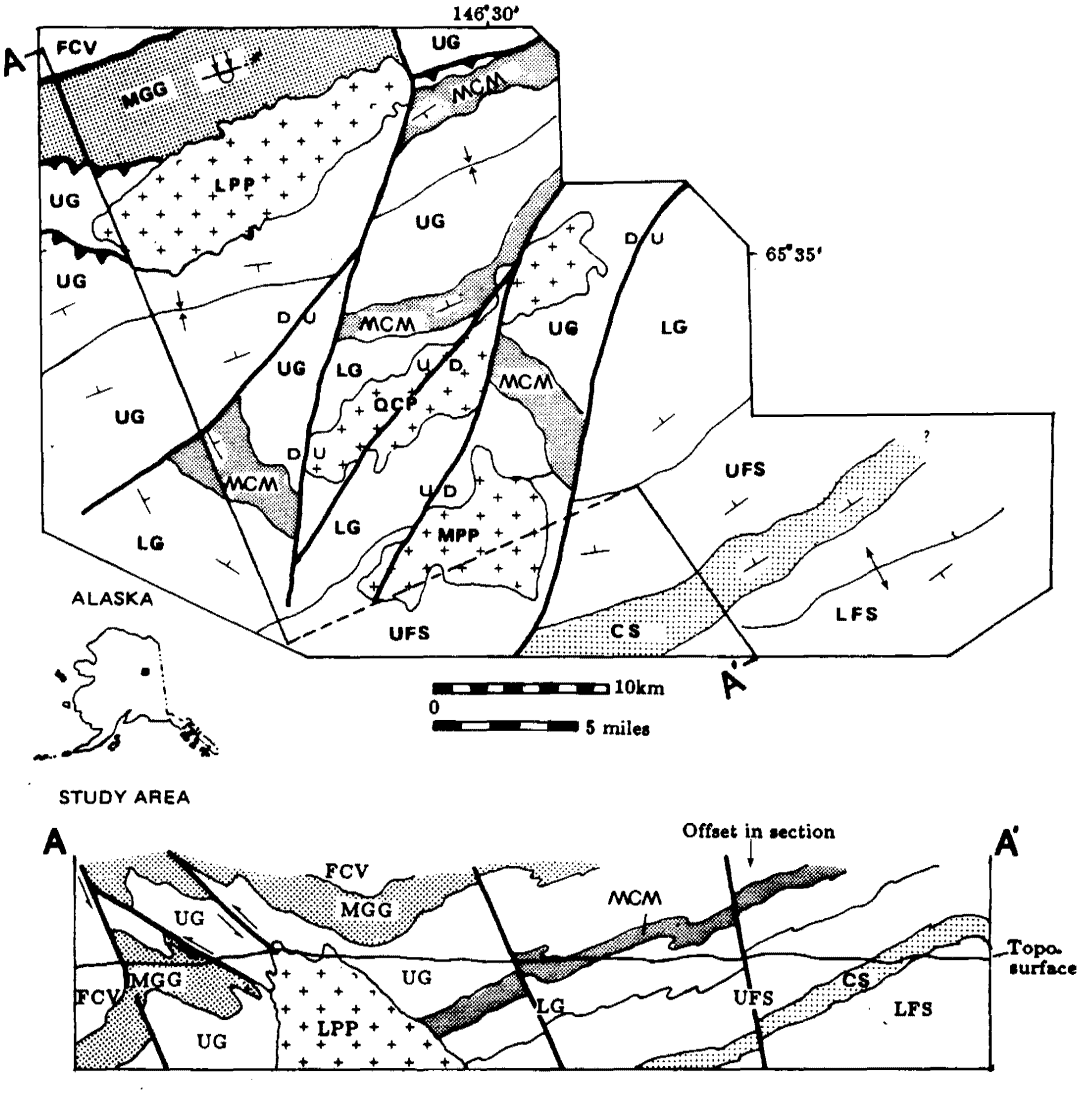
The Fairbanks schist(?) consists almost entirely of pelitic schists, but includes layers and lensoid bodies of chlorite schist, marble, and calc-silicate schist. The Cleary sequence(?), a recessive sequence of felsic and graphitic schists interstratified with pelitic schist occurs near the upper part of the Fairbanks schist(?), and is tentatively correlated with the Cleary sequence of Smith and others (1981) in the Fairbanks area. In the study area, the Cleary sequence(?) separates the Fairbanks schist(?) into an upper unit and a lower unit. The lower unit is of slightly higher metamorphic grade.

The lower contact of the Fairbanks schist(?) is not exposed in the study area, and is not known to be exposed regionally. The Fairbanks schist(?) is apparently gradational with the lowermost unit of the overlying "grit-metagrit sequence" (fig. 2.3). Because protoliths of the two units are very similar and the metamorphic grades are gradational over the contact boundary, the contact, as placed on the accompanying map, is approximate.

Character and thickness

Pelitic schist

Pelitic schists comprise the greatest percentage of rocks of the Fairbanks schist(?). As noted above, the Fairbanks schist(?) is divided into a lower unit, an upper unit, and the interstratified Cleary sequence(?), which separates the upper from the lower unit. All three units contain major percentages of pelitic schist. The lower unit is greater than 2,500 meters thick and the upper unit is approximately 2,300 meters thick. The interstratified Cleary sequence is approximately 500 meters thick. Small-scale isoclinal and asymmetric folding and small-scale thrust faulting makes estimates of true stratigraphic thickness difficult. Therefore, the thicknesses given are taken from apparent thickness on a regional scale and from approximations of regional dip. Local variations in thickness are large.



EXPLANATION

LPP	LIME PEAK PLUTON	UG	UPPER GRIT
QCP	QUARTZ CREEK PLUTON	MCM	MARBLE/CHLORITE MARKER
MPP	MOUNT PRINDLE PLUTON	LG	LOWER GRIT
FCV	FOSSIL CREEK VOLCANICS	UFS	UPPER FAIRBANKS SCHIST
MGG	MAROON AND GREEN GRIT	CS	CLEARY SEQUENCE
		LFS	LOWER FAIRBANKS SCHIST

Figure 2.4 Generalized geologic map and interpretive cross section showing distribution of major stratigraphic units and simplified structure of the Lime Peak-Mt. Prindle area.

In the upper unit, the rocks include pelitic schist, white mica-quartz schist, brown to gray quartzite, lesser schistose quartzite with white mica, and white mica-biotite-quartz schist. Minor amounts of chlorite, chloritoid, garnet, and poikiloblastic plagioclase porphyroblasts as well as a trace of tourmaline are also contained in these rocks. The plagioclase porphyroblasts commonly display syn- or post-tectonic rotation. Plagioclase also occurs as crystal clots up to 1.5 millimeters in diameter.

The schists of the upper unit are generally fine-grained and medium-gray to greenish medium-gray. Minor rusty pitting (after pyrite ?) is common. Calcareous layers, chloritic layers and clear, stretched "quartz eyes" up to 1.5 millimeters long are also common. The quartz eyes generally occur in greater abundance near the upper part of the Fairbanks schist(?), and may be relic granule-size detrital quartz grains of the protolith. The schists are generally moderately foliated and locally crenulated. Small garnet porphyroblasts are rare and alter to chlorite and white mica. Ribbon quartz and mortar texture are common.

Rocks in the lower unit of the Fairbanks schist(?) are generally more schistose than the upper unit and contain slightly higher grade metamorphic assemblages than the upper unit. Rocks of the lower Fairbanks schist(?) include pelitic schist, white mica-quartz schist, massive quartzite with white mica, biotite schist, and garnet-chlorite-biotite schist. The schists are generally fine- to medium-grained, thinly-banded, and medium-gray to greenish dark-gray.

In the southeastern part of the map area, mineral assemblages in pelitic schists of the lower unit include quartz + white mica + chlorite + plagioclase (locally porphyroblastic) +/- garnet +/- biotite. Traces of zircon, sphene, tourmaline, and epidote are common. Fine-grained pink garnets are most common in the easternmost part of the map area. The garnet isograd is shown in figure 2.5. Kyanite porphyroblasts up to 0.5 millimeters in diameter occur in schists along the southeasternmost boundary of the study area.

Hornfels zones in the pelitic schist are localized in the Table Mountain area. Hornfels mineral assemblages consist of quartz + plagioclase + white mica + biotite + andalusite +/- black tourmaline +/- garnet (see section on hornfels rocks, this chapter). West of Table Mountain, a hornfels zone in the pelitic schist contains the opaque mineral assemblage of arsenopyrite + pyrrhotite +/- pyrite. The character and extent of the hornfels zones in the Table Mountain area indicate the probable presence of a pluton at a shallow depth below the surface.

Chlorite schist

Thin layers and lensoid bodies of green-gray white mica-chlorite-quartz schist are common in the Fairbanks schist(?). Many of these occurrences are too small to show on the map, but the larger layers and bodies are delineated as chlorite schist. Locally, the chlorite schists may grade into chloritic quartzite containing white mica.

The chlorite schists are fine- to coarse-grained and slightly- to well-foliated. Mineral assemblages may include up to 50 percent quartz and feldspar, 40 percent white mica, and up to 30 percent chlorite, with minor amounts of tourmaline and porphyroblastic plagioclase (2.5 mm. in diam.). Calcareous-coating and/or abundant limonitic pitting (after pyrite ?) on weathered surfaces is common.

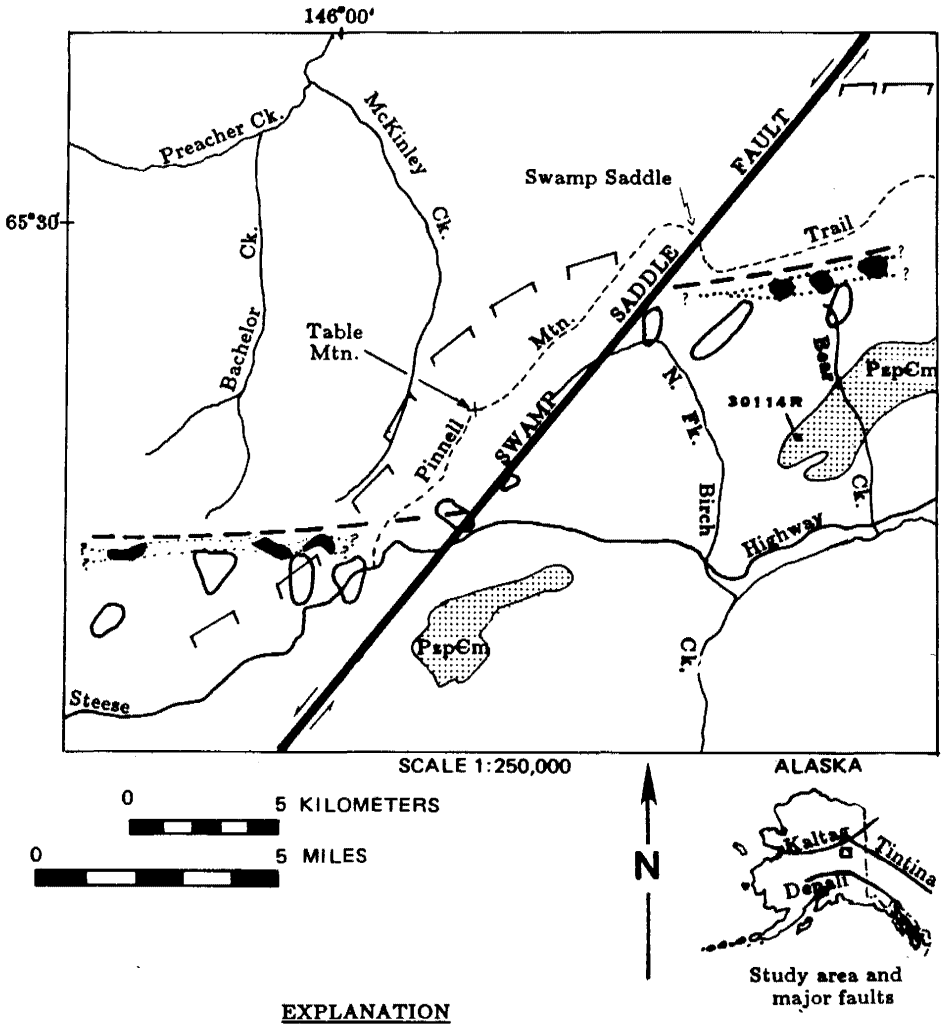


Figure 2.5 Generalized geology of the Table Mountain area showing the trace of the left-lateral Swamp Saddle fault, the offset of the regional garnet isograd (Foster and others, 1983), the inferred northern limit of porphyroblastic chlorite schist outcrops (mafic chlorite schist of Yeend, 1987), and stream drainages having samples anomalous in antimony.

Marble and dolomitic marble

Marble, dolomitic marble, and schistose marble occur as thin layers and lensoid bodies within the Fairbanks schist(?). The carbonate rocks are light- to dark-gray or black, greenish-gray, and weather to light tan and brown. Most carbonates are fine-grained to cryptocrystalline, and layers are up to several meters thick. Mineral assemblages include up to 30 percent quartz, and up to 10 percent plagioclase (An 9), in addition to the carbonate component. The schistose marbles may contain up to 20 percent white mica. Chert may form up to 2 percent of the rocks.

White veins and stringers of fine-grained calcite are common in the carbonate rocks. The carbonate rocks are frequently associated with or gradational into calc-silicate schist.

Calc-silicate schist

Layers of calc-silicate schist occur throughout the pelitic schists of the Fairbanks schist(?). The calc-silicate schists are greenish-gray, brown weathering and contain a variety of mineral assemblages. Varieties include light-gray to white tremolite schist, very fine-grained, greenish-gray sphene-plagioclase-chlorite-diopside schist, and coarse-grained pyrrhotite and tourmaline-bearing quartz-clinopyroxene-garnet-calcite granofels or skarn. Metasomatism has altered some of the calc-silicate schists to sulfide- and scheelite-bearing skarns in the vicinity of Table Mountain.

Age and Correlation

The Fairbanks schist is an informal name applied by Robinson (1982) to the oldest rocks in the Fairbanks-Livengood area. These rocks were originally part of the now-abandoned Birch Creek Schist of Mertie (1937), which included metasediments, sediments, carbonates, and volcanics of Proterozoic to Paleozoic age.

In the Fairbanks-Livengood area, the Fairbanks schist consists primarily of quartzite and quartz-muscovite schist and is about 1,300 meters thick. In that area, the quartzite is reddish-brown weathering and the schists are silvery-gray to brown weathering with abundant white mica + quartz +/- chlorite +/- detrital tourmaline +/- garnet +/- biotite. The Cleary sequence is interstratified near the upper part of the Fairbanks schist, and consists of white to buff felsic schist, actinolite greenschist, greenstone, marble, pelitic schist, and quartzite (Smith and others, 1981).

The Fairbanks schist in the Fairbanks-Livengood area is gradational into the overlying Wickersham grit (Weber and others, 1985). The Fairbanks schist contains increasing amounts of granular quartz "eyes" in the upper part of the unit, and resembles the grit metasediments of the overlying Wickersham grit (Weber and others, 1985).

The regional geology between the Fairbanks-Livengood area and the study area indicates that the Fairbanks schist is probably contiguous into the study area (T.E. Smith, pers. comm., 1986; F.R. Weber, pers. comm., 1987). In the study area, a unit of felsic and graphitic schists near the middle of the Fairbanks schist(?) resembles, at least partially, the Cleary sequence of the Fairbanks area. The upper part of the Fairbanks schist(?) in the study area contains the same increase in content of white quartz "eyes" as noted in the Fairbanks-Livengood area. The contact is apparently gradational into the overlying "grit-metagrit sequence" of this report, which we suggest is at least partly correlative with the Wickersham grit in the Fairbanks-Livengood area.

In the Livengood A-2 and A-3 Quadrangles, the Fairbanks schist and the overlying Wickersham grit are considered to be Late Proterozoic (Hadrynian) and earliest Cambrian in age, based on the presence of *Bavlinella*, a blue-green algae of Late Precambrian and/or Early Cambrian age (Weber and others, 1985; based on pers. comm. with Carol Allison, 1984), which was found in the uppermost part of the Wickersham grit.

In the study area, the fossil *Oldhamia* of Late Precambrian to Early Cambrian age was found in the "maroon and green grit" of this report, about 6,000 meters stratigraphically above the Fairbanks schist(?), by Foster and others (1983). No fossils were found in the underlying "grit meta-grit sequence" or the Fairbanks schist(?). Because of its stratigraphic position below the known Proterozoic to Early Cambrian fossil occurrences, and the lack of fossils in the overlying "grit-metagrit sequence," the Fairbanks schist(?) is tentatively assigned an age of Late Precambrian.

Correlation of the Fairbanks schist and the overlying Wickersham grit with rocks of similar protolith and metamorphic grade of the Windermere Supergroup in the Yukon Territory of Canada, has been proposed by Weber and others (1985). Pelitic schists, grit, meta-grit, and maroon and green phyllite and grit (Gabrielse and others, 1973; Tempelman-Kluit, 1984) in the Yukon Territory are quite similar to the stratigraphic sequence in the study area. In the Yukon Territory, these rocks are believed to floor the Selwyn platform (Tempelman-Kluit, 1984).

Cleary sequence(?)

Occurrence

Distinctive interlayers of graphitic and felsic schists are found in the pelitic schist and quartzite of the Fairbanks schist(?) in the vicinity of Bachelor and Hope Creeks. These lithologies and their apparent stratigraphic position in the upper part of the Fairbanks schist(?) suggests that they may be correlative with the Cleary sequence of Smith and others, (1981) in the Fairbanks schist of the Fairbanks mining district.

The graphitic and felsic schists are recessive weathering, and the best exposures are in Bachelor Creek, where placer mining operations cut down to bedrock. On ridgetops, only minor amounts of float indicate the presence of these lithologies.

Character and thickness

The Cleary sequence(?) is approximately 500 meters thick, although considerable lateral variation in thickness is possible. The Cleary sequence(?) in the study area is characterized by the presence of relatively abundant graphitic schist and very thin layers of felsic schist interlayered in pelitic schist.

Felsic schist

Interlayers of light-gray and light blue-gray, finely-laminated, fine-grained white mica-plagioclase-quartz schist and white, laminated, banded, micaceous quartzite are characteristic of the Cleary sequence(?). These rocks commonly weather to a rusty reddish-brown. Arsenopyrite(?), pyrite, and chalcopyrite are commonly abundant in these rocks.

Mineral assemblages in the felsic schists include 75 percent quartz, 15 percent plagioclase, 7 percent white mica, and about 3 percent chlorite. Tourmaline is present in trace amounts. The white mica content varies locally, and may comprise up to 50 percent of these schists.

Tourmalines from this unit are typically zoned. Tourmalines microprobed by R.J. Newberry (unpublished data, 1987) are very low in calcium and contain subequal amounts of iron and magnesium. The zoning and Ca-Mg-Fe content of the tourmaline is typical of a volcanogenic origin (fig. 2.6) on the basis of criteria established by Taylor and Slack (1984).

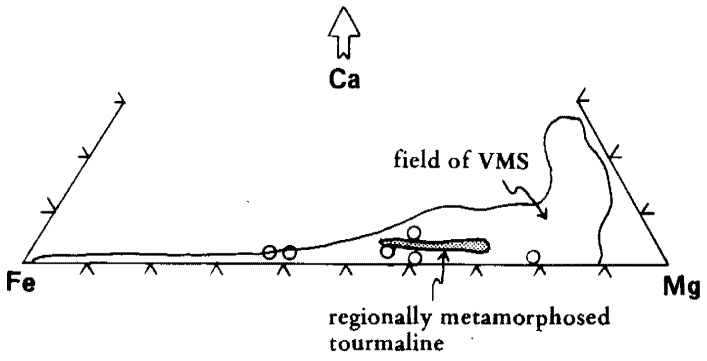


Figure 2.6 Compositions of tourmalines from Bachelor Creek (circles) compared to those of volcanogenic massive sulfide (Taylor and Slack, 1984) and regionally metamorphosed tourmaline from staurolite metapelites (Henry and Guidotti, 1985). Elements are expressed as molecular proportions.

Graphitic schist

Dark gray to black graphitic schist is interlayered with felsic schist, pelitic schist, and other Cleary sequence(?) lithologies. The graphitic schist is typically very finely-laminated and is typically interlayered with gray, graphite-chlorite-white mica schist, feldspathic quartz-white mica schist, white quartzite, very rare black quartzite, and felsic meta-grit. The graphitic schists include black graphite schist, and graphitic pelitic schist. The graphitic schist locally contains thin to thick layers of chlorite-plagioclase-garnet-bearing schist and amphibole-calc schist. Locally, the graphitic schist contains up to 10 percent pyrite. Other sulfides are locally abundant, and include, chalcopyrite, arsenopyrite, pyrrhotite, and enargite(?).

Quartz veining is common within the graphitic schist in the Faith Creek area (chap. 6, this report) and is subparallel to cross-cutting. Veins of quartz, quartz-chlorite or quartz sulfide (pyrite, sphalerite, arsenopyrite, chalcopyrite, and stibnite) are also found in that area. The sulfide rich veins commonly weather orange to red.

Age and Correlation

In the Fairbanks mining district, the Cleary sequence is an informal name for a distinctive sequence of rocks interlayered within the Fairbanks schist. This sequence includes inter-lensing felsic schist, laminated white micaceous quartzite, chloritic and actinolitic greenschist, graphitic schist, minor metabasite and metarhyolite, calc-silicate schist, and banded gray marble (Smith and

others, 1981; Bundtzen, 1982; Metz, 1982; Robinson, 1982; Weber and others, 1985). These rocks are interlayers with pelitic schists which are indistinguishable from schists of the Fairbanks schist. The Cleary sequence is thought to be largely of distal volcanogenic origin, and hosts most of the concordant and discordant lode mineral occurrences in the district (Weber and others, 1985). The Cleary sequence is also exposed upstream of most significant placer deposits in the Fairbanks area (Smith and others, 1981; Robinson and others, 1982).

In the study area, the presence of graphitic schist and sulfide-bearing felsic schist, both typical of the Cleary sequence in the Fairbanks area, appears to justify the tentative correlation of such rocks with the Cleary sequence.

The age of the Cleary sequence(?) is tentatively assigned as Late Precambrian on the basis of its position in the Fairbanks schist(?), stratigraphically below the "grit-metagrit sequence," and the known fossil occurrences of *Oldhamia* in the "maroon and green grit" (see section on Fairbanks schist(?) and fig. 2.3).

"Grit-metagrit sequence"

Occurrence

Clastic and metaclastic rocks of the "grit-metagrit sequence" underlie most of the study area, and crop out in a belt about 25 kilometers wide, trending east-northeast through the center of the map area (figs. 2.3 and 2.4). The name, "grit-metagrit sequence" is an informal name used in this report.

The "grit-metagrit sequence" is variably metamorphosed from lowest-grade greenschist in the northwestern part of the study area to highest grade greenschist facies in the south and southeast. The sequence is divided into three major subunits, all of which have very similar protoliths consisting mostly of shale and siltstone with lesser, but very distinctive beds of gritty, quartz arenite sandstone and grit. Grit conglomerate and pebbly grit conglomerate are not common, but are the most distinctive rocks in the sequence. The middle unit, the "marble-chlorite marker," which contains an appreciable percentage of chloritic and carbonate layers, separates the "lower grit" from the "upper grit "(fig. 2.3).

The southern contact of the sequence is gradational into the Fairbanks schist(?). In the vicinity of the contact, the protolith and metamorphic grade of the two units are similar. Although the contact between the Fairbanks schist(?) and the "lower grit" is gradational and not clearly defined, there is consistency in the placement of the contact by experienced workers (for example, F.R. Weber, T.E. Smith) in the region. Hence, although the contact as shown on the accompanying map (pl. 2-1A) is somewhat arbitrary, it does appear to have stratigraphic and regional significance. Overall compositions in the Fairbanks schist(?) are clearly different from the overlying "grit-metagrit sequence" in spite of the general similarity of the units in the vicinity of the contact.

The "grit-metagrit sequence" is overlain by the "maroon and green grit," another informal unit name used in this report. The protolith of both units is very similar, but the latter contains beds of very distinctive maroon- and green-colored phyllite and shale. The contact between the two units appears, in most places, to be a low-angle thrust fault, but the stratigraphic relationship between the two units may be a gradational contact (figs. 2.3 and 2.4).

Character and thickness

As noted above, protoliths of the "grit-metagrit sequence" are very similar throughout the extent of the outcrop belt, and the most obvious mappable field characteristic of the rocks is usually the metamorphic grade and texture.

The entire "grit-metagrit sequence" consists of variably metamorphosed clastic sediments that were apparently deposited in a submarine fan environment. The protoliths throughout the sequence consist of shale, silty shale and siltstone, grit-sandstone, and grit, with very distinctive bimodal quartz arenite sandstone. Grit and pebble conglomerate are rare. The granules in the gritty sandstone and grit are almost all quartzose, but albitic feldspar clasts make up a very rare, but distinctive constituent in some layers. The feldspars are partially altered to clay, and appear as whitish clasts in the unmetamorphosed parts of the sequence. In the schistose varieties, the feldspar granules may be the origin of white, altered, feldspar porphyroblasts.

Quartzite and grit lithologies are highly variable and range from light- to dark-gray, creamy-white to light-greenish-gray, fine- to very coarse-grained (0.125 to 2.0 mm.), to granule and pebble conglomerate (2 to 6 mm.). The quartzite is plane-laminated to massive, locally with normal grading. The sandstones are poorly to moderately sorted, with angular to sub-angular grains and silica cement. Local variations of the coarse-grained rocks include: 1) greenish-gray chlorite-bearing graywackes, 2) white-spotted feldspathic sandstone, 3) limonitic-specked sandstone and 4) dark-gray, mafic-rich graywacke. Coarse-grained rocks tend to form resistant ledges and blocky outcrops on the ridge crests. The shaley and phyllitic rocks are recessive, and most exposures consist of float, rather than outcrop.

The fine-grained sediments form, by far, the largest part of the sequence, and the coarser-grained gritty sandstone and grit layers are found in isolated lenticular or irregular shaped bodies about 100 meters thick, and with lateral dimensions up to 1.0 kilometer. Marble and chlorite-rich lithologies constitute a very small percentage of the sequence, but are the basis for mappable markers, and constrain depositional environment models.

Sedimentary features are best preserved in the "upper grit," in the northern part of the study area, where the metamorphism is the lowest grade. Sedimentary structures include graded-bedding, erosional bases, and scour-markings as well as very rare cross-bedding, sole-markings, and depositional slump features, convolute- and plane-parallel laminations, and complete Bouma sequences, all indicative of turbidity current deposition.

The isolated lenticular and irregular shaped bodies of the relatively coarse-grained sediments, with clearly defined cross-cutting erosional bases, as well as the sedimentary features noted in the rocks appears to indicate an inner-fan depositional environment (fig. 2.7) as defined by Mutti and Ricci-Lucchi (1972). The geometry and sedimentary features of the coarse-grained rocks are characteristic of channel deposits, and the surrounding fine-grained shales and silty shales, with thin beds of sandy-silt and sandstone are typical of hemipelagic and overbank deposits.

Metamorphism, which is higher grade in the lower units of the "grit-metagrit sequence" has destroyed most of the delicate sedimentary features. In the semischistose varieties of the grit, graded-bedding in the gritty sandstones and grit is about the only remaining identifiable

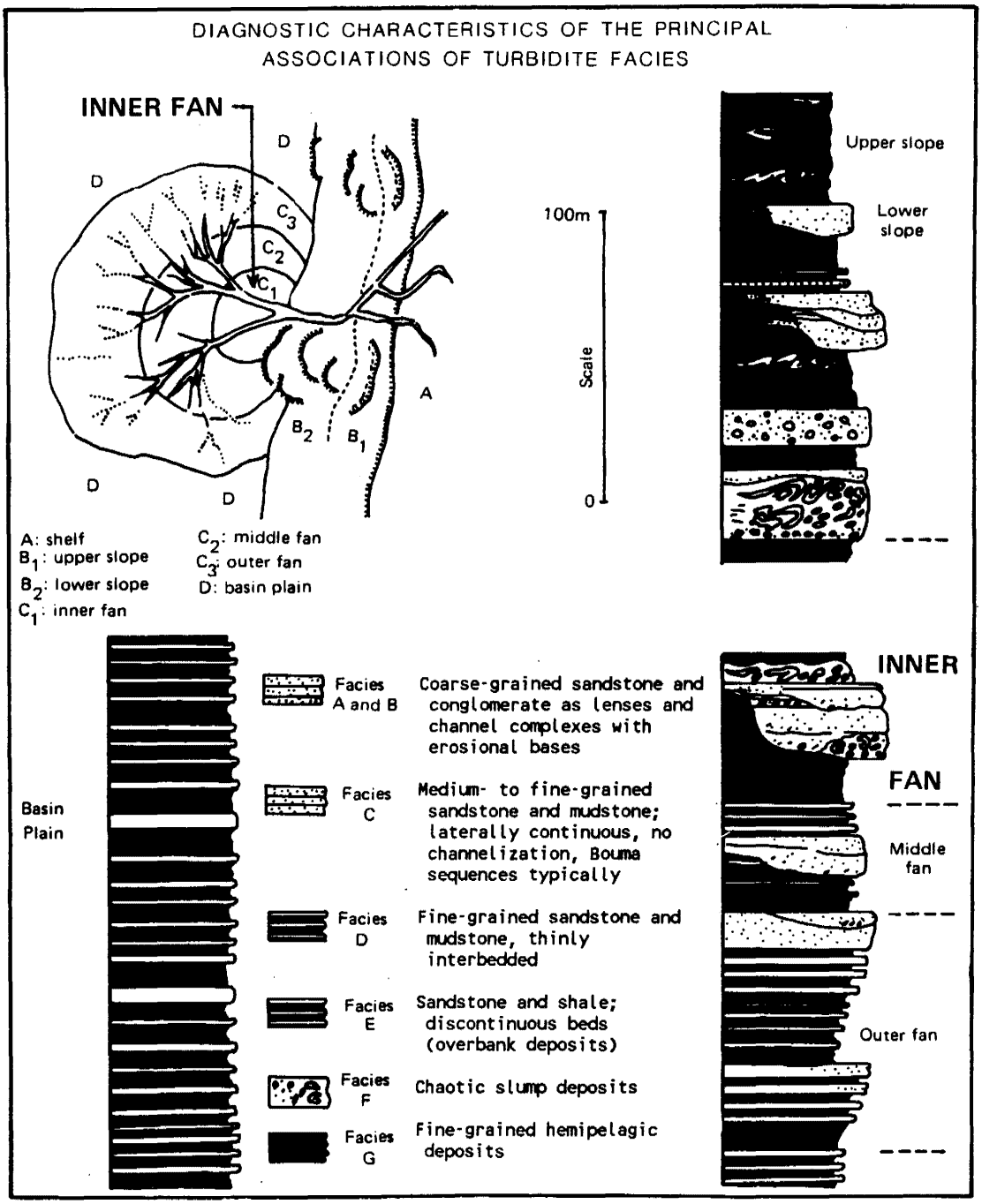


Figure 2.7 Environmental model and stratigraphic sections showing the principle associations of turbidite facies (from Mutti and Ricci Lucchi, 1972). The "maroon and green grit" and the "grit-metagrit" units of the Lime Peak-Mt. Prindle area are predominantly inner fan-type deposits (Facies A, B, and G). Grit lithologies are typically poorly-sorted, coarse-grained sandstones and conglomerates in massive, laterally discontinuous beds. Large (up to 300 meters across) erosional channel-type deposits occur.

sedimentary feature. In the schistose grit, all primary sedimentary features have been destroyed by the development schistosity and crenulation folding. However, the bimodal character of the coarse-grained gritty sandstones and grit is clearly discernible, even when the original quartz granules are stretched out as in the high-grade greenschist facies rocks.

Provenance for the "grit-metagrit sequence" was probably the western side of the North American craton during Late Proterozoic to Early Cambrian time. A low-relief granitic and/or metamorphic shield source produced quartz (locally blue-opalescent), plagioclase, potassium feldspar, white mica, and tourmaline as detrital minerals. Mafic minerals are rare, but form distinctive layers and almost all are chloritized. Calcareous rocks and limestone (micritic limestone with 2 to 3 percent detrital quartz grains) may represent continental shelf lithologies re-deposited on upper and possibly lower slope areas. Carbonate deposition was clearly localized and of small areal extent. Chlorite-rich, mafic protoliths may represent the periodic influx of continent-derived tuffaceous material, possibly from extensional volcanism along the transition from continental to oceanic crust (Stewart, 1971).

Graywacke and metagraywacke make up a small but distinctive part of the "grit-metagrit sequence." The graywackes are poorly-sorted, medium- to coarse-grained, subangular to angular with grains of quartz, plagioclase, and chlorite, with minor white mica and opaque minerals. Some graywackes are calcareous. Tremolite is common in metagraywackes.

The "grit-metagrit sequence" is about 6,000 meters thick. Each of the three major subunits are approximately 2,000 meters thick (fig. 2.3). Thicknesses in the unit are only approximate, and are based on inference from regional dips and outcrop patterns. Repetitive low-angle faulting and isoclinal folding on all scales probably has increased the apparent thickness of the sequence.

"Lower grit"

Because of their position in the higher grade portions of the regional metamorphic gradient and relative depth in the section, the "lower grit" rocks are mostly schistose with some minor semischist varieties . As noted above, most or all of the sedimentary features of the protolith of this unit have been destroyed by metamorphism. However, the "lower grit" appears to contain much less of the coarser-grained protoliths typical of the "grit-metagrit sequence." If the hypothesis of a submarine fan as the depositional model for the "grit-metagrit sequence" is correct, the "lower grit" is probably a more distal facies of the fan sequence than the "upper grit," which is unequivocally almost entirely inner fan facies. The rhythmically bedded clastics, graded-bedding, and sole-markings of the Bouma sequences typical of middle and outer fan facies would have been destroyed by the development of schistosity in these rocks.

Lithologies of the "lower grit" rocks are very similar to the upper part of the Fairbanks schist(?), both in apparent protolith and metamorphic grade. Pelitic schists comprise the greatest percentage of the unit. The schists are generally fine-grained, medium-gray to greenish-gray, with minor rusty-pitting (after pyrite?). The rocks include white-mica schist, brown to gray quartzite, schistose quartzite with minor white mica, and white mica-biotite-quartz schist. White, stretched quartz "eyes" and whitish, clay-altered poikiloblastic plagioclase porphyroblasts are locally evident. The stretched quartz "eyes" and porphyroblasts are thought to be relic granules from grit-sandstone and grit protoliths. Ribbon and mortar texture are common in the pelitic schist.

The metamorphic grade of the "lower grit" is no higher than upper greenschist facies, unlike the Fairbanks schist(?), which is locally up to amphibolite facies in grade.

Thin layers (generally less than 5 meters) of chloritic schist, mostly green-gray white mica-chlorite-quartz schist, are relatively rare in the "lower grit." Marble, dolomitic marble, and schistose marble also form thin, lenticular layers, and characteristically contain an appreciable percentage (less than 30 percent) of detrital quartz. Schistose marbles contain some white mica. Marble layers of significant thickness are delineated on the accompanying map.

"Marble/chlorite marker"

Green-gray, white mica-chlorite-quartz schist and semischist, including some very rusty-weathering varieties, form rare but distinctive layers throughout the "grit-metagrit sequence." Marbles, dolomitic marble, and schistose marble are also distinctive layers in the sequence, as are several varieties of calcareous schist. In approximately the middle 2,000 meters of the "grit-metagrit sequence," rusty-weathering chloritic schist associated with marble is found in relative abundance and appears to comprise a regional marker unit, named informally in this report as the "marble/chlorite marker (fig. 2.3)."

The marble in the marker unit tends to be thicker than elsewhere in the "grit-metagrit sequence," and in one location near Champion Creek, the marble is tens of meters thick, and includes brecciated marble as well as massive and schistose varieties. These carbonate rocks are generally very fine-grained to cryptocrystalline, but some coarser-grained varieties are also present. White veins and stringers of calcite are common in the carbonate rocks. Many of the carbonates are gradational into calcareous schist and semischist.

The metamorphic grade of the "marble/chlorite marker" is somewhat lower than the "lower grit" and includes both semischist and schistose varieties. Most of the rocks in the marker unit are pelitic schists and semischists and include minor amounts of metamorphosed gritty sandstone and grit, as is typical of the entire "grit-metagrit sequence." Mortar and ribbon textures are common in the pelitic schists of the marker unit.

"Upper grit"

The "upper grit" is the least metamorphosed of the "grit-metagrit sequence." Most of the unit is slightly altered or lowest grade greenschist facies, with phyllite and slate being the most common rock type (fig. 2.3). Sedimentary features of the protoliths for the "grit-metagrit sequence" are best preserved in this upper part of the sequence. A minor amount of semischistose "upper grit" crops out in the northeastern part of the study area.

"Upper grit" lithologies include quartz arenite and quartzite, phyllitic shale, slate, gritty sandstone and grit, with minor calcareous sandy siltstone, quartzwacke and graywacke. Grit and gritty sandstone typically consist of more than 90 percent clasts, and 10 percent or less of argillaceous matrix and silica cement. Hematite or calcite may be a locally important matrix constituent. Modal composition, based on 51 thin sections, is monocrystalline quartz with undulose extinction (80 to 95 percent), polycrystalline quartz (5 to 10 percent), microcrystalline quartz (1 to 2 percent), albite-twinned plagioclase (1 to 3 percent), perthitic potassium feldspar (1 percent) with trace amounts of tourmaline, white mica, zircon, foliated quartz, metamorphic rock fragments, and biotite. Plagioclase feldspar compositions average An34 (andesine range,

determined by the Michel-Levy method). Plagioclase is slightly to moderately altered to clay minerals, and potassium feldspar is only slightly altered. Quartz may be dimensionally oriented, and quartz mortar texture is incipient. Quartz exhibiting undulose extinction commonly contains abundant vacuole trains.

Rocks of the "upper grit" unit are metamorphosed to the lower greenschist facies. Authigenic white mica, quartz, and chlorite are common at the grain boundaries with the argillaceous matrix.

Age and Correlation

The age of the "grit-metagrit sequence" is based on the occurrence of the Lower Cambrian trace fossil *Oldhamia*, in the overlying "maroon and green grit" (fig. 2.3). This fossil has been noted about 20 kilometers west of the Lime Peak area in the Livengood Quadrangle (Churkin and Brabb, 1965; Mertie, 1937), and in the northwest Circle C-6 Quadrangle (65° 37' 36", 146° 55' 18"; Foster and others, 1983), in the headwaters of Mascot Creek. No fossils were recovered during this investigation. The stratigraphic position of the "grit-metagrit sequence" below the rocks containing *Oldhamia*, constrains the upper age limit of the sequence to Early Cambrian. From the stratigraphic thickness, the similarity of protoliths and apparent stratigraphic continuity of the "grit-metagrit sequence" with the overlying "maroon and green grit," and the lack of fossils, we infer that much of "grit-metagrit sequence" is probably Late Precambrian in age. For this reason, the position of the Precambrian-Cambrian boundary is uncertain, but is arbitrarily placed below the "upper grit" unit (fig. 2.3).

In the Lime Peak-Mt. Prindle area, the upper part of the "grit-metagrit sequence" and the "maroon and green grit" correlates with part of the Wickersham grit, an informal name for similar rocks in the adjoining Livengood Quadrangle (Weber and others, 1985). Rocks of the "grit-metagrit sequence" are contiguous with the Wickersham grit. In the Livengood Quadrangle, the Wickersham grit consists of a basal unit of quartzite, granule conglomerate and phyllite overlain by interlayered maroon and green slate, limestone, and dolomite. Thus, the "grit-metagrit sequence" of this report would approximately correlate with the basal part of the Wickersham grit. The overlying "maroon and green grit" of this report would correlate with the middle and, perhaps upper units of the Wickersham grit (fig. 2.3).

Regionally, the "grit-metagrit sequence" probably correlates, at least partially, with similar grit, shale, and siltstone of Late Precambrian and Early Cambrian age (Fritz and others, 1983), 900 kilometers southeast of the study area in the Gull Lake region of the Yukon Territory (fig. 2.8). The Gull Lake "grit unit" (Gabrielse, 1967) is composed of a lower subunit of alternating thick quartzite, quartzitic pebble conglomerate, shale, and siltstone capped by a thin (8 meter) limestone (Fritz and others, 1983). Most of the upper unit is composed of maroon shale, and contains the Lower Cambrian trace fossil *Oldhamia radiata* Forbes (Hofmann and Cecile, 1981). Similarities of stratigraphy, lithology, and fossils indicate that the "upper grit unit" and "lower grit unit" of the Gull Lake area in Yukon Territory are probably correlative with the "maroon and green grit" and "grit-metagrit sequence" of this report (S.P. Gordey and Grant Abbott, pers. comm., 1987).

The "grit-metagrit sequence" may also be correlative with the Twitya Formation of the Windermere Supergroup in the MacKenzie Mountains of northwest Yukon Territory. The Twitya Formation consists of shale, siltstone, parallel-laminated sandstone, with conglomeratic channel

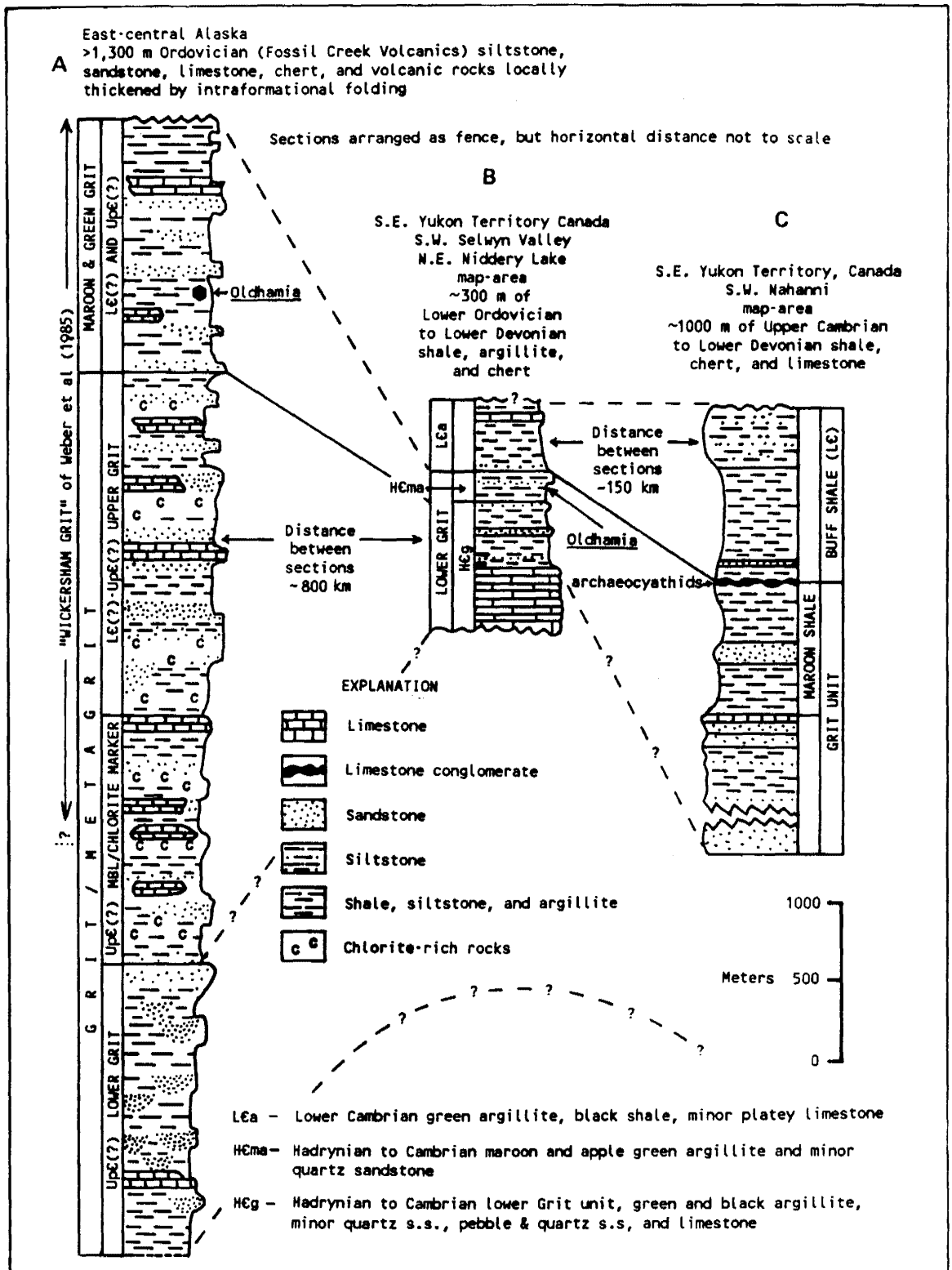


Figure 2.8 Tentative lithostratigraphic correlation of map units of the Lime Peak-Mt. Prindle area, east-central Alaska (stratigraphic section 'A' unit thicknesses estimated from cross sections), with map units of the Selwyn Valley, Yukon Territory, Canada (B) from Hofmann and Cecile (1981) and Nahanni map area (C) from Gordey (1980).

deposits, and appears to have been deposited in a turbidity current and mass-flow depositional environment (Eisbacher, 1981). Laterally, rocks of the Twitya Formation grade into thick silicic, clastic flysch, which correlates with parts of the widespread Middle to Late Proterozoic age "grit" unit of the Selwyn Basin (Eisbacher, 1981).

"Maroon and green grit"

Occurrence

The "maroon and green grit" is the youngest of the various meta-clastic units in the study area that are characterized by bodies of gritty sandstone and grit in predominantly pelitic rocks (fig. 2.3). The unit is named for the characteristic maroon and green slate and phyllite that is interbedded with gritty sandstone and grit. The unit crops out north and northwest of Lime Peak (fig. 2.4; pl. 2-1A), and because the regional metamorphic gradient is weakest in this area, sedimentary features are relatively well-preserved.

The lower contact of the "maroon and green grit" with the "grit-metagrit sequence" appears to be a low-angle thrust fault, where exposed to the west of Lime Peak. However, the protolith of the "maroon and green grit" appears to be almost identical in character to the underlying "grit-metagrit sequence," and the original stratigraphic relation between the two units may be a conformable and gradational contact. The "maroon and green grit" structurally underlies the older "grit-metagrit sequence," and many of the beds within the "maroon and green grit" are overturned. Because of poor exposure and structural complexity, it is not possible to work out details of the structure within the "maroon and green grit," but the unit appears to be exposed in a large overturned synform in the area north of Lime Peak (fig. 2.4).

The contact of the "maroon and green grit" with the overlying Fossil Creek Volcanics is probably a faulted unconformity. Cataclastic rocks and complex, high-angle, en echelon faulting of unknown displacement are characteristic of the contact zone, which is very poorly exposed on brush and tree-covered hills in the study area. The lowest layer in the overlying Fossil Creek Volcanics is characteristically a black, cherty, limey shale over 100 meters thick that is laterally persistent along the contact zone. This persistent horizon at the base of the overlying Fossil Creek Volcanics and the variation in lithology of the "maroon and green grit" under the contact supports the conclusion that the contact is a faulted unconformity.

Character and Thickness

The "maroon and green grit" is lithologically almost identical to the "grit-metagrit sequence" except for the colored slates and phyllites from which the name is derived. The unit is about 1,700 meters thick, and consists of dark- to medium-gray shale, siltstone, phyllite, with the typical quartzose gritty sandstone, grit, and grit conglomerate of all the so-called "grit rocks." The coarser-grained rocks crop out in lenticular bodies up to hundreds of meters thick and up to 1 kilometer in lateral dimension, as do the coarse-grained rocks in the "grit-metagrit sequence."

The distinctive maroon and green rocks in this unit are typically slate or phyllite in beds up to 15 meters thick. The green variety is generally more common than the maroon. The maroon and green rocks are recessive, platy-weathering, and have abundant chlorite on cleavage surfaces. Very fine-grained detrital material is visible under a microscope and consists of 90 percent quartz and 10 percent feldspar.

Thin limestone, marble, and calc-arenites are associated with the "maroon and green grit," generally in layers less than 3 meters thick. The calcareous clastic rocks are plane-laminated, very poorly-sorted limey mudstones. Detrital grains include mostly monocrystalline quartz with minor microcrystalline quartz, albite-twinned plagioclase feldspar, and lithic fragments. Adjacent clastic rocks commonly contain abundant carbonate material.

Mafic and ultramafic dikes and sills locally intrude the "maroon and green grit," particularly in the northernmost exposures of the unit in the vicinity of the contact with the Fossil Creek Volcanics. These intrusive rocks are mostly gabbro with minor ultramafic rock and possibly basalt, and may be associated with similar intrusives in the Fossil Creek Volcanics. The petrology of these intrusive rocks is discussed in detail in chapter 3 of this volume.

The "maroon and green grit" contains a belt of calcareous, mafic schistose rock, about 10 to 70 meters thick, near the southern contact with the "grit-metagrit sequence" and also along the northern limit of its outcrop extent. The two outcrop belts of these distinctive lithologies may represent opposing limbs of a large scale fold. The lithologies include fine- to medium-grained schistose calcareous metatuff, altered, porphyritic, intermediate to mafic igneous sills or flows, and calc-schist. This "marker unit" generally consists of an upper layer several meters thick of marble and calc-schist, and a lower layer of calcareous, mafic schist up to tens of meters thick. Metatuffs in this package are light greenish-gray, fine- to medium-grained, locally schistose with relic fragmental pyroclastic (lapilli) texture with calcite, quartz, chlorite, and volcanic rock fragments. In thin section, the metatuffs contain numerous 1.0 millimeter, subrounded, altered feldspar laths, as well as quartz, altered mafic clasts, and calcite. Alteration products include chlorite, calcite, opaque minerals, white mica, and epidote. Marble layers, about 1 to 2 meters thick, in the mafic schist are white or light- to dark-gray, fine-grained, thin-bedded, and laminated in part. Mafic sills or flows in this "marker unit" are blocky-weathering, about 1 to 3 meters thick, light-green, porphyritic with medium grains in an aphanitic matrix, non-foliated, and are both concordant and discordant. Mineralogy of these mafic rocks includes chlorite, calcite-altered pyroxene, altered plagioclase phenocrysts, and opaque minerals.

The "maroon and green grit" is metamorphosed to biotite-bearing hornblende hornfels in the vicinity of the Lime Peak pluton. In the hornfels zone, the distinctive maroon and green colors of the unit are bleached, and the unit is indistinguishable from the upper parts of the underlying "grit-metagrit sequence." At least some possibility exists that the "grit-metagrit sequence" and the "maroon and green grit" represent a single, contiguous unit, and that the typical maroon and green colors are simply bleached by the alteration due to regional metamorphism of the older parts of the sequence. However, the geochemical characteristics of the "maroon and green grit" appear to be distinct and separate from the underlying "grit-metagrit sequence," based on the extensive stream sediment sampling and analyses that were part of the present study. Thus, it is possible that some subtle, but fundamental difference, besides the color, justifies separating the two units.

The distinctive maroon and green colored layers, that give this unit its name, may be the result of the oxidation state of the iron contained in the sediments. Morad (1983) concluded that green- or dark-colored rocks are developed during early diagenesis in reducing conditions, below a water table. Red-colored rocks, by contrast, are formed by alteration of iron-bearing minerals (e.g. biotite, ilmenite) under oxidizing conditions during diagenesis.

The depositional environment of the "maroon and green grit" is the same as the underlying "grit-metagrit sequence, i.e. the inner-fan facies of a submarine fan (see discussion of "grit-metagrit sequence"; fig. 2.7). The proportion of coarse-grained to fine-grained rocks in the "maroon and green grit" appears to be greater than in the "grit-metagrit sequence" to the sourh, and hence the "maroon and green grit" may be more proximal than the latter unit.

Age and Correlation

The age of the "maroon and green grit" is based on the occurrence, in these rocks, of the Early Cambrian trace fossil *Oldhamia*, in the northwest portion of the study area (Foster and others, 1983).

In the study area, the "maroon and green grit" correlates with the middle part of the Wickersham grit (Weber and others, 1985) in the adjoining Livengood Quadrangle (fig. 2.3). In the Livengood Quadrangle, the middle part of the Wickersham grit consists of interlayered maroon and green slate, limestone, rare dolomite, and rare foliated, mafic intrusive rocks known as the "maroon and green member" (Weber and others, 1985). The upper informal member of the Wickersham grit, made up of arenaceous dark-gray limestone, grit, green and gray argillite, and chert, has been called the Takoma Bluff member for an exposure on the Yukon River in east-central Alaska, (Brown, 1983).

The age of the Wickersham grit together with the underlying Fairbanks schist is considered to be Late Proterozoic (Hadrynian) and earliest Cambrian, based on the presence of *Bavlinella*, a blue-green alga in the Takoma Bluff member, the youngest part of the Wickersham grit (Weber and others, 1985, based on pers. comm. with Carol Allison, University of Alaska Museum, 1984).

Regionally, the "maroon and green grit" is probably correlative with part of the Windermere Supergroup of the Canadian Cordillera (fig. 2.8). In the Gull Lake region of the Yukon Territory, the upper part of the "grit unit" of Gabrielse (1967) is composed mostly of maroon shale along with grit layers, and contains the Lower Cambrian trace fossil *Oldhamia radiata* Forbes (Hofmann and Cecile, 1981). Similarities of stratigraphy, lithology, and fossils indicate that the upper part of the "grit unit" in the Gull Lake area may be correlative with the "maroon and green grit" unit of this report (this report; S.P. Gordey and Grant Abbott, pers. comm., 1987).

Fossil Creek Volcanics

Occurrence

The lower part of the Fossil Creek Volcanics, consisting mostly of shale, siltstone, chert, limey shale, limestone, and mafic volcanics, is exposed in the northwest corner of the study area (fig. 2.4). The formation was defined by Mertie (1937) for exposures in the adjoining Livengood Quadrangle.

Exposure in this part of the study area is poor to very poor, with brush and trees covering most of the sidehills and ridges. Available evidence from the study area and from the adjoining Livengood Quadrangle indicates that the contact of the Fossil Creek Volcanics with the underlying "maroon and green grit" is a faulted unconformity. The apparent linear trace of the contact and the presence of discontinuous exposures of fault gouge and cataclastic rocks, suggest that the contact might be a high-angle fault. However, in spite of the poor exposure, the Fossil Creek

Volcanics apparently has some stratigraphic continuity along the contact zone, and typically a chert-rich horizon crops out in the vicinity of the contact.

The Fossil Creek Volcanics were subdivided into two parts: a lower, largely sedimentary part, and an upper, largely volcanic part north of Beaver Creek, by Chapman and others (1971) on the basis of work in the adjoining Livengood Quadrangle. In the study area, south of Beaver Creek, only the lower part of the formation is exposed.

Character and Thickness

Most of the Fossil Creek Volcanics in the study area consists of black to dark-gray and dark-brown shale, cherty shale, siltstone, shaly siltstone, and calcareous shale, with interbedded siltstone and banded black chert. Limonitic fine-grained limestone, medium to fine-grained sandstone, minor volcaniclastic sandstone and numerous sills and dikes of mafic and ultramafic igneous rocks are also typical of the unit. Non-foliated to slightly phyllitic textures predominate in the unit. Locally, numerous concordant quartz veinlets and larger, cross-cutting quartz veins are common. Primary sedimentary features, other than planar laminations are not evident.

Microscopic examination of the shale, siltstone, and sandstone indicates an epiclastic texture, and well-sorted, subrounded to rounded grains. Clasts include about 95 percent quartz and about 3 to 5 percent lithic fragments. Quartz grain types in quartzwackes and siltstone include monocrystalline-undulose extinction (70 to 95 percent), monocrystalline-straight extinction (up to 5 percent), and polycrystalline (2 to 4 percent). Some rocks contain trace amounts of plagioclase, potassium feldspar, white mica, biotite, and tourmaline. Siltstone and fine-grained sandstone are grain-supported with a matrix of quartz, carbonate, and hematite, as well as carbonate cement.

The Fossil Creek Volcanics in the study area are approximately 1,300 meters thick, a thickness that includes only the lower part of the formation. The upper, volcanic part of the formation is not exposed in the study area.

Limestone, dolomite, and mafic and ultramafic dikes and sills are common in the unit, and, where of sufficient thickness, are delineated as interlayers on the accompanying map (pl. 2-1A). The lowermost few hundred meters of the formation consists largely of dark chert and cherty argillite, which is also given subunit status on the map.

The depositional environment of the lower part of the Fossil Creek Volcanics is indeterminate. Major oxide data for basalts in the Livengood Quadrangle indicate an alkalic affinity, making continental tholeiite or a mid-oceanic ridge setting unlikely (Wheeler and others, 1987). The dark, micritic limestones, chert, and limey shales interbedded with predominant epiclastic deposits may indicate a distal environment on a continental shelf that was subject to repeated volcanic activity. The intrusive rocks may be associated with extensional faulting and the volcanic activity.

Chert

Dark gray to black chert predominates in the lower part of the Fossil Creek Volcanics, near the lower contact with the "maroon and green grit." The chert is interbedded with dark-gray to black argillite, and is commonly thin-bedded with a hackley fracture or finely-banded with minor white-colored bands. Massive, black, argillaceous chert with a vitreous luster also occurs. Local pervasive limonite staining is common.

In thin section, the cherty rocks contain a few percent of poorly-sorted, sub-angular, fine- to very fine-grained quartz, with minor feldspars, lithic fragments, and trace amounts of tourmaline. However, most of the rock is cryptocrystalline, with minor amounts of clastics and up to 20 percent hematitic matrix, and 10 percent hematite and/or carbonate cement.

Near the lower contact of the Fossil Creek Volcanics, the chert unit contains interbedded greenish, chloritic, silty sandstone, tuffaceous sandstone, and lithic tuff with some limestone clasts. Fragments from the volcaniclastic rocks contain minor clinopyroxene phenocrysts up to 3 millimeters, minor hornblende, cherty xenoliths, plagioclase altered to calcite and clay minerals, and secondary chloritization along microfractures. Depositional slumping, at least on a minor scale, is evident in the volcaniclastic rocks.

Limestone and dolomite

Thin, discontinuous layers, usually less than 5 meters thick, of very fine-grained, dark- to light-gray, platey limestone and dolomite are common in the Fossil Creek Volcanics. The carbonates are mapped as a distinct subunit, where possible. The limestone is impure and locally contains up to 10 percent detrital quartz (less than 0.1 mm.) and a trace of hematite. The limestone is generally interbedded with black shale, thin-bedded white chert, and medium- to dark-gray calcareous rocks with a schistose texture. Locally, the carbonate rocks exhibit intense isoclinal and asymmetric folding.

Age and Correlation

The Fossil Creek Volcanics were defined by Mertie (1937) for a 610 meter thick sequence of mafic volcanic and pyroclastic rocks with small bodies of mafic intrusive rocks, agglomerate, conglomerate, and sedimentary rocks in the Livengood Quadrangle. The type section for the formation is in the White Mountains, about 80 kilometers north of Fairbanks, where a belt about 64 kilometers long of these rocks is exposed along Fossil Creek. In the northeastern Livengood Quadrangle, Chapman and others (1971), subdivided the Fossil Creek Volcanics into a lower, predominantly sedimentary unit and an upper, predominantly volcanic unit. The two units are thought to interfinger in the Livengood Quadrangle (Chapman and others, 1971).

In the Livengood Quadrangle, the lower, sedimentary unit of the Fossil Creek Volcanics is composed of thinly interbedded, calcareous, dark-gray slate to light-gray slatey phyllite and black, tuffaceous shale, gray to black and gray-banded silty chert, and minor intercalated basalt flows (Wheeler and others, 1987). This lower unit in the northeastern part of the Livengood Quadrangle extends into the study area.

Fossils recovered recently from the upper unit of the Fossil Creek Volcanics in the Livengood Quadrangle indicate a Middle to Late Ordovician age, based on gastropods, conodonts, and trilobites, and an Ashgillian age based on brachiopods (Blodgett and others, 1987).

In the Selwyn Basin, northwestern Yukon Territory, basalt, tuff, pillow basalt, shale, shaly limestone and limestone of Ordovician to Cambrian age unconformably or disconformably overlie maroon and green shale and sandstone (S.P. Gordey, pers. comm., 1987), and may be correlative with the Fossil Creek Volcanics. The correlation of the Fossil Creek Volcanics and underlying grit units of the Yukon-Tanana Uplands with similar sequences in the Selwyn Basin, Yukon Territory,

has been made previously by Chapman and others (1980), Robinson and others (1983), Templeman-Kluit (1984), Hall and others (1984), and Albanese and others (1987).

CONTACT METAMORPHIC ROCKS (HORNFELS)

Contact metamorphism is evident in the vicinity of the major plutons, including those at Lime Peak, Quartz Creek, and Mt. Prindle. Some degree of contact metamorphism is also evident adjacent to many of the smaller intrusive stocks and dikes.

Evidence for contact metamorphism in the field consists primarily of fine-grained biotite-bearing hornfels, which has a distinctly orange or reddish-brown weathering color. Higher grade contact metamorphism and different protoliths are evident from sparse occurrences of garnet and amphibolite-bearing hornfels. In the field, definition of the extent of the contact aureoles was based on the first occurrence of fine-grained biotite in the hornfels. On the map (pl. 2-1A), the degree of contact metamorphism is portrayed by the density of the stippled pattern. The contact aureoles are generally rather narrow, usually less than 500 meters, in the vicinity of steeply dipping contacts. However, in some areas, particularly north and east of the Quartz Creek pluton, the hornfels zone is a kilometer or more in width, and probably represents a shallow-dipping contact zone.

The country rock around the plutons includes the sedimentary and metasedimentary rocks of the various units of the "grit-metagrit sequence" and the Fairbanks schist(?). The foliation resulting from the regional metamorphism is normally persistent in the hornfels, but the degree of granoblastic texture increases near the igneous contacts. The grit rocks and quartz arenites typically exhibit recrystallized grain boundaries, secondary silicification, white mica, and biotite. Myrmekitic texture is a minor feature in some localities.

Pelitic rocks in the contact aureoles contain white mica + biotite + quartz + feldspar +/- chlorite +/- andalusite +/- tourmaline +/- cordierite. Garnet is rare, but is present at a number of locales. Cordierite is restricted to locations along the north side of the Lime Peak pluton.

Porphyroblasts of cordierite, andalusite and albite(?) are commonly altered to lower grade mineral assemblages including white mica and quartz. Porphyroblasts typically exhibit synkinematic rotation, and some mimic the foliation and crenulation of the pre-existing regional metamorphic fabric.

Calcareous and carbonate rocks, rare in contact zones, are greenish white to brownish white. Calcareous rocks in the contact aureoles commonly contain quartz, plagioclase, phlogopite, calcite, tremolite, and garnet. Marbles in contact zones commonly contain tremolite +/- calcite +/- chlorite +/- quartz +/- idocrase +/-garnet +/- diopside +/- wollastonite. The rare skarn rocks are of small extent. Skarn minerals include clinopyroxene (commonly hedenbergite), garnet, idocrase, actinolite, chlorite, hornblende, fluorite, sulfides, and calcite. Skarns near Hope suite plutonic rocks contain accessory axinite and hulsite-pageite. Skarns near the Pinnell Trail contain variable amounts of scheelite. Skarns most commonly replace calcareous rocks, and skarns formed from marble are quite rare.

Mineral assemblages in the hornfels zones are indicative of upper albite-epidote hornfels facies to lower hornblende hornfels facies. Partial syntectonic retrograde metamorphism of porphyroblasts to low grade assemblages is also evident. The general absence of garnet in the

pelitic hornfels suggests a shallow emplacement of the pluton. The metamorphic grade appears to be lower than is typical for hornfels zones associated with granitic rocks. This suggests that the magmas which produced the plutons were relatively cool, probably close to the lower limit of granitic temperature ranges of about 650° C., and the country rocks were relatively cool at the time of granite emplacement.

REGIONAL STRUCTURE

by

Richard C. Swainbank

Introduction

The Lime Peak - Mount Prindle area is underlain by a complexly deformed sequence of metaclastic rocks that were later affected by at least two episodes of granitic plutonism. Field observations of individual outcrops, especially in poorly exposed areas, were not conclusive in defining the relationship of minor structural elements to major structures. Structural elements determined in the course of the project, such as foliation, minor fold axes, lineations, cleavage, bedding, joints, veins, and faults are depicted and analyzed using standard stereonet projection techniques.

A compilation of observed structural features, lineaments derived from airphoto interpretation, and inferred major folds are shown in plate 2-2. Figure 2.9 is a map showing some of the principle structural elements in the study area. All structural data is depicted on a standard, southern hemisphere equal-area stereographic projection. Plots and contours of the structural data were made on a U.S. Geological Survey computer program called "EADIAG". The resulting plots were simplified by contouring at 2 percent intervals and were redrafted for clarity (figs. 2.10 to 2.13). At least five major structural regimes or domains were defined, based largely on major lithologic subdivisions, apparent patterns of structural elements on the structural map, and a similarity of foliation and bedding attitudes (pl. 2-2). These regimes are designated A through E on plate 2-2.

Foliation and bedding

A total of 1,222 foliation and bedding attitudes were measured in the field. Because of the poor bedrock exposure, original bedding, as opposed to foliation, was very difficult to distinguish, and only 165 of the measured attitudes were noted as bedding. Of the 165 stations with bedding data, only 117 also had a measured foliation. In 92 of the locations (78 percent) with both bedding and foliation data, the attitude of the bedding and foliation are essentially concordant. For this reason, bedding and foliation are treated in this analysis as being essentially the same. Bedding, as distinct from foliation, is most evident in lower grade metamorphic rocks in the northern part of the Lime Peak-Mt. Prindle area. Elsewhere, foliation is the dominant structural element due to the increasing grade of regional metamorphism to the south and east.

Figure 2.10A, a plot of all of the poles to bedding and foliation throughout the Lime Peak-Mt. Prindle area, shows a relatively simple bimodal distribution, suggestive of broad, open folding about northeasterly-trending axes. Figure 2.10B, shows poles to foliation and bedding, excluding 152 attitudes measured in contact zones around the major plutons. A plot of foliation and bedding within the contact aureoles of the intrusives indicates more complex deformation in the contact zones (fig. 2.10C).

The bimodal plots of foliation and bedding away from intrusives (figs. 2.10A, B) suggest that the structure in the study area consists of several broad, open anticlines and synclines. This broad

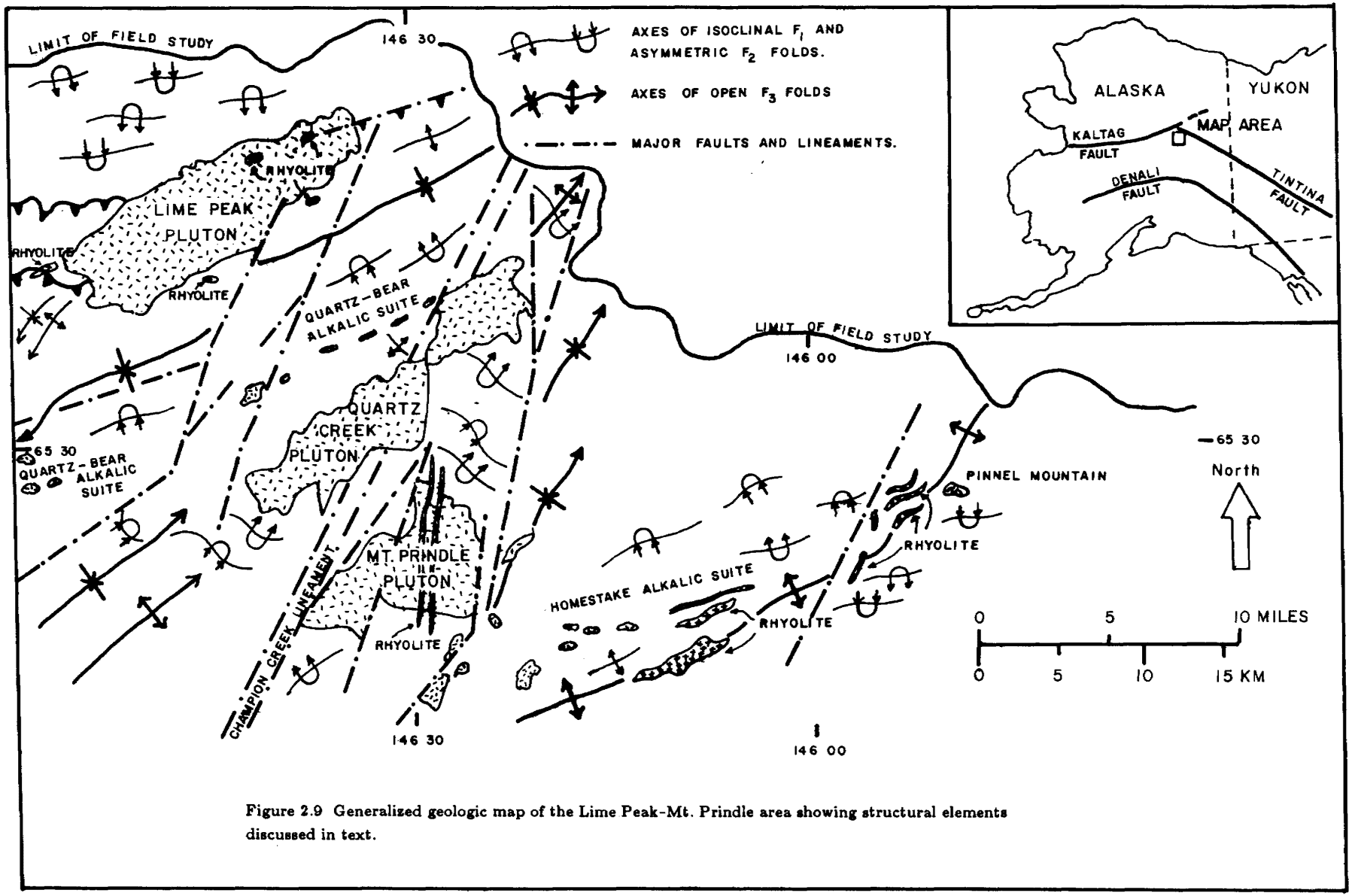


Figure 2.9 Generalized geologic map of the Lime Peak-Mt. Prindle area showing structural elements discussed in text.

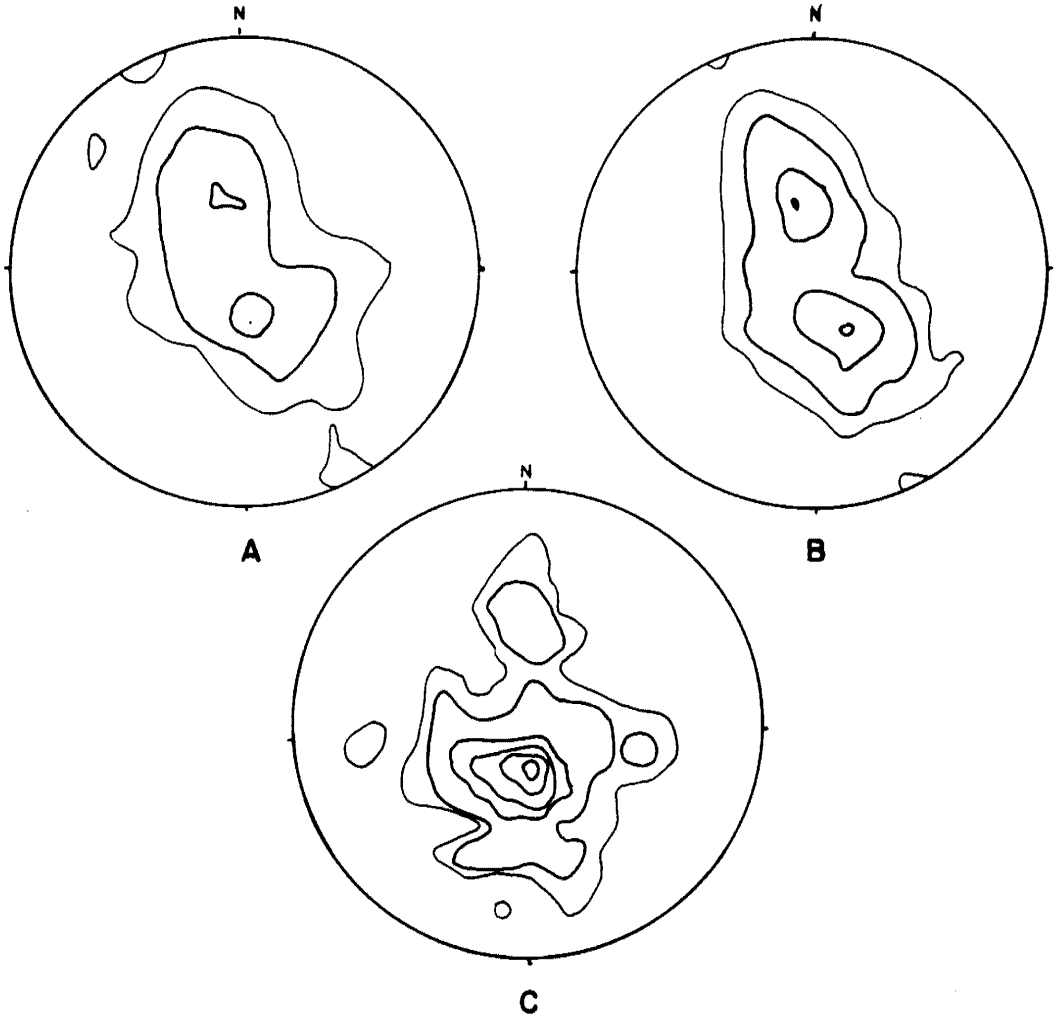


Figure 2.10 Southern hemisphere equal area stereographic projections of poles to bedding and foliation planes in the Lime Peak-Mt. Prindle area. Contours at 2 percent intervals. A. Poles to 1222 foliation and bedding planes. B. Poles to 920 foliation and bedding planes in metasedimentary rocks. C. Poles to 152 bedding and foliation planes in the contact metamorphic aureoles of intrusive rocks.

fold system is only vaguely perceptible in the field; since individual outcrops generally displayed only inclined or recumbent tight folds and isoclinal folds.

Figures 2.11A to E are the projections of poles to foliation and bedding in each of the respective structural domains (pl. 2-2). In domain A, the attitudes strike about N. 75° E. and dip about 34 degrees SE (fig. 2.11A). In domain B, the dominant strike of the foliation is about N. 45° E. with a 30 degrees dip to the northwest (fig. 2.11B). A combination of data from these two domains almost exactly replicates the bimodal plots for the entire study area (figs. 2.10A, B).

In domain C, foliation strikes east-west, dipping between 10 and 20 degrees to the north (fig. 2.11C). A weak bimodality is apparent in domain D (fig. 2.11D), with one showing strike concentration about N. 65° W. dipping 35 degrees northeast, and the other indicative of N. 10° W. strikes with 10 degrees northeast dips. Domain E in the southern map area shows a strong bimodality, indicative of east-west strikes with dips of 20 degrees south and 10 degrees north (fig. 2.11E).

Folds

Stereographic projections of the poles to foliation in structural domains A and B (figs. 2.11A, B) indicate simple, monoclinal sequences dipping respectively to the south and north. Field observations in domain A indicate at least two fold episodes, both of which are north-vergent. In only a few cases are entire folds evident in a single outcrop or exposure. Generally, only one limb of a fold is exposed, and complete folds must be inferred across rubble and covered intervals. Outcrops are generally comprised of more resistant lithologies. In some cases, folds with amplitudes and wavelengths of thousands of feet can better be discerned in views from adjacent ridges.

Most of the folds seen in domain A are asymmetric, tight to isoclinal, with axial planes inclined or reclined to the north, and axial planes dipping 30 to 40 degrees south. West of Lime Peak, fold axes trend northeasterly, whereas they trend more easterly in the area north and northeast of Lime Peak. Many of the minor overturned folds shown in plate 2-2 are inferred from convergent or divergent foliation attitudes.

Very complex folding is evident in parts of domain A (Township 10N, Range 4W), where more open F_2 folds are superimposed on isoclinal F_1 folds within marbles, phyllites, and mafic schist of the "maroon and green grit sequence". Although the individual rock units strike almost east-west with moderate southerly dips, the F_2 folds are chevron-style in the mafic schist, and are more open and sinuous in the marble and phyllite. The average plunge of the F_2 fold axes is at a low angle to the southwest, but there is a distinct difference of axial trends in the marble as opposed to those in the mafic schist. The folds in this vicinity may be affected by the proximity of the Lime Peak pluton. Similar folding may be common elsewhere and not recognized because of the scarcity of outcrop.

The stereographic plot of the poles to foliation and bedding in structural domain A (fig. 2.11A) is somewhat misleading, as it represents the average dip of many limbs of tight, asymmetrical, inclined and recumbent, north-vergent folds. A sufficient number of minor folds were observed in domain B to recognize that the structural styles are similar to those in domain A, except that the folds are south-vergent rather than north-vergent. This pattern of symmetry could occur on opposite limbs of large folds.

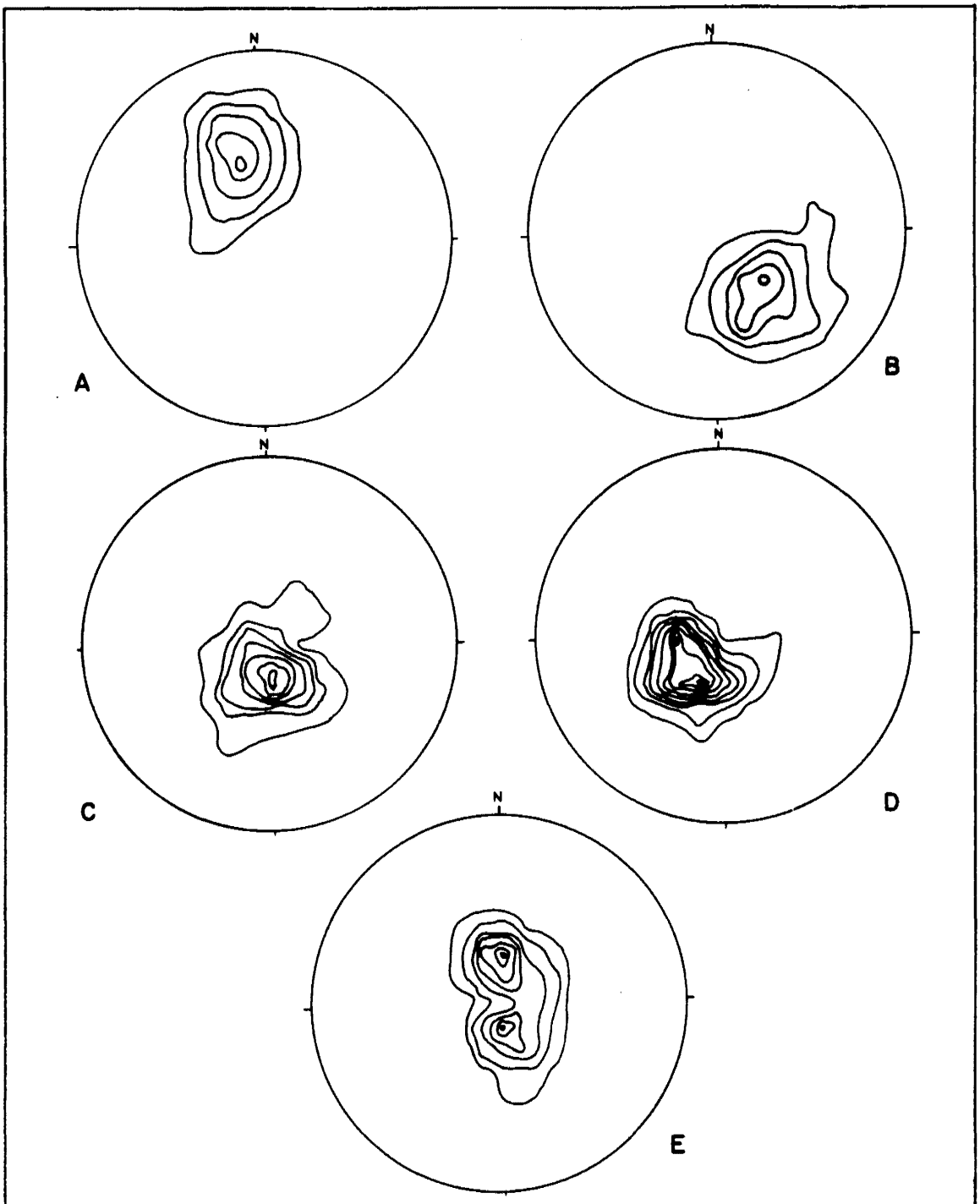


Figure 2.11 Southern hemisphere equal area stereographic projections of poles to foliation and bedding in five structural domains within the Lime Peak-Mt. Prindle area. Contours at 2 percent intervals. A. Plot of 319 poles in domain A northeast and west of Lime Peak. B. Plot of 278 poles in domain B south and east of Lime Peak. C. Plot of 135 poles in domain C west of Mt. Prindle. D. Plot of 114 poles in domain D northeast of Mt. Prindle. E. Plot of 224 poles in domain E to the east of Mt. Prindle. Structural domains are shown on plate 2.2.

Structural domains A and B are almost coincident with the northern and southern limbs of a regional-scale synform or synclinorium which plunges gently to the west-southwest. The approximate trace of the synformal axis is shown on plates 2-1 and 2-2. The main fold axis is apparently offset north of the confluence of Bear and Quartz Creeks.

In structural domains C and D, most of the minor fold axes are inferred from the observed foliation attitudes, because exposure is relatively very poor, and opportunities for direct observation of folds are rare. In domain C, tight asymmetric overturned antiforms and synforms with northwesterly-trending axes appear to be warped by broad, open F_3 synforms and antiforms with axes plunging gently to the northeast. In domain D, F_3 open fold axes appear to plunge more steeply than elsewhere in the study area. Folds in domain D plunge about 20 degrees in a N. 5° E. direction, though the attitudes may be affected somewhat by the intrusion of the Quartz Creek pluton. The northeasterly-plunging F_3 folds in domain D are tighter than in domain C, and more closely resemble the style in domain A, except for the difference in orientation.

Folding in the structural domains C and D (pl. 2-2) has the same general style as elsewhere in the area, but the axial trends of minor folds are more northwesterly, rather than northeast. The folds in these domains are southwest vergent, and may be the result of southwesterly-directed compressive stress. However, a more likely explanation is that shear stresses, perhaps parallel to the southwest-trending segment of the Tintina Fault, have rotated and reoriented the first two fold episodes in a broad northeast-southwest trending zone that includes domains C and D.

The bimodality of the poles to foliation, which is weakly present in domain D, is more obvious in domain E, to the east of Mt. Prindle (fig. 2.11D, E), and is indicative of open folding about axes trending almost east-west. The northern limb of folds appears to dip northerly at 10 degrees, and the southern limbs to the south at 20 degrees. The apparent simplicity of the plot shown in figure 2.11E masks a more complex situation, as the east-west folding is disposed about a major northeasterly-trending antiform or anticlinorium. The east-west folds are tight or isoclinal, are north-vergent on the southern limb of the major antiform, and are south-vergent on the northern limb. Thus the overall style is comparable to that in the domains A and B, but is anticlinorial rather than synformal.

Figures 2.12A-D are stereographic projections of fold axes, lineations, and poles to axial planes and cleavage planes. Most of the lineations are crenulations with axes parallel to the minor fold axes, but the relationship of cleavage planes to the folds is not as certain.

Poles to the 43 measured axial planes (fig. 2.12C), plot as a partial girdle about northeasterly-trending axes, with strong concentrations at N. 35° E. and N. 82° E. However, a moderate concentration of poles also indicates folding about axial planes trending about N. 60° E, and a weak, but distinct concentration indicates folding about axial planes trending N. 60° W.

Figure 2.12A is a plot of 125 observed fold axes, showing concentrations with trends of N. 40° E. and N. 55° - 60° W. in addition to the major grouping with trends between N. 50° E. and N. 70° E.

Forty-eight lineations, most of which are crenulations, are shown as figure 2.12B. These lineations have a major concentration with N. 40° E. trends, and a more diffuse concentration

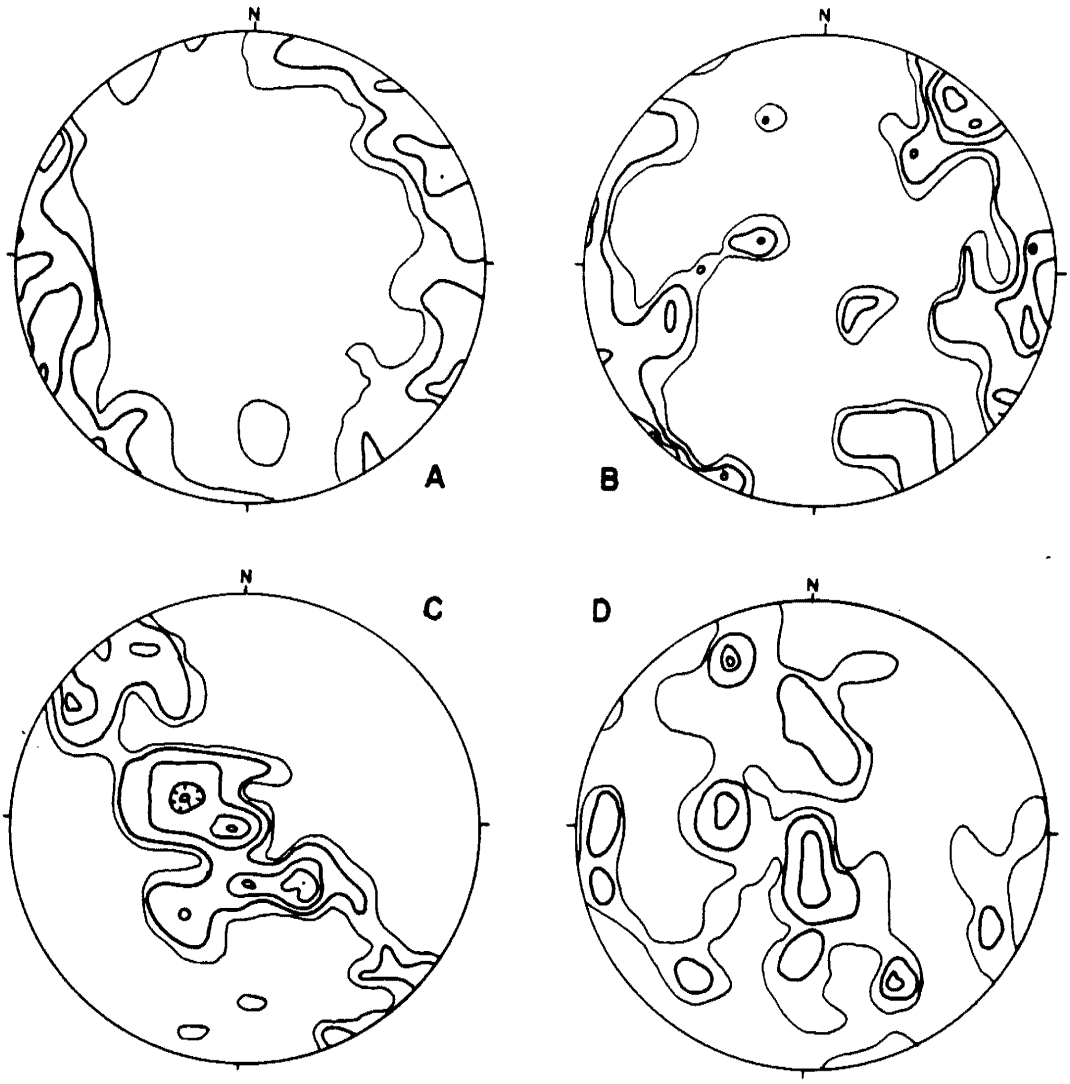


Figure 2.12 Southern hemisphere equal area stereographic projections of fold axes, lineations, and poles to fold axial planes and cleavage planes in the Lime Peak-Mt. Prindle area. Contours are at 2 percent intervals. A. Plot of 125 fold axes. B. Plot of 48 lineations. C. Plot of 43 poles to fold axial planes. D. Plot of poles to 52 cleavages.

between N. 65° E. and N. 80° E. A weak concentration of lineations is also indicated within 10 degrees of a N. 65° W. trend.

The poles to 52 cleavage planes are more scattered, (fig. 2.12D), but there are moderate concentrations of planes striking N. 20° E., N. 60° E., and N. 85° E. A weak concentration about N. 55° W. is also present.

Summary

In summary, the statistical data for most folds show a strong concentration of axial trends about N. 35° E., another strong grouping between N. 60° E. and N. 80° E., with a distinct but weaker grouping about N. 55° W. The small number of observed fold axes, together with axial planes and lineations supports the conclusion that the first fold episode (F_1) deformed original bedding into isoclinal and tight folds with northeasterly trends. These F_1 folds were then refolded in a more open, chevron to asymmetric style (F_2), on the limbs of major, regional antiforms or synforms with east-northeasterly axial trends (F_3).

Prior to the F_2 folding episode, some reorientation of the early fold axes may have occurred within domains C and D. The minor isoclinal and chevron-style fold axes in these domains apparently trend more northwesterly, which is reflected on the plots of fold axes, axial planes and lineations (fig. 2.12).

Fractures

Joints, faults, shears, lineaments and veins are included in this category of structural elements. Figures 2.13A-E are southern hemisphere stereographic projections of measured attitudes of structures classified as fractures. Observed attitudes are plotted on plate 2-2. Some bias towards high-angle planes is probable because low-angle fracture planes are not often apparent in the rubbly outcrops typical of the study area.

Joints

Joint planes were subdivided into three major categories: 1) joints in the plutons, 2) joints in contact aureoles around the plutons, and 3) joints in metasedimentary rocks. Plots of the poles to these joints are shown as figures 2.13C-E. The plots show no evidence of flat- lying joints because so few of them were measured.

The majority of the joints in all three subsets are high-angle or vertical and trend within a few degrees of north-south. In addition to the strong north-south trending joints in the intrusives, a moderately-strong, near-vertical joint set striking northeasterly is also obvious. Within the contact aureoles, both northeast and northwest trending joint sets are present in addition to the very strong north-south joints (fig. 2.13E). In the areas outside of the contact aureoles of the intrusives, less intense joint sets strike northwest (fig. 2.13C).

Faults

The poles to fault planes plotted as figure 2.13B. are only those attitudes of fault planes that could be measured in the field, and the high-angle lineaments defined on the basis of imagery shown on plate 2-2 are not included. As with measured joints, the majority of the faults are near-vertical, and trend north-south. A significant number of faults also strike about N. 65° E. and

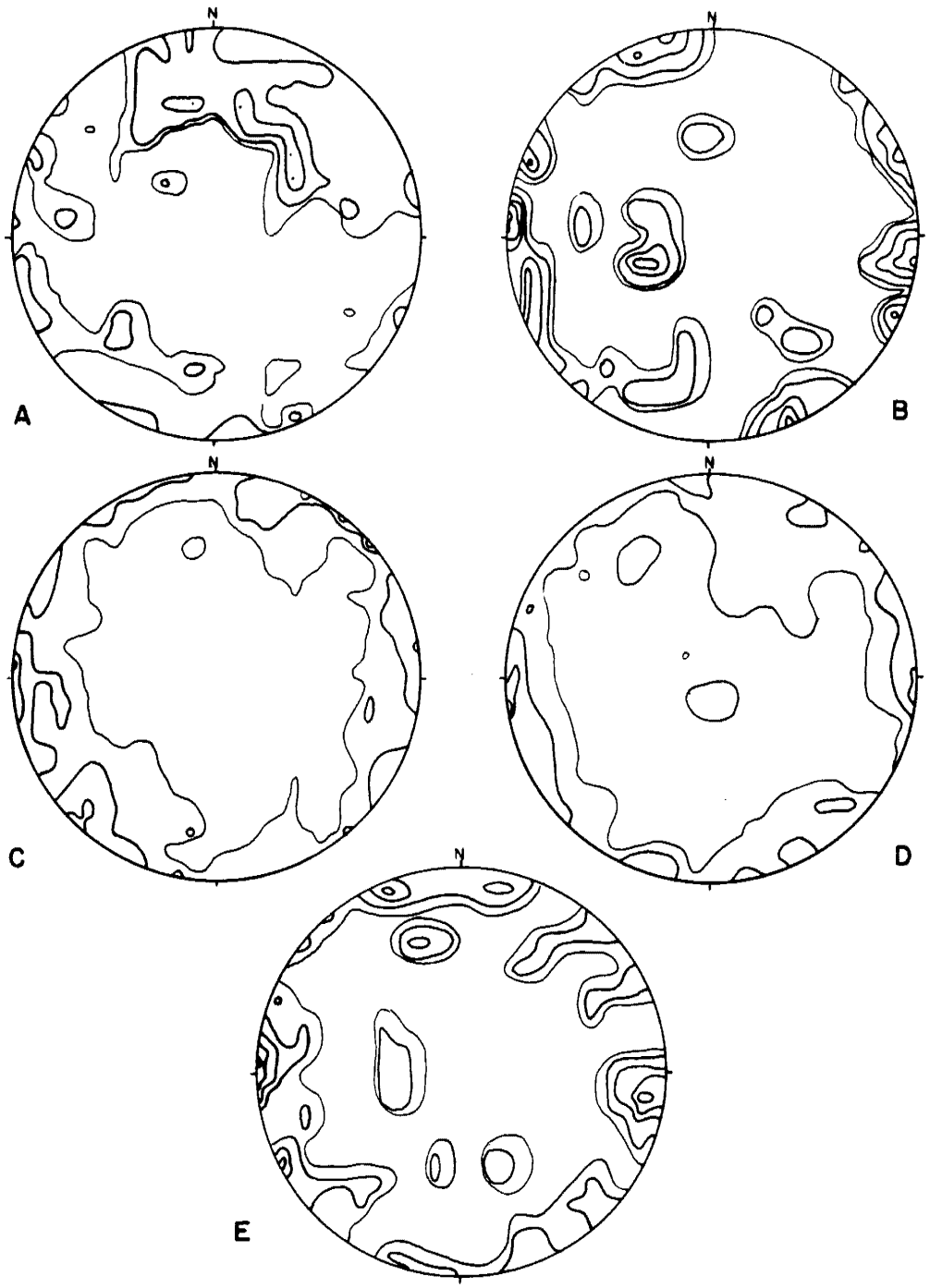


Figure 2.13 Southern hemisphere equal area stereographic projection of poles to joints, faults, and veins in the Lime Peak-Mt. Prindle area. A. Plot of poles to 73 veins. B. Plot of poles to 31 faults. C. Plot of poles to 198 joints in metasedimentary rocks. D. Plot of poles to 375 joints in intrusive rocks. E. Plot of poles to 44 joints in hornfelsed aureoles of intrusive. Contours at 2 percent intervals.

are subparallel to the secondary joint set in the intrusives and contact aureoles. A very few low-angle faults, dipping to the east-northeast, have poles near the center of the plot.

Evidence of northerly-directed thrust-faulting was observed west of Lime Peak, and was inferred in a second zone a few kilometers to the north. Such low-angle faulting would be expected given the inclined north-vergent folding in that area, but with the limited bedrock exposure, could not be demonstrated elsewhere.

In addition to measured faults, several shear zones were observed in the field. the general trend of these shears is shown on plate 2-2.

Prominent lineaments

Lineaments were defined by examination of false-color infrared imagery. The lineaments are predominantly straight, indicating high-angle structural elements. Because photo interpretation is necessarily subjective, only those lineaments which were determined by two independent workers are shown on plate 2-2. Some of the major lineaments are coincident in whole or in part with the shear zones observed in the field.

A number of these linear features coincide with intrusive contacts or with apparent offsets of such contacts, and are generally consistent with a small component of left-lateral displacement. However, poor bedrock exposure prevents demonstration of offset in many cases. Many of these lineaments also correspond to apparent offsets of magnetic anomalies. However, these prominent lineaments cannot be confirmed as faults because of a lack of demonstrated displacement.

A very major northeasterly-trending lineament, approximately corresponding to the trend of the upper part of Little Champion Creek and Champion Creek, is evident on the satellite imagery, as are a number of circular and subcircular features.

Veins

Most of the veins for which attitudes were measured occur within the intrusive bodies, and are generally described as greisen veins. Only 18 of the 73 measured veins are quartz veins in the metasedimentary rocks. Poles to the veins measured during regional mapping are plotted in figure 2.13A. These data do not include many veins noted during subsequent detailed studies of the mineral prospects. The vast majority of the veins plotted strike northwesterly. However, veins in the three major prospects (Bedrock Creek, Cliff, and Tin Ridge) mostly trend within 20 degrees of east-west. In these prospects, no obvious relation exists between known joint sets in the plutons and the major greisen vein trends. Within the plutons, veins appear to follow intraplutonic contacts.

Structure and Igneous Rocks

Small bodies and dikes of an alkalic suite, consisting of hornblende quartz monzonite, lamprophyre, and felsite, crop out in two discontinuous belts in the map area. The northern belt follows Bear and Quartz Creeks in a northeasterly direction, and the more southern belt crops out south of the Mt. Prindle pluton and extends east-northeastward to Table Mountain near the eastern boundary of the map area (fig. 2.9). Potassium-argon age dates indicate these alkalic rocks formed 85 to 90 Ma (chap. 3B, this volume). These two belts may have once been a single belt of alkalic rocks which was subsequently offset by right lateral displacement. If this is the case, the

shear displacement must have taken place between 85-90 Ma and the 60 Ma intrusion of the Hope granites. The two belts also may originally have been separate parts of an en echelon or parallel dike swarm.

A weak aeromagnetic high (Cady and others, 1983), associated with the Bear Creek-Quartz Creek alkalic suite, appears to be offset in a left-lateral sense about two miles north of the study area. This apparent offset is coincident with a north-south aeromagnetic hiatus in the Mt. Prindle pluton, and with an apparent offset in the eastern part of the Quartz Creek pluton. The eastern end of the magnetic high trends toward an area where gabbroic rocks crop out in Preacher Creek (Foster and others, 1983), outside of the study area.

Shear zones within the three major plutons in the area indicate some post-intrusive displacements, generally along northeast- and north-trending shear zones and lineaments. The movement appears to be left-lateral and/or vertical displacement with downthrow to the east. Displacements are generally less than a mile.

Conclusions

The earliest fold episode (F_1) recognized in the Lime Peak-Mt. Prindle area is isoclinal in style about northeasterly trending fold axes. Limbs of isoclinal folds are mostly concordant or close to concordant with bedding in the sedimentary sequences. Tightly-folded asymmetric and chevron folds (F_2) with northeasterly-trending axes were superimposed on the isoclinal folds throughout the area.

A third fold episode (F_3), characterized by broad, open, synformal and antiformal warps with east-northeasterly axes is superimposed on earlier folds in domains C and D. These open folds plunge gently to moderately northeast. Steeper plunges near the northeastern flank of the Quartz Creek pluton suggests that the F_3 folding event preceded the intrusion of the granite.

Many of the veins measured in the study area are greisen veins within the plutons. The veins are dominantly east-west trending and commonly follow intraplutonic intrusive contacts. No apparent correlation exists between the greisen veins and the joint sets in the plutonic rocks

Throughout the study area, most measured joints are near vertical and many strike approximately north-south. The plutons have an additional joint set trending northeast-southwest. The metasediments surrounding the plutons have both a north-south joint set and a set trending northwest-southeast.

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CHAPTER 3

INTRUSIVE ROCKS OF THE LIME PEAK - MT. PRINDLE AREA

Part A: Tin-related granites of the Lime Peak - Mt. Prindle area

by

L.E. Burns and R.J. Newberry

INTRODUCTION

The following six types of intrusive rocks are present in the Steese area: 1) the three granite plutons of the Hope granite suite, 2) sills and dikes of gabbro and minor ultramafic rock in the northwest part of the map area, 3) small bodies of hornblende granite and dikes of lamprophyres and minor syenite of the alkalic suite, 4) the Pinnell Trail monzogranite, 5) felsite dikes, including rhyolite and quartz trachyte, and 6) gabbro dikes intruding the Hope suite granite plutons. The Hope granite suite is discussed in chapter 3A. The other intrusive rocks are discussed in chapter 3B.

The Lime Peak, Quartz Creek, and Mt. Prindle composite plutons crop out in the northwestern portion of the Circle Quadrangle. The plutons are mineralogically and texturally similar and are referred to herein as the Hope granite suite (fig. 3.1). The granites are of economic interest because of the presence of lode tin prospects (Burton and others, 1984; Warner and others, 1986), fluorite veins (Mertie, 1937), and abundant cassiterite in placer concentrates in the area (Joesting, 1942; Wedow and others, 1954). Holm (1973) pointed out the occurrence of minor tin mineralization at the Mt. Prindle pluton, and the U.S.Bureau of Mines (Burton and others, 1984; Warner and others, 1986) and the U.S. Geological Survey (Menzie and others, 1983) have since examined the Hope granite suite for further evidence of tin mineralization. Because the area had not received extensive exploration, however, its true tin potential was not known.

The current study, including the geologic mapping and accompanying petrologic and compositional analyses, of the Hope granite suite has been undertaken to 1) determine whether the Hope granite suite is the type likely to have produced an economically significant tin deposit and 2) determine the level of exposure of the Hope suite relative to the levels most suitable for occurrence of lode tin deposits. Our analysis is based on a thorough description of the less-altered rocks of the Hope suite and comparisons with well studied plutonic rocks associated with economically important tin deposits elsewhere in the world.

REGIONAL GEOLOGY

The Hope granite suite is part of a larger belt of Late Cretaceous to Early Tertiary age plutons which extends discontinuously from the Fairbanks area through the Selwyn Basin in the Yukon Territory, Canada and south to the Yukon Territory-British Columbia border (fig. 3.2). Other plutons of the belt in the vicinity of the Hope granite suite include the Cache Creek pluton about 12 km west of the study area (Chapman and others, 1971; fig 3.2), and the Circle Hot Springs pluton about 35 km east of the study area (Foster and others, 1983). The Cache Creek and Circle Hot Springs plutons are similar to and probably part of the Hope granite suite. However, they are not considered further in this paper, as they are outside the study area. Significant tin mineralization is

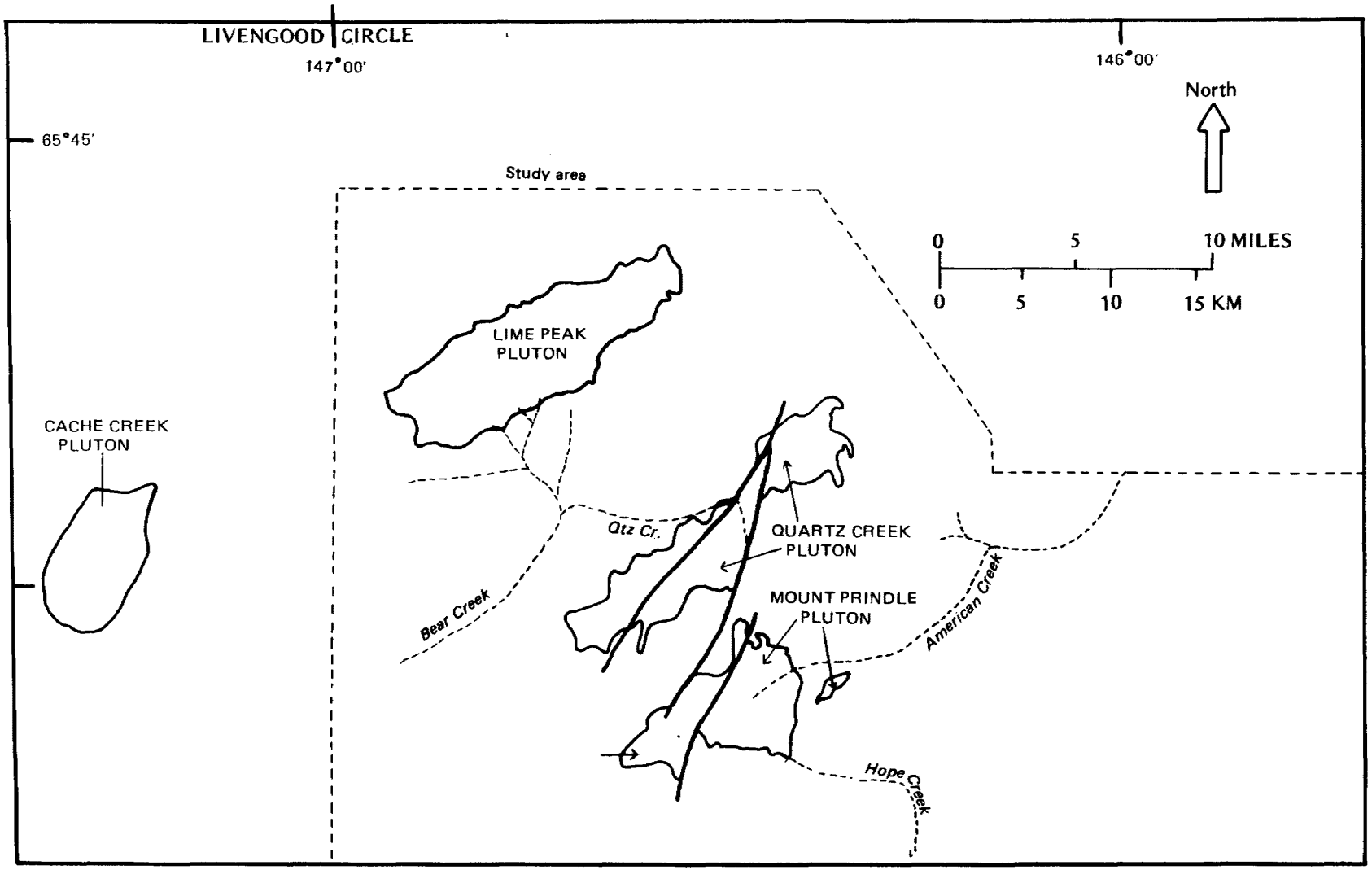


Figure 3.1. Diagram of the western Circle and eastern Livengood Quadrangles showing location of the Lime Peak, Quartz Creek, and the Mount Prindle granite plutons. The plutons are informally called the Hope granite suite in this report. Also shown is the location of the similar and probably related Cache Creek pluton.

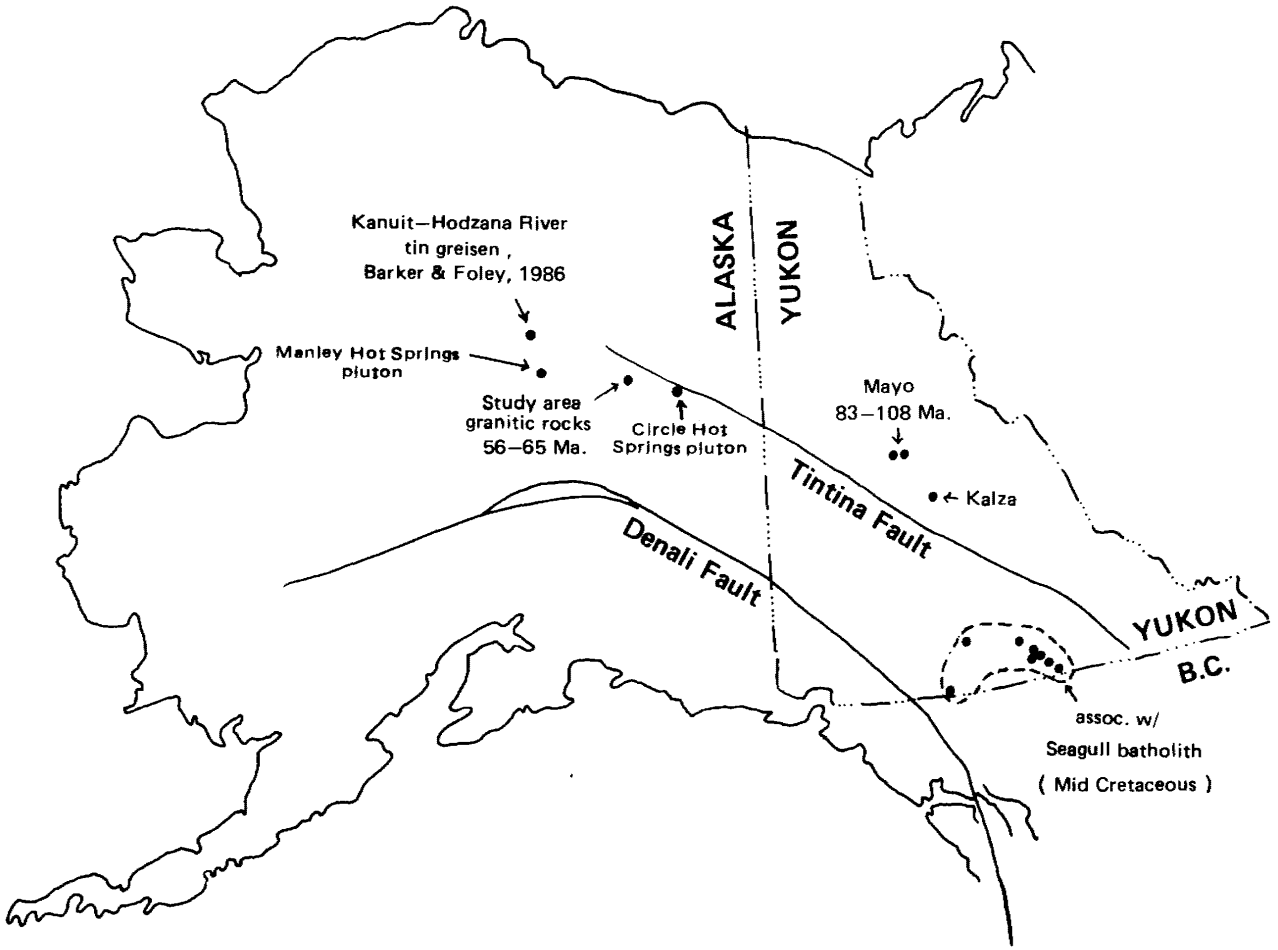


Figure 3.2. Location map showing discontinuous belt of Tertiary - Early Cretaceous Sn-bearing plutons which extends from near Fairbanks, Alaska to the Selwyn Basin in the Yukon Territory, Canada.

known from several places in the large belt including lode and placer deposits in the Yukon near Mayo, Faro, and the Seagull batholith (Morin and others, 1984), and tin associated with gold placers in the Circle Hot Springs pluton and at Manley Hot Springs in Alaska (Berg and Cobb, 1967; fig 3.2).

The Hope granite suite intrudes metasedimentary and metavolcanic rocks of Paleozoic to Precambrian age (chap. 2, this volume). The metamorphic rocks include quartzite, pelitic schist, and minor marble. Emplacement of the plutons appears to be largely passive, with small, but significant warping of structures in the surrounding metasediments (see section on structural geology, chap. 2, this volume). Thrust-faults and high-angle faults which pre-date the plutons are clearly truncated by the granitic intrusion. The country rock is metamorphosed to hornblende hornfels facies near the plutons.

The plutons of the Hope granite suite are elongated northeast - southwest. The elongation is caused primarily by intrusion of the plutons along an older north-east-trending structural grain. The Mt. Prindle and Quartz Creek plutons are elongated further by north-northeast-striking high-angle faults.

HOPE GRANITE SUITE

Introduction

The three plutons of the Hope granite suite have the same general history of granite intrusion, but differ in detail. Each pluton consists of syenogranite and monzogranite (terminology after Streckeisen, 1976) and is composed of two or three main intrusive units. These will be termed granite 1, 2, and 3 (from oldest to youngest intrusion) with a letter preceding the number to indicate the pluton (L = Lime Peak, Q = Quartz Creek, and P = Mt. Prindle). This terminology is roughly equivalent to units TKg1, TKg2, and TKg3 shown on plates 2-1A and 2-1B, except for the Mt. Prindle pluton where TKg1 and TKg2 are combined to form granite P1, and TKg3 forms granite P2. Reasons for this are discussed below in the section on the Mt. Prindle pluton. Mineralogy and petrology among all three plutons are similar. The granites are described below in sequence from early to late intrusions.

Minor amounts of mafic dikes intrude all the granite plutons and are described in chapter 3B of this volume).

The contacts of all three plutons with the country rock are sharp. Fine-grained contact zones are rare. Generally, no major changes in grain size of the granites are present at the contacts. In a few areas, igneous breccia is present at the contact. Granitic dikes and quartz +/- tourmaline veins are locally present in the country rocks near the granite contact.

Four potassium-argon age-dates on biotite and muscovite from rocks collected at four sites in all three plutons of the Hope granite suite yield ages from 56 to 66 Ma (Holm, 1973; Wilson and Shew, 1981; DuBois and others, 1986) . The similarity in intrusive histories, mineralogy, petrology, composition, and the age data indicate that the three plutons of the Hope granite suite were produced by the same general magmatic event. Five potassium-argon determinations on the Sn-related plutons of the Circle Hot Springs suite (M.K. Wilkinson, 1987) and one on the Cache Creek pluton (Holm, 1973) yield ages from 54 to 62 Ma.

Textural terminology

Three main textural types of granites-- seriate, porphyritic, and equigranular (fig. 3.3)-- are present in the Hope granite suite. The criteria used for classification are listed in table 3.1. Shorthand notation used in tables and figures in this report generally consists of two letters. The first letter (s, p, or e) corresponds to the texture of the rock (seriate, porphyritic, or equigranular). An "a" denotes an aplite, and a "d" denotes a dike in the country rock. The second letter, c, m, or f, corresponds to the grain size (coarse, medium, or fine).

Table 3.1 Criteria used for textural classification and grain size of the Hope granite suite.

TEXTURES:	DEFINITION:	CRITERIA:
equigranular	one narrow size range	biggest grain 5 % smallest
porphyritic	bimodal size distribution	grain size variations 10x; smallest big grains 5x & biggest small grains 20x the fine-grained matrix
seriate	wide & continuous range in grain sizes for each mineral	grain size variations 10x; % fine-grained matrix

GRAIN SIZES:	AVERAGE GRAIN DIAMETER:
fine	< 1 mm
medium	1 - 5 mm
coarse	5 - 30 mm
very-coarse	> 30 mm

Lime Peak pluton

The Lime Peak pluton is elongated northeast-southwest and is about 18 km long by 6 km wide (fig. 3.4). The pluton is composed of three main granite units, which are, from oldest to youngest, a coarse-grained, seriate unit (L1), a fine-grained porphyritic- to medium-grained equigranular unit (L2), and a fine- to medium-grained equigranular unit (L3). Rock types in L2 are complexly intermixed. Rhyolite porphyry dikes and lesser mafic and intermediate(?) dikes are common in the Lime Peak granites.

Although locally granite L2 (porphyritic and equigranular granite) cross-cuts and lies above granite L1 (the coarse-grained seriate granite), the second intrusion normally crops out below L1. This observation and the common porphyritic texture of L2 suggests that only the roof zone of L2 is exposed. The third granite intrusion (L3) crops out only in the southwest part of the pluton where it intrudes both L1 and L2. Geologic evidence indicates that L3 is likely to be present at depth elsewhere.

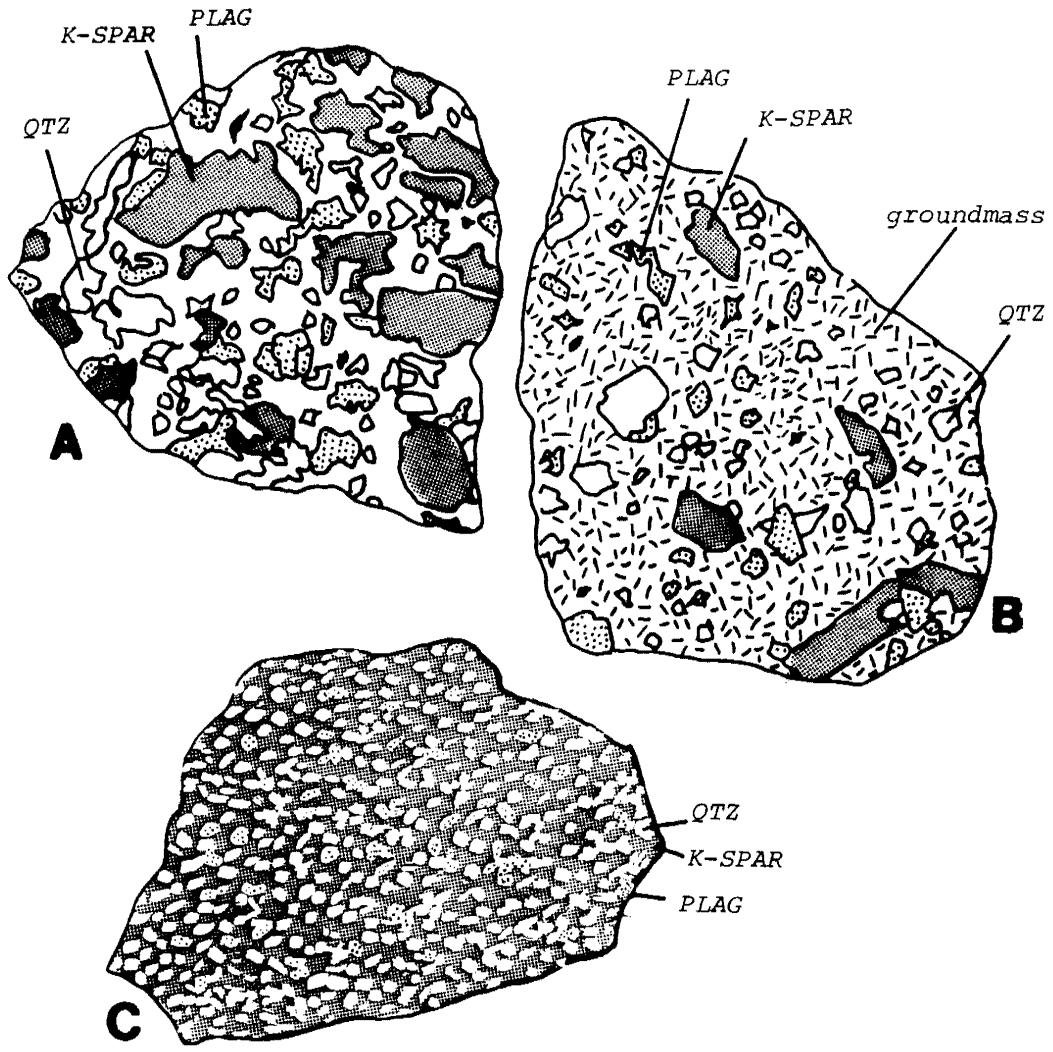


Figure 3.3. Diagram showing textures of the granites of the Hope intrusive suite. A = coarse-grained seriate granite, B = fine-grained porphyritic granite, C = medium-grained equigranular granite.

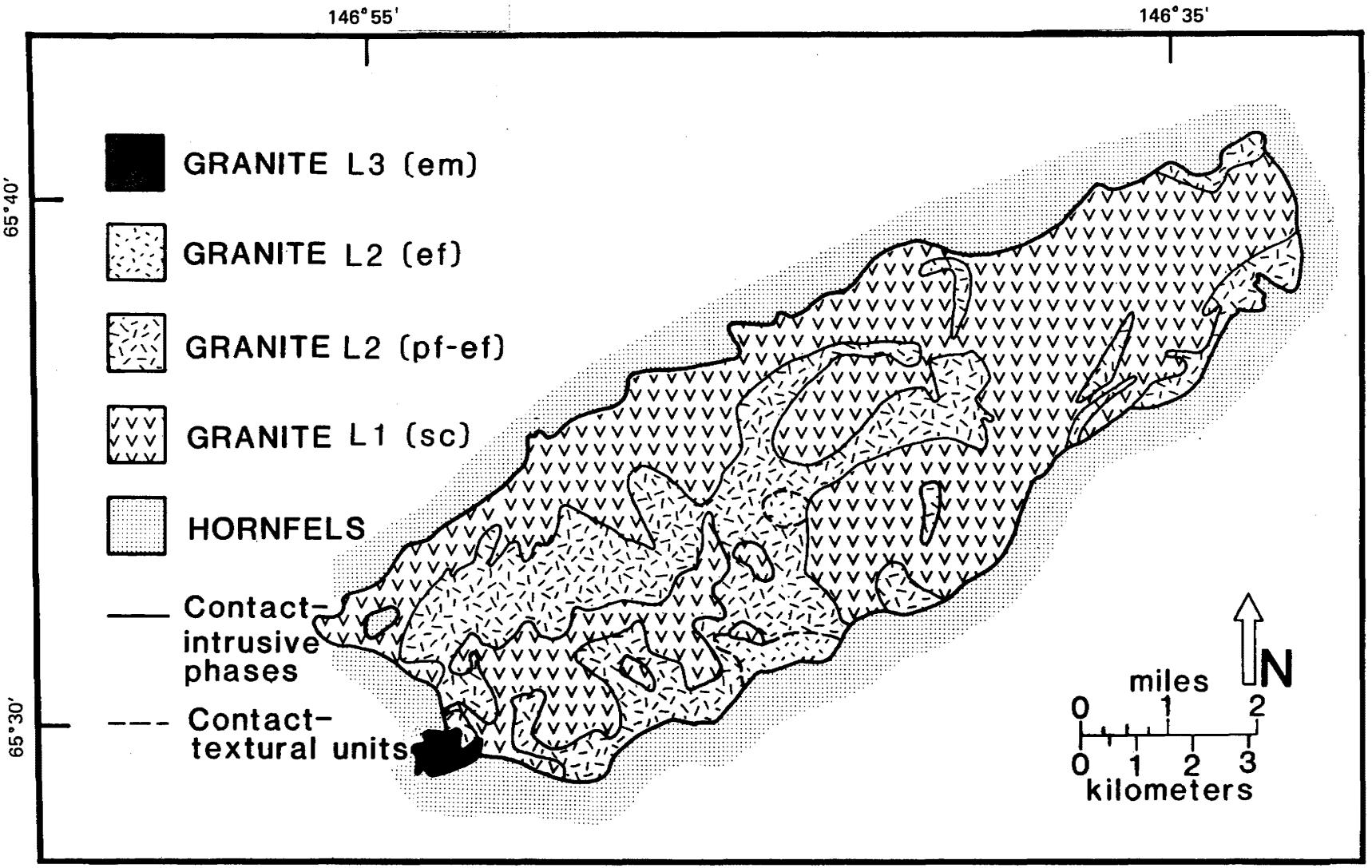


Figure 3.4. Generalized bedrock geologic map of the Lime Peak pluton showing the three major intrusive phases.

Greisen veins are present throughout the pluton, particularly in L2 and L3. The greisen veins are most abundant near the center of the intrusion at Bedrock Creek and at the southwest end of the pluton. Greisen veins are dominantly chlorite +/- sericite, but zinnwaldite-chlorite and zinnwaldite-albite greisen veins are present in the southwest part of the Lime Peak pluton. Greisen veins and associated mineralization are discussed in more detail by Newberry and others (chap. 6, this volume).

Intense manganese-oxide fracture fillings and iron-oxide staining are present in the L1 and L2 units at the northeastern end of the Lime Peak pluton. Iron-oxide staining is present in scattered locations elsewhere in the pluton, but manganese staining is rare.

Quartz Creek pluton

The Quartz Creek pluton is composed of two granite intrusions, Q1 and Q2, which are similar to granites L1 and L2 in the Lime Peak pluton. The granite Q1 in the Quartz Creek pluton is a coarse-grained seriate unit with abundant, potassium feldspar megacrysts. Granite Q2, which only occurs in the northeast part of the Quartz Creek pluton, is a fine-grained porphyritic and fine- to medium-grained equigranular unit. The rock types in Q2 are complexly intermixed.

Major differences between the Quartz Creek pluton and the Lime Peak pluton include 1) abundant potassium feldspar phenocrysts in Q1 of the Quartz Creek pluton, 2) fewer rhyolite porphyry dikes, 3) generally smaller biotite crystals, 4) mafic clots or shlieren 1 to 2 cm in diameter locally that contain 30 to 50 percent biotite, and 5) a relative paucity of greisen veins in the Quartz Creek pluton.

Mt. Prindle pluton

The Mt. Prindle pluton is slightly elongated northeast-southwest and is 10.5 km long by 6 km wide (fig. 3.5). The pluton is composed of one main granite intrusion (P1) and a few younger granite dikes (P2). Rhyolite porphyry dikes are present in the Mt. Prindle pluton, but are not as common as in the Lime Peak pluton.

The P1 intrusion discussed here is shown on Plates 2-1A and 2-1B as TKg1 and TKg2. Field mapping indicated the Mt. Prindle pluton was nearly identical to the Lime Peak and Quartz Creek plutons in terms of major units (TKg1, TKg2, and TKg3). However, at the Mt. Prindle pluton contacts between TKg1 and TKg2 were noted to be either gradational or obscured. Later analytical work and petrographic study have shown that TKg1 and TKg2 at the Mt. Prindle pluton are more similar to each other in the degree of evolution as indicated by rare earth elements and abundance of topaz than to TKg1 and TKg2 of the other two plutons. This evidence, supported by the lack of intrusive contacts between TKg1 and TKg2 at the Mt. Prindle pluton, indicates this particular TKg1 and TKg2 should be combined into one intrusion with several textural variations. The early intrusion at Mt. Prindle is therefore called P1 in this chapter.

The main intrusion (P1) contains rocks with many textural variations and is similar in terms of compositional data and degree of differentiation (see Composition section) to the second intrusions of both the Lime Peak and Quartz Creek plutons (L2 and Q2). P1 has the most textural variability of all the intrusions, containing seriate, porphyritic, and equigranular granite. The younger granite dikes (P2) at the Mt. Prindle pluton are similar in terms of differentiation and texture to the third intrusion (L3) of the Lime Peak pluton. Granites similar in composition and

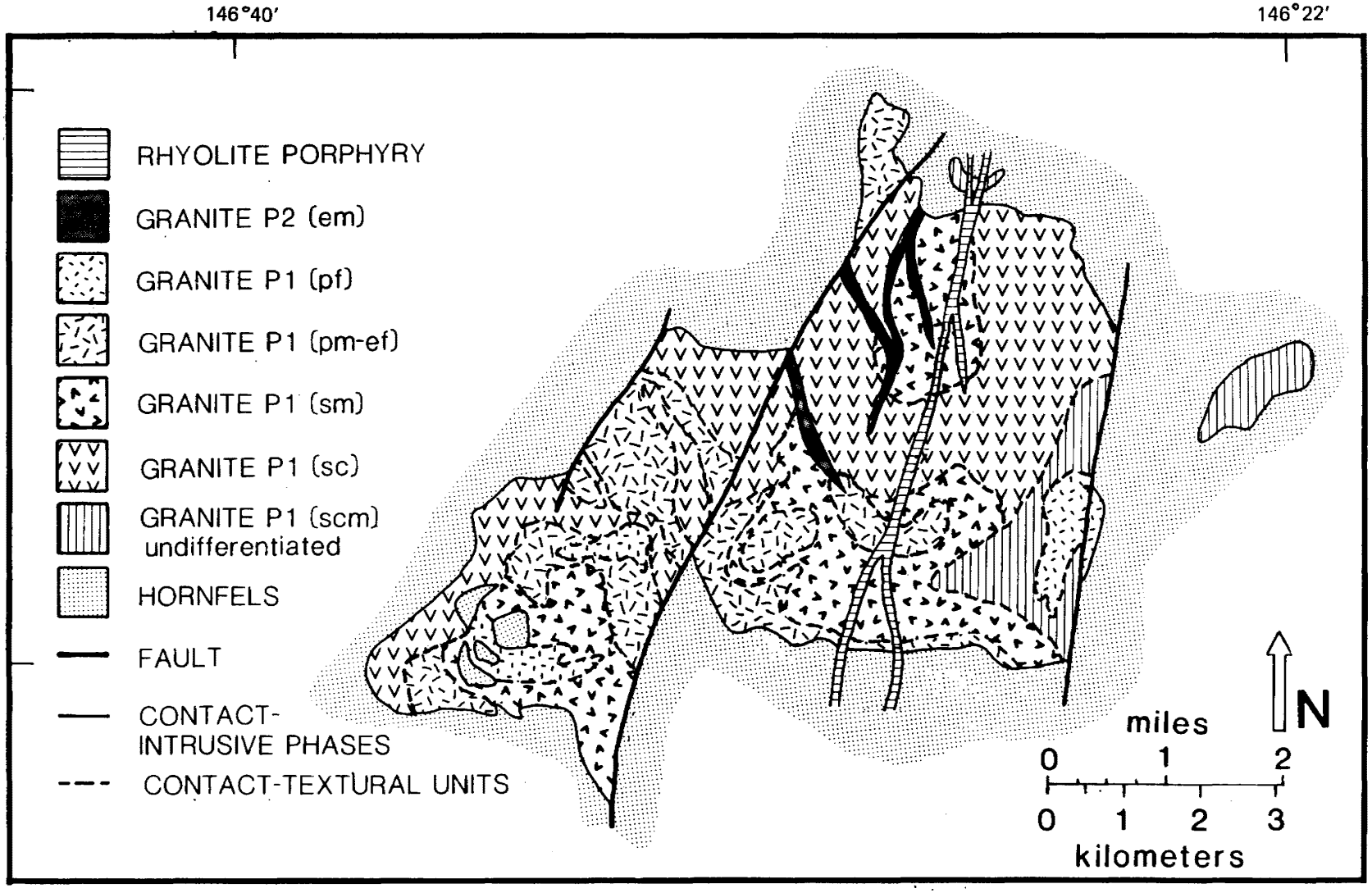


Figure 3.5. Generalized bedrock geologic map of the Mount Prindle pluton showing the two major intrusions.

degree of differentiation to the first intrusions of Lime Peak and Quartz Creek plutons (L1 and Q1) are not present at the Mt. Prindle pluton.

Although the intrusions on Mt. Prindle are similar to intrusions 2 and 3 at Lime Peak and Quartz Creek plutons, several major differences are present. The Mt. Prindle rocks include more topaz and tourmaline and less fluorite than in the Lime Peak rocks, and more topaz, equal fluorite, and possibly more tourmaline than in the Quartz Creek rocks. Topaz is present in almost every rock of P1. Greisen veins are present but less abundant than in the L2 of the Lime Peak pluton.

Four mappable units of monzogranite belonging to P1 have been shown on figure 3.5. The units include: (1) pm - dominantly medium-grained porphyritic monzogranite abundantly interspersed with (diked by?) fine-to medium-grained equigranular and lesser fine-grained porphyritic rocks, (2) sm - medium-grained seriate rocks, (3) sc - coarse-grained seriate rocks, and (4) pf - fine-grained porphyritic rocks with few equigranular rocks interspersed. The contacts of the textural units of P1 (except for the fine-grained porphyritic unit) are gradational. The fine-grained porphyritic granite appears to be intrusive into the other varieties of P1. Because of similar mineralogy, the fine-grained porphyritic granite is believed to represent a late phase of P1 which was mobile enough to create intrusive contacts. P2 contains only equigranular rocks with up to 5 percent phenocrysts locally. Unaltered rocks of P1 generally contain biotite with little or no muscovite, while P2 and granites of P1 adjacent to P2 generally contain muscovite +/- tourmaline and no biotite.

Greisen veins are present in P1 in several locations (see pl. 6-1). On the northwest side of the Mt. Prindle pluton, tourmaline - white mica(?) greisen veins are abundant in a restricted area in the coarse-grained seriate unit. One to two cm wide, closely spaced, weakly chloritized greisen veins with little to no tourmaline are present in the seriate unit on the south side of American Creek and are discussed elsewhere (chap. 6, this volume).

Early Intrusions

Petrology

Seriate granite - present in the L1, Q1, and P1 intrusions:

Seriate-textured biotite granite in the rocks of the Hope granite suite varies from white to gray to pink. The coarse-grained rocks form smooth, large tors which typically occur on ridge crests. The medium-grained seriate rocks form smaller, rough, blocky tors which occur on the sides of ridges as well as on ridge crests. As tors disintegrate, they form boulders 0.5 to 2 m in diameter and also crumble completely to grus. Minor miarolitic cavities, indicating shallow emplacement, are present in some areas, as are minor quartz veins.

The coarse-grained seriate granite is composed of primary quartz, potassium feldspar, plagioclase, biotite, zircon, and trace amounts of ilmenite, apatite, monazite, and xenotime. Secondary minerals include sericite, chlorite, rutile, and magnetite +/- tourmaline, muscovite, and minor sphene. Topaz is very common at Mt. Prindle, locally present at Lime Peak, and rare to absent in Quartz Creek (tables 3.2, 3.3, and 3.4). Topaz is probably both a late magmatic and an early alteration phase.

Table 3.2 Petrographic characteristics of the Lime Peak pluton. Locations of samples analyzed for modal determination are shown in Appendix H.

NAME OF PLUTON	LIME PEAK PLUTON			
UNIT	GRANITE L1	GRANITE L2		GRANITE L3
TEXTURE AND GRAIN SIZE	coarse-grained seriate (sc)	fine-grained porphyritic (pf)	fine to medium equigranular (ef/m)	fine to med equigranular (ef/m)
DOMINANT ROCK TYPE	syenogranite	monzogranite	monzogranite	monzogranite
TYPICAL FEATURES	Tor-forming	Variability of rock type; abundant rhyolite porphyry dikes		White-grey-brown mica.
MODAL MINERALOGY - Primary Minerals				
Quartz	25 - 40	25 - 40	20 - 35	20 - 35
K-feldspar	35 - 50	25 - 45	35 - 45	35 - 45
Plagioclase	15 - 25	17 - 25	25 - 35	25 - 35
Biotite	0 - 5	0 - 10	0 - 5	0 - 5
Ubiquitous Accessories	Zircon in biotite apatite	Zircon in biotite	Zircon in biotite	Zircon in biotite
Occas. Acces.	rare topaz	0 - 1% topaz	0 - 5% topaz	0 - 5% topaz
MODAL MINERALOGY - Secondary Minerals				
Fluorite	rare	rare	0 - 2%	rare
Tourmaline	rare	rare	0 - 3%	0 - 3%
Sphene	rare			
Common alteration	{sericite - chlorite - minor opaque - ilmenorutile +/- muscovite} present in all types			
Local alteration				zinn-albite +/- tourm +/- topaz
REMARKS		Up to 2 % myrmekite,etc	Some rocks composed only of myrmekite, etc. Albite-pericline twinning common in K-feldspar Muscovite more common than in sc or pf.	Myrmekite,etc present in some rocks. Coarse zinn. common.
GREISEN VEINS	chlorite	chlorite	chlorite	zinn-alb zinn-chl & chl

1 May be both primary and secondary.

Table 3.3 Petrographic characteristics of the Quartz Creek pluton. Locations of samples analyzed for modal determination shown in Appendix H.

NAME OF PLUTON	QUARTZ CREEK			
INTRUSIVE UNIT	GRANITE 1	GRANITE 2		APLITE
TEXTURE AND GRAIN SIZE	coarse-grained seriate with 10 to 20 % megacrystic K-feldspars	fine-grained porphyritic	fine to medium equigranular	equigranular aplite dikes
DOMINANT ROCK TYPE	syenogranite	monzogranite	monzogranite	monzogranite
TYPICAL FEATURES	Tor forming. Tourm. more common than in Lime Peak pluton & is typically disseminated. Contains least altered plag of all Hope suite rx. Bio. = very common inclusion in feldspar.	Variability of rock type. - Rhyolite porphyry dikes not as abundant as in Lime Peak pluton.		Albite-pericline twinning common in K-feldspar.
MODAL MINERALOGY - Primary Minerals				
Quartz	25 - 40	25 - 35	20 - 35	30 - 35
K-feldspar	35 - 50	30 - 45	35 - 45	35 - 45
Plagioclase	15 - 25	20 - 35	25 - 35	20 - 35
Biotite	0 - 8	0 - 7	0 - 5	0 - 2
Ubiquitous Accessories	Zircon in biotite; apatite	Zircon in biotite	Zircon in biotite	Zircon in biotite; apatite
MODAL MINERALOGY - Secondary Minerals				
Topaz	absent	rare	0 unless greisen	
Fluorite	rare	rare	0 - 2 %	
Tourmaline	replaces biotite in some rocks	occasional	0 - 5 %	0 - 8 %
Muscovite	replaces bio and felds. in some rx	rare	occasional 0 - 5 %	0 - 2 %
Sphene	rare			
Common alteration	{sericite - chlorite - minor opaque - ilmenorutile +/- muscovite} present in all types			
REMARKS	Aplite dikes common. Mafic schlieren with 30-50 % bio. present locally.		No rocks with mymerkitic & granophyric intergrowths observed.	Dikes commonly contain biotite, tourmaline, or muscovite.
Greisen Veins	rare chlorite	rare chlorite	rare chlorite	

Table 3.4 Petrographic characteristics of the Mount Prindle pluton. Locations of samples analyzed for modal determination are shown in Appendix H.

NAME OF PLUTON		MOUNT PRINDLE PLUTON		
UNIT	GRANITE P1	GRANITE P1	GRANITE P1	GRANITE P2
TEXTURE AND GRAIN SIZE	med to c. seriate	fine to med porphyritic	fine to med equigranular	fine to med equigranular; sparsely phenocrystic locally
DOMINANT ROCK TYPE	monzogranite & syenogranite	monzogranite & syenogranite	monzogranite & syenogranite	monzogranite
TYPICAL FEATURES	Tor-forming Contains topaz	Equigran & porph. interdiked; covered by black lichen; contains topaz pm & sm gradational	common	Contains topaz; w.mica & tourm
MODAL MINERALOGY - Primary Minerals				
Quartz	25 - 40	25 - 40	20 - 35	20 - 35
K-feldspar	35 - 50	25 - 45	30 - 50	35 - 50
Plagioclase	15 - 30	20 - 35	20 - 30	20 - 30
Biotite	0 - 5	0 - 7	0 - 5	0 - 2
Ubiquitous Accessories	Zircon in biotite topaz (tr-3%)	Zircon in biotite topaz (tr-2%)	Zircon in biotite topaz (tr-3%)	Zircon in biotite topaz (0 - 5 %)
MODAL MINERALOGY - Secondary Minerals				
Fluorite	very rare	very rare	very rare	very rare
Tourmaline	0 - 5 % local	trace	0 - 5 %	0 - 5
Sphene	rare			
Muscovite	0 - 5 %	0 - 5 %	0 - 5 %	
Musc/Zinn				2 - 6%
Common alteration	{sericite - chlorite - minor opaque - ilmenorutile +/- muscovite} present in all types			
REMARKS	Tourm more common than in L1. K-feld mega-crysts common.	No myrmekite observed.	No myrmekite observed. Albite-pericline twinning common in K-spar.	
GREISEN VEINS	A few chlorite greisens.	More chl greisens than in sc/m, but not as many as in L2.		A few chlorite greisens.

The seriate textured rocks contain a range of grain sizes for each mineral within each rock. Grain size variation is shown in table 3.5. Potassium feldspar is typically the coarsest mineral, followed by quartz, and then plagioclase. Biotite is always the smallest primary mineral. Tourmaline is present locally and is formed both by primary and secondary processes. Locally, tourmaline forms the largest mineral grains in the granite; elsewhere tourmaline is typically more fine-grained. Topaz, where present, is similar to biotite in size.

Table 3.5 Mineral grain sizes for typical rocks from the Hope granite suite.

PLUTON	LP	QC	MP	LP - QC - MP	MP	LP - QC - MP
Intrusion	L1	Q1	P1	L2, Q2, P1	P1	L2, L3, Q2, P2
Texture	sc	sc	sc/m	pf	pm	ef/m
General	2 - 7 mm	2 - 7 mm	.5 - 7 mm	1.5 mm - 2 cm	2 mm - 3 cm	.5 - 3 mm Range
K-spar	1.5 - 15 mm	1.5 - 30 mm	.5 - 30 mm	1.5 mm - 2 cm	2 mm - 3 cm	
Qtz	.5 - 5.5 mm	1 - 7 mm	.25 - 6 mm	1.5- 5.5 mm	2 - 6 mm	
Plag	0.5- 3.5 mm	0.5- 3.5 mm	0.2- 3.5 mm	1.3- 3.5 mm	2 - 5 mm	
Bio	0.5- 2.5 mm	0.7 -2.5 mm	0.1 - 3 mm	0.5 - 2 mm	1 - 4 mm	
Tour	.5 - 15 mm	0.05 - 3 mm	.5 - 20 mm	0.1- 0.5 mm	.5 - 1 mm	
K-Spar Megacryst	up to 4 cm; locally	up to 4 cm; ubiquitous	up to 10 cm; abundant			
Groundmass	n.a.	n.a.	n.a.	equigr.; ranges from 0.05 - 0.5 mm	equigr.; ranges from 0.5 -1 mm	n.a.

Megacrysts of potassium feldspar are present locally within the Lime Peak pluton, in about half the seriate rocks at the Mt. Prindle pluton, and are ubiquitous at the Quartz Creek pluton. The megacrysts commonly range up to 4 cm in length, except at the Mt. Prindle pluton, where the crystals range up to 10 cm (Holm, 1973). The megacrysts form 10 to 25 percent of a given rock at the Quartz Creek and Mt. Prindle plutons, and 3 to 10 percent at the Lime Peak pluton.

The coarse-grained seriate units are cross-cut by 1 to 20 cm wide tourmaline-bearing and biotite-bearing aplite dikes. The aplites are composed of quartz, potassium feldspar, plagioclase, and either biotite, tourmaline, or muscovite. Potassium feldspar in the aplite dikes commonly contains combined albite-pericline twinning that forms a plaid twin pattern.

Intermixed porphyritic and equigranular rocks - present in the L2, Q2, and P1 intrusions:

A unit present in all three plutons consists of fine- to medium-grained porphyritic granite with closely spaced dikes(?) of fine- to medium-grained equigranular granite. This unit forms intrusions 2 of Lime Peak (L2) and Quartz Creek (Q2), and part of the first intrusion at Mt. Prindle (P1). The unit is typically exposed as rubble, and is characterized by extreme variability of rock type and relative abundance of rhyolite porphyry dikes. Chlorite greisen veins are abundant in this unit in the Lime Peak pluton.

The rocks are variously colored white, gray, green, or pink. The unit is characterized by recessive weathering and forms smooth rounded hills. The scree is typically less than one meter in diameter, and is covered by black lichen at the Mt. Prindle pluton.

The porphyritic rocks in the Hope granite suite contain an equigranular groundmass (either fine- or medium-grained) with 10 to 30 percent phenocrysts. The porphyritic granite is composed of primary quartz, potassium feldspar, plagioclase, biotite, and zircon +/- xenotime (tables 3.2, 3.3, and 3.4). Secondary minerals include sericite, chlorite, opaque minerals, and +/- minor muscovite, tourmaline, topaz, and fluorite.

Phenocrysts are typically composed of 5 to 15 percent quartz, 3 to 10 percent potassium feldspar, 1 to 3 percent plagioclase, and more rarely up to 1 percent biotite.

Grain size of the phenocrysts typically varies with the size of the groundmass crystals. Rocks with smaller groundmass crystals tend to have smaller phenocryst sizes. The size of the groundmass crystals in different rocks can range from 0.05 to 0.5 mm. The size of the phenocrysts generally ranges from 1.5 mm to 2 cm (table 3.5).

The equigranular rocks of the Hope granite suite have, on a hand-specimen scale, minerals with approximately equal grain sizes. The equigranular granite is typically composed of the primary minerals quartz, potassium feldspar, plagioclase, biotite, topaz, and a trace of zircon +/- xenotime. In the Mt. Prindle pluton, topaz forms up to 4 percent of the rock. Secondary minerals include sericite, chlorite, opaque minerals, and +/- tourmaline, muscovite, and fluorite. A few rocks in the Lime Peak pluton are composed completely of myrmekitic and granophyric intergrowths.

Grain size of the equigranular granite is very uniform within an individual rock. Grain size varies among the equigranular rocks from 0.5 to 2 mm. Locally, the equigranular rocks have up to 5 percent phenocrysts, and may grade into the porphyritic rocks described above.

Mineralogy

Quartz is typically subhedral to anhedral. In the porphyritic rocks, quartz phenocrysts are subhedral. Quartz crystals commonly show well developed beta crystal faces against feldspar grains in the porphyritic rocks and locally in the seriate and equigranular rocks. In hand specimen, quartz is most commonly clear in the seriate and equigranular rocks, and smoky to clear in the porphyritic rocks. Locally, quartz forms 1 to 3 mm euhedral grains in miarolitic cavity fillings.

Potassium feldspar is subhedral to anhedral and commonly perthitic. Carlsbad twinning is typical. In the equigranular rocks, potassium feldspar crystals commonly have albite-pericline cross-hatch twinning. In the Hope granite suite the equigranular textured aplite dikes are the only other rock type that contains this plaid pattern of twinning in the potassium feldspar.

Plagioclase crystals are subhedral, and albite twinning is common. The plagioclase is oligoclase to albite in composition, and is commonly slightly zoned. Many crystals have thin rims of albite. In some equigranular rocks, coarse-grained muscovite replaces plagioclase in addition to the sericite alteration. The coarse-grained muscovite may represent an early form of greisen alteration.

Biotite most commonly forms equant or elongate subhedral crystals. In the equigranular and porphyritic rocks, biotite locally forms long bladed crystals. In thin section, biotite ranges from reddish-brown for the unaltered crystals to green and brown for slightly altered crystals (see "Alteration" below). Biotite contains many small crystals of zircon (+/- xenotime and monazite)

which have produced metamict halos in the surrounding biotite. Biotite grains also contain trace amounts of fine-grained apatite and ilmenite. In the seriate rocks, primary biotite is commonly included in potassium feldspar and plagioclase crystals, particularly in the Quartz Creek pluton. The coarse grain size, euhedral crystal shapes, and the inclusion of biotite in feldspar crystals strongly suggest that biotite was an early crystallizing phase.

Several common textures of tourmaline are present. The dominant form of tourmaline in the Quartz Creek pluton is small (.05 to 0.5 mm), subhedral, equant crystals that are evenly disseminated. These crystals may be both a product of primary crystallization and hydrothermal alteration; tourmaline was observed in thin section replacing both biotite, muscovite, and possibly plagioclase. In the Lime Peak and Mt. Prindle plutons, the dominant modes of occurrence for tourmaline are as crystals in veins and as interstitial clots up to 3 cm in diameter composed of many subhedral, elongate and equant crystals. The vein occurrences of tourmaline are clearly the product of hydrothermal alteration. Locally, all textural forms are present in each pluton. Tourmaline is most abundant in the Quartz Creek and Mt. Prindle plutons (tables 3.2, 3.3, and 3.4), and is rare in the porphyritic rocks, except where intruded by younger dikes. In thin section, tourmaline is blue, yellow, and green, and more rarely yellow and orange.

Topaz is typically subhedral and equant and is common near biotite crystals. Veins of sericite are common in topaz in altered rocks.

Regional Alteration

Alteration of the granitic rocks can be broadly classified into two categories: 1) regional/disseminated, and 2) vein-related (greisen). The later type of alteration is discussed by Newberry and others (chap. 6, this volume).

Regional alteration of the granites typically consists of partial replacement of plagioclase with sericite and partial to complete replacement of biotite with chlorite and minor opaque minerals. Although unaltered biotite is common, particularly in the seriate rocks, almost all thin sections contain at least 25 percent altered biotite crystals. Trace amounts of secondary fluorite replacing biotite is present, and less commonly fluorite replaces plagioclase.

Several stages of biotite alteration are visible. In the first stage, biotite recrystallizes as an intergrowth of cross-hatched red-brown biotite grains. With further alteration, the biotite becomes pale green. Changes in biotite color are caused by progressive loss of titanium, as discussed by Newberry and others (chap. 6; this volume). With still further alteration, chlorite, fine-grained opaque minerals +/- trace amounts of fine-grained mica (muscovite) and fluorite replace biotite.

The granite Q1 from the Quartz Creek pluton is typically the least altered. In the rocks of Q1 affected by relatively strong amounts of the regional alteration, however, the cores of the plagioclase crystals commonly are more altered than those in the other two plutons. This suggests that plagioclase in the Quartz Creek pluton may have been the most calcium-rich, and therefore the Quartz Creek pluton contained the least evolved rocks of the three plutons.

Tourmaline has three modes of occurrence in and adjacent to the Hope granite suite plutons: 1) forming up to 30 percent of the rock in both the granites and the country rock near contacts with the country rock, 2) localized near intrusions of younger granites and aplites, and 3) in random areas within any individual granite unit, where its presence suggests either localized

enrichment of boron in the crystallizing melt or the presence of a younger intrusion at depth. Biotite and tourmaline appear to be antipathetic: the more abundant the tourmaline, the more likely biotite is absent. Textures discussed above suggest tourmaline is a product of both hydrothermal alteration and late magmatic crystallization; in places tourmaline replaces biotite, muscovite, and plagioclase(?).

Late Intrusions

Petrology and mineralogy

Lime Peak L3:

A small intrusion (1 1/2 sq km) composed only of equigranular granite is present in the southwestern end of the Lime Peak pluton (the "Tin Ridge" area, chap. 6, this volume). The intrusion is a pale grey to white weathering, fine- to medium-grained (0.5 to 2 mm) equigranular granite that commonly contains brown-grey zinnwaldite. Zinnwaldite-albite, zinnwaldite-chlorite, and chlorite greisens are common in L3. The intrusion forms a sheet which crops out mainly between earlier granites and the hornfels. L3 intrudes both L1 and L2. Some of the contacts are well exposed, but most are obscured in rubble.

The equigranular granite of L3 is almost identical to the equigranular granite discussed earlier (tables 3.2, 3.3, and 3.4). Differences include 1) no associated porphyritic rock, 2) presence of zinnwaldite, a brown-grey mica, 3) more abundant greisens, and 4) more topaz (up to 5 percent). Topaz may be both primary and secondary. Biotite is present in unaltered L3, and is replaced by zinnwaldite during greisen alteration.

The equigranular granite (L3) shows abundant evidence of late-magmatic and hydrothermal greisen alteration. Veins of albite-zinnwaldite-quartz +/- fluorite are common. Some rocks consist exclusively of albite, zinnwaldite, quartz, +/- tourmaline and represent pervasively altered equigranular granite ("apogranite" in the Russian literature). Small amounts of sulfide minerals including pyrrhotite, arsenopyrite, and alabandite (MnS) are associated with this alteration. Extensively developed fine-grained white mica (sericite) alteration of feldspar is distinguished from the zinnwaldite by lower Fe and Li contents. Upper parts of L3 contain chlorite-zinnwaldite-cassiterite veins with high-grade Sn values (chap. 6, this volume).

Hydrothermal/late-magmatic alteration is concentrated in L3, but is also found in surrounding L1 and L2. In the Tin ridge area, some L1 and L2 contain up to 2 percent secondary green and/or purple fluorite, while other rocks contain up to 5 percent topaz, of probable secondary origin. Although these minerals occur in L2 elsewhere, they are not present in such large quantities. The L2 rocks also contain biotite partly altered to white mica; the composition of the mica is unknown. The hornfels surrounding L3 is cut by numerous tourmaline veins with accompanying fluorite and contains slightly anomalous Sn values. The secondary mineral assemblage of the hornfels and the L1/L2 unit near L3 also suggests that fluids rich in fluorine, boron, and Sn were associated with L3, causing autometasomatism and metasomatism of surrounding rocks.

Several characteristics of the L3 suggest that it is associated with high grade tin mineralization and is a classic "tin granite". The important compositional characteristics include

the presence of 1) cassiterite-bearing greisens, 2) very high base-line concentrations of Sn, Ta, Rb, F and other incompatible elements, 3) zinnwaldite (which contains high fluorine, boron and lithium content), and 4) pervasive albitization. Much of L3 shows "stockscheider" or pegmatite-aplite textures, known to be common with the central European tin deposits. We suggest that because L3 topographically underlies chlorite greisen-bearing L2 in the Tin Ridge area, other small bodies of L3 underlie similarly mineralized areas in the Lime Peak pluton.

Although L3 is different from L2 and L1, it does resemble the equigranular rocks of L2 in major oxide and modal composition, texture, and mineralogy, and a more-or-less gradational change in major, minor, trace, and rare earth element abundances between L3 and L1-L2 exists. For that reason, we suggest that L3 is a late crystallizing, more evolved variety of L2.

Mt. Prindle P2:

A few equigranular granite dikes up to 20 m wide form the second intrusion (P2) of the Mt. Prindle pluton, and may indicate a larger intrusion at depth. The dikes may also be a late stage of P1 or be related to the rhyolite porphyry dikes which cross cut Mt. Prindle. The Mt. Prindle porphyries were observed to vary in texture from an aphanitic groundmass to a fine-grained equigranular rock in the general vicinity of the P2 dikes, and the dikes contain a few phenocrysts locally.

P2 commonly contains brown-grey mica and is similar to L3. The brown mica in one thin section was analyzed by electron microprobe and proved to be muscovite and not zinnwaldite as in L3. Zinnwaldite does appear to be present locally in P2, however. The P2 is associated with tourmaline formation in the surrounding country granite, and alteration of biotite to muscovite. Iron-stained country granites are present around the P2 dikes locally.

Few greisen veins were found near P2 rocks. Skarns with high tin values are locally present adjacent to P2 at the southeast edge of the pluton (chap. 6, this volume).

Rhyolite Porphyry dikes

Introduction

Light green- to gray-, white-, orange-, and pink-weathering, rhyolite porphyry dikes are present near plutons of the Hope granite suite. Similar-appearing dikes in the Homestake Creek-Table Mountain area were mapped as rhyolite (plates 2-1A and 2-1B) but, based on petrographic and analytical data, are presently classified as quartz trachyte and alkali feldspar rhyolite. These rocks are now interpreted as part of the alkalic suite (chap. 3B, this volume). The Hope suite rhyolite dikes are flaggy, recessive weathering, and are locally pitted and iron-stained. Phenocrysts form 5 to 30 percent of the rock.

Most rhyolite porphyry dikes clearly cross-cut and are younger than the plutons of the Hope granite suite. Mineralogy and trace and major oxide composition suggest that the rhyolite porphyry dikes are genetically related to the Hope granite suite. Some of the rocks mapped as rhyolite porphyry dikes are probably an extremely fine-grained or aphanitic variety of the porphyritic units of the Hope granite suite (L2, Q2, and P1).

The rhyolite porphyry dikes generally contain 5 to 20 percent quartz, 2 to 10 percent potassium feldspar, 0 to 7 percent plagioclase, and 0 to 3 percent biotite phenocrysts.

Phenocrysts typically range from 0.5 to 5 mm in diameter, with a mode of around 2 mm. Potassium feldspar phenocrysts are typically the largest phenocrysts. Quartz, potassium feldspar, plagioclase, and minor biotite are present in the groundmass. The groundmass is typically green to gray and aphanitic to very fine-grained.

Secondary minerals include chlorite, sericite, and trace amounts of local topaz, fluorite, and pyrite. Unaltered rhyolites are rare.

Mineralogy and alteration

Quartz forms dark- to smoky-gray, equant crystals. Many quartz crystals have beta quartz outlines visible in hand specimen or are rounded and embayed. Quartz phenocrysts are typically surrounded by a rim of minute crystals of plagioclase and potassium feldspar(?). The feldspar rim is commonly overgrown by a thin rim of quartz. Potassium feldspar phenocrysts are subhedral to euhedral. Some potassium feldspar is perthitic. Plagioclase is subhedral. Albite twinning and slight normal zoning are common. Plagioclase is commonly partly to completely altered to sericite. Biotite forms equant and, less commonly, long bladed phenocrysts 0.5 to 2 mm in diameter. Biotite is partly to completely altered to chlorite.

Compositional data

Modal and chemical data were obtained in order to 1) quantify the compositional variations among plutons and intrusive units and 2) to determine how closely the Hope granite suite resembles major Sn-bearing granite suites. To determine modes, point-counts on rock samples from each pluton in the Hope intrusive suite were obtained using standard mineral staining and counting procedures. Representative unaltered rocks were analyzed by X-ray florescence and nuclear activation techniques to determine major oxide and trace element concentrations respectively. These analyses were conducted by Nuclear Activation Services, Ltd., Hamilton, Ontario. Compositions of representative minerals from several plutonic samples were determined by use of the electron microprobe at Washington State University. Sample locations are shown in appendix H.

Modal Composition

Point counts were obtained on 43 stained slabs of the Hope granite suite (fig. 3.6). The data show different trends for the three plutons. At Lime Peak, the seriate rocks (L1) are dominantly syenogranites, whereas the L2 and L3 rocks are monzogranites. The equigranular rocks from L2 and L3 typically have the highest plagioclase/alkali feldspar ratio of the rocks from the Lime Peak pluton. This path of differentiation, in which the ratio of plagioclase to alkali feldspar increases from the earliest intrusion to the latest, (unlike the usual pattern of plagioclase decreasing with fractionation) has been termed the albite trend (Hudson and Arth, 1983; Swanson and others, in press). An increase in fluorine and boron moves the composition of the minimum melting point granite towards albite (Manning, 1981). Thus, as differentiation increases, the rocks acquire increasingly higher plagioclase to alkali feldspar ratios as long as fluorine and boron become increasingly concentrated in the residual magma. Hence, the occurrence of the albite trend in the Lime Peak pluton is consistent with concentration of fluorine and boron. The enrichment is indicated mineralogically by more abundant tourmaline and topaz. Trace and rare earth element data also indicate a consistent fractionation trend from L1 to L2 to L3 under conditions of increasing fluorine and boron concentration.

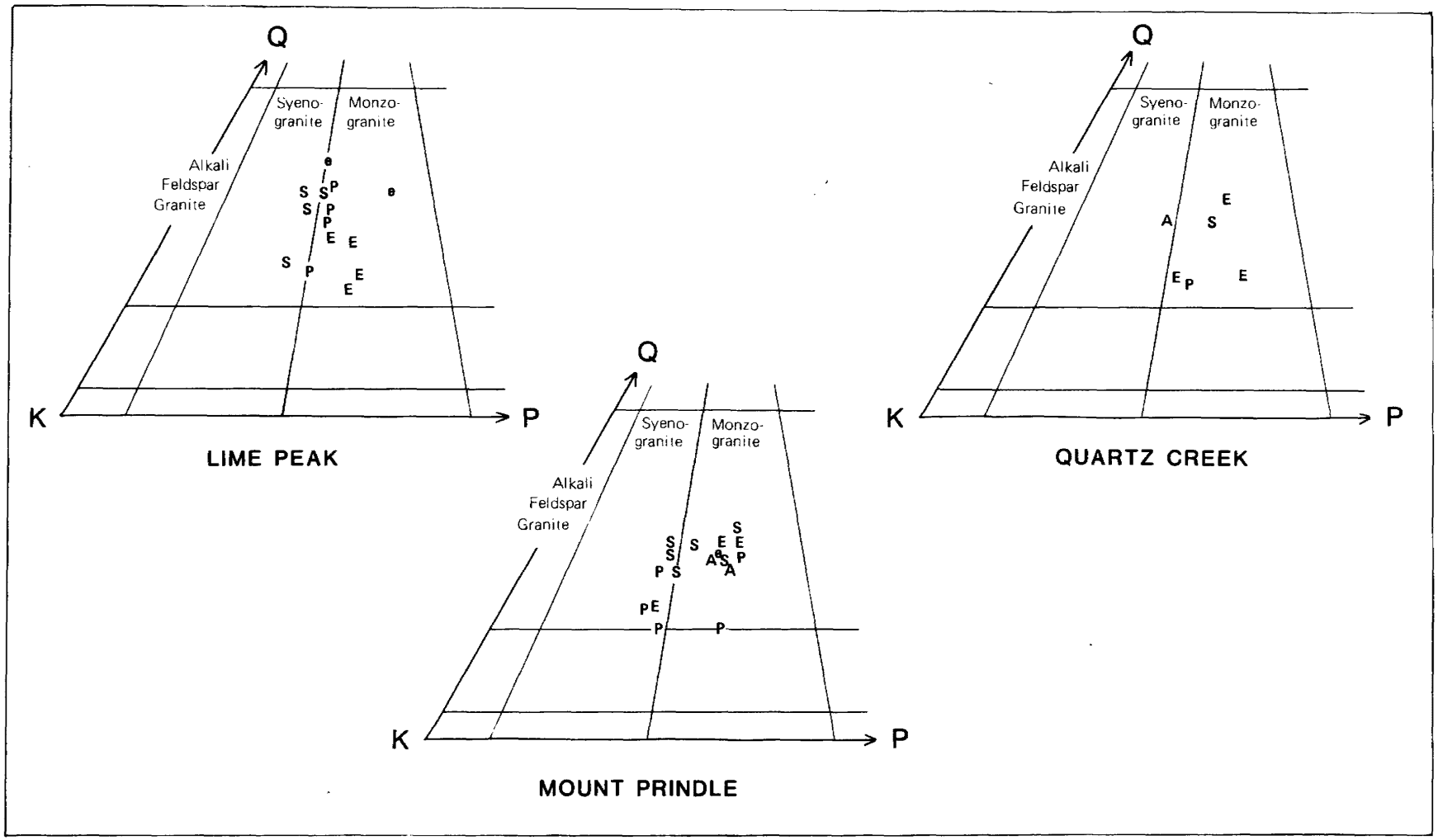


Figure 3.6. Diagram showing modal proportions of quartz (Q)- plagioclase (P) - potassium feldspar (K) for the Hope granite suite granites. Symbols are as follows: seriate rocks from L1, P1, and Q1 = S; porphyritic rocks from L2, P1, and Q2 = P; equigranular rocks from L2, P1, and Q2 = E; equigranular rocks from L3 and P2 = e; aplites = A. The data are based on point counted slabs.

The modal data displayed on figure 3.6 for the Mt. Prindle and Quartz Creek plutons do not clearly show the albite trend with change in texture. However, major oxide analyses from all the plutons show an albite trend as indicated by a rise in Na_2O/K_2O ratio versus differentiation index (fig. 3.7). The Na_2O/K_2O ratio is highest in the last intrusions of the Lime Peak and Mt. Prindle pluton (L3 and P2). The abundant topaz and tourmaline in the P1 at the Mt. Prindle pluton also indicate that fluorine and boron were present in major amounts, and that the magma forming P1 was probably even more enriched in fluorine and boron than the magma forming L2. The mixture of data points shown on figure 3.6 for Mt. Prindle is more likely explained by a heterogeneous magma with variable fluorine, boron, and vapor contents which has resulted in the textural variability and complexity of the pluton.

Whole Rock Compositions

Major Oxides

Thirty-seven samples of granites and one rhyolite porphyry dike of the Hope intrusive suite were analyzed for major oxides (table 3.6). The granites are high in SiO_2 (72 wt. percent) and generally have differentiation indices (D.I.) greater than 90. The clustering of the data at high D.I.s indicates a very high degree of differentiation for the granite suite and/or a very low degree of partial melting from a crustal source for the parent magma.

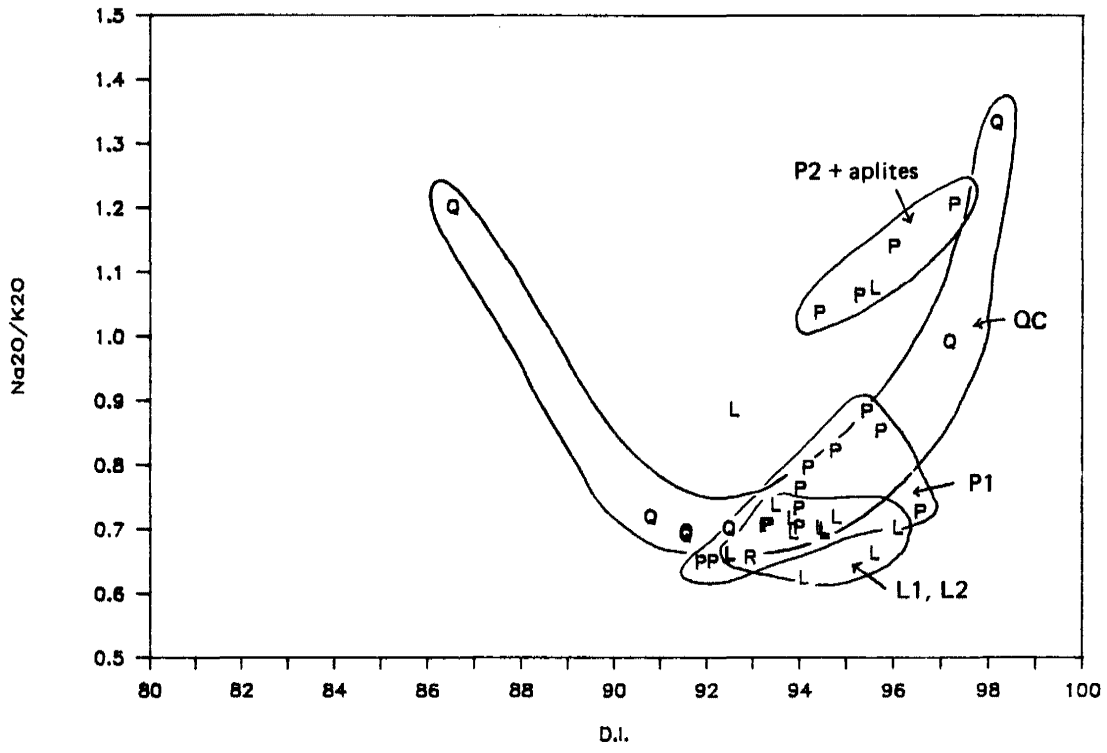


Figure 3.7. Variation diagram showing Na_2O/K_2O versus the differentiation index (D.I.) for the Lime Peak (L1, L2, and L3), Mount Prindle (P1, P2, and aplites), and Quartz Creek (Q) plutons. (D.I. = normative quartz + orthoclase + albite; Thornton and Tuttle, 1960.)

Table 3.6: Major oxide analyses and CIPW normative minerals for rocks of the Hope granite suite. Sample locations are shown in appendix H.

PLUTON	LIME PEAK:											
SAMP NO	TS52	TS60a	DNS93	DNS110	TS60b	TS67	DNS113	MW15a	LB25	LB43a	RN178a	LB44
INTRUSION	L1	L1	L1	L1	L2	L2	L2	L2	L2	L2	L3	L3
ROCK TYPE	sc	sc	sc	sc	pf dike	pf in sc	pf	pf dike	em in sc	em near	em	em L3
SiO2	74.8	76.8	77.2	76.0	76.6	76.0	75.6	75.5	74.9	74.0	71.7	73.1
Al2O3	12.5	11.7	11.7	12.0	12.5	12.3	12.5	13.3	12.7	12.8	15.5	14.4
Fe2O3	0.47	0.36	0.58	0.41	0.34	0.41	0.32	0.29	0.40	0.45	0.51	0.00
FeO	1.4	1.2	1.2	1.1	1.0	1.1	1.3	0.8	0.5	1	1	1
MgO	0.18	0.09	0.07	0.10	0.06	0.12	0.11	0.04	0.06	0.04	0.04	.01
CaO	0.94	0.65	0.88	0.73	0.72	0.70	0.74	0.80	0.66	0.34	0.14	0.16
Na2O	3.41	3.40	2.97	3.49	3.42	3.58	3.61	3.58	3.77	3.51	3.87	4.73
K2O	5.14	4.84	4.49	5.01	4.76	5.08	4.88	5.14	5.35	4.87	4.36	4.39
TiO2	0.21	0.15	0.14	0.13	0.13	0.13	0.15	0.08	0.06	0.05	0.05	0.03
P2O5	0.05	0.03	0.03	0.03	0.05	0.03	0.04	0.02	0.02	0.02	0.02	0.02
MnO	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.02	0.03	0.04	0.08	0.08
LOI	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.7	0.8	0.85	1.16	0.69
SUM	99.63	99.75	99.89	99.53	100.21	100.08	99.89	100.27	99.25	97.97	98.43	98.60
NORMATIVE MINERALS												
QTZ	32.7	36.7	40.4	34.8	36.5	33.8	33.6	32.9	31.6	34.5	32.4	28.2
COR			0.4		0.5		0.0	0.4		1.2	4.3	1.7
OR	30.6	28.8	26.7	29.9	28.2	30.2	29.0	30.5	32.1	29.6	26.5	26.5
ALB	29.1	29.0	25.3	29.8	29.0	30.4	30.8	30.4	32.4	30.6	33.7	40.9
AN	3.7	2.4	4.2	2.3	3.3	2.5	3.4	3.9	2.0	1.6	0.6	0.7
DIOP	0.6	0.6		1.0		0.7			1.1			
HYP	2.0	1.6	1.7	1.3	1.6	1.5	2.2	1.2	0.2	1.6	1.6	2.0
MAG	0.7	0.5	0.8	0.6	0.5	0.6	0.5	0.4	0.6	0.7	0.8	
HEM												
ILM	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1
RUT												
AP	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
WOLL												
SPHENE												
FeO*/MgO	10.2	16.9	24.6	14.7	21.8	12.2	14.4	26.6	14.4	35.1	36.5	
D.I.	92.5	94.5	92.4	94.5	93.8	94.4	93.4	93.8	96.1	94.8	92.6	95.6
Normative												
OR	48.3	47.9	47.5	48.2	46.6	47.8	45.9	47.1	48.3	47.9	43.6	38.9
AB	45.9	48.2	45.0	48.1	48.0	48.2	48.6	47.0	48.7	49.5	55.4	60.1
AN	5.8	4.0	7.5	3.7	5.4	4.0	5.4	6.0	3.0	2.6	1.0	1.0

Table 3.6 (Con.)

PLUTON			MOUNT PRINDLE:									
SAMP NO	DA116	DA19c	RN130	TS58	RR149	DNS124	MA89	DNS106	MA103	RN127	MW73	DA137
INTRUSION	aplite	aplite	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1
ROCKTYPE	in hornfels	in hornfels	sc	sc	sc	sm	pm	pm	pf/m	pf/m	pf w/ 2 micas	em w/ 2 micas
SiO2	76.3	75.4	74.3	74.5	76.1	75.4	76.0	76.0	75.6	75.3	73.2	75.7
Al2O3	13.6	13.8	12.8	13.1	12.4	13.5	12.5	13.4	13.1	13.2	13.7	14.1
Fe2O3	0.19	0.13	0.45	0.31	0.29	0.26	0.28	0.24	0.33	0.17	0.29	0.29
FeO	0.2	0.4	1	1.3	1.1	1	1.1	0.7	1.1	0.69	1.1	0.6
MgO	0.02	0.03	0.15	0.17	0.16	0.17	0.16	0.07	0.19	0.07	0.28	0.05
CaO	0.59	0.93	0.59	0.49	0.63	0.80	0.50	0.60	0.91	0.39	0.73	0.41
Na2O	3.53	3.46	3.53	3.46	3.61	3.20	3.87	3.50	3.18	4.04	3.83	3.65
K2O	5.31	5.53	5.01	4.89	4.72	4.92	4.70	4.77	4.90	4.73	5.41	4.58
TiO2	0.03	0.05	0.17	0.19	0.17	0.16	0.16	0.11	0.18	0.08	0.19	0.04
P2O5	0.02	0.03	0.08	0.08	0.07	0.09	0.07	0.07	0.08	0.06	0.14	0.09
MnO	0.01	0.02	0.06	0.06	0.06	0.07	0.05	0.07	0.05	0.06	0.06	0.07
LOI	0.5	0.6	0.7	0.6	0.6	0.7	0.7	0.5	0.6	0.7	0.8	0.7
SUM	100.30	100.38	98.84	99.15	99.91	100.27	100.09	100.03	100.22	99.49	99.73	100.28
NORMATIVE												
QTZ	34.2	32.0	33.4	34.2	35.2	35.7	33.9	35.9	35.8	32.8	28.2	36.0
COR	1.0	0.5	0.7	1.4	0.4	1.7	0.3	1.6	1.1	0.9	0.6	2.6
OR	31.4	32.8	30.2	29.3	28.1	29.2	27.9	28.3	29.1	28.3	32.3	27.2
ALB	29.9	29.3	30.4	29.7	30.8	27.2	32.9	29.8	27.0	34.6	32.8	31.0
AN	2.8	4.4	2.4	1.9	2.7	3.4	2.0	2.5	4.0	1.6	2.7	1.5
DIOP												
HYP	0.2	0.7	1.7	2.4	2.0	1.9	2.0	1.2	2.0	1.3	2.3	1.1
MAG	0.3	0.2	0.7	0.5	0.4	0.4	0.4	0.4	0.5	0.3	0.4	0.4
HEM												
ILM	0.1	0.1	0.3	0.4	0.3	0.3	0.3	0.2	0.3	0.2	0.4	0.1
RUT												
AP	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.3	0.2
WOLL												
SPHENE												
FeO*/MgO	18.5	17.1	9.4	9.3	8.5	7.3	8.4	13.1	7.3	12.1	4.9	17.3
D.I.	95.6	94.1	94.0	93.2	94.0	92.1	94.8	94.0	91.8	95.7	93.3	94.2
Normative												
OR	49.0	49.2	47.8	48.1	45.6	48.8	44.4	46.7	48.4	43.9	47.7	45.6
AB	46.6	44.1	48.3	48.7	50.0	45.5	52.4	49.1	45.0	53.7	48.3	52.0
AN	4.4	6.7	3.9	3.2	4.4	5.7	3.2	4.2	6.7	2.4	4.0	2.4

Table 3.6 (Con.)

PLUTON							QUARTZ CREEK:					
SAMP NO	DNS121	LB94	RN175e	DNS122	DNS119	DA186	GP180	GP157	DNS178	DNS180	MA114	DNS179
INTRUSION	P1	P2	P2		aplite	aplite	Q1	Q1	Q1	Q1,Q2	pf w/	
ROCK TYPE	ef at contact	em	em w/ tour	aplite in sm	in hornfels	in hornfels	sc	sc	sc	sc	tour & fluorite	aplite w/tour
SiO2	75.2	74.9	74.3	74.2	74.4	73.6	73.6	71.4	74.0	73.7	71.5	76.3
Al2O3	13.2	13.5	14.9	15.1	13.9	15.1	14.3	14.4	14.2	13.9	14.0	13.8
Fe2O3	0.28	0.19	0.25	0.24	0.38	0.34	0.43	0.41	0.32	0.50	0.57	0.40
FeO	0.7	0.6	0.4	0.4	0.5	-0.1	0.8	1.7	0.9	1	0.7	-0.1
MgO	0.09	.01	-0.01	0.01	0.08	-0.01	0.30	0.58	0.31	0.35	0.30	0.01
CaO	0.39	0.27	0.37	0.49	0.31	0.41	1.01	1.79	0.92	1.09	0.93	0.30
Na2O	4.05	4.45	4.58	4.39	4.08	5.37	3.61	4.51	3.52	3.54	3.76	4.51
K2O	4.58	3.90	4.30	4.23	5.60	4.45	5.17	3.75	5.08	4.91	5.35	4.54
TiO2	0.09	0.04	0.04	0.04	0.06	0.03	0.21	0.36	0.22	0.24	0.20	0.06
P2O5	0.06	0.11	0.10	0.18	0.08	0.24	0.09	0.14	0.09	0.11	0.11	0.05
MnO	0.06	0.04	0.07	0.07	0.05	0.05	0.06	0.08	0.06	0.06	0.09	0.02
LOI	0.7	0.62	0.5	0.5	0.6	-0.5	0.5	0.7	0.5	0.5	1.5	-0.5
SUM	99.40	98.62	99.80	99.85	100.04	98.98	100.08	99.82	100.12	99.90	99.01	99.39
NORMATIVE												
QTZ	33.3	34.1	30.6	31.9	28.6	25.2	30.2	25.7	31.5	31.4	27.4	32.2
COR	1.0	1.8	2.3	2.9	0.8	1.3	1.1	0.0	1.5	1.0	0.6	1.0
OR	27.4	23.5	25.6	25.2	33.3	26.4	30.7	22.4	30.1	29.2	32.4	26.8
ALB	34.7	38.4	39.0	37.4	34.7	45.6	30.7	38.5	29.9	30.1	32.6	38.2
AN	1.6	0.6	1.2	1.3	1.0	0.5	4.4	8.0	4.0	4.7	4.0	1.2
DIOP												
HYP	1.3	1.0	0.6	0.6	0.8		1.6	3.8	1.9	2.0	1.4	0.0
MAG	0.4	0.3	0.4	0.4	0.6	0.1	0.6	0.6	0.5	0.7	0.8	
HEM						0.3						0.4
ILM	0.2	0.1	0.1	0.1	0.1	0.1	0.4	0.7	0.4	0.5	0.40	0.0
RUT												0.0
AP	0.1	0.3	0.2	0.4	0.2	0.6	0.2	0.3	0.2	0.3	0.3	0.1
WOLL												
SPHENE												
FeO*/MgO	10.6			61.2	10.6		4.0	3.6	3.8	4.1	4.1	26.1
D.I.	95.4	96.0	95.3	94.4	96.6	97.3	91.5	86.5	91.5	90.8	92.5	97.2
Normative												
OR	43.0	37.6	38.9	39.4	48.2	36.4	46.6	32.5	47.1	45.6	47.0	40.6
AB	54.5	61.4	59.3	58.6	50.3	62.9	46.6	55.9	46.7	47.1	47.3	57.7
AN	2.5	1.0	1.8	2.0	1.5	0.6	6.8	11.7	6.2	7.4	5.8	1.8

Table 3.6 (Con.)

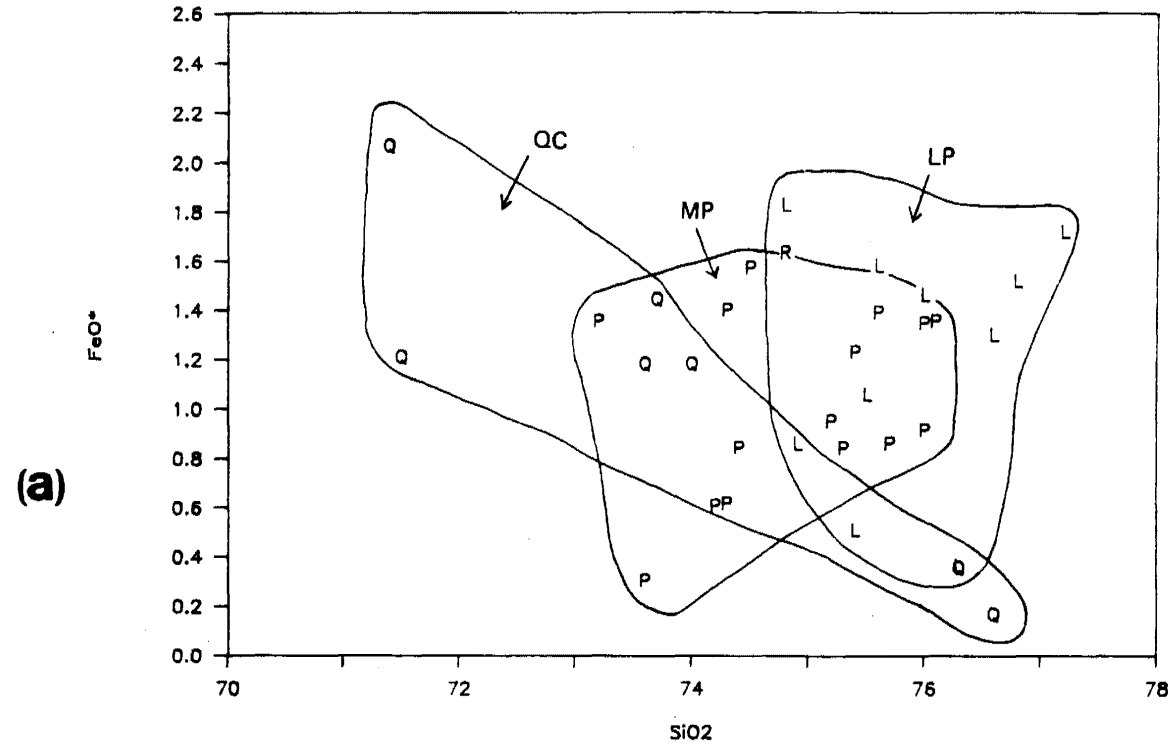
PLUTON		RHYOLITE PORPHRY DIKE
SAMP NO	RR135	RR151
INTRUSION		near LP
ROCK TYPE	aplite	
SiO2	76.6	74.8
Al2O3	13.1	12.5
Fe2O3	0.19	0.26
FeO	-0.1	1.4
MgO	0.03	0.17
CaO	0.46	0.71
Na2O	5.19	3.32
K2O	3.89	5.05
TiO2	0.06	0.18
P2O5	0.04	0.05
MnO	0.01	0.03
LOI	-0.5	0.7
SUM	98.97	99.17
NORMATIVE		
QTZ	31.0	34.1
COR		0.4
OR	23.1	30.3
ALB	44.1	28.5
AN	1.0	3.2
DIOP	0.2	
HYP		2.6
MAG		0.4
HEM	0.2	
ILM	0.0	0.3
RUT		
AP	0.1	0.1
WOLL	0.3	
SPHENE	0.1	
FeO*/MgO	2.4	9.6
D.I.	98.2	92.9
Normative		
OR	33.9	48.8
AB	64.7	46.0
AN	1.4	5.2

Harker diagrams (figs. 3.8a-d) show little variation and probably indicate that SiO_2 is not a good indicator of differentiation for rocks that are as highly evolved as the Hope suite rocks. Linear trends, however, are seen when these elements are plotted against the D.I. (fig. 3.9a-d).

The least evolved granite analyzed (sample 86GP157 with a D.I. of 86.5; fig. 3.9a-d) is a coarse-grained seriate monzogranite from Q1 of the Quartz Creek pluton. The rock contains only minor chlorite and sericite and is thus relatively unaltered. Microprobe analyses on biotite and plagioclase from this rock also indicate the rock is the most mafic rock analyzed. This relatively unaltered, mafic sample forms an a mafic end point for determining the differentiation trend of the magma.

The analytical data show differences in the degree of differentiation both among the plutons and among textural types within each pluton. In general, the major oxide data suggest Quartz Creek is the least evolved pluton. Only aplites show high degrees of differentiation at Quartz Creek (table 3.6). To show an example of the textural variability, TiO_2 vs. D.I. has been plotted for each pluton with symbols showing the textural varieties of granites present (fig. 3.10a-c). The figure shows that the equigranular, aplitic, and dike rocks are more evolved than the seriate and porphyritic rocks. Field mapping also indicates that the equigranular phase typically intruded after the seriate and porphyritic phases, and thus are probably the product of a more evolved magma.

Oxide data for Hope plutonic rocks plotted in terms of CIPW normative quartz-orthoclase-albite (fig. 3.11) show the effects of confining pressure and fluorine (F) content on the observed compositions. Water-saturated, fluorine-absent ternary minimum melts (experimental data of Jahns and Burnham, 1969) plot along the upper line, and compositions move towards the albite corner with increasing pressure. Fluorine-bearing water-saturated melts at 1 kb pressure (Manning, 1981) plot along the lower curve, and compositions move in a different path towards the albite corner with increasing fluorine. Low-fluorine samples from the Hope suite (our data) plot at or towards the 0.5 kb end of the low-fluorine curve, indicating they



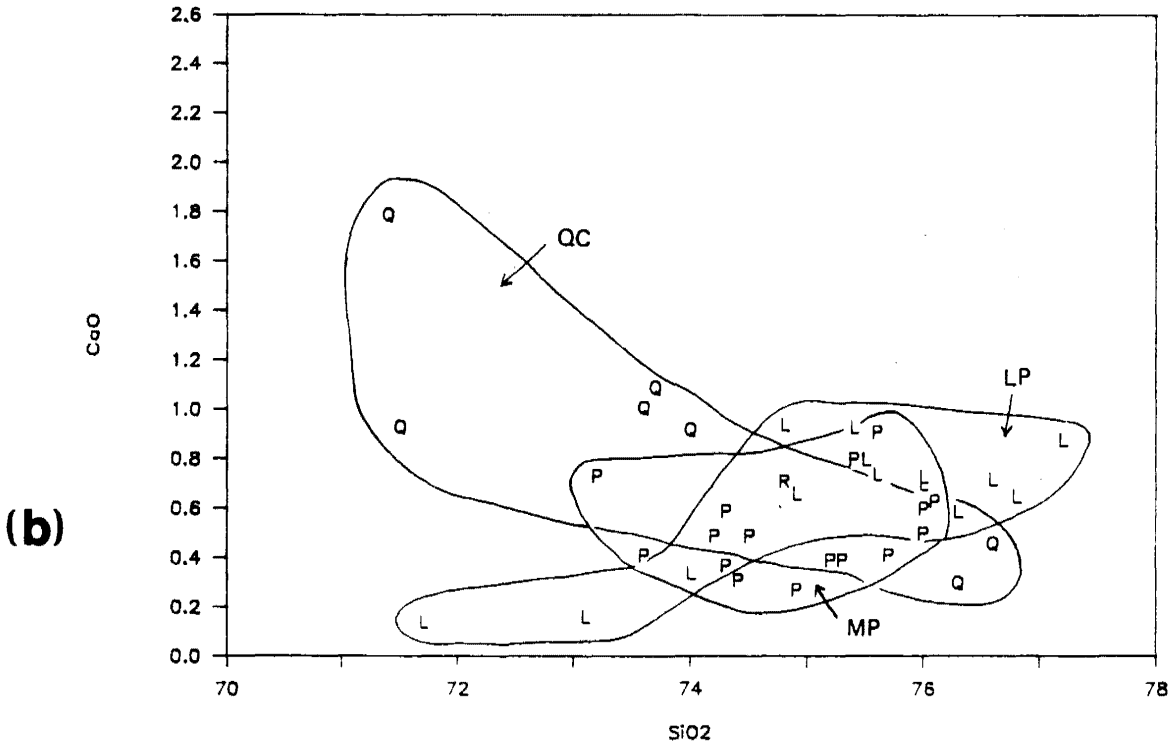
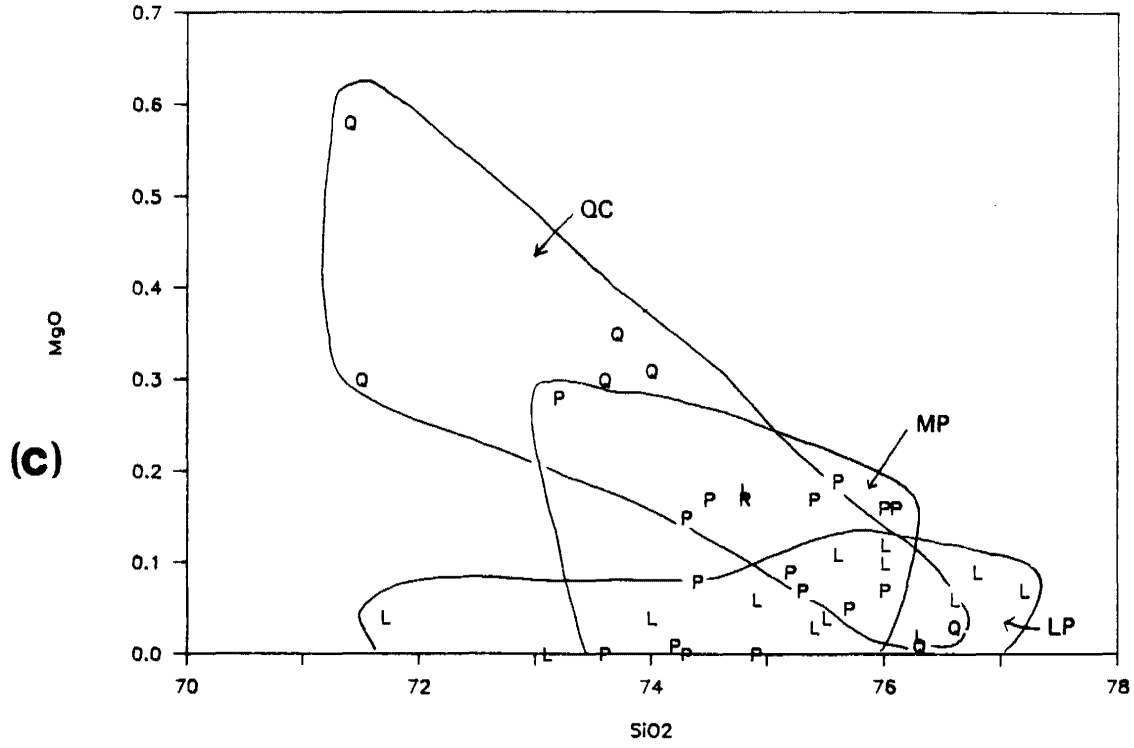


Figure 3.8a-d. Harker diagrams showing major oxide compositions versus SiO_2 for a) FeO^*, b) CaO, c) MgO, and d) TiO_2 for rocks from the Lime Peak (L), Mount Prindle (P), and Quarts Creek (Q) plutons. The rhyolite porphyry (R) is near the Lime Peak pluton. FeO^* = total Fe expressed as FeO.



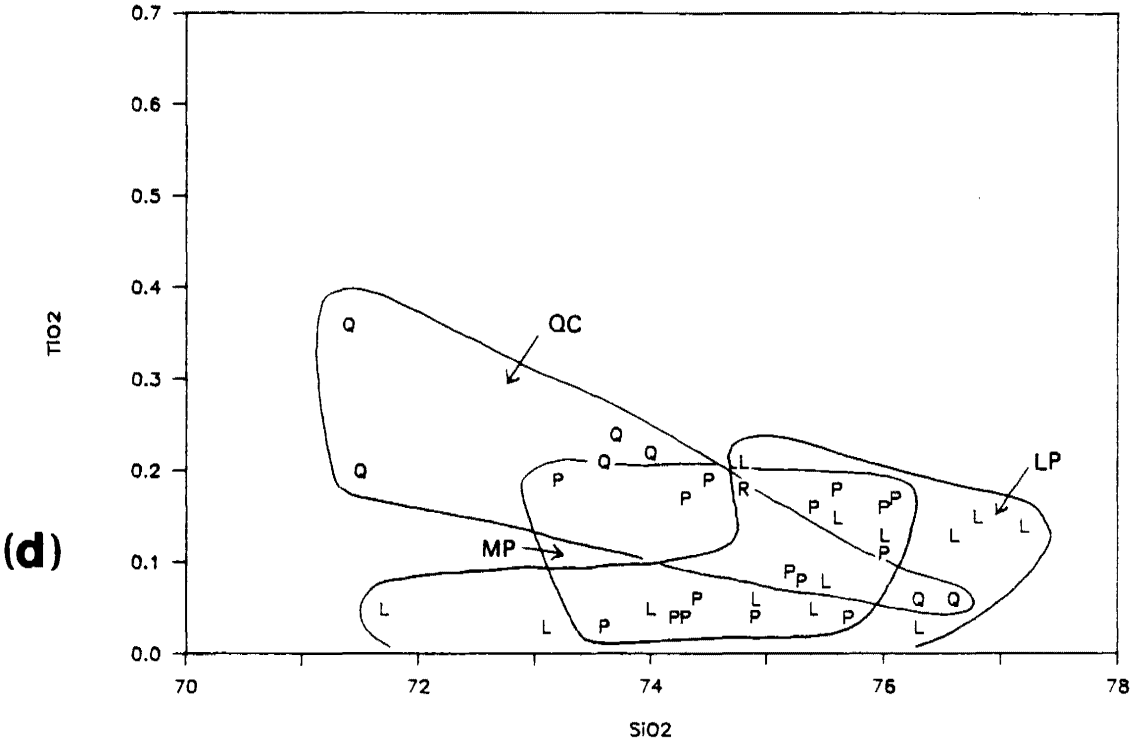


Figure 3.8 a-d. continued

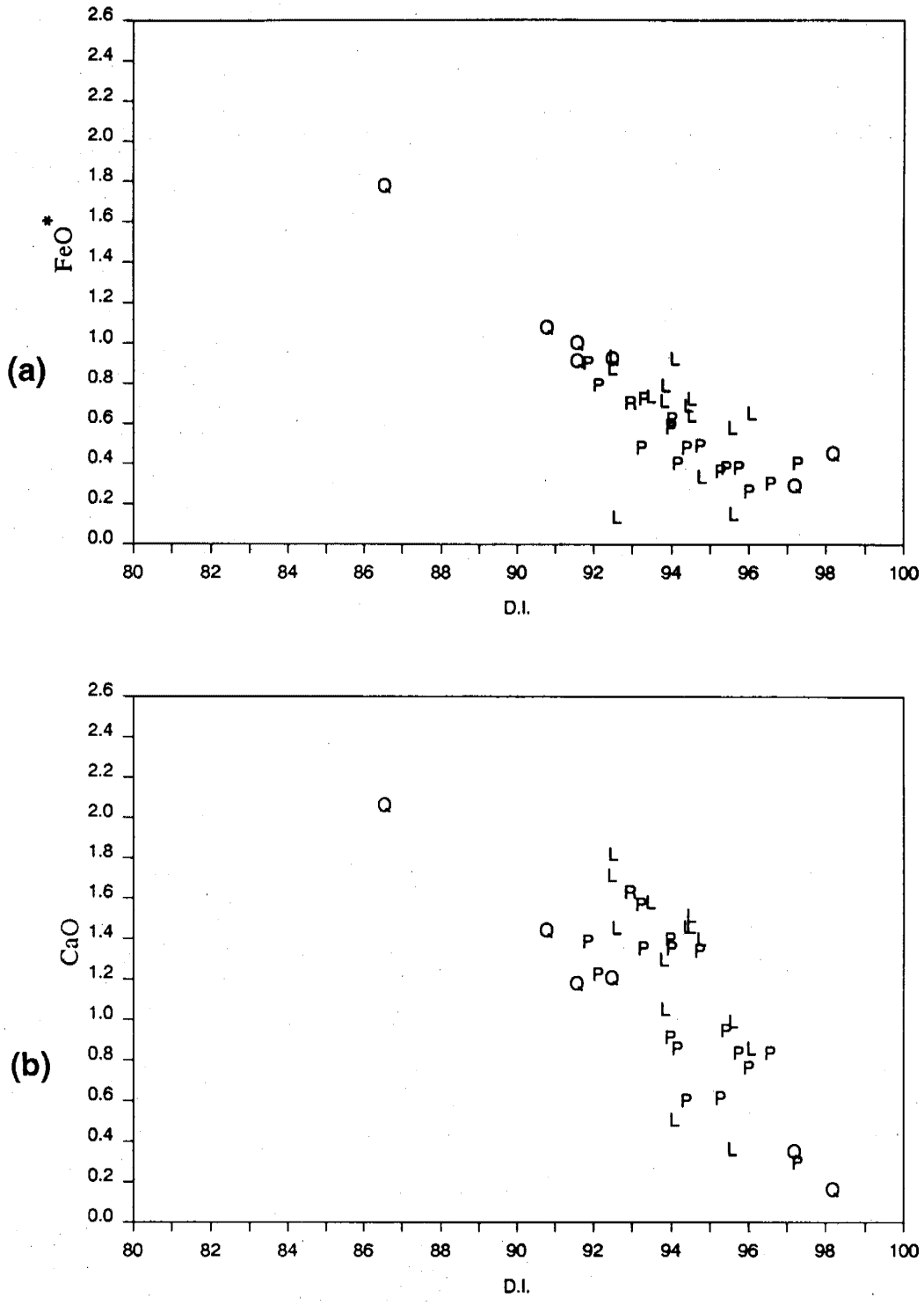
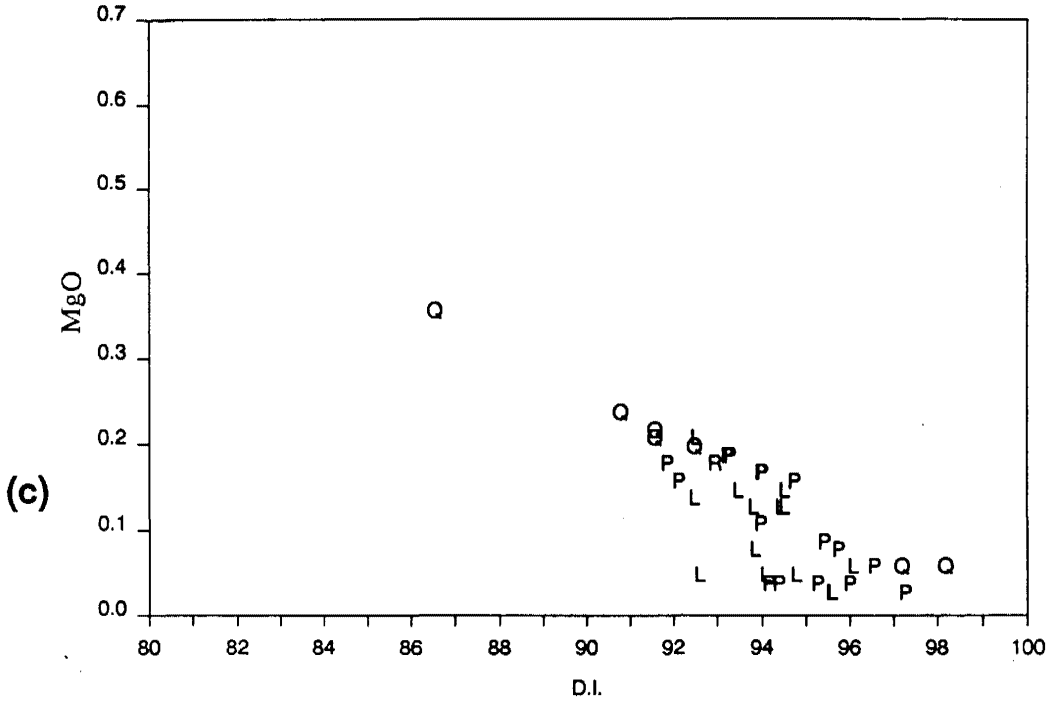


Fig. 3.9a-d: Variation diagrams showing major oxide concentrations versus differentiation index (D.I.) for a) FeO*, b) CaO, c) MgO, and d) TiO_2 from rocks of the Hope granite suite. Symbols as in Fig. 3.8. FeO^* = total Fe expressed as FeO.



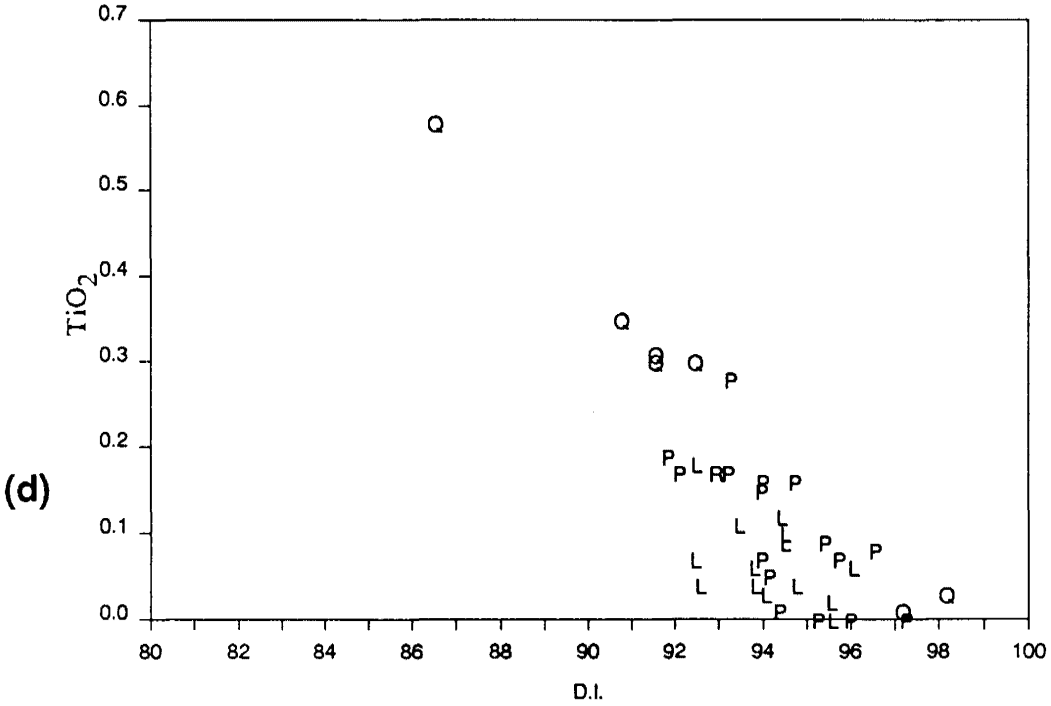


Figure 3.9a-d (Con.)

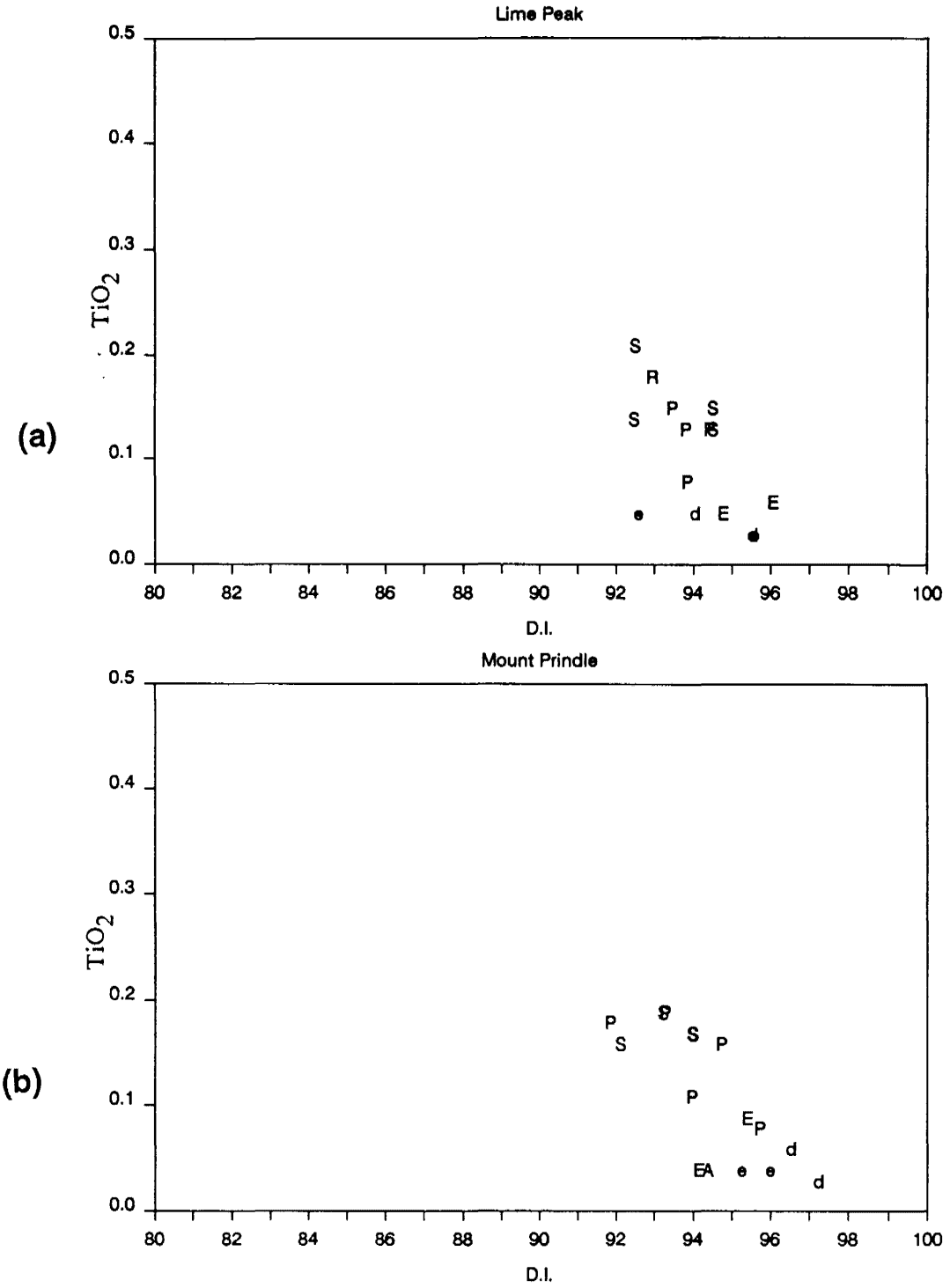


Fig. 3.10a-c: TiO_2 versus D.I. for a) Lime Peak, b) Mount Prindle, and c) Quartz Creek plutons. Data is plotted by textural type. Symbols are as follows: Seriate rocks from L1, P1, and Q1 (S); porphyritic rocks from L2, P1, and Q2 (P); equigranular rocks from L2, P1, and Q2 (E); equigranular rocks from L3 and P2 (e); aplites of unknown association (A); aplitic dikes in hornfels (d).

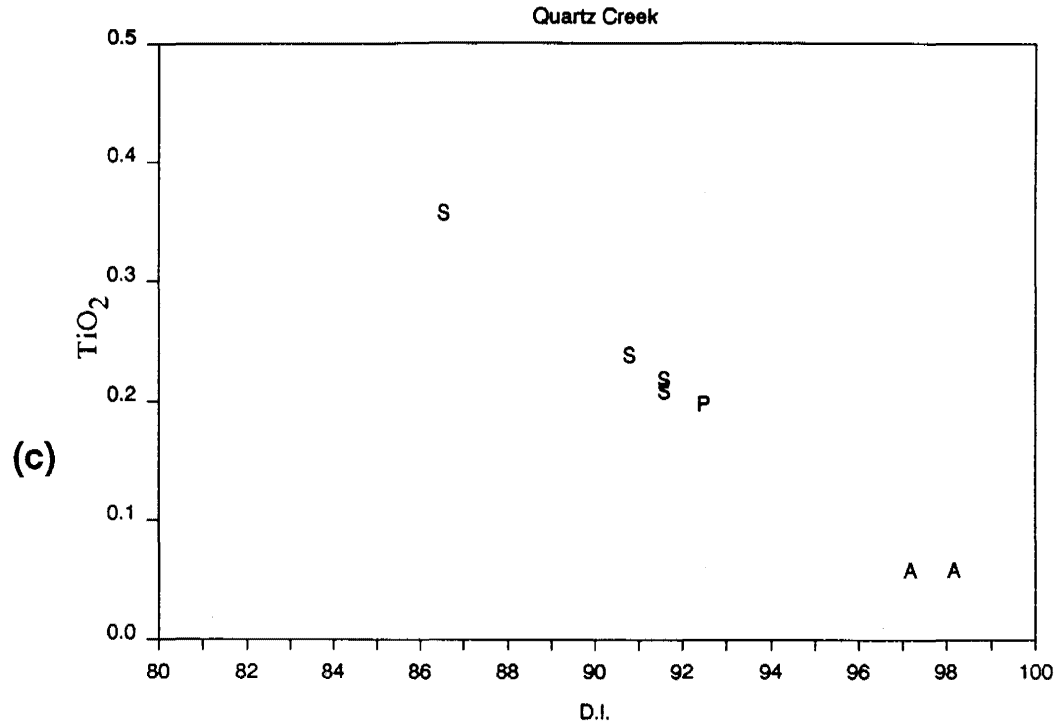


Fig. 3.10a-c (Con.)

crystallized at approximately 0.5 kb. Deviations from the curve are caused by the slight anorthite components present in some of the rocks. Higher fluorine rocks from the Hope suite (0.3 percent F) plot away from the 0.5 kb end of the fluorine-absent curve, approximately parallel to and mostly right of Manning's (1981) 1 kb curve. This data indicates that 1) highly fractionated Hope suite rocks contained very high fluorine contents and 2) much of this fluorine was lost to exsolved hydrothermal fluids.

Trace and Rare Earth Elements

Thirty-four of the rocks analyzed for major elements were also analyzed for 36 trace and rare earth elements (REE; table 3.7). The data show some predictable trends, such as Rb increases and Sr decreases with differentiation (fig. 3.12a,b). The Lime peak equigranular unit (L3) contains the highest Rb (more than 1000 ppm), which confirms other suggestions that L3 is the most evolved unit exposed in the Hope intrusive suite.

Some trace and rare earth elements reflect a difference between the Lime Peak pluton and the other two plutons. Sc, Th, Y, Zr, La, Ce, Nd, Sm, and Tb show relative enrichment for the Lime Peak pluton (fig. 3.13a-i) compared to the other two plutons. The rare earth element values are the lowest for the Quartz Creek pluton and intermediate for the Mt. Prindle pluton. Other trace and rare earth elements show no distinctive trends. The relative enrichment in the Lime Peak pluton of the above mentioned elements is most likely explained by the presence of minerals, such as monazite and xenotime, that contain those incompatible elements. Qualitative microprobe examination indicates the presence of cerium-REE-bearing phosphate minerals, supporting this contention.

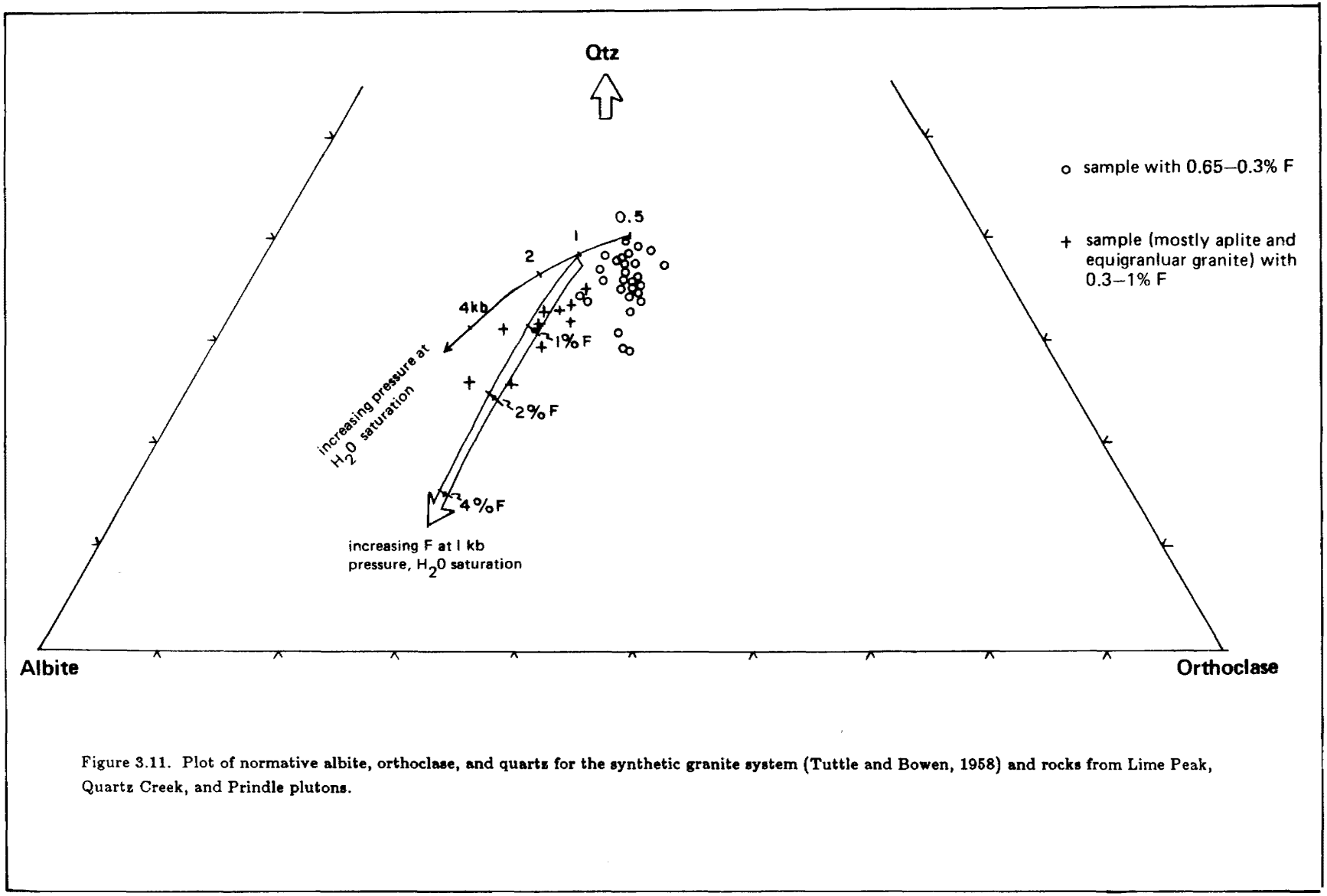


Figure 3.11. Plot of normative albite, orthoclase, and quartz for the synthetic granite system (Tuttle and Bowen, 1958) and rocks from Lime Peak, Quartz Creek, and Prindle plutons.

Table 3.7: Trace and rare-earth element analyses for rocks from the Hope granite suite and spatially associated mafic dikes.

PLUTON LIME PEAK:

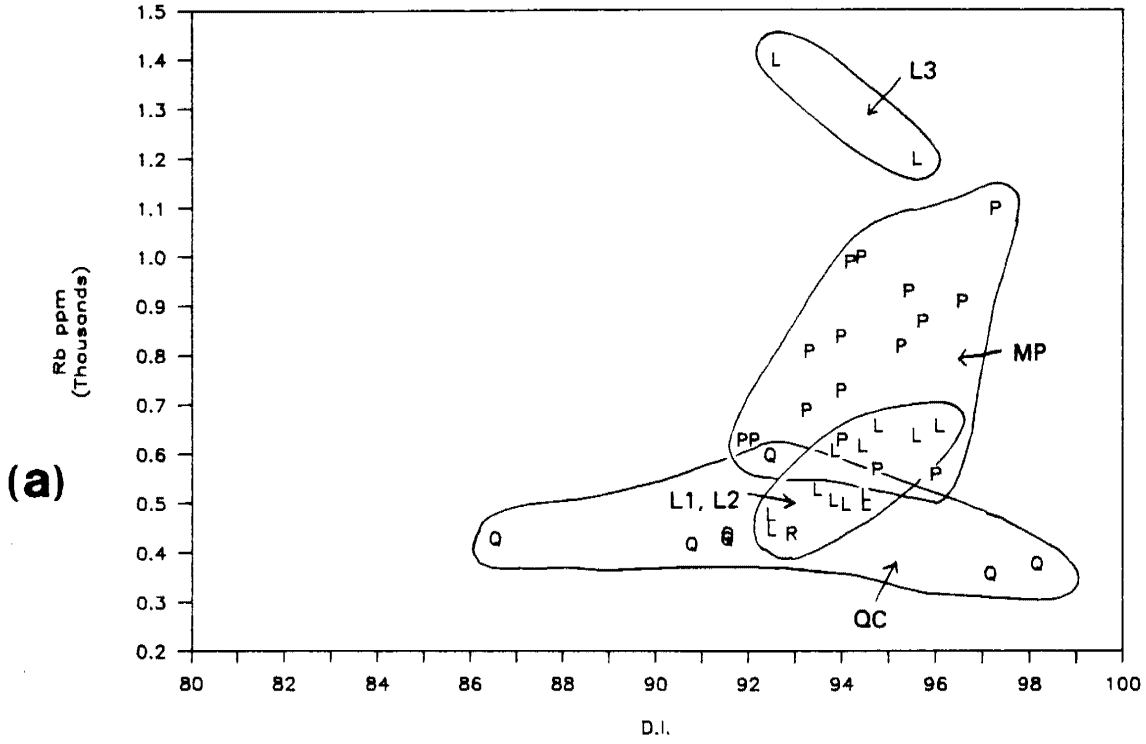
SAMP NO		TS52	TS60a	DNS93	DNS110	TS60b	TS67	DNS113	MW15a	LB25	DA116	DA19c
UNIT		L1	L1	L1	L1	L2	L2	L2	L2	L2	aplite	aplite
ROCK TYPE		sc	sc	sc	sc	pf dikes in sc	pf	pf	pf dike	em	in hornfels	in hornfels
AG	PPM	-5	-5	-2	-5	-5	-5	-5	-2	-5	-2	-2
AS	PPM	-2	2	1	-2	-2	2	-2	1	4	1	-1
AU	PPB	-5	-5	5	6	6	-5	-5	-5	-5	-5	-5
B	PPM	23	20	17	15	n.a.	15	20	10	14	28	14
BA	PPM	400	130	170	170	300	100	200	200	100	220	260
BR	PPM	0.8	-0.5	-0.5	1.1	-0.5	-0.5	0.9	1.5	-0.5	1.1	-0.5
CA	%	0.8	-0.5	0.7	-0.5	-0.5	-0.5	1	0.4	0.6	-0.3	0.7
CO	PPM	1.6	1.1	1.4	1.7	2.3	1.2	1	0.8	1.2	1.1	1
CR	PPM	10	10	-0.5	10	10	10	10	2.6	10	-0.5	-0.5
CS	PPM	5	8	6.4	6	10	7	8	5.6	6	3	4.2
F	PPM	2000	1600	2300	2100	n.a.	2600	2400	1700	2100	1500	660
FE	%	1.7	1.5	1.44	1.4	1.2	1.4	1.5	1.01	0.9	0.373	0.57
HF	PPM	7	7	6	6	5	5	6	5.1	5	4	4.4
MO	PPM	-4	-4	-2	-4	-4	-4	-4	-2	-4	-2	-2
NA	%	2.1	2.2	2.1	2.2	2	2.1	2.3	2.5	2.3	2.4	2.4
NB	PPM	40	30	20	30	20	30	30	20	20	20	40
NI	PPM	-200	-200	-50	-200	-200	-200	-200	-50	-200	-50	-50
RB	PPM	450	520	480	500	510	620	530	610	660	640	500
SB	PPM	0.4	0.3	0.4	0.3	0.4	0.4	0.4	0.2	0.2	0.1	0.3
SC	PPM	6.7	6.7	6.32	6.2	5.8	5.7	6.5	5.36	4.6	4.15	7.52
SE	PPM	-1.1	2.4	-1	-1.4	-1.2	-1.3	-1.2	-0.8	2.9	-0.6	1.9
SN	PPM	2	6	10	6	10	4	12	2	2	-2	-2
SR	PPM	50	10	-10	10	40	-10	20	-60	-10	-10	-50
TA	PPM	1.7	1.9	2.3	2.2	3	2.8	2.7	3	2.8	7.1	5.8
TH	PPM	71	100	87	76	62	85	58	78	55	22	29
U	PPM	13.6	20.6	10.8	10.1	12.3	14.2	10.2	16.9	10.3	15.9	16.9
W	PPM	-4	-4	-1	-4	-4	5	-4	-1	-4	2	2
Y	PPM	50	80	110	110	80	120	80	50	160	160	260
ZN	PPM	-50	-50	32	-50	34	-50	50	26	80	16	50
ZR	PPM	200	160	160	170	120	140	170	110	120	60	50
LA	PPM	132	123	107	124	68	93	109	55.8	28	33.3	52.1
CE	PPM	252	253	217	254	143	192	225	122	74	87	120
ND	PPM	91	92	83	93	56	75	80	48	32	33	36
SM	PPM	15.5	17.4	17.5	18.3	12.2	15.5	16.5	11.5	10.9	10.7	10.7
EU	PPM	0.6	0.3	0.25	0.3	0.3	0.4	0.4	0.21	-0.2	0.1	0.17
TB	PPM	1.9	2.1	2.6	2.8	2	2.2	2.6	1.6	2	3.2	4.4
YB	PPM	5.7	7.5	9.59	8.7	6.8	8.4	9.7	5.91	12.7	14.9	24.7
LU	PPM	1	1.3	1.52	1.4	1.1	1.4	1.5	1.06	2	2.3	3.64

Table 3.7 (Con.)

PLUTON		MOUNT PRINDLE:											
SAMP NO		RN130	TS58	RR149	DNS124	MA89	DNS106	MA103	RN127	MW73	DA137	DNS121	RN175e
UNIT		P1	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1	P2
ROCK TYPE		sc	sc	sc	sm	pm	pm	pf/m	pf/m	pf w/ two micas	em w/ two micas	ef at contact	em w/ tourm
AG	PPM	-5	-5	-5	-2	-5	-2	-2	-5	-5	-2	-5	-5
AS	PPM	-2	-2	6	2	-2	2	1	5	5	2	-2	-2
AU	PPB	-5	-5	-5	6	-5	5	-5	-5	-5	7	-5	-5
B	PPM	52	27	85	79	10	150	23	100	41	80	100	24
BA	PPM	200	200	200	250	200	160	310	200	400	70	100	110
BR	PPM	0.8	-0.5	0.7	0.7	0.8	0.8	0.5	-0.5	-0.5	0.9	0.7	-0.5
CA	%	-0.5	-0.5	0.5	0.5	0.5	0.4	-0.3	-0.5	0.5	-0.2	-0.5	-0.5
CO	PPM	1.5	1.5	1.6	1.4	1.7	1.1	1.3	0.8	1.8	0.7	1.2	2
CR	PPM	10	10	3	5.4	10	-0.5	3	10	10	-0.5	10	30
CS	PPM	29	19	25	30.4	11	44.2	24.2	56	25	37.4	58	22
F	PPM	2700	2100	2400	2500	1300	2900	2200	2900	2700	3100	2300	6200
FE	%	1.3	1.5	1.4	1.13	1.3	0.879	1.23	0.8	1.3	0.88	1	0.6
HF	PPM	4	4	4	3.3	4	3.3	3.9	3	3	2.3	3	2
MO	PPM	-4	-4	-4	-2	-4	-2	-2	-4	-4	-2	-4	-4
NA	%	2.2	2.2	2.3	2.2	2.3	2.4	2.2	2.6	2.3	2.6	2.6	2.7
NB	PPM	10	10	20	30	30	20	10	-10	20	20	10	10
NI	PPM	-200	-200	-200	-50	-200	-50	-50	-200	-200	-50	-200	-200
RB	PPM	730	690	630	630	570	840	630	870	810	990	930	820
SB	PPM	0.9	0.6	0.6	0.7	0.5	1.2	0.6	1.7	0.8	0.8	1.3	0.5
SC	PPM	4.9	5.7	5.3	5.43	4.6	4.2	4.7	3.6	4.4	3.46	4.3	2.5
SE	PPM	-0.9	2.2	-0.9	-0.6	-1.7	-0.8	-0.7	-0.9	-0.7	-0.6	-0.8	-0.8
SN	PPM	32	22	18	38	26	68	38	50	34	58	62	34
SR	PPM	30	10	10	80	10	-50	-60	-10	50	-50	-10	-10
TA	PPM	3.4	3.7	3.6	4.5	3.4	4.5	3.2	5	3.6	12	4.8	6
TH	PPM	27	29	29	20	24	16	24	18	20	15	19	11
U	PPM	10.9	9.2	32.1	8	27	8.1	16.3	25.5	23.4	8.7	8.3	5.8
W	PPM	4	19	4	6	-4	6	5	9	5	15	11	34
Y	PPM	60	60	70	30	60	60	80	40	30	50	50	10
ZN	PPM	60	50	50	62	47	63	69	50	60	28	60	47
ZR	PPM	100	120	100	100	90	50	100	30	80	20	60	20
LA	PPM	36	40	39	30.3	32	21.6	34	18	30	7	18	4
CE	PPM	78	88	83	65	73	49	74	43	59	18	45	13
ND	PPM	31	34	39	27	35	20	31	20	26	9	18	5
SM	PPM	6.9	7.7	7.6	6.05	7.6	4.9	7.88	5.2	5.1	3.2	4.9	1.7
EU	PPM	0.2	0.3	0.2	0.24	0.3	0.14	0.31	-0.2	0.3	0.09	-0.2	0.52
TB	PPM	1.2	1.4	1.3	1	1.2	0.8	1.3	1	0.7	0.6	1	0.4
YB	PPM	5.6	5.9	6.5	4.21	7.1	4.17	5.59	6.4	2.5	3.81	6.2	2.9
LU	PPM	0.9	0.9	1.3	0.71	1.3	0.7	1.02	1.2	0.6	0.65	1	0.5

Table 3.7 (Con.)

PLUTON	MT. PRINDLE CON.			QUARTZ CREEK							RHYOLITE POR.DIKE
SAMP NO	DNS122	DNS119	DA186	GP180	GP157	DNS178	DNS180	MA114	DNS179	RR135	RR151
UNIT	aplite	aplite	aplite in	Q1	Q1	Q1	Q1	Q2	aplite	aplite	near LP
ROCK TYPE	in sm	in hornfels	hornfels near skarn	sc	sc	sc	sc	pf with tourm & fluorite	with tourm		
AG PPM	-2	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
AS PPM	2	-2	-1	-2	4	-2	-2	-2	-2	14	3
AU PPB	-5	-5	-5	-5	-5	-5	5	-5	-5	-5	-5
B PPM	250	16	320	140	11	120	45	160	650		6.9
BA PPM	50	150	100	500	320	500	500	600	100	200	400
BR PPM	0.9	1	0.5	-0.5	-0.5	-0.5	-0.5	-0.5	0.5	0.5	1
CA %	-0.2	-0.5	0.8	0.7	1.5	0.9	1	-0.5	-0.5	0.5	0.7
CO PPM	0.6	0.8	1.6	2.6	3.7	3.2	3.4	1.9	2.2	0.4	1.6
CR PPM	-0.5	10	10	20	10	10	20	10	20	10	10
CS PPM	51.9	27	10	28	22	25	33	25	7	9	4
F PPM	7400	1700	1800	800	1100	840	900	1200	100		1700
FE %	0.636	0.8	0.2	1	2	1.1	1.2	1.1	0.3	0.118	1.6
HF PPM	2.3	2	2	3	6	3	3	4	1	2	6
MO PPM	-2	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4
NA %	3	2.6	3.3	2.1	2.9	2.2	2.1	2.2	2.5	3.2	2
NB PPM	10	20	60	20	50	50	40	40	50	70	30
NI PPM	-50	-200	-200	-50	-200	-200	-50	-200	-200	-200	-200
RB PPM	1000	910	1100	440	430	430	420	600	360	380	440
SB PPM	1.3	0.7	0.2	0.6	0.7	0.5	0.7	0.6	0.2	0.3	0.2
SC PPM	1.44	4	2.7	3.8	6.9	3.8	4.2	3.6	2.1	1.1	6.1
SE PPM	-0.5	-0.7	21	-0.9	-1.1	-1	-0.8	-1.2	-0.7	-0.9	-1
SN PPM	36	38	10	28	18	30	28	28	4	4	-2
SR PPM	-50	-10	50	140	190	160	170	130	-10	10	60
TA PPM	6.5	7	28	5	4.9	4	4	3	9	12	1.8
TH PPM	13	14	7.3	20	38	23	27	23	4.7	6.8	49
U PPM	4.7	18.8	3.1	4.2	12.9	5.6	5.4	10.2	9.4	39	6.6
W PPM	12	13	16	-4	4	-4	-4	-4	-4	36	-4
Y PPM	20	30	10	20	30	40	20	20	10	30	80
ZN PPM	31	60	26	-50	60	-50	38	-50	-50	-50	60
ZR PPM	20	20	10	90	170	110	130	120	10	30	170
LA PPM	3.9	9	1	34	67	36	46	46	4	5	107
CE PPM	12	21	3	64	128	68	86	76	10	13	212
ND PPM	6	11	-3	22	51	23	28	25	5	10	79
SM PPM	2.8	3	0.8	4.2	8.8	4.7	5.4	4.5	1	1.6	14.6
EU PPM	-0.05	-0.2	-0.2	0.5	0.6	0.5	0.5	0.7	0.08	-0.2	0.6
TB PPM	0.6	0.6	0.2	0.6	1.4	0.6	0.7	0.5	0.4	0.5	2
YB PPM	2.9	3.8	0.7	2.2	4.2	3	2.5	1.6	1.8	4.9	7
LU PPM	0.47	0.7	0.1	0.4	0.8	0.5	0.4	0.4	0.4	1.3	1



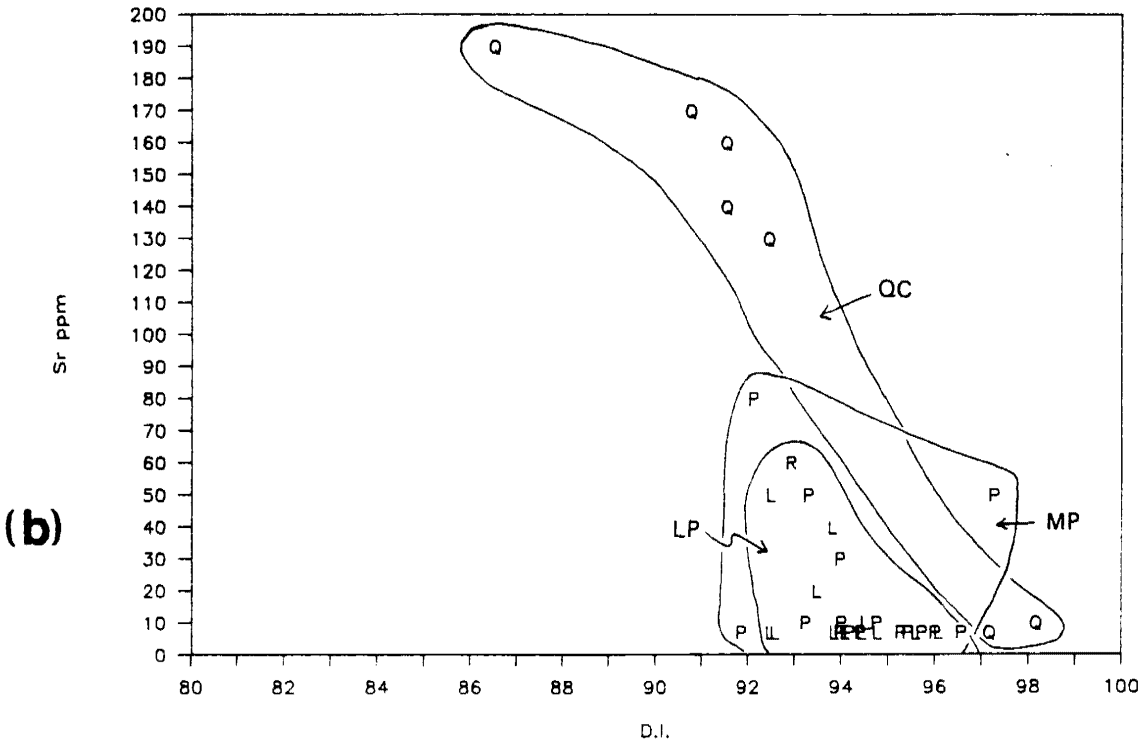


Figure 3.12a,b. Variation diagrams for the Hope granite suite showing D.I. versus a) Rb and b) Sr concentrations expressed in parts per million.

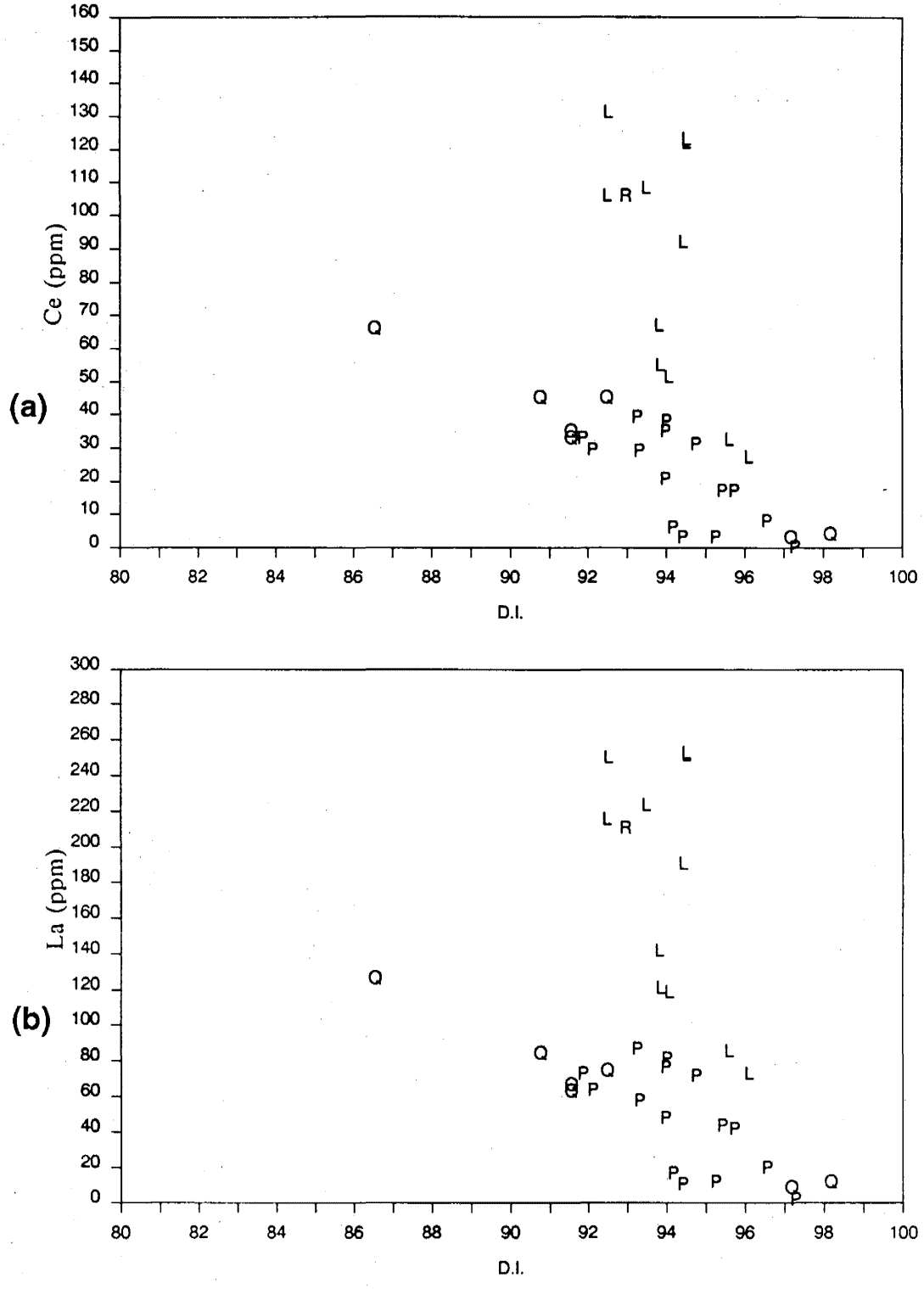
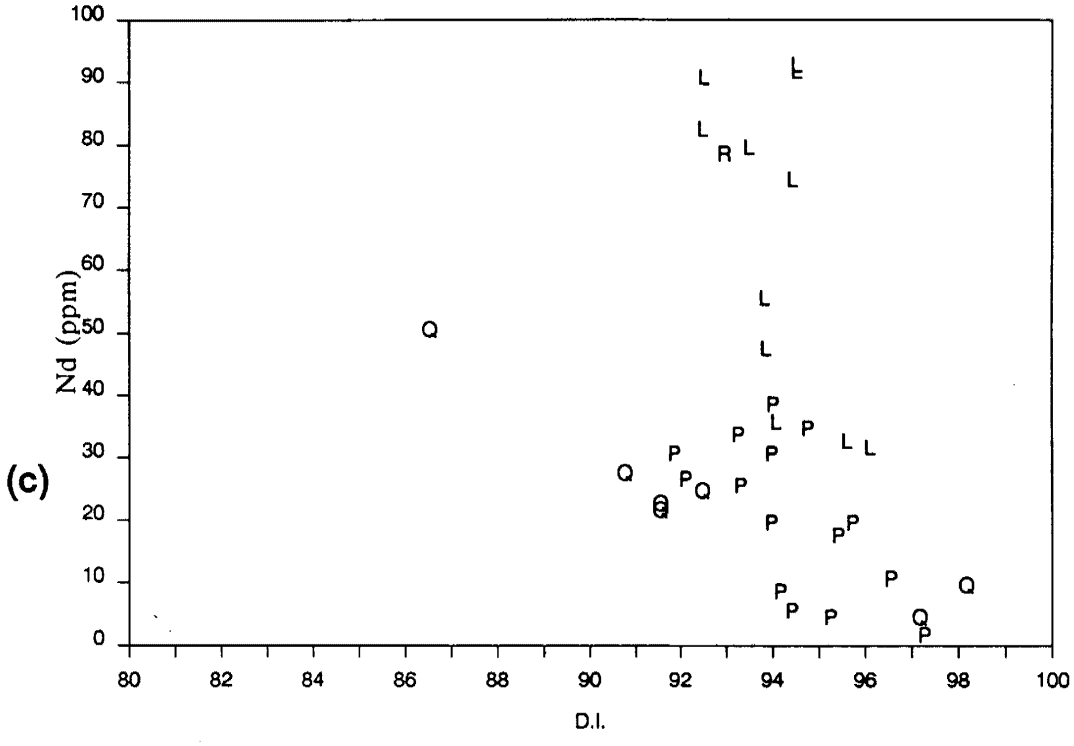


Fig. 3.13a-i: Variation diagrams for the Hope granite suite showing D.I. versus a) Ce, b) La, c) Nd, d) Sc, e) Sm, f) Tb, g) Th, h) Y, and i) Zr concentrations expressed in parts per million.



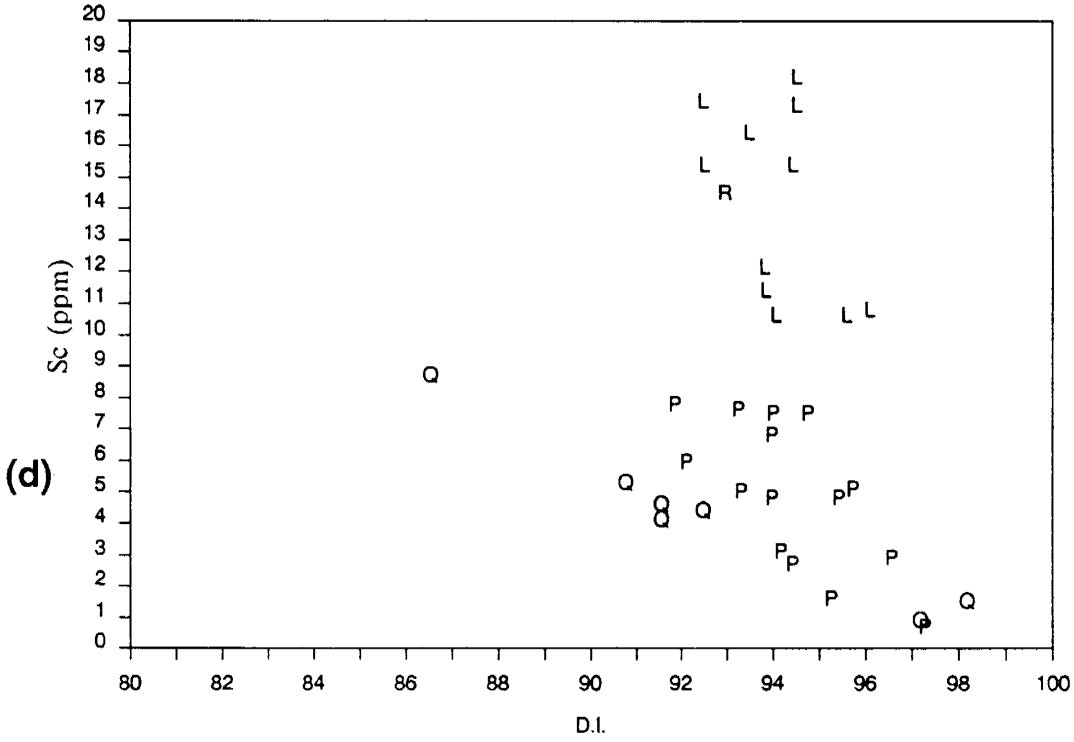
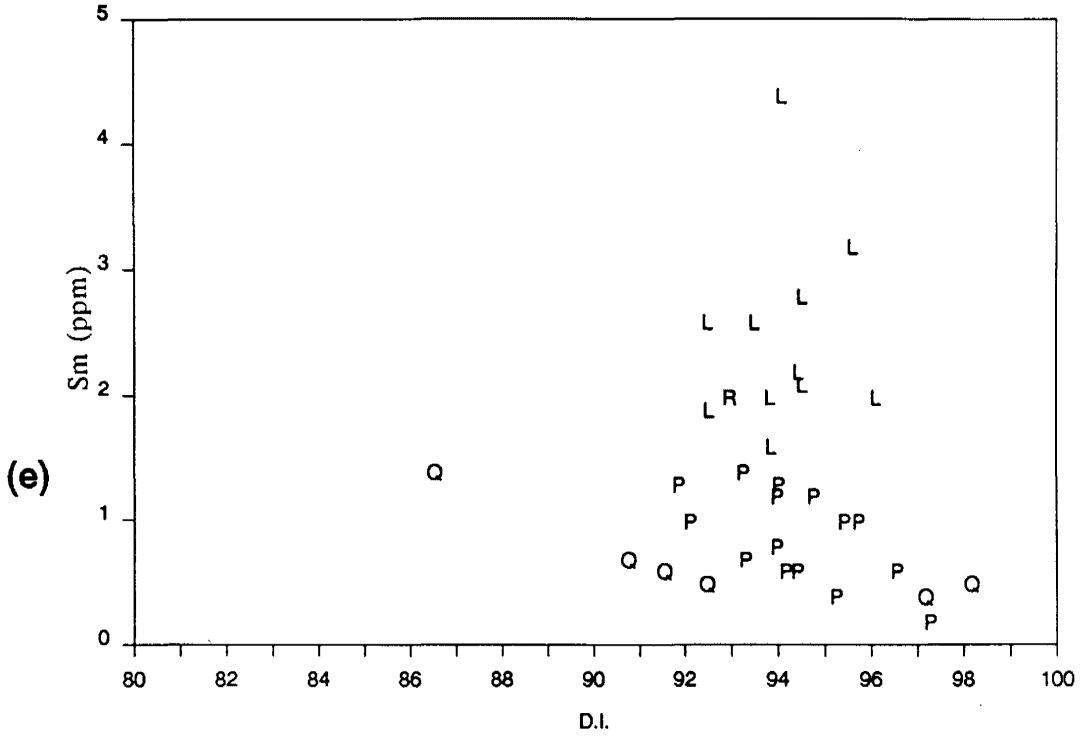


Figure 3.13a-i (Con.)



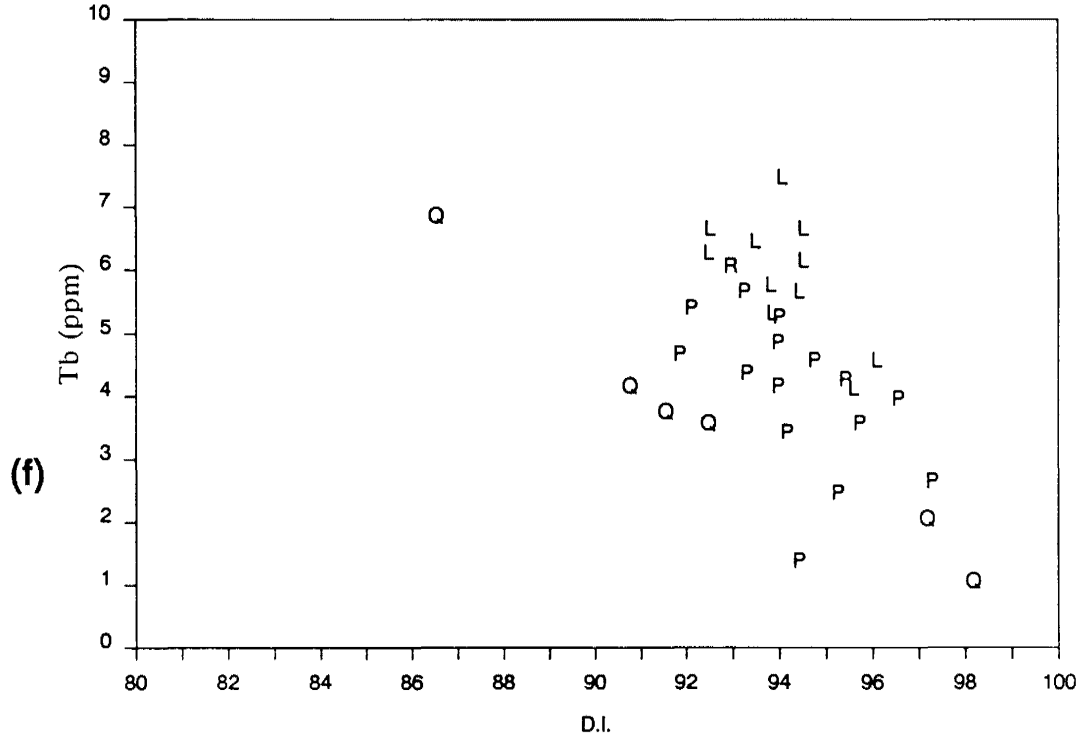
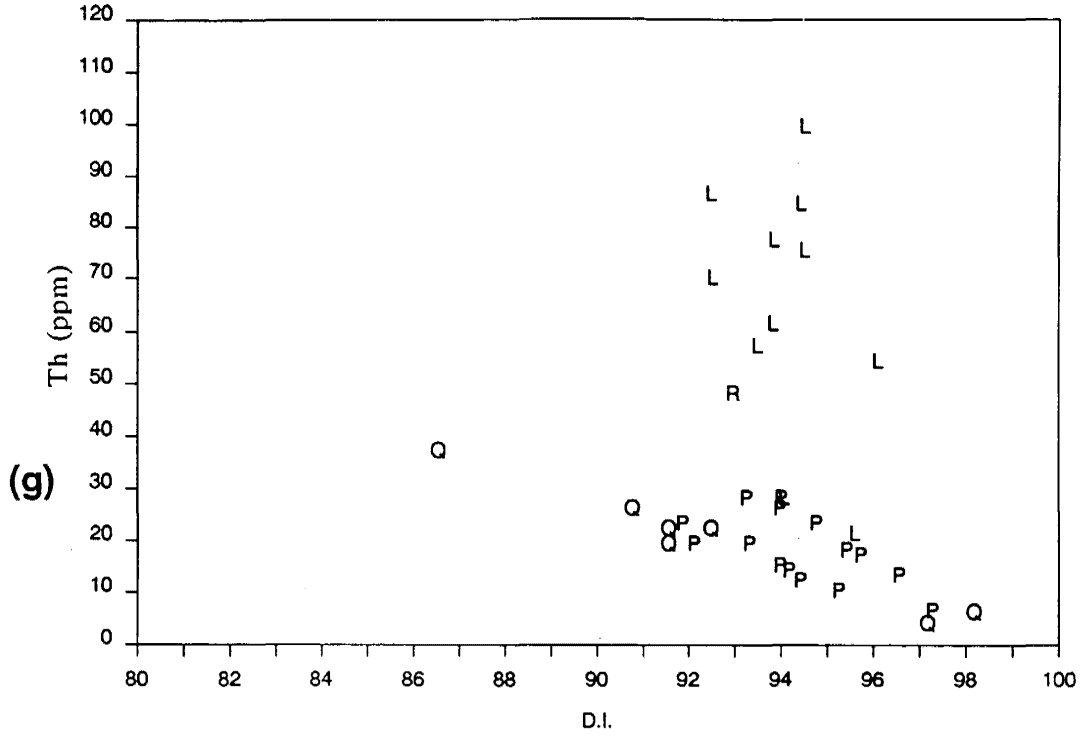


Figure 3.13a-i (Con.)



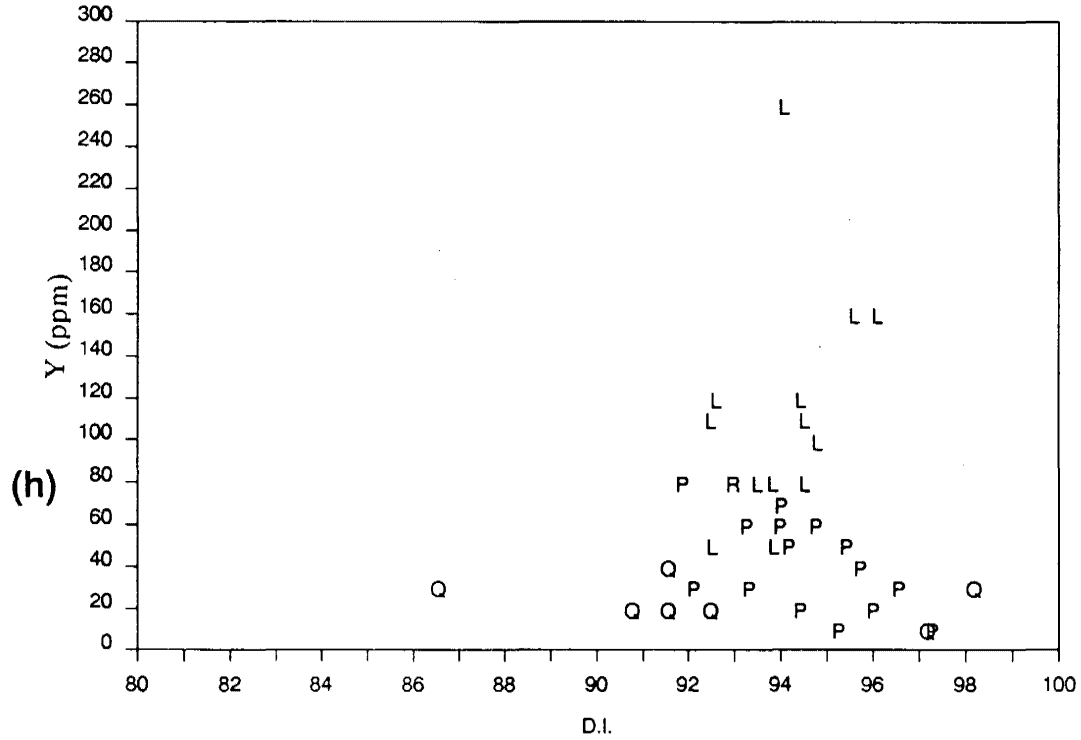


Figure 3.13a-i (Con.)

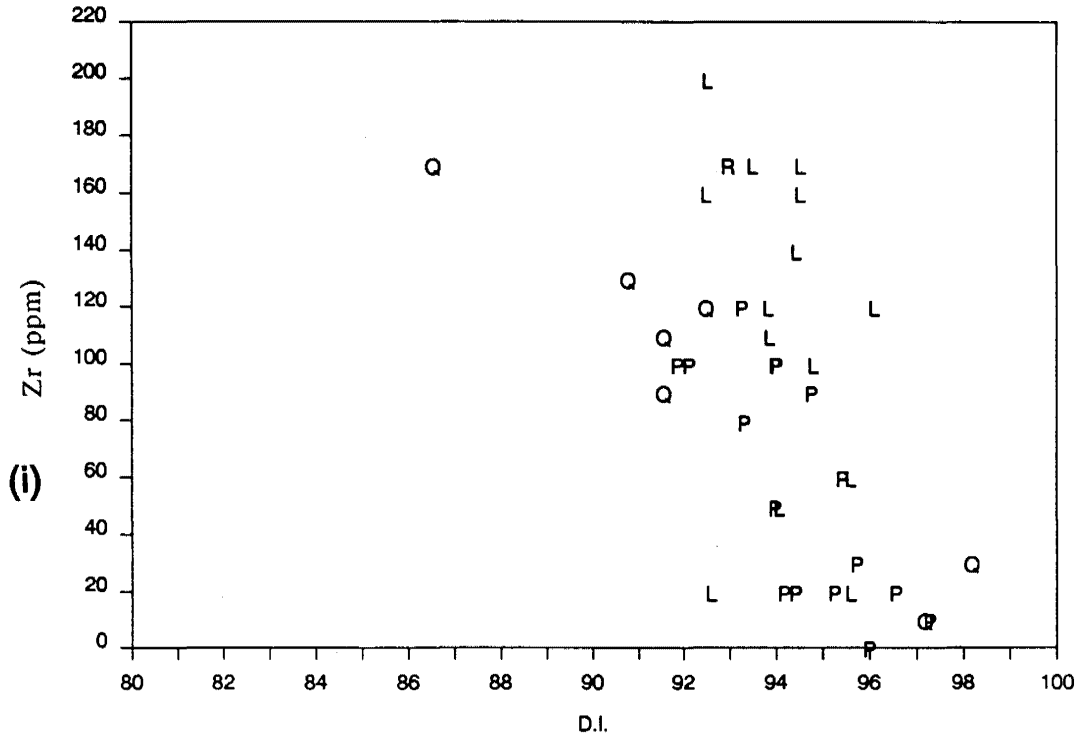


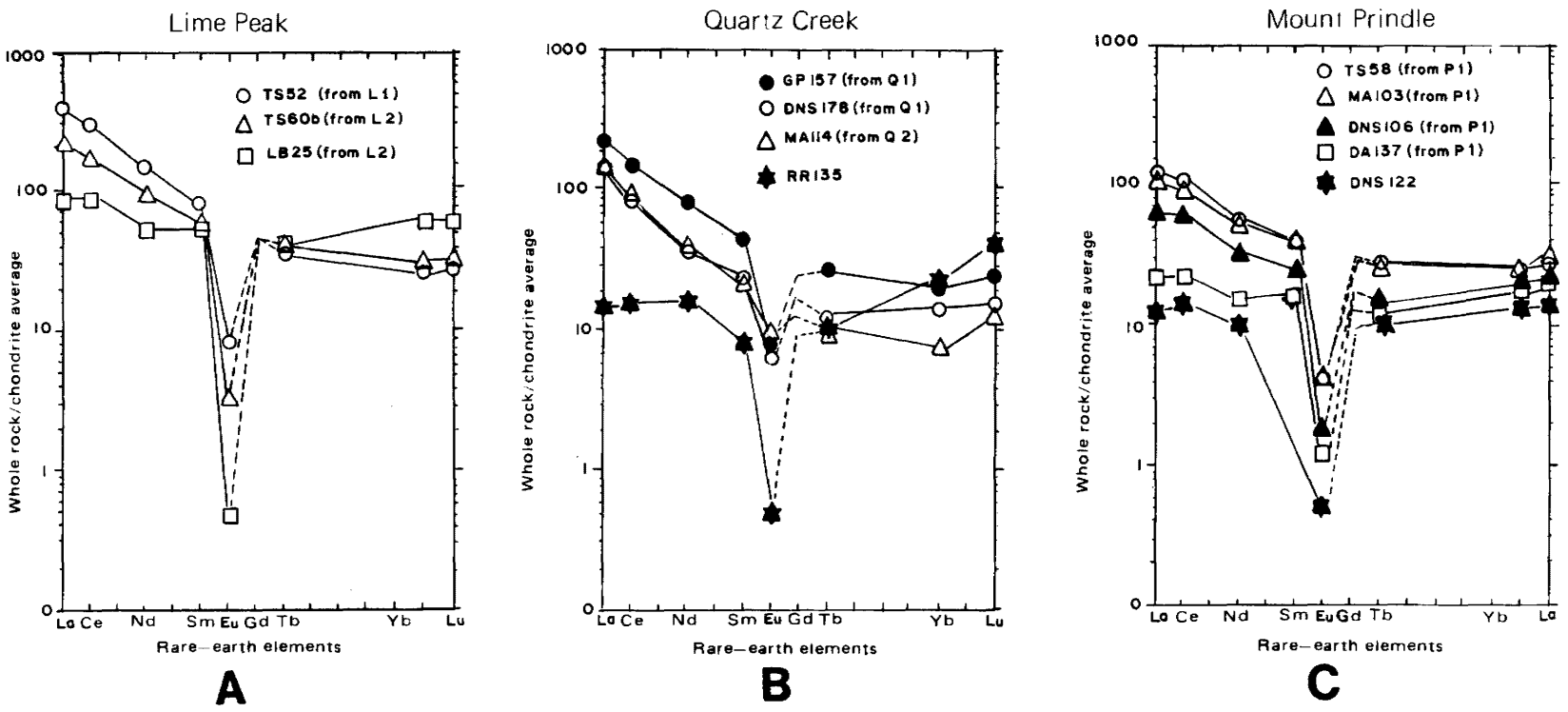
Figure 3.13a-i (Con.)

Three conclusions can be drawn from chondrite normalized REE patterns and Eu^*/Eu diagrams of the granitic rocks from the Hope intrusive suite (figs. 3.14a-c, and 3.15):

(1) The strong Eu anomaly shows that plagioclase was removed during fractionation and/or in the residuum during partial melting. The magnitude of the Eu anomaly is shown quantitatively by plotting Eu^*/Eu values for each pluton (fig. 3.15; Eu^* represents the value that Eu would have if a straight line was present between Sm and Tb on figs. 3.14a-c). The relative Eu^*/Eu values for the L1, P1, and Q1 intrusions indicate that the magma which formed the L1 was either more evolved than the others or else was produced by a smaller degree of partial melting than the other two early intrusions (for example, see Hudson and Arth, 1983). Similarly, the Eu^*/Eu signature for the Quartz Creek pluton indicates that Quartz Creek is either the least fractionated pluton or the one produced from the largest degree of partial melting.

(2) The Eu^*/Eu values also change systematically with texture (fig. 3.15). The values are smaller for equigranular granites, aplites, and dikes than for seriate and porphyritic rocks. This trend supports the conclusion stated earlier for the major oxide data that the aplites and equigranular rocks are probably more evolved than the seriate and porphyritic rocks (fig. 3.15).

(3) The La/Yb ratios of the coarse-grained seriate granites from the Mt. Prindle pluton are more closely related to the porphyritic/equigranular unit of Mt. Prindle pluton than to the coarse-grained seriate units of the Lime Peak and Quartz Creek plutons (L1 and Q1). Inspection of the chondrite normalized diagrams indicates the slopes of the REE patterns are moderately negative (La/Yb = 7.3 to 15.2) for the coarse-grained seriate granite (L1 and Q1) from both the



Figs. 3.14a-c. Chondrite-normalised rare earth element patterns for typical granites from the a) Lime Peak, b) Mount Prindle, and c) Quartz Creek plutons. Symbols are as follows: seriate (circles - from L1, P1, and Q1), porphyritic (triangles - from L2, P1, and Q2), equigranular (squares - from L2 and P1) and aplite (stars). In general, the equigranular rocks show patterns and abundances similar to the aplites.

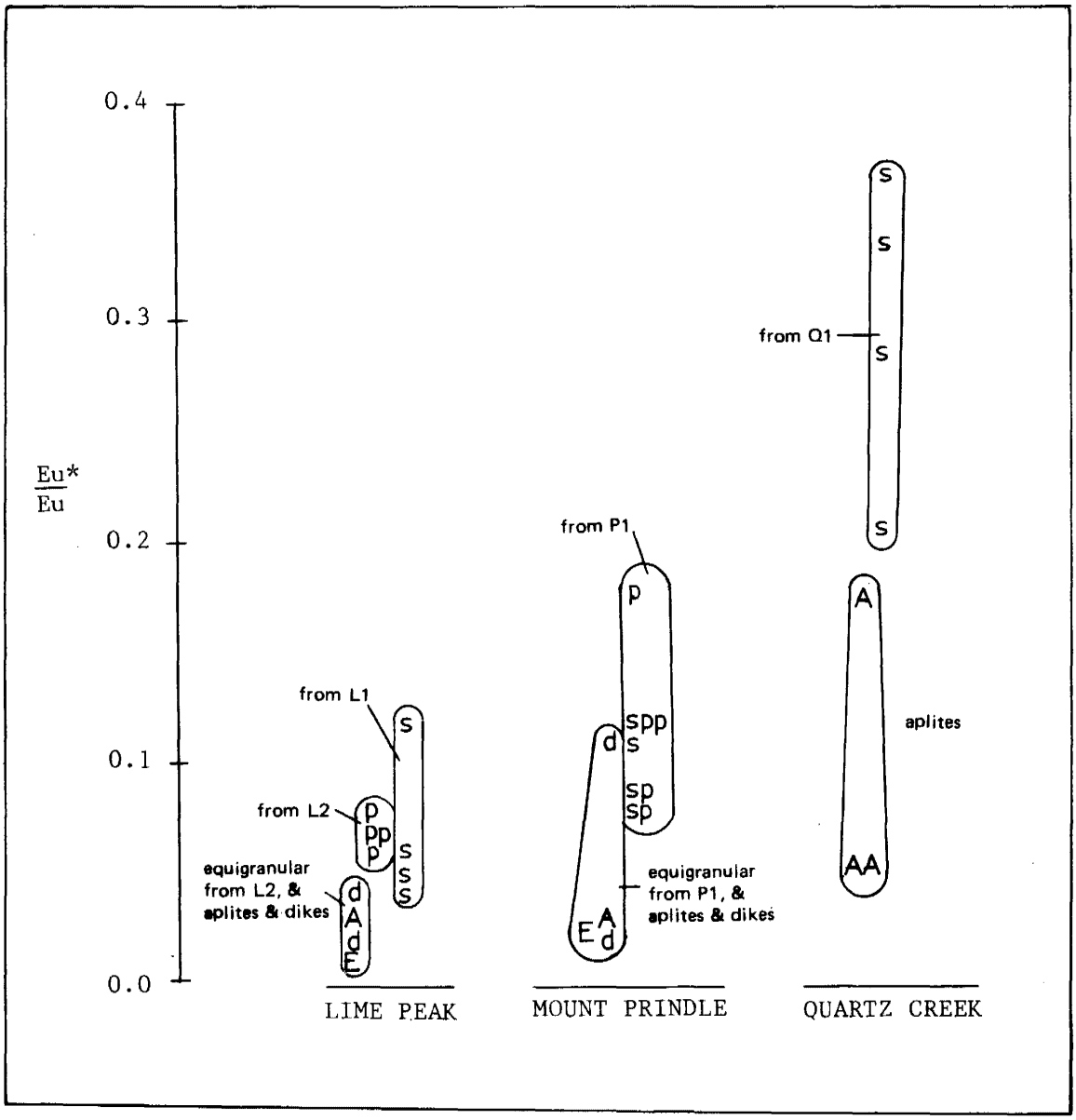


Figure 3.15. Projected europium divided by actual europium content (Eu^*/Eu) for the Hope granites. Data is plotted by textural type. Symbols are as follows: seriate rocks = S; porphyritic rocks = P; equigranular rocks = E; aplites = A; aplitic dikes in hornfels = d. The lower ratios indicate a more evolved magmatic system or a smaller degree of initial partial melting.

Lime Peak and Quartz Creek plutons, but are smaller for most L2, Q2, and P1 rocks (La/Yb = 1.4 to 7). The La/Yb ratio is almost horizontal for most aplites, equigranular rocks, and dikes (La/Yb = .7 to 2.6).

Mineral Compositions

Electron microprobe analyses of minerals from the Hope intrusive suite yield data critical to interpreting the petrogenetic history of the granites and their economic potential. The data, discussed below, indicate these rocks fractionated along the trend necessary to produce "tin-granites".

Microprobe analyses of biotite, plagioclase, and ilmenite indicate that progressive changes in mineral composition accompanied changes in whole rock composition. Sample 86GP157 collected from the Quartz Creek pluton contains the most magnesium-rich biotite ((100*Mg)/(Mg+Fe) = $Mg^{\#}32$; table 3.8) and the most calcic plagioclase (An_{23}) analyzed. The $Mg^{\#}$ of biotites analyzed from other granites in the Hope suite ranges from 19 to 5, and reflects

Table 3.8: Biotite compositions determined by electron microprobe analysis.

	86GP157	86RR144A ADJ ILM	86RR144A	86RN136B BROWN	86RN153A CORE BROWN
PLUTON	QC	LP	LP	LP	LP
UNIT	Q1	L1	L1	L1	L1
ROCK TYPE	sc	sc	sc	sc greisen	pf greisen
Na2O	0.12	0.13	0.18	0.13	0.23
FeO	23.79	28.89	29.51	30.34	28.36
K2O	9.37	9.19	9.05	9.18	9.31
SiO2	36.05	35.62	35.84	35.31	35.74
CaO	0.00	0.00	0.00	0.06	0.01
Al2O3	14.89	14.54	14.47	15.57	17.45
TiO2	4.04	3.04	2.87	3.45	2.48
MgO	6.17	3.69	3.57	1.59	0.82
MnO	0.77	0.25	0.30	0.32	0.41
TOTAL	95.19	95.34	95.78	95.93	94.8
Molecular proportions based on 22 oxygen.					
Na	0.09	0.10	0.15	0.11	0.19
Fe	8.3				
3	10.32	10.50	10.86	10.17	
K	5.00	5.01	4.91	5.01	5.09
Si	15.09	15.21	15.25	15.11	15.3
Ca	0.00	0.00	0.00	0.03	0.0
Al	7.34	7.32	7.26	7.86	8.82
Ti	1.27	0.97	0.92	1.11	0.80
Mg	3.85	2.35	2.27	1.01	0.52
Mn	0.27	0.09	0.11	0.12	0.15
O	58.74	58.64	58.64	58.80	58.94
TOTAL	100.00	100.00	100.00	100.00	100.00
Mg#	31.6	18.5	17.8	8.5	4.9

increasing iron-enrichment with differentiation. Plagioclase grains analyzed from other Hope intrusive suite granites had An contents less than 2. All ilmenite grains analyzed had relatively high Mn contents, but a very low (6 mole percent) hematite component. There is a slight trend towards more hematite-poor ilmenite compositions with increasing fractionation, which indicates that fractionation took place along a buffered fO_2 path (fig. 3.16). This path is similar to that proposed by Burnham and Ohmoto (1980) as characteristic of Sn-producing plutons.

Compositions of biotite and white mica separates (table 3.9) indicate continued concentration of F, Sn, Li and Rb took place with fractionation of the host magma. These biotites are also different from "typical" igneous biotites (Deer and others, 1966) in their high trace element contents (for example, F, Rb, Sn, Li) and low Mg contents, but are similar to those seen in "tin-granites".

Microprobe analyses of igneous minerals and compositions of biotite separates (especially high Fe^{2+}/Fe^{3+} ratios) indicate that the plutons of the Hope suite crystallized at a low oxidation

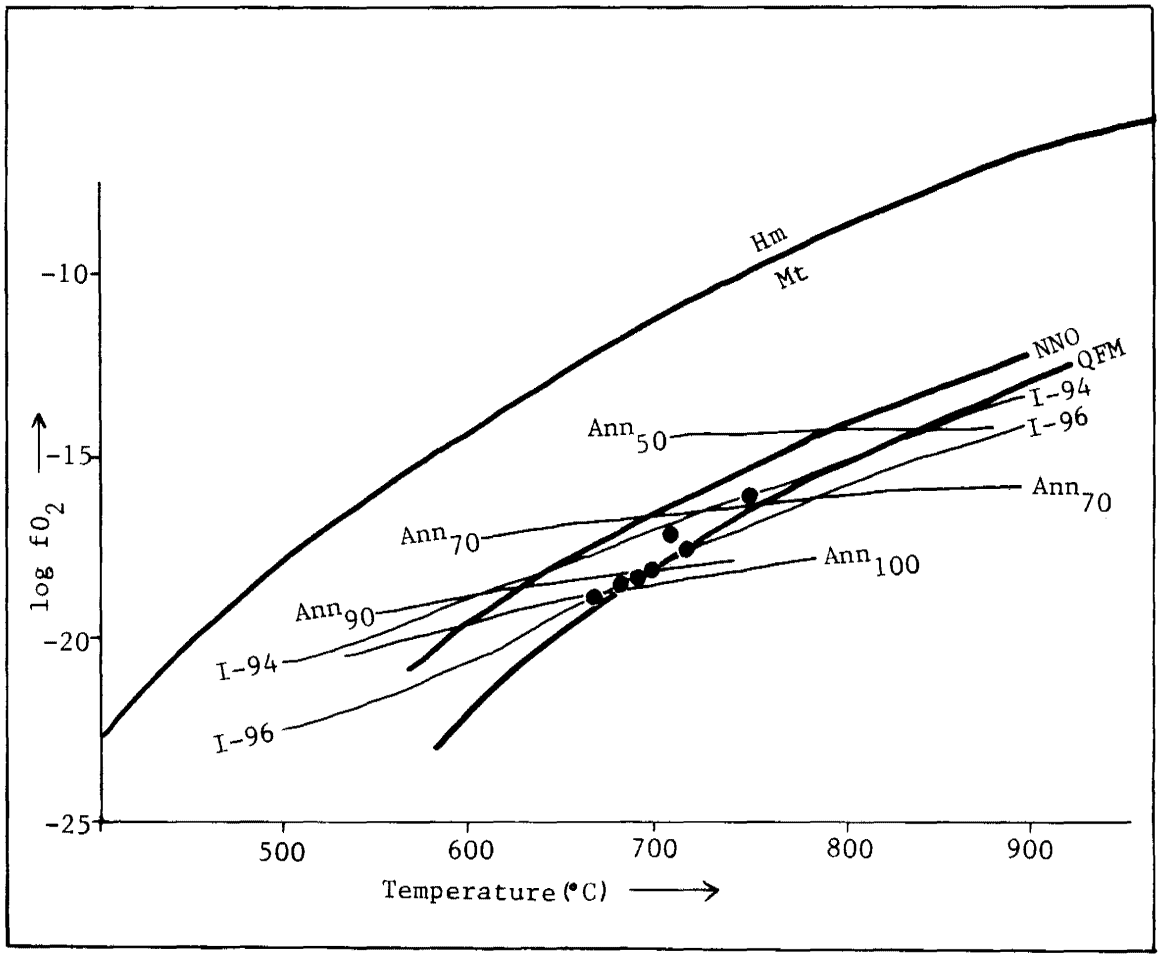


Figure 3.16. Temperature - log fO_2 crystallization path for Hope suite plutons, based on compositions of coexisting biotite-ilmenite pairs. I = ilmenite, Ann = annite, QFM = quartz-fayalite-magnetite buffer, NNO = nickel-nickel oxide buffer. Dots represent data from the Hope granite suite. Diagram modified from Buddington and Lindsley (1961) and Wones and Eugster (1965) and corrected to P = 0.5 kbar.

state (tables 3.8, 3.9; figs. 3.16, 3.17). Low-oxidation states are also considered critical for the concentration of tin in a magma. Magnetite, characteristic of rocks crystallizing at high oxidation state, incorporates tin, preventing its enrichment. Plotting of microprobe compositions of co-existing biotite and ilmenite pairs on a T-log fO_2 diagram (fig. 3.16) indicates progressive fractionation of the parent magmas from temperatures of approximately 750 degrees C to approximately 670 degrees C, along a path approximately buffered between quartz-fayalite-magnetite (QFM) and nickel-nickel oxide (NNO). This temperature interval corresponds to the change in the solidus temperature for a minimum melt granite with no fluorine (730 degrees C) to a minimum melt granite with 2 percent fluorine (670 degrees C), as shown experimentally by Manning (1981), and is characteristic of PO_2-T conditions for Sn-system granites. Compositions of biotite separates plotted on a Fe^{2+}-Fe^{3+}-Mg diagram (fig. 3.17) also confirm that the rocks crystallized in an oxidation state between QFM and NNO, characteristic of tin granites. These oxidation state data are similar to those like those of the Sn-system granites of the Seward Peninsula, Alaska, (Swanson and others, in press) and are different from non-tin granites.

The most evolved granite (the equigranular rock of L3) contains zinnwaldite. Zinnwaldite contains high iron and lithium contents, and, although difficult to conclusively identify in thin section, is readily distinguished from muscovite and sericite by microprobe analysis (tables 3.9, 3.10). Newberry and others (chap. 6, this volume) further discuss zinnwaldite occurrence and

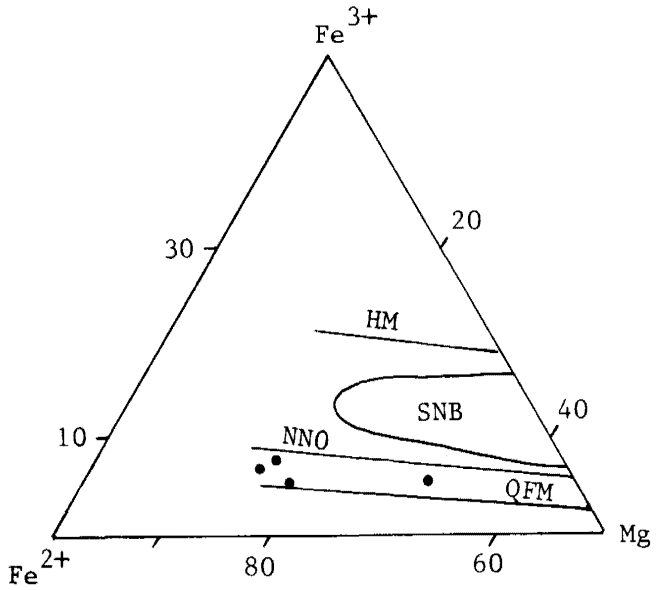


Figure 3.17. Compositions of biotite separates (dots) plotted in terms of Fe^{2+}-Fe^{3+}-Mg. Locations of buffer curves from Wones and Eugster (1965). These data indicate the Hope suite crystallized at an oxidation state between Ni-NiO (NNO) and quartz-fayalite-magnetite (QFM), which is low relative to non-Sn associated plutons such as those of the Sierra Nevada Batholith (SNB). Data for SNB from Dodge and others (1969). HM is the hematite-magnetite buffer.

recognition. Zinnwaldite is the characteristic mica of magmas with high fluorine contents and low oxidation states. Zinnwaldite is thus generally considered indicative of tin-granites.

Classification of the Hope granite suite

Ishihara (1977) has proposed a granite classification scheme of "ilmenite-series" vs. "magnetite-series", based on the type and abundance of opaque minerals present. Burnham and Ohmoto (1980), as well as other workers, have noted that Sn-granites are all associated with ilmenite-series granites and suggest that the low oxidation states of these magmas allows for the ready enrichment of Sn during differentiation. Our mineralogical and microprobe data indicate that the Hope granites are definitely in the ilmenite series, and that they crystallized at low oxidation states, hence are suitable for tin-enrichment.

Further classification of the granites is less clear. "A-type" granites are at least somewhat alkalic, that is, possess alkali-rich amphiboles and relatively low quartz contents. There is no

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Table 3.9: Compositions of biotite and white mica mineral separates.

	BIOTITE:					SERICITE	ZINNWALDITE:		
SAMPLE	GP157	RR151	DNS110	DNS107	DNS102	DNS102	JB69	87RN94	87RN95
PLUTON	QC	QC	LP	MP	MP	MP	LP	LP	LP
UNIT	Q1		L1	P1	P1	P1	L3	L3	
ROCK TYPE	sc	aplite	sc	pf	pm	pm	greisen	alt'd em	alt'd em
wt %									
SiO_2	34.2	29.6	34.8	38.3	36.0	n.a.	40.6	n.a.	n.a.
Al_2O_3	15.2	16.9	15.8	22.7	21.1	n.a.	19.9	n.a.	n.a.
CaO	0.44	0.62	0.29	0.03	0.11	n.a.	0.06	n.a.	n.a.
MgO	5.97	2.54	1.57	0.92	1.41	n.a.	<.01	n.a.	n.a.
Na_2O	0.03	0.15	0.30	0.20	0.44	n.a.	0.46	n.a.	n.a.
K_2O	8.45	7.42	8.05	9.45	8.57	n.a.	9.61	n.a.	n.a.
Fe_2O_3	3.10	3.39	3.01	2.23	6.93	n.a.	0.45	n.a.	n.a.
FeO	23.4	32.0	29.0	17.9	17.9	n.a.	13.2	10.40	12.20
MnO	0.64	0.44	0.36	1.09	0.94	n.a.	0.81	n.a.	n.a.
Cr_2O_3	0.01	0.01	<.01	<.01	<.01	n.a.	<.01	n.a.	n.a.
TiO_2	3.62	2.28	2.37	1.15	1.82	n.a.	0.05	n.a.	n.a.
$P2O_5$	0.28	0.08	0.07	0.05	0.11	n.a.	0.01	n.a.	n.a.
Li_2O	0.26	0.09	0.24	0.63	0.58	0.24	2.6	2.60	2.40
Rb_2O	0.19	0.09	0.21	0.67	0.43	n.a.	1.3	n.a.	n.a.
F	1.10	0.95	2.20	3.70	2.70	2.00	6.90	>1	>1
H_2O	1.00	3.46	1.08	1.54	1.85	n.a.	0.08	n.a.	n.a.
TOTAL	97.89	100.02	99.35	100.56	100.89		96.03		
ppm									
Ba	1100	310	270	230	240	n.a.	360	n.a.	n.a.
Nb	550	380	460	300	290	n.a.	<10	n.a.	n.a.
Sn	54	14	28	490	150	n.a.	20	n.a.	n.a.
Sr	<10	<10	<10	<10	<10	n.a.	<10	n.a.	n.a.
Y	30	100	120	50	50	n.a.	80	n.a.	n.a.
Zr	120	210	400	50	50	n.a.	<10	n.a.	n.a.

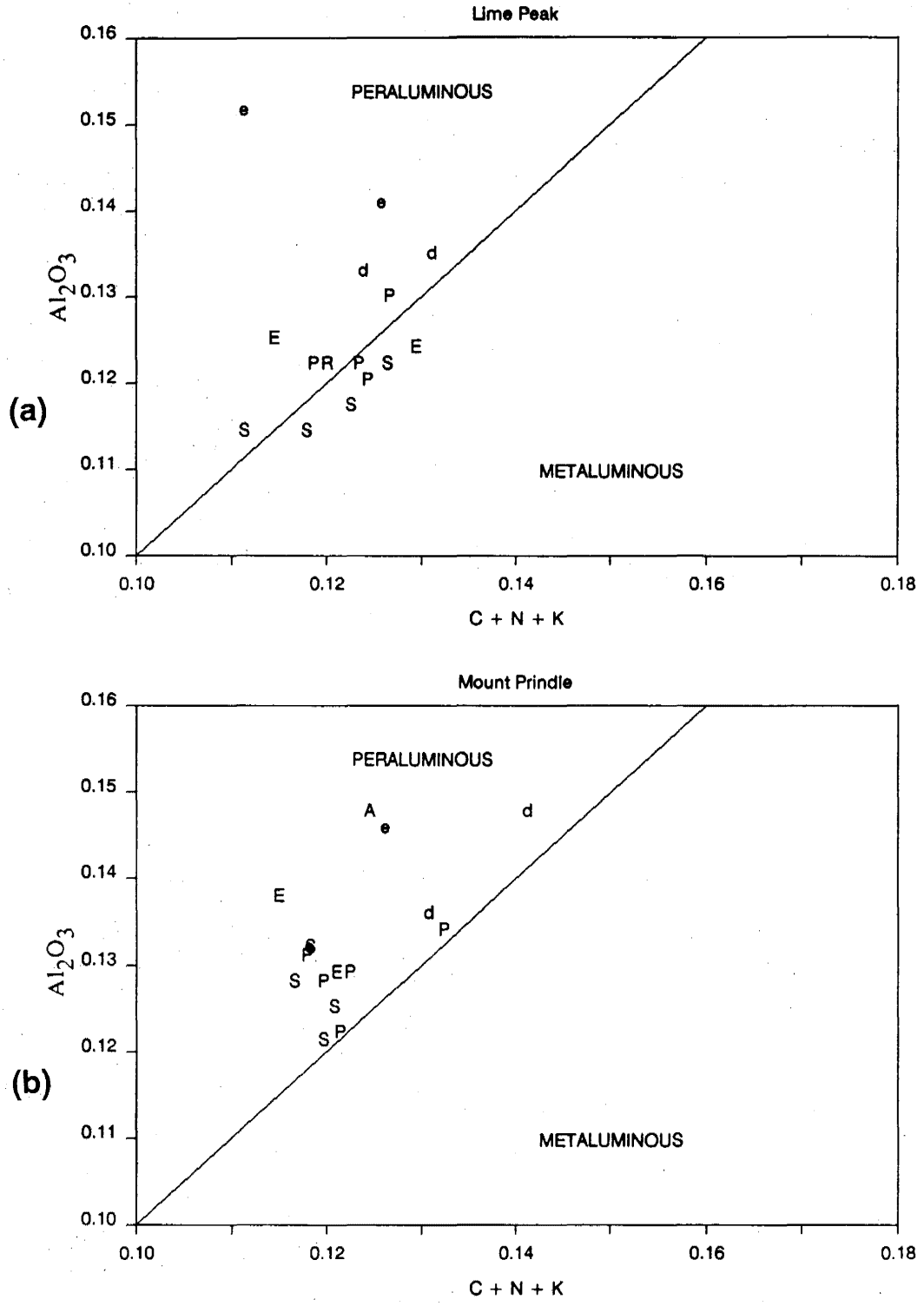


Fig. 3.18a-c: Molecular proportions of Al_2O_3 vs. ($CaO + Na_2O + K_2O$) in for the Lime Peak, Mount Prindle, and Quartz Creek plutons. Symbols are as follows: seriate rocks from L1, P1, and Q1 = S; porphyritic rocks from L2, P1, and Q2 (P); equigranular rocks from L2, P1, and Q2 = E; equigranular rocks from L3 and P2 = e; aplites = A; aplitic dikes in hornfels = d.

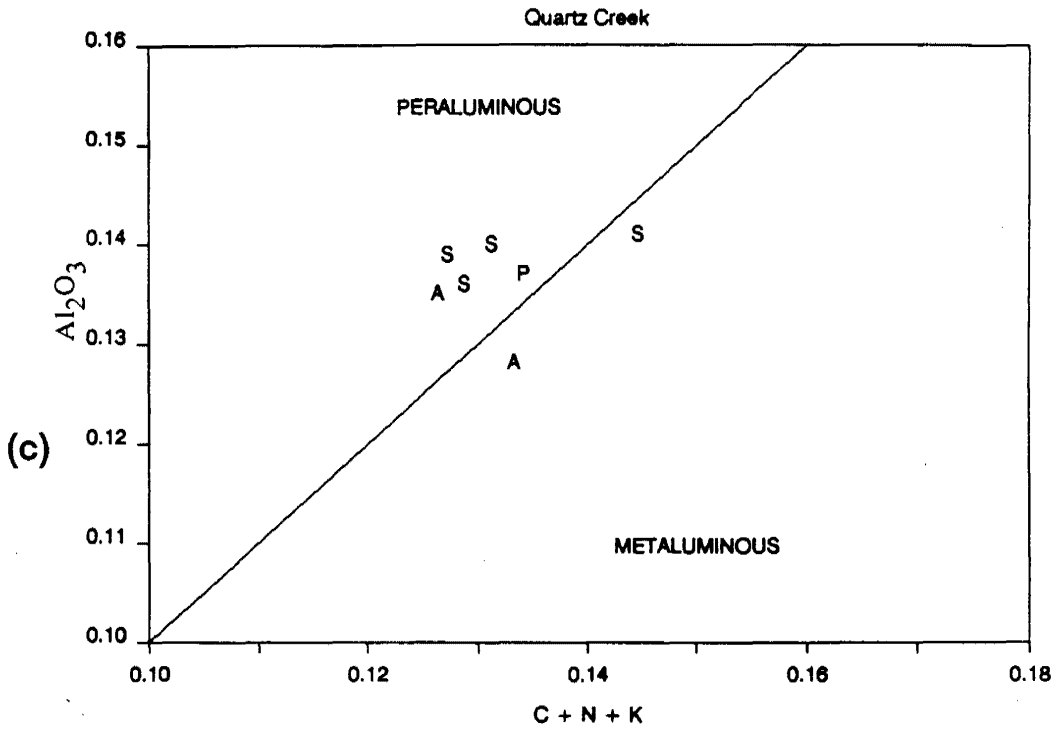


Figure 3.18a-c (Con.)

indication that the Hope suite falls into this category. "S-type" granites are strongly peraluminous and have high K/Na ratios. Unaltered rocks from the Hope suite are slightly to moderately peraluminous (fig. 3.18) and, as previously noted, commonly have high Na/K. The latter characteristic is, we believe, a function of crystallization in a fluorine- and boron-rich magma and implies nothing about the source rock for the magma. Perhaps most clearly unlike "S-type" granites, the Hope suite lacks peraluminous-indicator minerals, like garnet, cordierite, and aluminosilicates. Some known Sn-granites, however, such as those of the Seward Peninsula, also lack peraluminous-indicator minerals. Hence, although the Hope suite should not be classified as "S-type", it is not clear that this has any economic significance. Ishihara (1982) has shown that some granites which are ilmenite series but not S-type are in fact associated with tin deposits; we suggest that the Hope suite is of this kind.

Potential for economic tin deposits

Having examined the character of the Hope suite, we can now assess the likelihood that this suite is associated with economic tin deposits. Our approach is twofold: (1) to compare, using as many criteria as possible, the Hope suite to known Sn-associated granites and (2) to establish the vertical position (depth of erosion) of the Hope suite relative to other major tin-producing granitic suites.

Geochemical and mineralogical criteria

The Hope suite granites strongly resemble plutonic rocks associated with Sn deposits, as shown by major oxide, trace element, and mineral analyses. Figure 3.19 shows the average composition of the Hope suite granites compared to average (non-Sn-related) granite and the

Table 3.10: Compositions of zinnwaldite, muscovite, and sericite determined by electron microprobe analysis.

	SERICITE:					MUSCOVITE:		
SAMPLE	86RN204B	86RN204B	86RN136E	86RN139C	86RN178B	86RN151	86RN151	86RN175D
PLUTON	LP	LP	LP	LP	LP	LP	LP	MP
UNIT	L3	L3	L1	L1	L3	L1	L1	P2
ROCK TYPE	em	em	sc	sc	em	sc	sc	em
DESCRIPT	high-grade greisen	high-grade greisen	edge of greisen	center of greisen		med.grn musc.	med.grn musc.	primary?
Na_2O	0.14	0.23	0.16	0.12	0.06	0.06	0.02	0.14
FeO*	6.97	10.10	7.70	3.06	2.67	4.37	5.73	2.16
K_2O	10.57	10.40	10.54	10.37	10.27	10.16	10.23	10.77
SiO_2	45.88	44.55	45.35	48.18	49.68	48.89	49.75	47.46
CaO	0.03	0.00	0.00	0.05	0.01	0.03	0.00	0.02
Al_2O_3	30.55	29.80	29.73	33.24	32.18	30.65	28.68	34.13
TiO_2	0.00	0.00	0.06	0.00	0.00	0.02	0.00	0.04
MgO	0.01	0.00	0.05	0.12	0.18	0.13	0.07	0.07
MnO	0.38	0.20	0.57	0.04	1.08	0.13	0.23	0.09
TOTAL	94.54	95.28	94.16	95.19	96.14	94.43	94.71	94.87
Molecular proportions based on 22 oxygen.								
Na	0.11	0.17	0.12	0.09	0.04	0.05	0.01	0.10
Fe	2.23	3.26	2.49	0.95	0.83	1.38	1.82	0.67
K	5.17	5.12	5.20	4.93	4.84	4.90	4.95	5.12
Si	17.60	17.18	17.55	17.95	18.36	18.48	18.87	17.71
Ca	0.01	0.00	0.00	0.02	0.01	0.01	0.00	0.01
Al	13.81	13.55	13.56	14.60	14.02	13.65	12.83	15.01
Ti	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.01
Mg	0.01	0.00	0.03	0.07	0.10	0.07	0.04	0.04
Mn	0.12	0.06	0.19	0.01	0.34	0.04	0.08	0.03
O	60.93	60.66	60.84	61.37	61.47	61.42	61.40	61.30
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Mg#	0.4	0.0	1.2	6.9	10.8	4.8	2.2	5.6

average of 185 Sn-related granites. Noteworthy in terms of major elements are the high Si and K contents, and the low Ti, Ca, Mg, Fe, and Mn contents of Sn-related rocks. A tabulation of trace element data for Hope suite, average granite and average Sn-related granite (table 3.11) also reveals close similarities between the Hope suite and typical Sn-related granites.

Mineral compositions also indicate that the Hope suite strongly resembles a typical Sn-granite suite. Biotites have major element compositions which are similar to plutonic biotites from other Sn deposits and dissimilar to biotites from non-Sn granites and barren granites (fig. 3.20a). Sericite and muscovite compositions are similar to those seen in Sn-greisens and dissimilar from those seen in porphyry Cu deposits (fig. 3.20b). Finally, tin contents of biotite separates from the Hope suite are high, and well within the range of tin contents of biotites associated with economic tin deposits (fig. 3.21).

Table 3.10 (Con.)

	ZINNWALDITE:			
SAMPLE	86RN204B	86RN204B	86RN180A	86RN178B
PLUTON	LP	LP	LP	LP
UNIT	L3	L3	L3	L3
ROCK TYPE	em	em	em	em
DESCRIPT	high-grade minzn.	high-grade minzn.	greisen + tourm	greisen
Na_2O	0.22	0.11	0.52	0.31
FeO*	12.77	16.03	14.29	15.43
K_2O	9.97	6.69	9.41	9.70
SiO_2	45.25	38.73	42.05	43.21
CaO	0.03	0.05	0.01	0.02
Al_2O_3	20.92	27.57	21.73	21.67
TiO_2	0.06	0.00	0.01	0.44
MgO	0.11	0.03	0.03	0.07
MnO	1.40	1.09	0.99	0.91
TOTAL	90.71	90.30	89.05	91.76
Molecular proportions based on 22 oxygen.				
Na	0.18	0.09	0.43	0.25
Fe	4.42	5.60	5.08	5.34
K	5.27	3.57	5.10	5.12
Si	18.75	16.18	17.86	17.89
Ca	0.01	0.02	0.01	0.01
Al	10.22	13.57	10.88	10.57
Ti	0.02	0.00	0.00	0.14
Mg	0.07	0.02	0.02	0.04
Mn	0.49	0.38	0.36	0.32
O	60.58	60.57	60.27	60.31
TOTAL	100.00	100.00	100.00	100.00
Mg#	1.6	0.4	0.4	0.7

Schemes based on trace element contents and normative mineralogy for distinguishing typical Sn-related from non-Sn-related granites have been proposed by various workers. The rocks of the Hope intrusive suite compare favorably to Sn-granites using the trace element scheme proposed by Govett (1983; figs. 3.22a-c and 3.23b). The Hope suite also falls into the Sn-related granite group on a "Kohler-Raaz" diagram (fig. 3.24), on which Sn-related granites are distinguished from granitic rocks associated with other types of ore deposits. Notably, the Hope data plot at a point indicated by Sattran and Klominsky (1970) as indicative of a "shallow" environment relative to the average Sn-granite and to Sn-granites from the New England Batholith, Australia. The Hope suite also falls into the range on a Ba-Sr-Rb diagram considered characteristic of Sn-W related granites (fig. 3.25). Finally, as discussed above, the Hope suite crystallized in an oxidation state considered favorable for the concentration and enrichment of Sn.

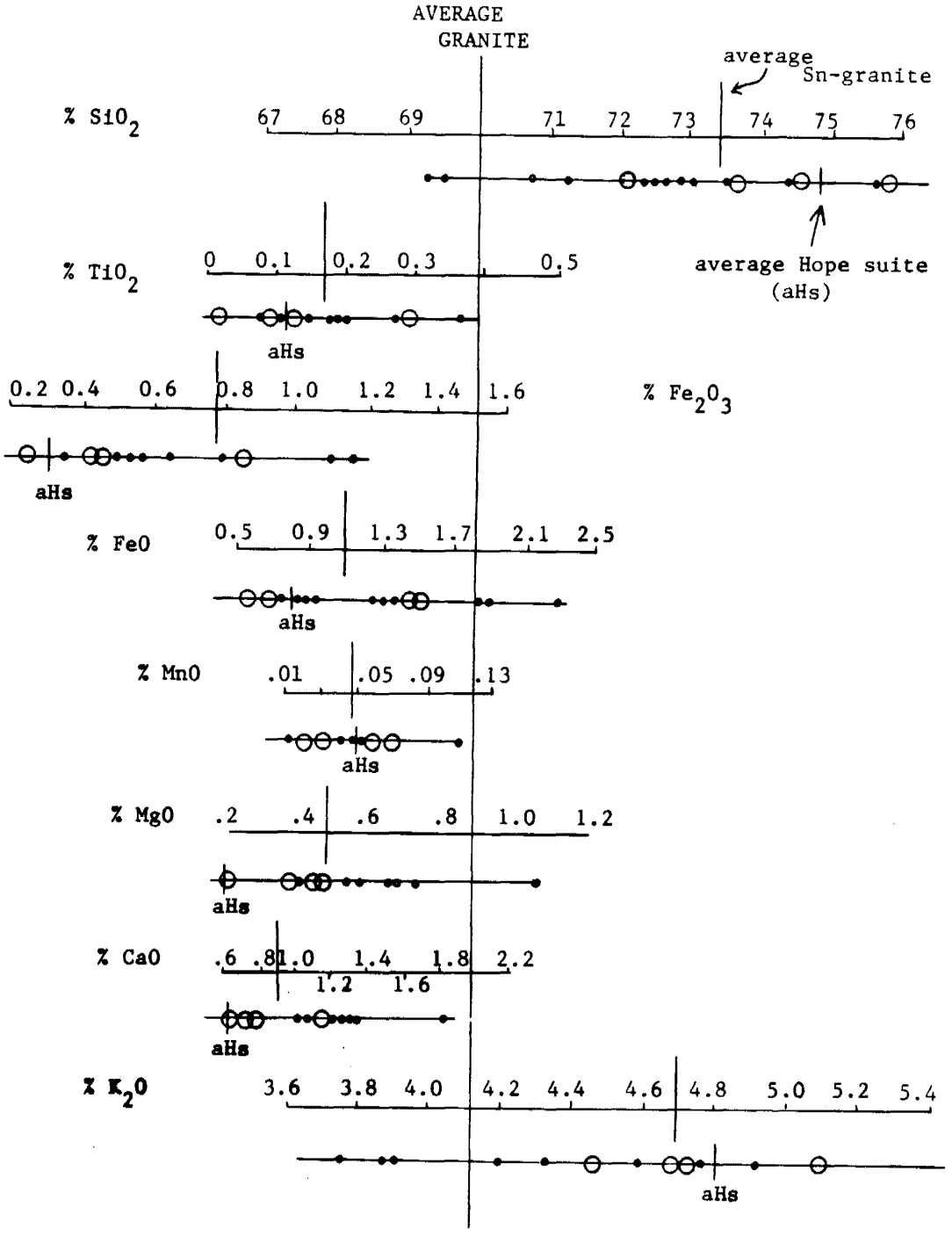


Figure 3.19. Comparison of selected major oxide abundances in average granite (continuous vertical line), average Sn-greisen-related granite (long vertical lines: after Tischendorf, 1977), average Hope suite (short vertical lines), and individual averages for Sn-greisen-related granite districts (circles; larger circles = major districts; after Taylor, 1979).

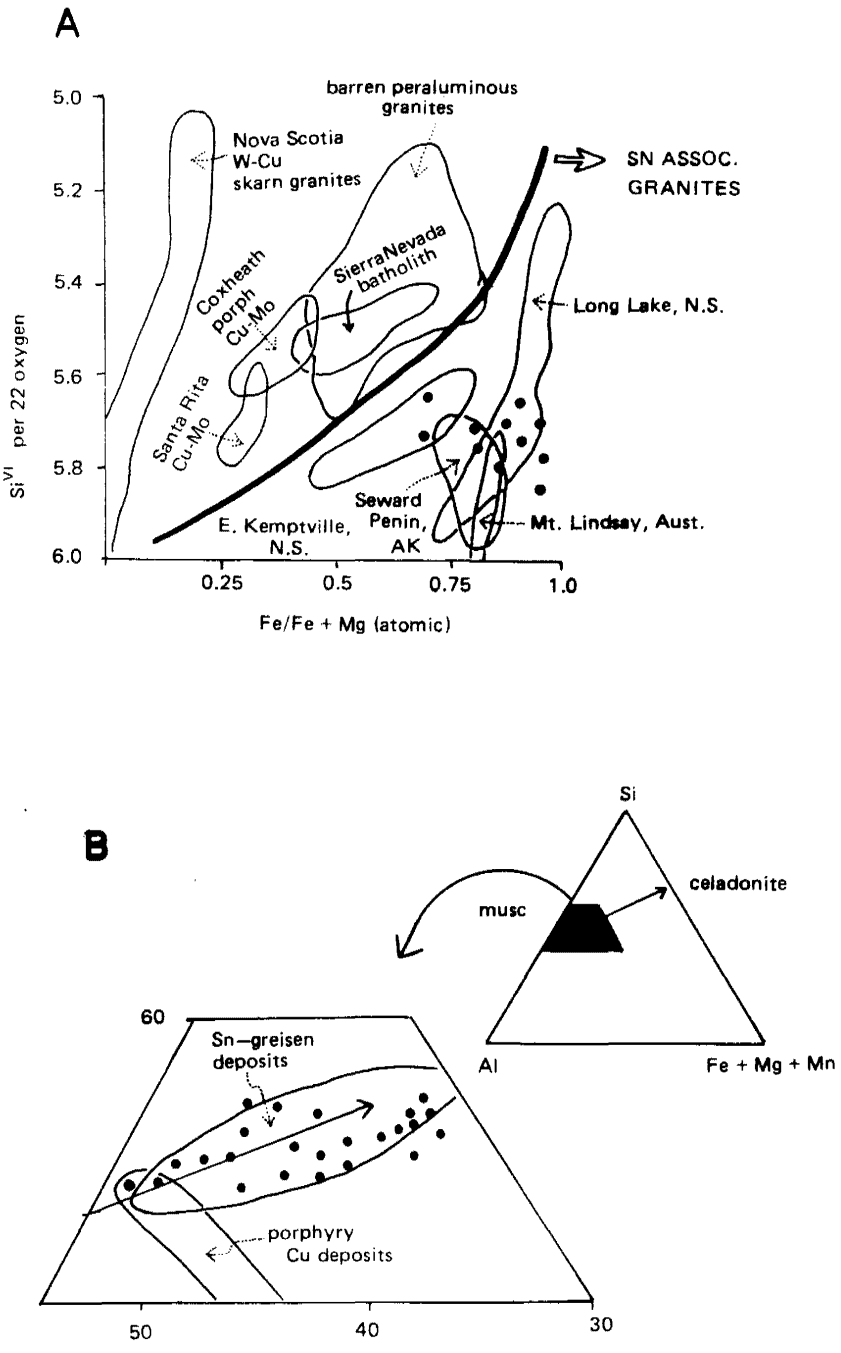


Figure 3.20a,b. Biotite (A) and white mica (B) major element compositions from the Hope granites (circles), well-known Sn-associated granites, and non-Sn-related granites/barren granites. Classification schemes and data from Strong and Chatterjee (1985) and Swanson and others (in press).

Table 3.11: Averages of selected trace elements for Hope intrusive suite, average granite, and average Sn-related granite. All values in ppm metal. Average granite data from Taylor (1964) and Beus (1964); average Sn-granite from Tischendorf (1977) and Beus (1964).

	Average granite (barren)	Average Sn-greisen granite	Average Hope granite suite
Ba	600	250	224
F	850	3700 +/- 1500	2520
Nb	20	29	27
Rb	150	580 +/- 200	690
Sn	3	15 +/- 4	22
Sr	285	40	35
Ta	2	5	5
U	2.7	15	12
W	2	7 +/- 3	6
Zr/Sn	76	30	13

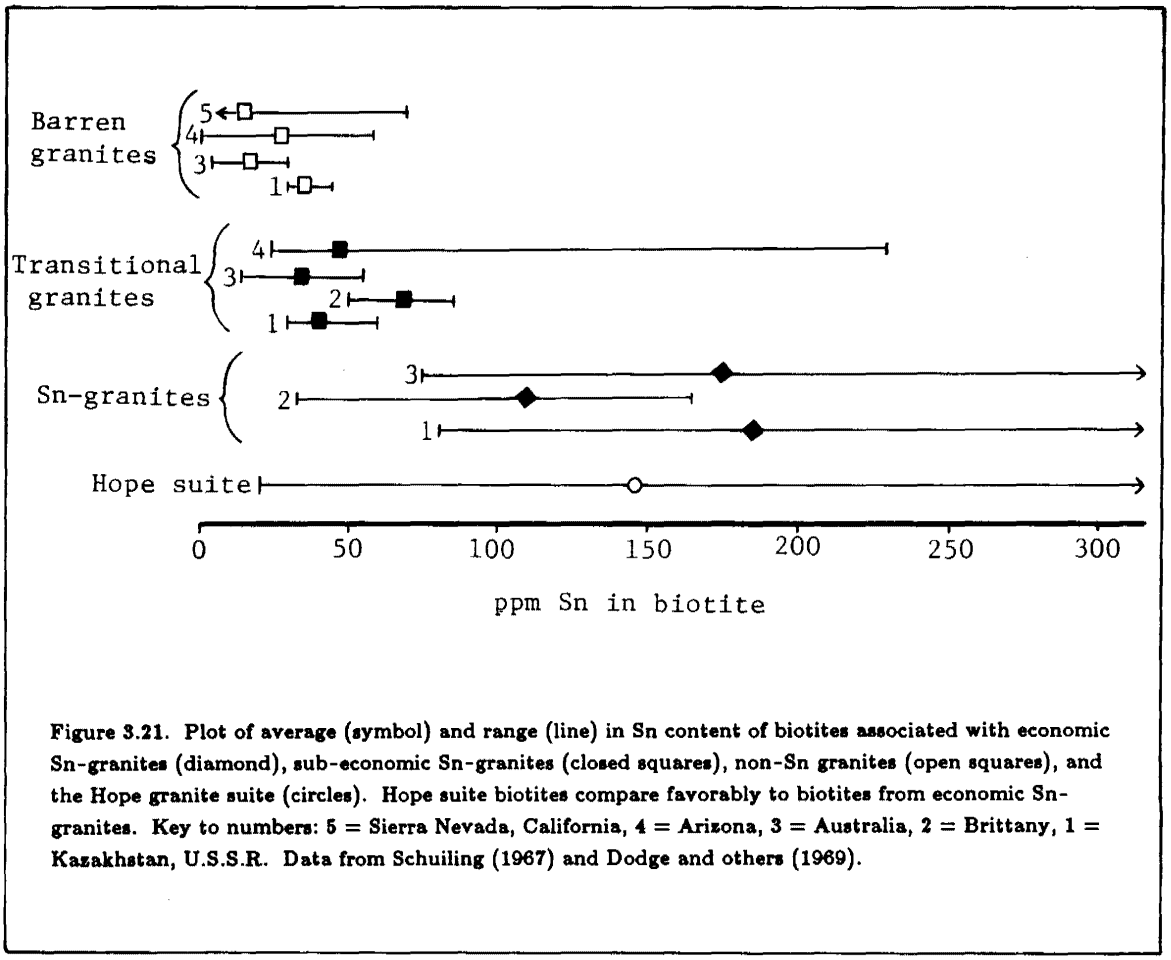


Figure 3.21. Plot of average (symbol) and range (line) in Sn content of biotites associated with economic Sn-granites (diamond), sub-economic Sn-granites (closed squares), non-Sn granites (open squares), and the Hope granite suite (circles). Hope suite biotites compare favorably to biotites from economic Sn-granites. Key to numbers: 5 = Sierra Nevada, California, 4 = Arizona, 3 = Australia, 2 = Brittany, 1 = Kazakhstan, U.S.S.R. Data from Schuiling (1967) and Dodge and others (1969).

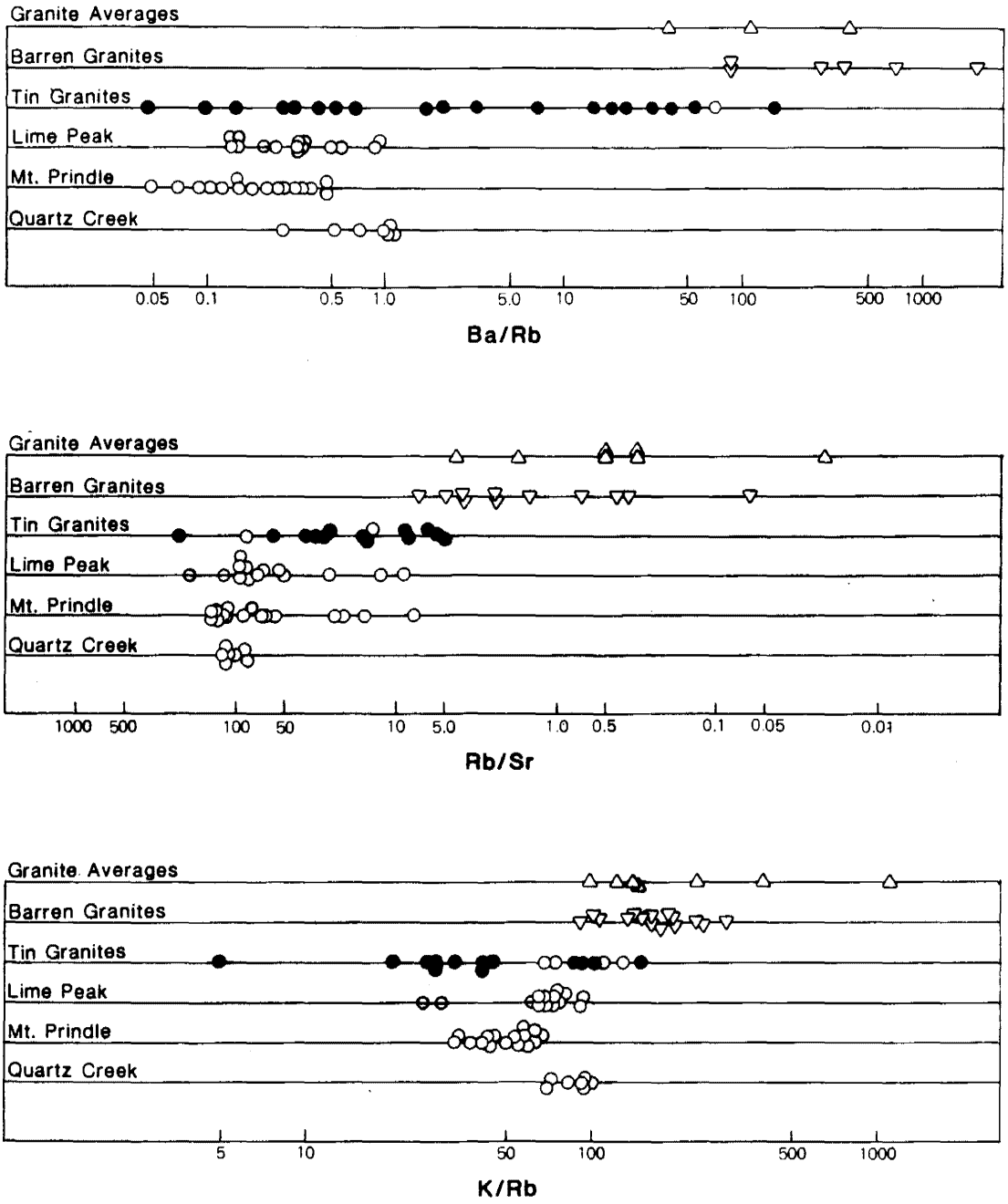


Figure 3.22a-c. Line plots showing the ratios of whole rock a) Ba/Rb, b) K/Rb, and c) Rb/Sr for tin granites, barren granites, average granites as shown in Govett (1983), and the granites of the Hope granite suite.

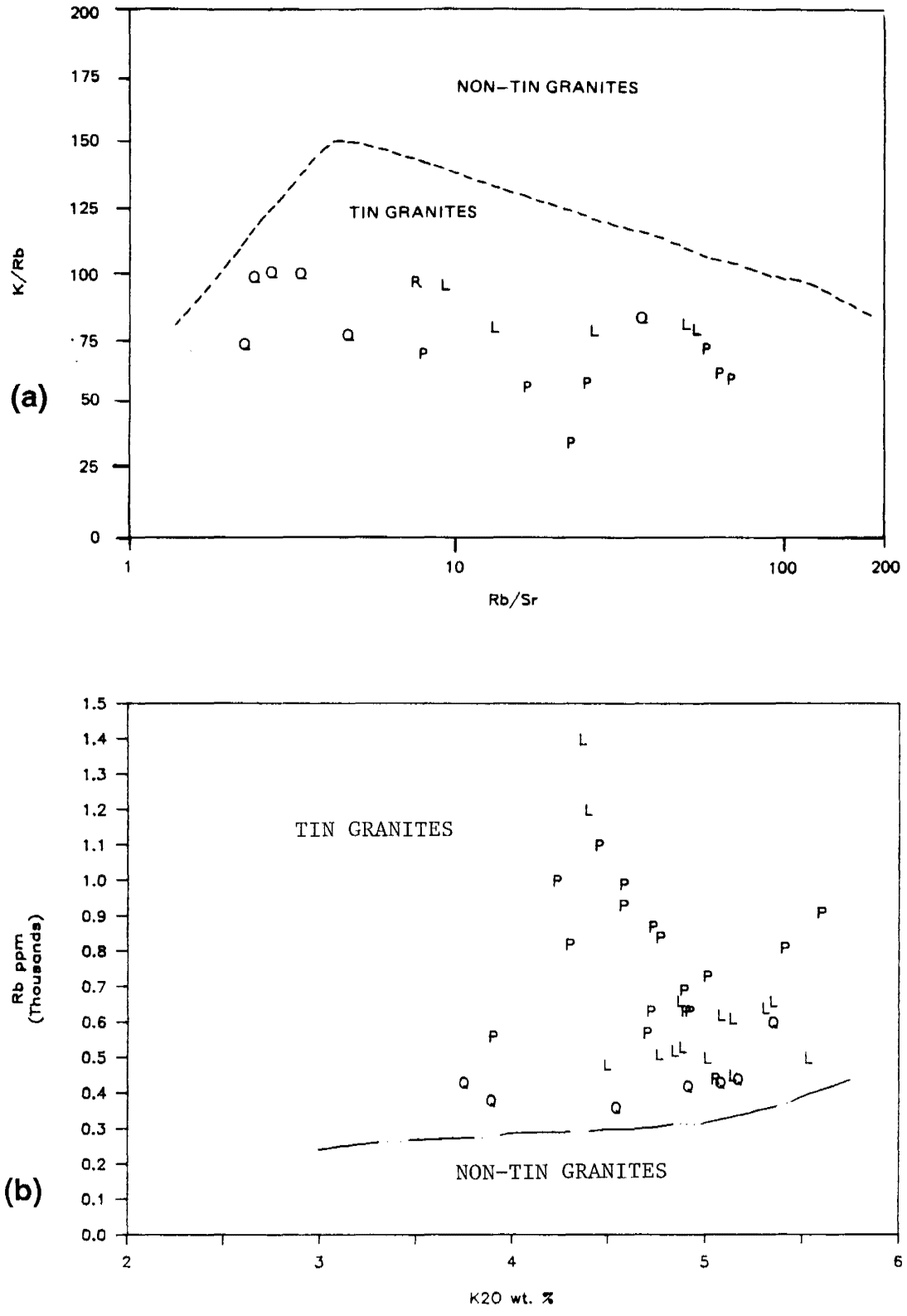


Figure 3.23a,b. Plots a) K/Rb verses Rb/Sr and b) Rb verses K_2O for Hope granite suite rocks, and the fields for Sn-bearing and Sn-barren granites. Figures modified and data for tin and barren granites taken from Govett (1983).

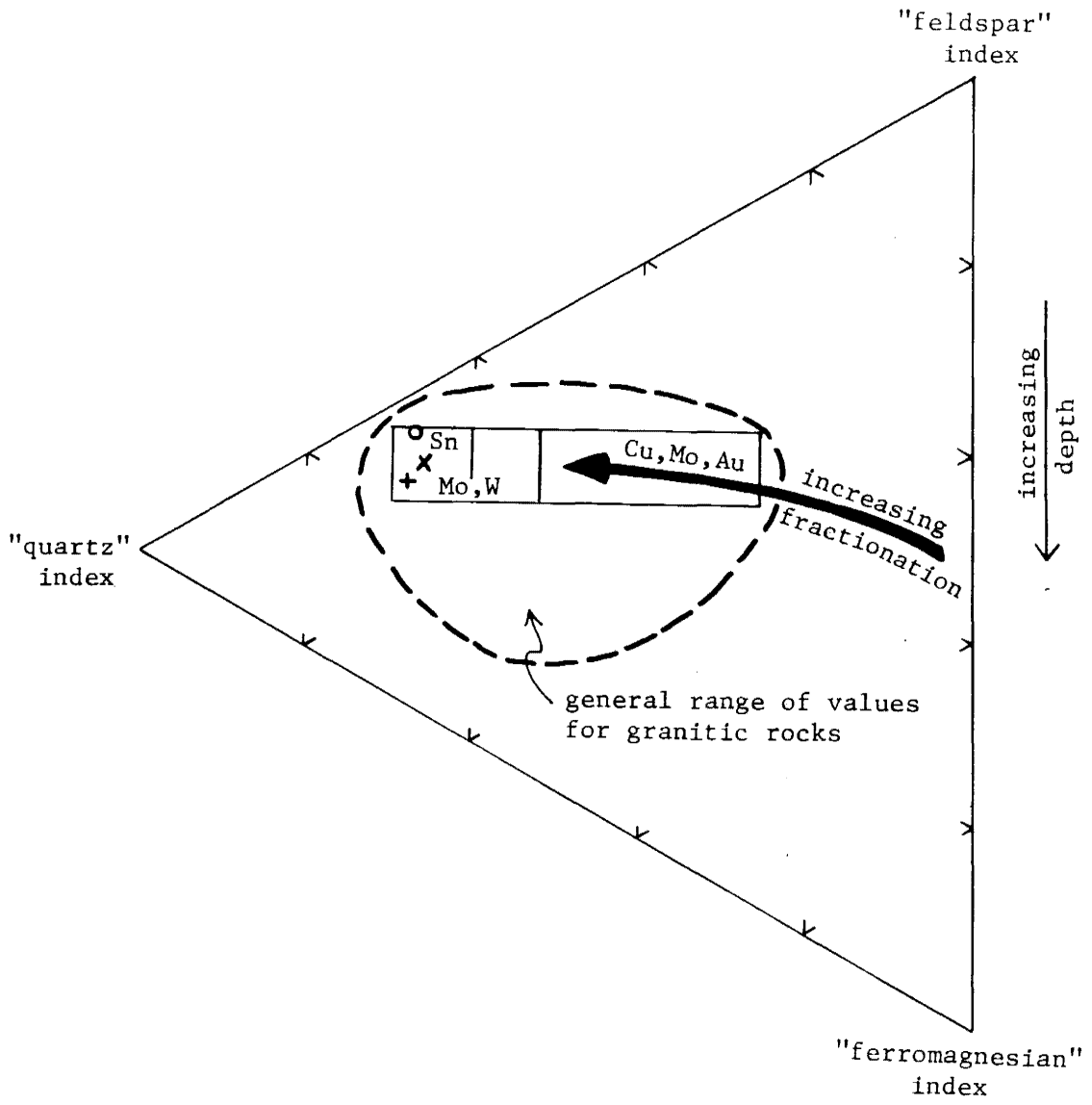


Figure 3.24. Differentiation diagram (after Kohler and Raaz, 1951) showing distribution of granitic rocks associated with several mineralization types (boxes; modified from Sattran and Klominsky, 1970) and average of 185 Sn-greisen-related granites (+), average granite of the Sn-related New England batholith (x) and average granite of the Hope suite, Alaska (o). Calculation of points given in Hesp and Rigby (1974). The various indexes in this diagram are calculated from major element compositional data using the formulas given in Kohler and Raaz (1951).

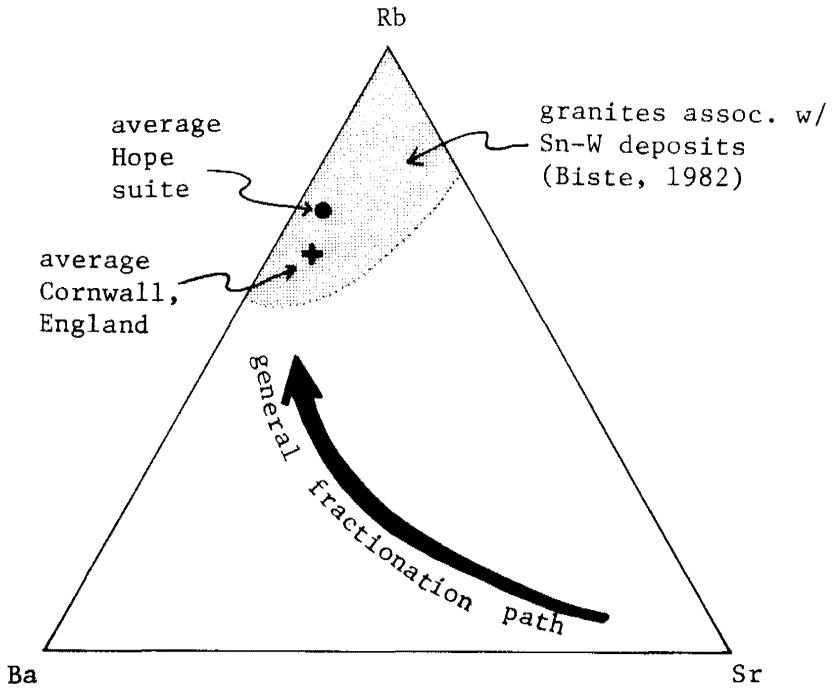


Figure 3.25. Ternary Sr-Ba-Rb diagram showing the field of Sn-W granites and the average position of Hope suite and Cornwall, England granites. Chemical compositions expressed as weight percent of metal.

The textures and sequence of intrusions in the Hope suite are essentially identical to those in plutonic complexes hosting well-studied economic Sn deposits. The occurrence of a strongly fractionated igneous suite, with very metal/fluorine enriched, mineralization-associated late intrusive phases is a theme common throughout known economic Sn granites (Taylor, 1979). The occurrence of a trinity of seriate, porphyritic, and equigranular granites with tin deposits is also characteristic (Hudson and Arth, 1983; Swanson and others, in press).

In summary, the Hope granite suite strongly resembles granites known to be associated with economic tin deposits using a wide variety of chemical, mineralogical, textural, and geologic criteria. We note that although these tables and diagrams show that the Hope granites probably have tin mineralization, they give no direct indication of amount of mineralization actually present (discussed further in chap. 6, this volume).

Depth of emplacement/mineralization

Analysis of the data presented above indicates that the Hope suite is very likely associated with tin mineralization. The next question is whether the mineralization lies at the present level of erosion, or above or below it. If the mineralization lies at the present level of erosion, economic tin mineralization should be exposed at the surface, and if the mineralization lies above the present level of erosion, any economic mineralization has been stripped off. There is no direct means of answering this question short of extensive drilling in the Lime Peak-Mt. Prindle project area, but

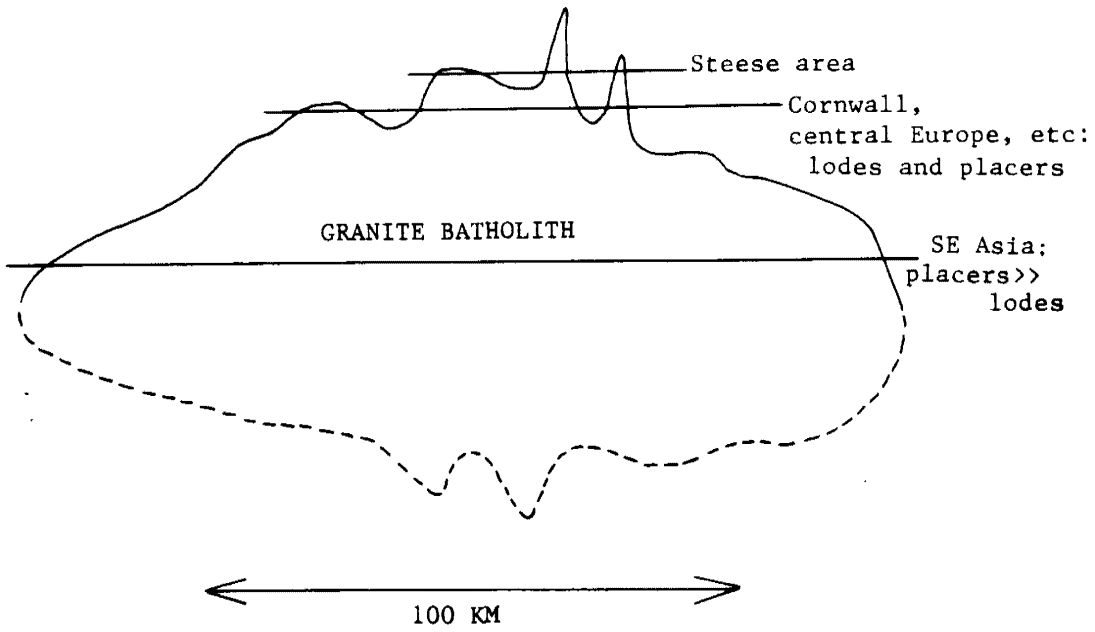


Figure 3.26. Diagrammatic cross-section of a Sn-related batholith showing relationship between depth and size of granite exposure. Shape and size of idealized batholith based on geological and geophysical studies of major Sn districts.

geologic reasoning, as outlined below, indicates that the major mineralization most likely lies below the present level of erosion.

Greisen-related tin mineralization is most concentrated near the top of the related granite batholith (Taylor, 1979). For example, Tischendorf and others (1971) found that Sn deposits of the Erzgebirge, Central Europe, were located within 1 km of the upper contact of the northern Bohemian batholith. Geological and geophysical studies in major tin districts have shown that very large batholiths underlie individual granite plutons (for example, the Cornubian batholith underneath the Cornish tin deposits), hence the depth of exposure within a tin-related batholith can be estimated by the surface exposure of Sn-related granite (depicted in the diagrammatic fig. 3.26). Table 3.12 summarizes such data for several representative tin districts and shows that in the typical lode district, 1,000 to 3,000 sq km of tin granite is exposed. In comparison, in the typical "placer only" district, where erosion has removed the lode deposits, 10,000 sq km of tin granite is commonly exposed (table 3.12). By these criteria, the Hope suite exposure is of the uppermost part of the related batholith, because less than 200 sq km of tin granites are exposed, including exposures in Livengood and eastern Circle Quadrangle. Interpretation of aeromagnetic and gravity data suggests that much of the area around and between the plutons is underlain by a large granite batholith (Cady and Weber, 1983). The geophysical evidence and table 3.12 indicate that the level of exposure for the Hope suite is at or slightly above the level of most productive tin lodes.

Table 3.12: Areas of surface exposures for granite in some major Sn-producing districts.

District	Deposits	Total surface area of Sn-related granites (sq km)	Surface area average granite pluton (sq km)
Steese, Alaska	lode, placer	170	40
Cornwall, Eng.	lode, placer	1,370	150
W. Seward Penin., Alaska	lode, placer	130	10
W. Tasmania	lode, placer	1,070	100
N.E Tasmania	lode	1,300	50
SW Nova Scotia	lode, placer	1,280	120
S. Thailand	lode	600	50
Salamca, Spain	lode	3,270	200
Canceres, Spain	lode	1,836	100
Cordobo, Spain	lode	2,652	75
Bohemia, Central Europe	lode	3,090	180
Torrington area, Australia	lode	650	
Herberton area, Australia	lode, placer	1,700	120
Central Burma	placerlode	12,000	
Bangka, Indonesia	placer	9,000	
Central Malaysia	placer>lode	13,780	400

Another means of assessing erosional level is by comparing pressure, thus depth, of crystallization of the Hope suite to other major tin deposits. As previously shown (fig. 3.11), the lower-fluorine members of the Hope suite plotted close to the 0.5 kb end of the experimentally-determined, pressure-dependent ternary melt curve, indicating that they crystallized at approximately 0.5 kb, or 2 km depth. In comparison, low-fluorine granites from Cornwall, England, plot between 1 and 0.5 kb (2-4 km depth; Manning, 1982) on the same diagram. Studies in other tin greisen districts, for example, the New England batholith, Australia, the Main Range in Malaysia, and the Erzgebirge, Germany (Varlamoff, 1978; Eadington, 1983) indicate that the tin deposits were originally formed at depths of 2-4 km below the surface. Hence, by a paleodepth

criteria, the Hope suite is currently exposed at or just above the level of most productive lode deposits.

A third criterion for depth in a tin lode system involves the types of alteration seen. Tischendorf and others (1971) and Varlamoff (1978) have summarized the vertical progression of alteration types seen in tin granites and their summaries are reproduced in figure 3.27. Both studies concluded that 1) chlorite greisens represent the highest-level expressions of an economic greisen tin system, 2) that the tin grade increases with depth below the level of chlorite greisens, and 3) that maximum grades are seen with tourmaline-topaz-zinnwaldite greisens. Alteration data briefly presented in this chapter and presented in more detail by Newberry and others (chap. 6, this volume) indicate that the vast bulk of Hope suite greisens are of the chlorite variety and that zinnwaldite-topaz-albite-tourmaline greisens are exclusively associated with L3, the highly evolved, equigranular phase of the Lime Peak pluton. Also notably, the highest tin grades encountered in non-carbonate rocks during regional sampling (2 percent Sn) were found in the zinnwaldite greisens at L3. We conclude from this alteration data that the present exposures of the Hope suite are above, and not below, the expected occurrence of high grade tin greisens.

Conclusions about the Hope granite suite

The Hope plutons are highly evolved granites which most likely represent the uppermost parts of a large, late Cretaceous - early Tertiary granitic batholith. The granites closely resemble -- in terms of major-, minor-, trace- and rare earth-element abundances, textures, geologic sequences, mineralogy, mineral compositions, and alteration types -- granites associated world-wide with economic tin deposits. Exposure seen in the granites is approximately at or just above the level of most productive tin deposits, as determined by comparison with other deposits. We therefore conclude that the Lime Peak-Mount Prindle study area has an excellent potential for containing a world-class tin deposit.

Of any rocks of the Hope intrusive suite, L3 is most clearly associated with high grade tin mineralization and most clearly shows the characteristics of classic "tin granites". Because L3 topographically underlies chlorite greisen-bearing L2 in the Tin Ridge area, we suspect that other plugs of L3 underlie similarly mineralized areas in the Lime Peak pluton and that rocks like L3 underlie chlorite greisens in other plutons. We suggest that L3 is a late crystallizing, more evolved version of L2. The small dimensions of L3 suggest that similar highly evolved bodies could be present at any of the plutons, and could certainly be present at depth anywhere in the area. Because L3 has a very narrow geochemical halo (chap. 6, this volume), it is difficult to predict at this time where other bodies of L3 might be located in the study area.

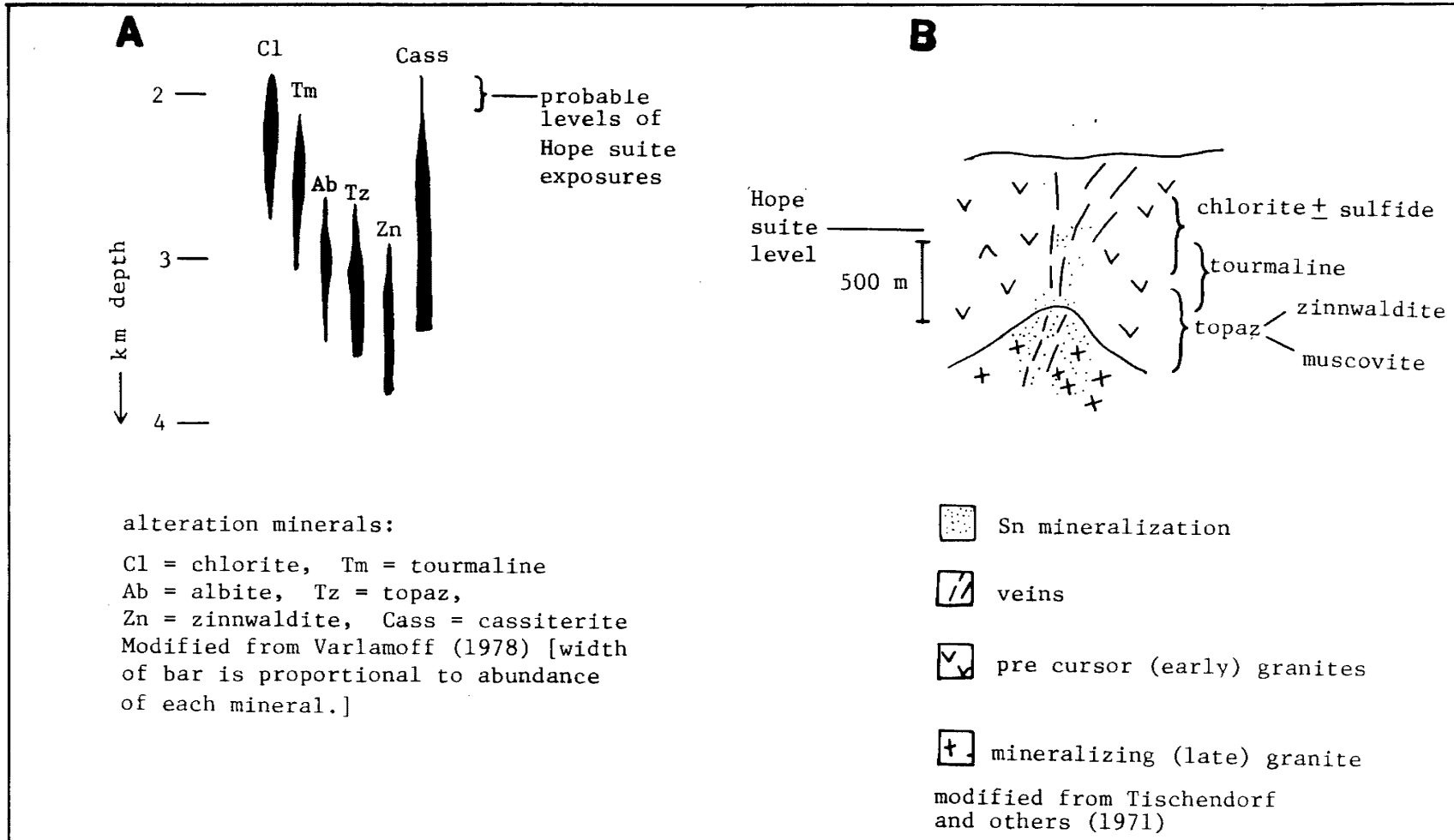


Figure 3.27. Summary representations of alteration zoning in Sn greisen deposits. Modified from Tischendorf and others (1971).

Part 3B: Gabbros, Alkalic Rocks, and the Pinnell Trail Monzogranite

by

L.E. Burns, R.J. Newberry, and R.R. Reifenstuhl

INTRODUCTION

In addition to the Hope granite suite, five other types of intrusive rocks are present in the Lime Peak-Mt. Prindle area. Four of these are shown on figure. 3.28 including three granite plutons of the Hope suite; the fifth type is present as mafic dikes within the Hope suite plutons. The intrusive rocks include 1) sills and dikes of gabbro and minor ultramafic rock in the northwest part of the map area, 2) small bodies of hornblende granite and dikes of lamprophyres and minor syenite of the alkalic suite, 3) the Pinnell Trail monzogranite, 4) felsic dikes undifferentiated, including rhyolite and quartz trachyte, most of which appear to be associated with the alkalic suite, and 5) gabbro dikes intruding the Hope suite granite plutons (terminology from Streckeisen, 1976). Except for the Hope suite, the intrusive rocks are discussed below from oldest to youngest.

GABBRO AND ULTRAMAFIC ROCKS IN THE NORTHWEST PORTION OF THE MAP AREA

Dark greenish-gray-weathering sills and dikes of gabbro with minor clinopyroxenite and lherzolite crop out northwest of the Lime Peak granite pluton (fig. 3.28). The sills and dikes are shown as unit Pzmi on plates 2-1A and 2-1B. Outcrop and rubble patterns are typically parallel with regional stratigraphy and structural trends, suggesting sill-like bodies. Some of the bodies, however, may be extrusive in origin. The gabbroic rocks intrude the Middle Ordovician Fossil Creek Volcanics unit and Cambrian or Precambrian "maroon and green grit" unit discussed in chapter 2. Thus, the gabbroic rocks must be Middle Ordovician or younger. The mafic and ultramafic plutonic rocks may be the intrusive equivalents of the volcanic rocks within the Fossil Creek Volcanics.

The gabbros are typically holocrystalline, medium- to coarse-grained equigranular (1 to 4 mm). Some rocks, however, are porphyritic and appear to grade into rocks having a basaltic texture, that are comprised of euhedral clinopyroxene phenocrysts in a fine-grained altered groundmass.

The unaltered gabbro is typically composed of 40 to 60 percent subhedral clinopyroxene, 40 to 60 percent zoned plagioclase, and trace to 5 percent opaque minerals. In some gabbro, minor amounts (5 percent) of olivine or brown hornblende are present. The hornblende typically rims clinopyroxene.

Olivine gabbro is present in minor amounts and typically has 20 to 40 percent olivine, 40 to 60 percent clinopyroxene, and 10 to 25 percent altered plagioclase. Minor lherzolite (composed of clinopyroxene, olivine, and less than 10 percent plagioclase) and clinopyroxenite also occur. The olivine-bearing rocks are more common in the extreme northwest portion of the map area, within the Fossil Creek Volcanics unit.

Alteration of the mafic and ultramafic rocks varies from minor to extreme. Plagioclase is partly to completely altered to white mica and minor clinozoisite. Plagioclase cores are commonly completely altered. Except for the occasional brown hornblende, clinopyroxene is the mineral

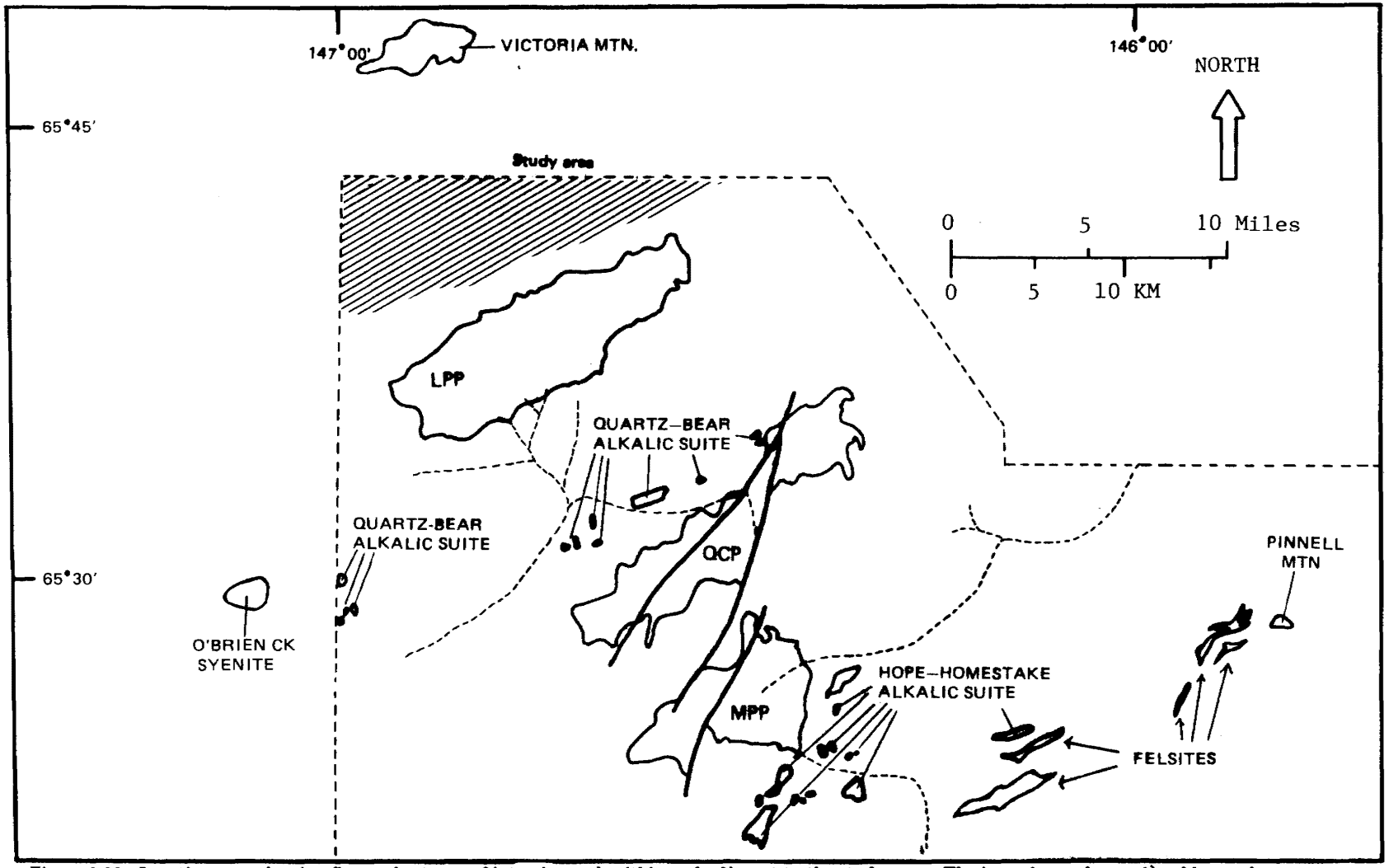


Figure 3.28. Location map showing five major types of intrusive rock within and adjacent to the study area. The intrusive rocks are 1) gabbro and ultramafic sills in the northwest part of the map area (diagonally lined), 2) Pinnell Trail monsogranite, 3) Hope granite suite plutons, including the Lime Peak (LPP), Quarts Creek (QCP), Mount Prindle (MPP), and probably Cache Creek plutons, 4) two belts of alkalic rock - Quarts-Bear and Hope-Homestake alkalic suites and related O'Brien Creek syenite, and 5) felsite dikes in the Homestake Creek-Table Mountain area. The felsites are probably related to the alkalic suite. Victoria Mountain, north of the map area, is an alkalic quarts syenite, but may be younger than the other alkalic rocks in the area.

phase most resistant to alteration, but locally it also has been extensively altered and yields chlorite +/- carbonate. Although unaltered olivine is present locally, olivine is typically represented by pseudomorphs of chlorite and serpentine minerals. Extremely altered rocks contain chlorite veins, carbonate minerals, randomly oriented white mica, minor epidote, prehnite, sphene, and disseminated hematite.

PINNELL TRAIL MONZOGRANITE

Introduction

A small pluton of biotite-hornblende-monzogranite, referred to here as the Pinnell Trail (PT) monzogranite, crops out in the eastern part of the study area (fig. 3.28 and pl. 2-1A, 2-1B, Kg unit). Based on the presence of monzogranites in the Fairbanks and Circle mining districts (Blum, 1983; Wilkenson, 1987) which have similar textures and mineralogies, the age of the PT monzogranite is most likely 70 to 90 Ma.

The PT monzogranite is a slightly porphyritic, medium- to coarse-grained, biotite monzogranite with coarse-grained K-feldspar megacrysts in a matrix of medium-grained quartz, zoned plagioclase (andesine-oligoclase), and biotite. The pluton has a 10 to 100 m wide margin of porphyritic biotite monzogranite. Minor aplite dikes (1 percent) intrude the PT monzogranite. Trace mineralogy of the granite includes small amounts (less than 1 percent) of primary hornblende, sphene, magnetite, myrmekite, and tourmaline. Biotite and hornblende are commonly altered to chlorite + rutile and plagioclase is commonly seriticized.

The PT monzogranite differs from the rocks of the Hope intrusive suite in several important respects: (1) it is less fractionated, as indicated by lower differentiation indices, smaller Europium anomalies, and more calcic plagioclase; (2) it contains several key minerals common in tungsten-skarn-related granitoids but absent from Sn-related granites (Newberry and Swanson, 1986), including sphene, hornblende, and magnetite; and (3) geobarometry, based on aplite compositional data, indicates the PT monzogranite crystallized at a pressure 1 kb, compared to approximately 0.5 kb for the Hope granitic suite (fig. 3.11).

Composition

Major oxide and CIPW norms for three samples of the PT monzogranite are shown in table 3.13. Trace- and rare earth-element analyses are shown in table 3.14. Comparison of modal and normative data with fields for various Alaskan skarn-associated plutons (Hagen-Leveille, 1987) shows the PT rocks within the range expected for W-skarn-related plutons. Higher normative and modal anorthite contents distinguish them from the more fractionated Sn-related granites. In terms of trace elements, relatively low Rb and F, combined with high Ni, Cr, and Co distinguish the PT monzogranite from the Hope suite plutons. In general, the PT monzogranite resembles a typical granite associated with W-skarns, using the criteria of Newberry and Swanson (1986) and does not appear to be part of the Sn-related Hope granite suite. Several small W-Au skarns are present near the PT monzogranite along the Pinnell trail and these are discussed in detail in chapter 6 of this volume.

Table 3.13: Major oxide analyses and CIPW normative minerals of the Pinnell Trail monzogranite. Sample locations are shown in Appendix H.

SAMP NO	DA217c	RN183-185	RN196b
TEXTURE	pf	ef	
ROCK TYPE	monzogranite composite	aplite	border phase
SiO2	75.0	76.4	69.2
Al2O3	13.0	13.1	13.8
Fe2O3	0.2	0.2	1.0
FeO	0.6	0.1	3.0
MgO	0.45	0.14	1.77
CaO	1.08	0.32	0.78
Na2O	4.02	4.23	3.37
K2O	3.85	5.15	4.45
TiO2	0.18	0.07	0.58
P2O5	0.06	0.03	0.18
MnO	0.03	0.01	0.10
LOI	1.3	-0.5	1.5
SUM	99.8	99.2	99.7
NORMATIVE MINERALS			
QTZ	34.3	31.4	27.5
COR	0.4	0.1	2.5
OR	23.1	30.5	26.8
ALB	34.5	35.9	29.0
AN	5.0	1.4	2.7
HYP	1.8	0.4	8.4
MAG	0.3	0.2	1.5
HEM	0.1 ILM	0.3	0.11.1
AP	0.1	0.1	0.4
SUM	100.0	100.0	100.0
FeO*/MgO	1.8	1.8	2.2
D.I.	91.9	97.8	83.3
Normative			
OR	36.9	45.0	45.7
AB	55.1	52.9	49.6
AN	8.0	2.1	4.7

Table 3.14: Trace and rare earth element analyses of the Pinnell Trail monzogranite. Sample locations are shown in appendix H.

SAMP NO		DA217c	RN183-185	RN196b
ROCK TYPE		monzogranite	aplite composite	border phase
AG	PPM	-5	-5	-5
AS	PPM	23	270	32
AU	PPB	-5	-5	9
B	PPM	10	19	12
BA	PPM	500	300	400
BR	PPM	0.6	0.9	0.6
CA	%	0.7	-0.5	0.7
CO	PPM	4	2.3	9
CR	PPM	50	10	60
CS	PPM	4	8	8
F	PPM	110	50	960
FE	%	0.746	0.4	3.1
HF	PPM	3	2	4
MO	PPM	-4	-4	-4
NA	%	2.4	2.6	2.2
NB	PPM	20	20	50
NI	PPM	-200	-200	90
RB	PPM	230	360	280
SB	PPM	-0.2	0.4	0.4
SC	PPM	3.9	1.8	11
SE	PPM	-1	-0.7	-1
SN	PPM	12	-2	20
SR	PPM	190	30	90
TA	PPM	2	4.9	4
TH	PPM	23	15	40
U	PPM	6.6	18.7	13.2
W	PPM	2	4	5
Y	PPM	20	40	20
ZN	PPM	24	-50	90
ZR	PPM	80	10	190
LA	PPM	18	15	31
CE	PPM	31	26	55
ND	PPM	10	13	22
SM	PPM	2.1	2.2	5
EU	PPM	0.2	0.3	0.42
TB	PPM	0.4	0.6	0.8
YB	PPM	1.7	3.2	3
LU	PPM	0.3	0.6	0.6

ALKALIC ROCKS: HORNBLENDE QUARTZ MONZONITE, LAMPROPHYRE, SYENITE, AND FELSITE

Introduction

Three types of alkalic rocks, hornblende quartz monzonite, lamprophyre, and minor syenite, are present in the map area (fig. 3.28). In addition, altered felsic dikes, which occur on Table Mountain and near Homestake Creek, have a slightly alkalic character, a modest spatial association with the alkalic rocks and are possibly related to the alkalic suite. The hornblende quartz monzonites and lamprophyres crop out in two discontinuous, northeast-trending belts; one belt occurs between the Lime Peak and Quartz Creek plutons (Quartz-Bear alkalic suite), and the second belt occurs south of the Mount Prindle pluton and trends toward Table Mountain (Hope-Homestake alkalic suite; fig. 3.28). A few dark- to light-gray weathering dikes and sills of syenite (unit Ksy on pl. 2-1A, 2-1B) are present near the western boundary of the map area in the Quartz-Bear alkalic suite (fig. 3.28). These syenites are composed dominantly of K-feldspar with minor (percent) albite and apatite.

In the map area the alkalic rocks form very small bodies (< 1 sq km) or dikes. Two relatively large bodies of alkalic rock, 1) the O'Brien Creek aegerine-augite syenite and related lamprophyres (Burton, 1981; Chapman and others, 1971) and 2) the Victoria Mountain quartz syenite (Foster and others, 1983; D. Rinehart, oral comm., 1987), are present west and north of the map area respectively (fig. 3.28). K-Ar dates obtained from biotite separated from the O'Brien Creek alkalic rocks are 86.7 +/- 3.6 and 85.4 +/- 6.4 Ma for the syenite (Burton, 1981), and 90.0 +/- 0.8 Ma for a lamprophyre (Dubois and others, 1986). A similar K-Ar age (89 +/- 4 Ma) was obtained from biotite in a hornblende quartz monzonite within the map area (pl. 2-1A, this volume). The close correspondence in K-Ar ages and alkalic mineralogy suggest that the the two belts of lamprophyre, hornblende quartz monzonite, and minor syenite are related to the O'Brien Creek syenite and lamprophyre. The Victoria Mountain hornblende granite yields concordant biotite-hornblende K-Ar dates of about 65.5 +/- 1 Ma (Dubois and others, 1986), and may represent a younger alkalic event.

Hornblende quartz monzonite

Hornblende quartz monzonite and lesser monzogranite, quartz syenite, and quartz monzodiorite (shown as hornblende monzogranite - TKhg on pl. 2-1A, 2-1B) are spatially and probably genetically associated with the lamprophyres discussed below. The white to brown-weathering hornblende quartz monzonite crops out as dikes and small bodies that intrudes the metamorphic basement, but not the Hope granite suite.

Most of these rocks are phaneritic, porphyritic, and altered; many contain large megacrysts of feldspar and as much as 1 percent subhedral sphene (to 1 mm in diameter). Dikes of the hornblende quartz monzonite suite are strongly porphyritic with phenocrysts to several millimeters in a microcrystalline groundmass. Although hornblende is the diagnostic mafic mineral, clinopyroxene (typically rimmed by hornblende) and biotite (sometimes rimming clinopyroxene and hornblende) are both common. Plagioclase to K-feldspar ratios clearly vary in the least altered rocks: although plagioclase is usually sub-equal in abundance to K-feldspar, some rocks contain very little plagioclase and some contain dominantly plagioclase. Magnetite (percent) and apatite (.5 percent) are common minor minerals.

Mafic minerals are partly to completely altered to chlorite, ankerite (identified by staining), iron-oxides, and pyrite. Feldspars are altered to sericite +/- calcite.

Composition

Major oxide analyses of two hornblende quartz monzonites (table 3.15; fig. 3.29) indicate the rocks are potassic and alkalic. These rocks have compositional trends similar to the lamprophyres on silica-potash and silica vs. Zr/TiO_2 (fig. 3.30) diagrams, suggesting petrogenetic similarities between these two units, and dissimilarities between these units and other granitic rocks of the study area.

Lamprophyres

Introduction

The reddish-brown-weathering lamprophyres crop out as dikes (0.5 to 2 m thick), and small bodies and, in the map area, are always near the hornblende quartz monzonites. Contact relations between the hornblende quartz monzonites and lamprophyres are typically poorly exposed, but some exposures suggest the lamprophyres intrude the slightly larger bodies of hornblende quartz

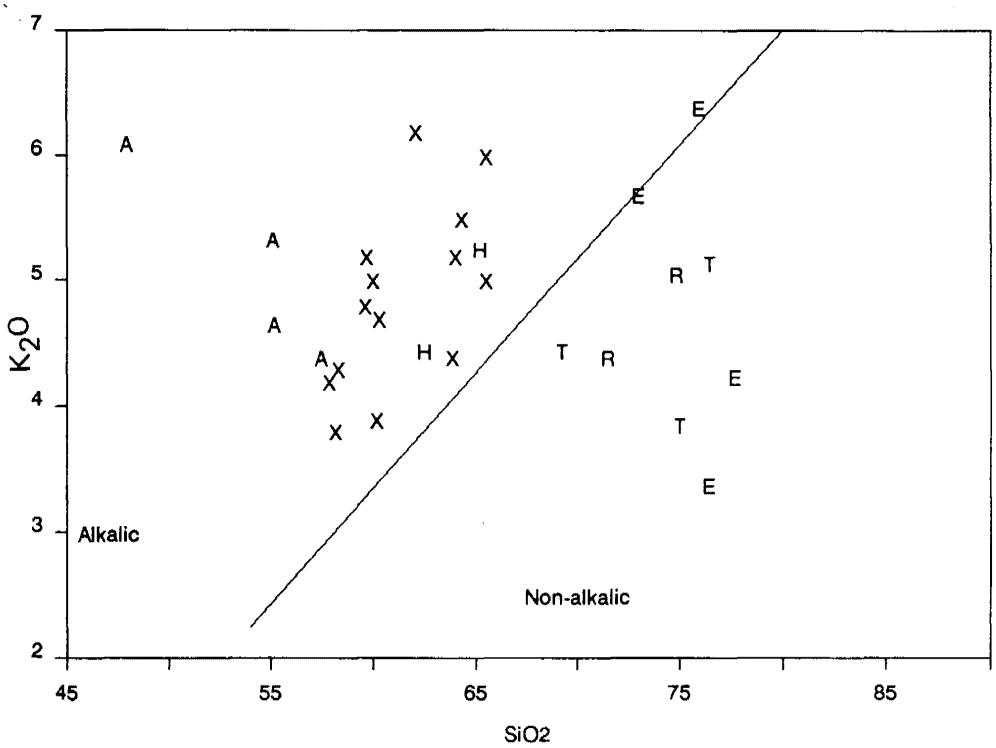


Figure 3.29. SiO_2 versus K_2O plot showing contrasts between the alkalic suite and other igneous rocks in the Lime Peak-Mt. Prindle study area. Symbols are A = lamprophyres, H = hornblende quartz monzonite, E = felsic dikes in the Homestake Creek-Table Mountain area, T = Pinnell Trail monzogranite, and R = rhyolite dikes spatially and genetically related to the Hope ganite suite. Mildly alkalic rocks associated with known gold deposits in Colorado, Montana, Utah, and British Columbia are shown by x. Data from Hunt and others (1953), Little (1960), Fears and others (1986), Hastings (1986), and Garwood and Roper (1987).

Table 3.15: Major oxide analyses and CIPW normative minerals of two hornblende quartz monzonites. Sample locations are shown in appendix H.

	HORNBLENDE QUARTZ MONZONITES:	
	RS87	GP282
SiO2	62.5	65.2
Al2O3	14.5	15.2
Fe2O3	0.59	0.04
FeO	3	3
MgO	2.31	1.28
CaO	3.57	3.10
Na2O	3.54	2.69
K2O	4.45	5.26
TiO2	0.62	0.44
P2O5	0.30	0.17
MnO	0.06	0.07
Cr	0.01	.01
LOI	2.08	1.62
SUM	97.53	98.07
NORMATIVE MINERALS		
QTZ	14.6	19.9
COR		
OR	27.6	32.2
ALB	31.4	23.6
AN	11.0	14.4
NEPH		
DIOP	4.5	0.4
HYP	8.1	8.2
OL		
MAG	0.9	0.1
ILM	1.2	0.9
AP	0.7	0.4
SUM	100.0	100.0
FeO*/MgO	1.5	2.4
D.I.	73.5	75.8
NORMATIVE		
OR	39.4	45.9
AB	44.9	33.6
AN	15.8	20.5
Fe2O3 unc	3.92	3.37

monzonite. The lamprophyres do not intrude the Hope intrusive suite. The lamprophyres are alkalic and are of the type associated with syenitic rocks as discussed by Rock (1977).

The lamprophyres contain 5 to 20 percent biotite phenocrysts (up to 2 cm) in a fine-grained groundmass composed dominantly of clinopyroxene, biotite, and K-feldspar. Minor amounts of altered clinopyroxene, hornblende(?), and/or large primary garnet phenocrysts (up to 5 mm) are present locally. Rare leucite and, more commonly, biotite, K-feldspar, and sericite pseudomorphs of leucite crystals locally form up to 3 percent of the rocks. Alteration-related pyrite and

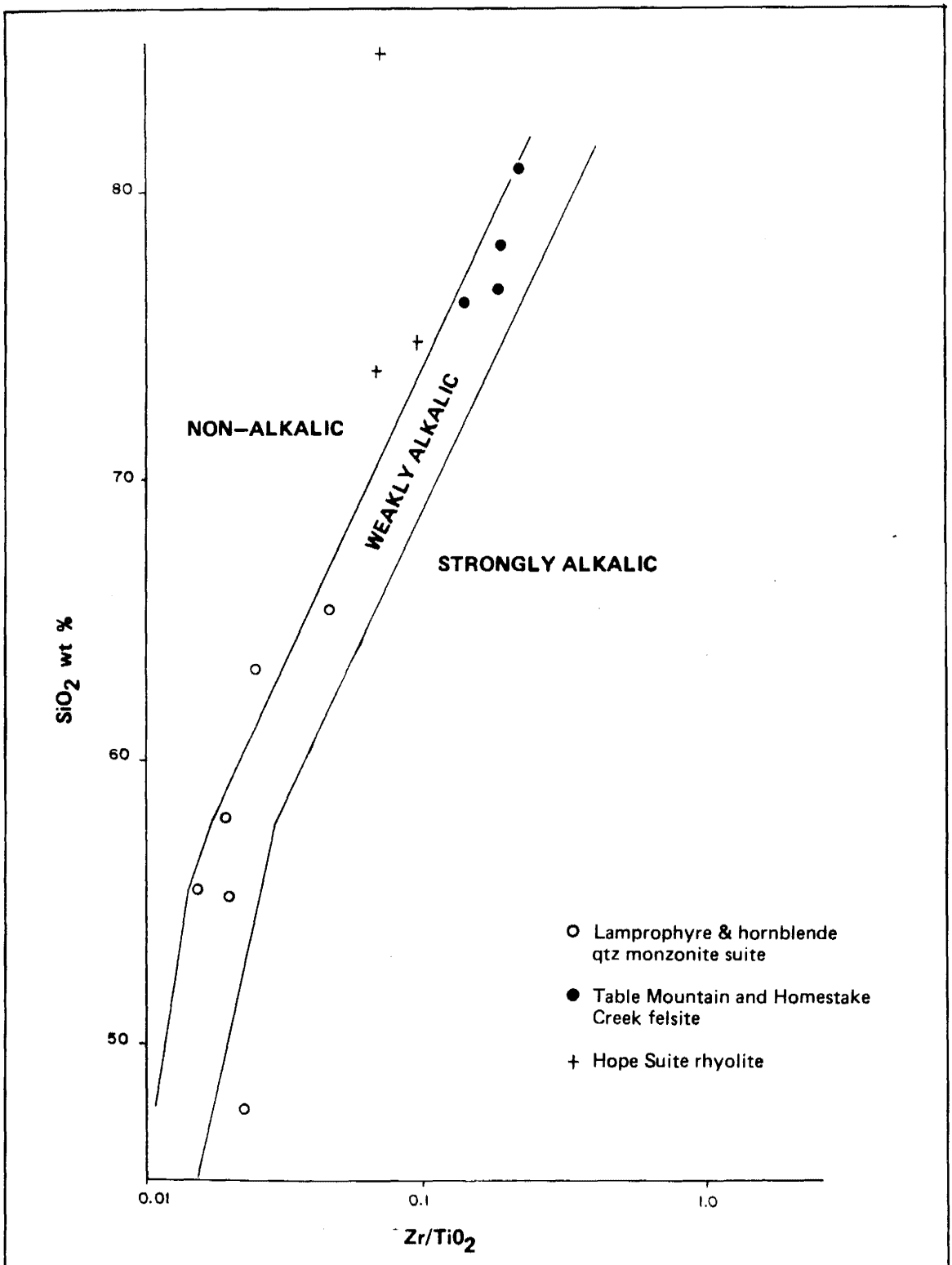


Figure 3.30. SiO_2 **versus** Zr/TiO_2 **showing contrasts in alkalinity between alkaline suite/felsites and Hope suite related rhyolites. Diagram modified from Winchester and Floyd (1977).**

magmatic(?) pyrrhotite are present in minor amounts. Rounded inclusions of quartzite, jasperoid quartz, and graphitic and pelitic schist are also common locally. Small amounts of breccias are occasionally associated with the lamprophyres.

Composition

Diamonds present in alluvial material about 50 km east of the study area (Forbes and others, 1987) presumably have a kimberlite or lamproite source (Bergman, in press), hence, the Lime Peak-Mount Prindle area lamprophyres were examined for lamproitic character. Major oxide analyses show that the lamprophyres have potassic, but not the ultrapotassic chemistry characteristic of lamproites (Bergman, in press). Additionally, the Lime Peak-Mount Prindle area lamprophyres contain significantly less TiO_2 and MgO than typical lamproites (table 3.16).

In addition to major element analyses, minerals in one lamprophyre dike were analyzed by electron microprobe to compare with typical lamproite mineral chemistry. Microprobe analyses indicate that the Lime Peak-Mount Prindle area lamprophyres contain clinopyroxene and biotite that have compositions more characteristic of lamprophyres than of lamproites (table 3.17). In particular, Lime Peak-Mount Prindle area lamprophyres have clinopyroxenes with more aluminum, and biotites with more iron than is typical for these minerals in lamproites.

Based on this work, the Lime Peak-Mount Prindle area lamprophyres are not lamproites, and probably have little potential as source rocks for diamonds.

Felsic dikes in the Homestake Creek-Table Mountain area

Altered felsic dikes and felsic bodies (field mapped as "rhyolite" , unit TKr on pls. 2-1A, 2-1B) are present in the Homestake Creek-Table Mountain area, at the east end of the study area. Felsic dikes occur north and south of, but parallel to, a lamprophyre-hornblende quartz monzonite dike near Homestake Creek. Also, intermediate composition dikes with lamprophyric trace and major element chemistry are present with felsic dikes on Table Mountain (Menzie and others, 1987). Because the felsic dikes have some spatial association with the alkalic suite rocks and because they have a somewhat alkalic character, we suspect they are related to the alkalic suite. Because they are not associated with tin-tantalum-uranium geochemical anomalies and are associated with copper-arsenic-gold anomalies, and because they have contrasting trace element signatures, we suggest that these felsic dikes are different from and unrelated to rhyolite dikes of the Hope intrusive suite. Pervasive alteration of these rocks has hindered radiometric dating and compositional/mineralogical classification; hence, our assignment of these rocks as "alkalic suite associated" is tentative.

The majority of minerals in the felsic dikes are microcrystalline; most dikes have 1 to 3 mm quartz + alkali feldspar +/- biotite phenocrysts, but phenocryst-free dikes also occur. Minor plagioclase occurs in these rocks, so that mineralogically they are quartz trachytes and alkali feldspar rhyolites. Biotite is the ubiquitous mafic mineral, but trace amounts of altered hornblende(?) occur also. Minor minerals include magnetite, sphene, zircon, and apatite.

All felsic dikes examined are altered. Mafic minerals are altered to chlorite +/- ankerite +/- sericite +/- magnetite +/- pyrite. Traces of fluorite are present with biotite in one sample. Feldspars are less altered than mafic minerals, but always contain at least traces of sericite +/-

Table 3.16: Comparison of major oxide compositions of Lime Peak-Mount Prindle area lamprophyres (this study) and typical lamprophyres and lamproites from Bergman (in press). Sample locations of lamprophyres analyzed for major oxide geochemistry from the Lime Peak-Mt. Prindle area are shown in Appendix H.

	LP - MP AREA LAMPROPHYRES:				DIAMONDIFEROUS	
	JB39	MA224	GP283b	RS283b		LAMPROITE
SiO2	47.9	57.5	55.1	55.2		47+/-7
Al2O3	10.0	13.8	14.5	14.0		4.8+/-1
Fe2O3	2.67	2.09	1.48	1.41		
FeO	4	5	6	6	FeO*	8+/-2
MgO	7.88	4.67	4.23	5.30		23+/-6
CaO	8.53	3.60	5.30	5.18		8+/-8
Na2O	1.21	1.08	1.69	1.52		0.4+/-.3
K2O	6.10	4.39	5.34	4.66		3.5+/-1
TiO2	0.70	0.87	0.96	0.97		2.9+/-1
P2O5	0.53	0.47	0.57	0.54		1.3+/-.7
MnO	0.13	0.17	0.16	0.14		.12+/-.04
Cr	0.05	0.02	0.01	0.02		
LOI	7.77	3.62	2.08	2.08		
SUM	97.44	97.28	97.42	97.02		
NORMATIVE MINERALS						
QTZ	0	19.4	6.6	8.6		
COR		2.0				
OR	40.2	27.7	33.1	29.0		
ALB	5.8	9.8	15.0	13.5		
AN	4.2	15.8	17.0	18.6		
NEPH	3.0					
DIOP	31.1	5.5	3.9			
HYP	19.2	17.3	21.0			
OL	8.5					
MAG	4.3	3.2	2.3	2.2 I		
LM	1.5	1.8	1.9	1.9		
AP	1.4	1.2	1.4	1.3		
SUM	100.0	100.0	100.0	100.0		
Mg#	66.1	50.3	44.9	50.7		82+/-5
D.I.	46.0	56.9	54.7	51.2		
NORMATIVE						
OR	80.1	52.0	50.8	47.5		
AB	11.6	18.3	23.0	22.2		
AN	8.3	29.7	26.1	30.4		

calcite +/- chlorite. Quartz veins and veinlets, and chlorite-ankerite veinlets are also moderately common.

Alteration yields somewhat ambiguous major element chemistry of the felsic dikes (table 3.18). Some dikes are marginally alkalic, as shown on a silica-potash diagram (fig. 3.29); others are not. The dikes are different from Hope suite rocks in that they are not strongly reduced as indicated by Fe_2O_3 FeO. This characteristic may be due to alteration, however.

Table 3.17: Comparison of mineral compositions of Lime Peak-Mount Prindle area lamprophyres (this study) to typical lamprophyres and diamond-bearing lamproites (Bergman, in press). Analyses performed with the aid of an electron microprobe.

	CLINOPYROXENES: groundmass & phenocryst phases				BIOTITES & PHLOGOPITES: groundmass & phenocryst phases			
	LP-MP AREA 86RS283b	LP-MP AREA 86RS283b	LAMPRO-PHYRE	LAMPROITE	LP-MP AREA 86RS283b	LP-MP AREA 86RS283b	LAMPRO-PHYRE	LAMPROITE
SiO_2	52.53	52.78	50 +/- 3	53 +/-1	35.8	35.76	37 +/- 2	41 +/- 2
TiO_2	0.05	0.30	1.6 +/- 1	1 +/- .6	4.27	4.33	4.3 +/- 2	5 +/- 2
Al_2O_3	0.46	2.36	4.2 +/- 2.7	.51 +/- .7	16.24	16.19	15 +/- 2	10 +/- 3
Cr_2O_3	n.a.	n.a.	.14 +/- .1	.19 +/- .3	n.a.	n.a.	.2 +/- .4	.3 +/- .4
FeO	10.42	6.49	6.8 +/- 3	3.5 +/- 2	15.6	16.08	11 +/- 4	6.8 +/- 4
MgO	12.01	14.76	14 +/- 3	17 +/- 2	12.03	12.36	18 +/- 4	22 +/- 3
MnO	0.65	0.27	.21 +/- .2	.11 +/- .7	0.2	0.23	.14	.06
CaO	22.91	22.92	22 +/- 3	24 +/- 2	0.38	0.01	.37	.07
Na_2O	0.16	0.28	.8 +/- 1	.46 +/- .7	0.23	0.22	0.42	.30
K_2O	0.03	0.01	n.a.	n.a.	9.17	9.06	8.5 +/- 2	10 +/- .6
TOTAL	99.22	100.17	99.75	99.77	93.92	94.22	94.93	95.53
Molecular proportions based on								
	6 oxygen				22 oxygen			
Si	19.97	19.46			14.54	14.49		
Ti	0.02	0.08			1.30	1.32		
Al	0.21	1.03			7.77	7.73		
Fe	3.31	2.00			5.30	5.45		
Mg	6.81	8.11			7.28	7.46		
Mn	0.21	0.08			0.07	0.08		
Ca	9.33	9.05			0.16	0.00		
Na	0.12	0.20			0.18	0.17		
K	0.01	0.00			4.75	4.68		
TOTAL	60.01	59.98			58.63	58.62		
Ca	48.0	47.2	46.2	47.5				
Fe	17.0	10.4	11.4	5.5				
Mg	35.0	42.3	42.4	47				
$Mg^{\#}$	67.3	80.2	78 +/- 11	90 +/- 7	57.9	57.8	74 +/- 14	85 +/- 10

There are some significant trace element differences between Hope suite rhyolites and the felsites. The felsic dikes have higher Zr/TiO_2 ratios (for a given silica content) than do Hope suite rhyolites and plot in a "weakly alkalic" field on a silica vs. Zr/TiO_2 diagram (fig. 3.30). Some of the felsic dikes (this study and Menzie and others, 1987) have anomalously high Cr, Sr, and Ni contents, suggesting mixing of felsic magma with a mafic (lamprophyric?) magma. Finally, felsic

Table 3.17 (Con.)

GARNETS: xenocryst & xenolith phases					K-FELDSPAR:			
	LP-MP AREA 86RS283b	LP-MP AREA 86RS283b	LAMPRO-PHYRE	LAMPROITE	LP-MP AREA 86RS283b		LAMPRO-PHYRE	LAMPROITE
SiO_2	39.34	39.26	41 +/- 1	41 +/- 1	62.92		65 +/- 2	63 +/- 1
TiO_2	0.45	0.45	.33 +/- .2	.27 +/- .2	0.00		n.a.	n.a.
Al_2O_3	22.06	22.15	22 +/- 1	21 +/- 2	18.13		19 +/- 1	17 +/- 1
Cr_2O_3	n.a.	n.a.	1.2 +/- 2	3.3 +/- 3	n.a.		n.a.	n.a.
FeO*	23.48	23.2	12 +/- 4	12 +/- 9	0.08	Fe_2O_3*	.3 +/- .1	2.3 +/- 1
MgO	7.33	7.36	17 +/- 4	18 +/- 6	0.02		.01	.5 +/- .4
MnO	0.68	0.77	.4 +/- .2	1.1 +/- 1.3	0.00		.01	.02
CaO	7.65	7.88	6.3 +/- 3	4.5 +/- 1.6	0.07		.24 +/- .3	.25 +/- .4
Na_2O	0.04	0.01	.6 +/- .8	.01	0.35		3.6 +/- 5	.47 +/- .2
K_2O	0.01	0	n.a.	n.a.	15.95		11 +/- 5	16 +/- .5
TOTAL	101.04	101.08	100.83	101.18	97.52		99.16	99.54
Molecular proportions based on								
	12 oxygen				8 oxygen			
Si	14.97	14.93			22.96			
Ti	0.13	0.13			0.00			
Al	9.89	9.92			7.80			
Fe	7.47	7.38			0.02			
Mg	4.16	4.17			0.01			
Mn	0.22	0.25			0.00			
Ca	3.12	3.21			0.03			
Na	0.03	0.00			0.25			
K	0.00	0.00			7.42			
TOTAL	60.01	60.01			61.51			
Ca	21.2	21.7						
Fe	50.6	50.0			Na 3.3			
Mg	28.2	28.3			K 96.7			
$Mg^{\#}$	35.8	36.1	71 +/- 11	72 +/- 22				

dikes are readily distinguished from the Hope suite rhyolites on a Ti-Zr-Y diagram, suggesting a different parentage for the two types of dike rocks (fig. 3.31).

Possibilities for gold deposits associated with the alkaline dike suite

Keith (1984) has suggested that "quartz alkalic" (that is, slightly alkalic) plutonic rocks are preferentially associated with gold deposits. Lovering and Goddard (1950) in a study of 12 mining

Table 3.18: Major oxide analyses and CIPW normative minerals of felsic dikes from the Homestake Creek-Table Mountain area. Sample locations are shown in appendix H.

	FELSIC DIKES							
SAMP NO	30545	30546	30547			30545	30546	30547
PLUTON								
ROCK TYPE								
SiO2	77.7	75.9	76.4	AG	PPM	<.05	<.05	<.05
Al2O3	11.6	12.6	12.7	AS	PPM	12	3	7
Fe2O3	0.388	0.565	0.406	AU	PPB	<9	<8	<11
FeO	0.2	0.5	0.4	BA	PPM	80	120	150
MgO	<0.01	<0.01	<0.01	BR	PPM			
CaO	0.41	0.04	0.64	CA	%	<3.5	<2.8	<3.9
Na2O	3.82	2.51	4.38	CO	PPM	<5	<5	<5
K2O	4.24	6.39	3.38	CR	PPM	<10	<10	10
TiO2	0.04	0.06	0.04	CS	PPM	7	5	10
P2O5	0.02	0.02	0.02	CU	PPM	4	16	3.5
MnO	0 02	0.03	0.05	FE	%	0.7	1.3	1.1
LOI	0.77	0.69	1.00	HF	PPM	4	4	6
				MO	PPM	<4	<4	<4
SUM	99.21	99.31	99.42	NA	%	4	2.7	4.5
				NB	PPM	20	20	50
NORMATIVE MINERALS								
				NI	PPM	<300	<300	<300
QTZ	39.0	37.2	37.1	RB	PPM	450	550	590
COR	0.0	1.6	0.7	SB	PPM	0.9	0.4	0.5
OR	25.5	38.3	20.3	SC	PPM	0.8	1.8	1.8
ALB	32.8	21.5	37.7	SE	PPM	30	22	
AN	1.9	0.1	3.1	SN	PPM	6	4	14
DIOP				SR	PPM	20	50	40
HYP	0.0	0.4	0.4	TA	PPM	5		4
MAG	0.6	0.8	0.6	TH	PPM	33	56	42
HEM				U	PPM	9.7	5	22.9
ILM	0.1	0.1	0.1	W	PPM	<4	<4	6
RUT				Y	PPM	150	230	150
AP	0.1	0.1	0.1	ZN	PPM	16	17	18
				ZR	PPM	20	90	80
				LA	PPM	17	7	33
D.I.	97.3	97.0	95.0	CE	PPM	71	25	91
				SM	PPM	7.4	3.3	12.2
				EU	PPM	<1.3	<1.1	<1.5
Normative				YB	PPM	13.4	10.7	14.3
OR	42.3	63.9	33.2	LU	PPM	2.4	1.8	2.8
AB	54.5	36.0	61.7					
AN	3.2	0.1	5.1					

districts of the Colorado Front Range, showed that of 12 Cretaceous-Tertiary magmatic episodes, gold ore deposition was exclusively associated with alkalic magmatism. Other gold deposits or districts associated with moderately alkalic plutonism include the Rossland area, British Columbia (Little, 1960), Henry Mountains, Utah (Hunt and others, 1953), Golden Sunlight Mine, Montana

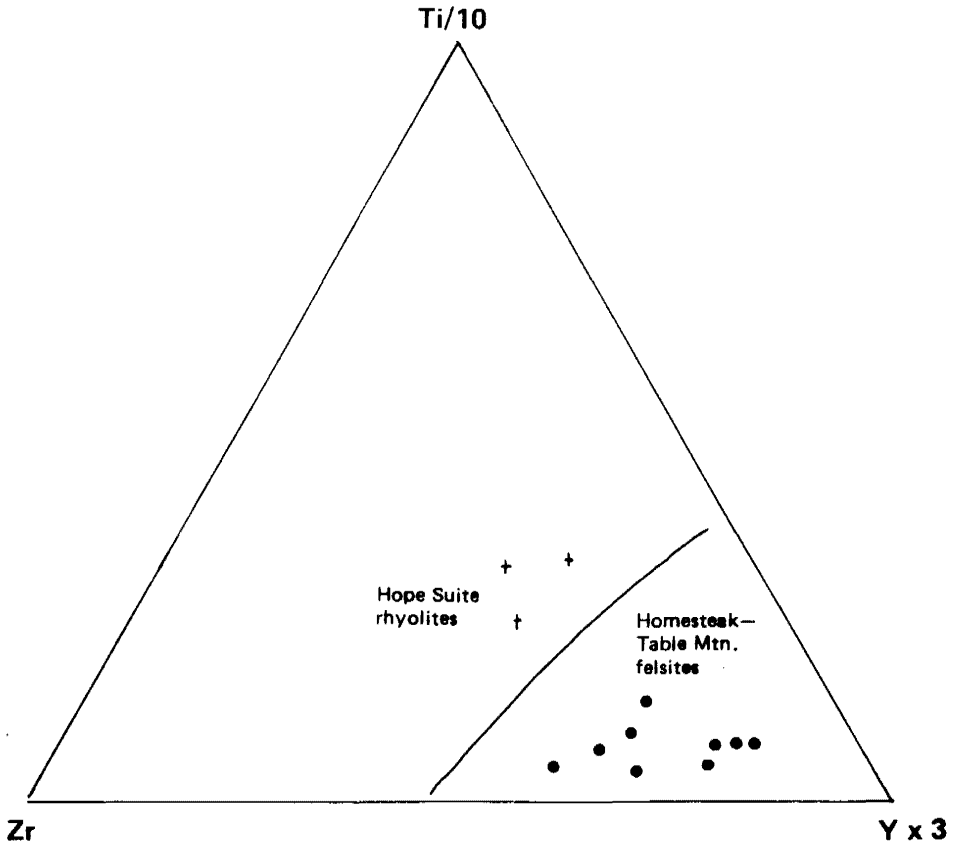


Figure 3.31. Ti-Zr-Y diagram showing contrast in trace element chemistry between the Homestake-Table Mountain felsites and the Hope suite related rhyolites. Diagram modified from Pearce and Cann (1973).

(Garwood and Roper, 1987), Cripple Creek and other central Colorado districts (Fears and others, 1986), the Little Rocky Mountains, Montana (Hastings, 1986), and Vunda, Fiji (Laznicka, 1986).

In the U.S.S.R., gold deposits are associated with moderately alkalic rocks at Berezovo, Kommunarovo, Darasun, Klyuchi, Kolchkar and Muruntau (Borodaevskaya and Rozhkov, 1974; Laznicka, 1986). A silica-potash plot (fig. 3.29) shows that the alkalic rocks of the Lime Peak-Mount Prindle area have compositions similar to those of well known alkalic gold districts.

Most of the above districts/deposits contain, in addition to alkalic rocks, lamprophyres and rhyolitic rocks. Textures in the rocks are invariably porphyritic and dike morphologies predominate. Alteration is similar to that seen in the Homestake Creek-Table Mountain area, with characteristic sericite-ankerite-pyrite. Fluorite and tourmaline are present in many of the above areas, and arsenic, bismuth, and antimony are common associates, as they are in the Homestake Creek-Table Mountain area.

In summary, the chemistry, alteration, and mineral associations of the alkalic suite in the Lime Peak-Mount Prindle study area are strikingly similar to igneous rocks associated with gold deposits in other parts of the world. Consequently lode gold deposits may exist in the Homestake Creek-Table Mountain area. Gold-bearing lode occurrences are, in fact, present and are discussed in chapter 6 of this volume.

MAFIC DIKES IN THE HOPE GRANITE SUITE

A few mafic dikes intrude the Hope granite suite. All mafic dike rocks examined in thin section were gabbros with 70 to 85 percent plagioclase laths. Clinopyroxene was subophitic. The dikes are relatively unaltered, and must be younger than the Late Cretaceous to Tertiary granite plutons. Although they were not observed during field mapping, the dikes may also intrude the surrounding country rock.

Major and trace element composition of the mafic dikes are shown in table 3.19.

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Table 3.19: Major oxide analyses, CIPW normative minerals, and trace element analyses of two gabbro dikes intruding the Hope granite plutons.

	MAFIC DIKES	
SAMP NO	DNS111	DNS52
PLUTON	in LP	in QC
ROCK TYPE	sc	sc
SiO2	49.1	50.8
Al2O3	15.7	16.2
Fe2O3	1.72	1.34
FeO	6.7	6.8
MgO	6.15	6.28
CaO	8.39	7.14
Na2O	2.31	3.16
K2O	0.55	1.26
TiO2	1.51	1.51
P2O5	0.26	0.27
MnO	0.23	0.14
LOI	5.5	3.8
SUM	98.12	98.70
NORMATIVE MINERALS		
QTZ	5.5	1.2
COR		
OR	3.5	7.8
ALB	21.1	28.2
AN	33.3	27.7
DIOP	8.0	6.3
HYP	22.2	23.0
MAG	2.7	2.0
HEM		
ILM	3.1	3.0
RUT		
AP	0.6	0.7
WOLL		
SPHENE		
FeO*/MgO	1.3	1.3
D.I.	30.1	39.5
Normative		
OR	6.1	12.3
AB	36.4	44.2
AN	57.5	43.5

		DNS111 in LP sc	DNS52 in QC sc
AG	PPM	-2	-2
AS	PPM	3	2
AU	PPB	-5	-5
BA	PPM	360	490
BR	PPM	-0.6	-0.6
CA	%	5.5	4.9
CO	PPM	31	29
CR	PPM	180	170
CS	PPM	9.9	13.4
FE	%	6.62	6.45
HF	PPM	4	3.7
MO	PPM	-2	-2
NA	%	1.9	2.5
NB	PPM	40	10
NI	PPM	-50	-50
RB	PPM	60	120
SB	PPM	1.6	0.6
SC	PPM	28.8	27.1
SE	PPM	3.2	-0.7
SN	PPM	-2	-2
SR	PPM	390	460
TA	PPM	1.1	-0.5
TH	PPM	10	4.3
U	PPM	5.3	1.9
W	PPM	-2	-2
Y	PPM	30	30
ZN	PPM	190	-5
ZR	PPM	150	140
LA	PPM	25.8	18.4
CE	PPM	56	43
ND	PPM	31	21
SM	PPM	7.5	5.26
EU	PPM	1.52	1.47
TB	PPM	1.6	0.9
YB	PPM	4.78	2.97
LU	PPM	0.79	0.48

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CHAPTER 4

SURFICIAL GEOLOGY, LINEAMENTS, AND PLACER RESOURCES IN THE LIME PEAK-MT. PRINDLE AND PINNELL MOUNTAIN TRAIL AREAS, EAST-CENTRAL ALASKA

by

S. E. Rawlinson

INTRODUCTION

During July and August of 1986, studies of the surficial geology and lineaments in the Lime Peak-Mt. Prindle (pls. 4-1 and 4-2) and Pinnell Mountain Trail (pl. 4-3) areas were made as part of the mineral-resource study reported in this volume. All unconsolidated deposits were mapped in the field, except in the low rolling terrain between the mountainous areas (pl. 4-1). In this area, the surficial geology was interpreted from aerial photographs and with the aid of photographs taken on the ground. On-site field checks of all the deposits were not possible because of personnel and time constraints. However, representative exposures of each type of deposit were visited and documented.

Lineaments were mapped on a 1:250,000-scale Landsat image and on 1:60,000-scale aerial photographs to provide information on structural trends and aid in delineation of potentially mineralized zones (pls. 4-2 and 4-3). These photolineaments include the traces of faults, shear zones, bedding planes, joints, dikes, contacts, and the trends of tors, the tread-scarp boundary of cryoplanation terraces, and some streams. Continuity of some lineaments is inferred; in steep terrain the confidence of continuity is greater than in rolling terrain.

Information concerning placer potential is based on mapping the distribution of various types of surficial deposits, air-photo interpretation, map measurements, and assumptions of the thicknesses of alluvium. A detailed study of the potential for placer resources is concurrently being done by the U.S. Bureau of Mines.

Previous Investigations

The surficial geology and placer potential of the study area have previously received little specific attention. Saunders (1960) briefly mentioned glacial features in the area around Mt. Prindle, and Pewe and others (1967) and Weber and Hamilton (1984) advanced the knowledge of the glacial geology there. Subsequent unpublished maps by Weber show the general distribution of glacial deposits in the Mt. Prindle and Lime Peak areas.

Cobb (1973) discussed placer deposits in streams within or near the study area; Cobb (1977) summarized commodities and production from these and other streams. Warner and others (1986) discussed the surficial geology of the North Fork of Preacher Creek east of Lime Peak and its potential for placer tin.

Except for regional lineament studies of the Circle Quadrangle by Le Compte (1981) and Simpson (1983), no previous studies of lineaments within the area have been done. An independent lineament study done concurrently by another project investigator was used to confirm major lineaments shown on plate 2-2.

SURFICIAL GEOLOGY

Colluvial Deposits

Mass-wasting processes such as rock fall and landslide, frost creep, and gelifluction have emplaced colluvial deposits, which account for most of the unconsolidated sedimentary deposits in the area (pls. 4-1 and 4-3). Washburn (1980) discussed the controls and mechanisms of these processes in a periglacial environment. Deposits emplaced primarily by rockfall (Talus - unit Ct on plates 4-1 and 4-3) consist chiefly of angular to subangular cobbles and boulders that are derived from adjacent bedrock, and occur in chutes or at the base of steep slopes; they are generally unvegetated.

Landslide deposits (Cls) in the area consist chiefly of silt, sand, or gravel, or graded mixtures of all three, that are derived from adjacent bedrock and deposited on slopes and at the base of slopes by slides or flows; angular to subangular cobbles and boulders are common. The surface topography of these deposits is generally hummocky. Vegetation, when present (depending on the age of the deposit), consists of grass, moss, low brush, and trees at lower elevations.

Landslide deposits in the area are restricted to generally west- and south-facing slopes. Whether this relationship is fortuitous or has some physical basis is difficult to determine because only a few landslide deposits were identified. Possible physical controls include the amount of received moisture, the thickness of the pre-slide regolith, the slope and aspect of that slope, and the type of underlying bedrock and its attitude. The largest landslide deposit occurs about 6.2 kilometers south of Lime Peak, east of an unnamed tributary of Bear Creek (pl. 4-1). The slide deposits face west. Bedrock there is the lower Fairbanks schist (?). Nearby foliation generally dips south. The pre-slide slope is estimated at about 15 degrees. The rock type, slope, and to a lesser extent the attitude of bedrock structures, in this case could collectively promote slope failure.

Most colluvial deposits in the area are derived from underlying or nearby bedrock and were emplaced by frost creep and gelifluction on slopes. Within the study area, low-slope colluvium (Cl), soliflucted colluvium (Cs), and rubble colluvium (Cr) have been differentiated. These types of deposits are sometimes called block fields (on very low slope) or block slopes (Washburn, 1980). Low-slope colluvium consists chiefly of silt, sand, or gravel, or graded mixtures of all three, and occurs on slopes up to about 15 degrees but generally much less than this amount (cited in error as 25 degrees on plates 4-1 and 4-3). Angular to subrounded, but most commonly subangular, cobbles and boulders in a silt and sand matrix form the bulk of these deposits. Glacial drift and outwash may be included in cirques and valleys proximally downstream of cirques. The deposits generally show some degree of downslope movement in the form of stripes. Frost scars are common on lower angle slopes, and generally occur at the top of the slope. The deposits are generally frozen on north-facing slopes. Vegetation consists of grass, moss, and low brush; tussocks are common on very low slopes, and trees are present at lower elevations.

Soliflucted colluvium is like low-slope colluvium except that the silt and moisture contents are generally slightly greater, and downslope movement is shown by rounded or tabular lobes with fronts up to several hundred meters long and several meters high. These deposits occur on slopes up to about 20 degrees.

Rubble colluvium (Cr) consists chiefly of sand and gravel with some silt that is derived from nearby bedrock and deposited on knobs, ridges, and slopes generally greater than 15 degrees (cited in error as 25 degrees on plates 4-1 and 4-3). Downslope movement is less with these deposits than with other colluvial deposits. Angular to subangular cobbles and boulders in a graded matrix of sand and pebbles form the bulk of these deposits. Glacial drift and outwash are sometimes included in cirques and in valleys proximally downstream of cirques. The deposits are generally sparsely vegetated with grass, moss, and low brush.

Undifferentiated valley colluvium and alluvium (Cv) consists of silt, sand, or gravel, or interbeds or graded mixtures of all three, that are deposited or retransported in valley bottoms by frost creep and gelifluction or by streams. The deposits sometimes include glacial drift and outwash in cirques and valleys proximally downstream of cirques. Clasts deposited or retransported by the mass-wasting processes are angular to subrounded and range through boulder size; cobbles and boulders are common. Their composition is that of nearby bedrock. Sand is the most common clast size in stream overbank deposits. Thicknesses of colluvium and alluvium are from less than 1 meter to several meters. Colluvium is generally lobate or hummocky and vegetated with grass and low brush. Alluvium in channels is unvegetated or sparsely vegetated; overbank alluvium and terrace alluvium are generally vegetated with grass and low brush.

Fluvial Deposits

Stream alluvium (Fa), terrace alluvium (Ft), including that which is covered by colluvium (ClFt), fan alluvium (Ff), outwash (Go), terrace outwash (Gt), and fan outwash (Gf) cover only about 5 percent of the mapped area. They have, however, the greatest potential for placer resources.

Alluvium in the area consists chiefly of silt or sand, or interbeds or graded mixtures of both, that were deposited in flood-plain overbank environments by fluvial, eolian, and lacustrine processes; and underlying silt, sand, or gravel, or interbeds or graded mixtures of all three, that were deposited in channel environments of flood plains by streams. Clasts of the channel deposits are subangular to subrounded and range up to boulder size; cobbles and boulders are common. Glacial erratic boulders may be included in these deposits in cirques and in valleys proximally downstream of cirques. Compositions of clasts are those of the rock types present in the drainage basin. Overbank silt and sand commonly support grass, low brush, and some trees; channel deposits are generally unvegetated, or sparsely vegetated with grass or low brush, or both.

Alluvial-terrace deposits are like stream alluvium except that overbank deposits are generally thicker, and a soil is often present. Vegetation is usually better established and may include trees. These deposits are generally above the maximum flood limit of the associated stream.

Alluvial-fan deposits consist chiefly of silt, sand, sandy gravel, or gravel, or interbeds or graded mixtures of all four, that were deposited by streams and debris flows where they emerge from mountain valleys onto lower gradient surfaces. Fluvially retransported glacial drift and outwash are sometimes included in the fans at the mouths of valleys with headwall cirques. Clasts are subangular to subrounded and range up to boulder size; cobbles and boulders are common. Compositions of clasts are the rock types present in the associated drainage basin. Inactive fan surfaces often include overbank silt and sand, which commonly support grass, low brush, and

some trees. Thicknesses of fan deposits are variable, but in large fans may be several tens of meters at the apex.

Glacial Deposits

Glacial-stream outwash, terrace outwash, and fan outwash are like the corresponding alluvial unit, except that the silt content is greater. Glacial deposits or the effects of glaciers, or both, are preserved in the area around the centers of greatest elevation-- Mt. Prindle, Lime Peak, and Table Mountain. Weber and Hamilton (1984) presented evidence of four Pleistocene glacial episodes, from oldest to youngest and most to least extensive-- Prindle, Little Champion, American Creek, and Convert. These glacial episodes likely correlate with other Pleistocene glacial episodes recognized elsewhere in Alaska. Type localities of these episodes are also presented by Weber and Hamilton.

Deposits of all four glacial episodes are present around Mt. Prindle. The Prindle, Little Champion, and American Creek episodes are represented by deposits in the Lime Peak area, although the distribution of deposits from the latter episode are very limited. Deposits of only the Prindle episode are likely in the Table Mountain area.

Deposits of the Prindle glaciation (Gd1) are erratic boulders up to about 2 meters diameter and localized thin till. Effects of this glaciation include cirques, side-wall facets, and some benches. The approximate maximum down-drainage extent of glaciation, and cirques in which some glacial deposits are likely to be present but are not shown (pl. 41), correspond to the Prindle glaciation.

Deposits of the Little Champion glaciation (Gd2) consist chiefly of subrounded cobbles and boulders, and some angular clasts of schist and quartzite, in a yellowish-brown matrix of well-graded, arkosic silty sand. The clasts are moderately to highly weathered (Weber and Hamilton, 1984). Much of this till is soliflucted.

Deposits of the American Creek glaciation (Gd3) consist chiefly of subrounded granitic cobbles and boulders and some angular quartzite boulders in a well-graded grus matrix. Granitic boulders are strongly weathered. Associated soils are well developed; they typically have a leached horizon over an oxidized reddish-brown horizon, which in turn overlies oxidized gravelly till. Large moraines of this glaciation are subdued and hummocky, and few boulders remain on the surface. Less subdued small moraines occur in cirques between 900 and 1,100 meters elevation, and have many boulders exposed on the surface (Weber and Hamilton, 1984).

Till associated with the Convert glaciation (Gd4) consists chiefly of subangular to subrounded granitic cobbles and boulders in a well-graded grus matrix. Surface boulders are weathered only slightly, and buried clasts have a thin weathered rind. Associated soils are immature; they typically have a thin organic horizon over brown loess, which in turn overlies gravelly till. Small moraines with steep frontal slopes occur in northeast-facing cirques above 1,025 meters elevation in the Mt. Prindle area (Weber and Hamilton, 1984).

LINEAMENTS

Lineament studies based on 1:250,000scale Landsat images of the Circle Quadrangle were published by Le Compte (1981) and Simpson (1983). The latter report defined two regional areas

within the Circle Quadrangle that have major differences in surface characteristics-- "domains A and B". Except in the extreme northwest and southeast corners, the study area is in domain A. Domain A is characterized by low relief and simple, widely spaced drainages, except where igneous rocks are exposed. Domain B is characterized by high relief, abrupt slope changes, and intricately dissected drainage.

The dominant trend of major lineaments in the study area is northeast-southwest (approximate mean N35E), except in the northernmost part; there the trend, although still northeast-southwest, is closer to east-west (approximate mean N75E). Lineaments in the area have a profound effect on the courses of streams. Most of these lineaments are shown on the inset of Landsat-image lineaments on plate 4-2. When these lineaments could not be confirmed on the larger scale photographs (primarily because of the limited field of view and the inability to continue the trend of a certain lineament or lineaments), they were excluded from the main map on plate 4-2. An example of this is Mascot Creek in the northwest part of the study area. As is evident from the Landsat image, the trend of Mascot Creek is certainly structurally controlled, even though its trend is almost normal to the dominant nearly east-west trend of lineaments in the area. But because on the 1:60,000-scale photographs of the study area, continuation of its trend could not be made with other certain lineaments, it was not indicated as a lineament. Other large streams that are probably structurally controlled but not indicated as such on the main map on plate 4-2 are Convert Creek, American Creek, Hope Creek, Homestake Creek, Bachelor Creek, and McKinley Creek.

The granitic intrusions in the area-- the Lime Peak, Quartz Creek, and Mt. Prindle plutons-- are elongated in the same general direction as trends of major lineaments and fold axes (pls. 2-1A and 4-2), indicating some structural control on their emplacement. Major lineaments also cut these plutons, indicating movement on these lineaments subsequent to emplacement of the plutons. The Mt. Prindle pluton and surrounding metasediments are cut by late hypabyssal rocks with trends that approximate the trends of local major lineaments. The trends of hypabyssal rocks that cut the lower Fairbanks schist (?) in the Table Mountain area also approximate the trends of major lineaments in that area. Because the structural lineaments seem to have a genetic association with the plutons and subsequent hypabyssal rocks, detailed analysis of lineament trends might aid targeting of mineralized zones in areas covered by unconsolidated deposits.

PLACER RESOURCES

Current study of the potential for placer resources by the U.S. Bureau of Mines (Fechner and Balen, in prep.) includes sampling and analysis of alluvium from the study area. Alluvial and outwash deposits are those most likely to contain placer mineral resources.

Placer gold has been the primary commodity recovered from the area, although monazite, antimony, and tin have also been produced. Production has been small from all creeks except Sourdough and Nome Creeks, where it has been moderate and large, respectively (Cobb, 1973, 1977). Although Warner and others (1986) cited two sources for placer tin in the area, low metal grades in surface samples do not indicate a significant placer tin resource. However, because the tin ore is very fine grained, it may be dispersed over a large area or concentrated near bedrock, or both. The tin-resource potential may be greater than indicated.

Although many more kilometers of small streams are present in the area, at least 435 kilometers of streams have a flood plain that is measureable at a scale of 1:63,360 and does not include a significant amount of colluvial deposits (designated Fa on plate 4-1). Of these streams, about 340 kilometers of streams are downstream of the maximum down-drainage extent of glaciation (pl. 4-1). Alluvium and outwash downstream of this limit occupy about 39 square kilometers and these deposits upstream of this limit occupy about 23 square kilometers.

Streams and the valleys they occupy in the area were classed as being large (both in length and width), intermediate sized, or small. Valley walls of large streams are shallowly inclined (up to about 10degree slope); valley walls of intermediate-sized streams are shallowly to moderately inclined (up to about 20-degree slope); and valley walls of small streams are moderately to steeply inclined (in excess of 20degree slope, with a maximum of about 25 degrees). Profiles were drawn in about mid-stream-length positions across the northeast-southwest-trending part of Bear Creek (large stream; shallowly inclined canyon), Champion Creek (intermediate-sized stream; shallowly inclined canyon), Hope Creek (small stream; moderately inclined canyon), and Mascot Creek (small stream; steeply inclined canyon). Projection of valley walls below the level of the stream in these profiles gives respective depths and cross-sectional areas of the alluvium of 26 meters and 1,627 square meters, 23 meters and 1,139 square meters, 9 meters and 375 square meters, and 15 meters and 687 square meters. The mean cross-sectional area is about 960 square meters. Assumptions are: (1) the inclination of the valley wall does not change below the level of the stream, (2) the cross section of the alluvial fill can be represented as an isosceles triangle, (3) the profile is a representative average of the entire stream length, and (4) the mean cross-sectional area is representative of all the streams in the area.

An estimate of 420 million cubic meters of potentially placer-bearing deposits has been calculated based on the measured length of all the streams (unit Fa on plate 4-1) and the mean cross-sectional area. The estimate should be accepted with caution because of the assumptions necessary for the calculation. If speculation by Weber and Hamilton (1984) that placer-bearing deposits do not occur upstream of the maximum down-drainage extent of glaciation is correct, this volume is reduced by 23 percent to 323 million cubic meters.

On the basis of this volumetric data and analytical data being prepared by the U.S. Bureau of Mines (Fechner and Balen, in prep.), a quantitative estimate of the placer potential of the area from may be possible.

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CHAPTER 5

GEOCHEMISTRY OF THE LIME PEAK - MT. PRINDLE AREA

WEST-CENTRAL CIRCLE QUADRANGLE, ALASKA

by

M.A. Wiltse

OBJECTIVES AND METHODOLOGY

The objectives of the geochemical portion of this appraisal program were to (1) locate and delineate significant occurrences of economically valuable minerals within the study area, and (2) to aid in the characterization of located deposits so that valid estimates of their economic potential could be made.

The major effort of the geochemical program was directed towards a detailed stream sediment and heavy mineral concentrate drainage survey. Rock geochemical studies were made of mineral occurrences found during the regional mapping phase of the area assessment, and the results are presented in chapter 6 of this volume. A few lines of soil samples were taken to investigate the possible occurrence of covered mineralization at specific sites. An 8-person geochemical sampling crew operated between July 15 and August 15, 1986 for a total of 224 man-days of sampling. The sampling crew was comprised of University of Alaska students working for ADGGS as student interns. During that time, 1557 stream sediment samples and 446 heavy mineral samples were collected from the study area for subsequent chemical and statistical data analysis. A 1/4 mile sample spacing was maintained between stream sediment samples, and heavy mineral concentrate samples were collected at every fourth sample station. Samples were also collected above stream junctions on minor side drainages. This stream sediment sampling density is 3 to 15 times greater than previous regional geochemical surveys conducted in the area.

Rock samples for trace element analysis were collected by team geologists whenever suspected mineralization was noted in the course of regional mapping. In addition, areas of visible mineralization or rock units of special interest were subjected to high density rock chip sampling on a site specific basis. This sampling resulted in 508 rock grab and composite chip samples being collected in 1986 (app. D), and 373 rock grab and composite chip samples being collected in 1987 (app. F). A total of 51 soil samples were collected from 2 sites suspected of having covered mineralization (app. E). The results of site specific sampling efforts are discussed under specific lode occurrences in chapter 6 of this volume.

Chapter 3 of this volume discusses the analytical data derived from 58 carefully selected rock samples collected for major oxide, rare earth, and trace element analyses.

Previous Geochemical Studies

Portions of several previous regional reconnaissance geochemical programs have involved the Lime Peak - Mt. Prindle area. Hinderman (1982) reported on the results of the National Uranium Resource Evaluation (NURE) stream sediment, rock, soil, water, and air radiometric survey made of the Circle quadrangle for uranium mineralization. That survey identified anomalous uranium in the sediments and pan concentrates of streams draining the Lime Peak, Quartz Creek,

and Mt. Prindle plutons, and in rock samples of the Lime Peak and Mt. Prindle plutons, but these anomalies were considered by Hinderman to be unrelated to economic occurrences of uranium ore. NURE Report K/UR-322 (1981) provides a compilation of chemical analyses for 1321 water samples collected in the Circle quadrangle. These samples were analyzed for 28 elements including uranium. Tripp (1986) Tripp and Crim (1983) and Tripp and others (1983) have compiled the results of the U.S. Geological Survey regional Circle quadrangle AMRAP geochemical stream sediment and non-magnetic heavy mineral concentrate surveys. Their maps show streams draining the Lime Peak pluton have high tin values. Jones and others (1983) use stream sediment trace element geochemistry as the basis for statistical discrimination between tin and uranium-bearing plutons in the east central portion of the Circle quadrangle. In their study, Lime Peak was treated as a known tin-bearing pluton and Mt. Prindle was treated as a known uranium-bearing pluton. Foster and others (1984) provide a compilation of 31-element geochemical analyses and locations for 1682 rock samples collected within the Circle quadrangle. Of these samples, 939 are classified as background samples, 727 are considered mineralized, and 16 are unclassified. The rocks have been further coded to one of 43 possible rock types. The reports of Burton and others (1985) and Warner and others (1986) contain useful stream sediment, pan concentrate, and rock geochemical data for local areas in and adjacent to the Lime Peak Pluton. Their data document tin occurrences in that pluton. The Union Carbide Company has released geochemical data for stream sediment samples collected within the Circle quadrangle. Mapco, Inc., actively investigated a series of claims located for uranium mineralization on a ridge above Roy Creek about three miles outside of the study area to the west. Those claims proved to be of greater interest for their occurrences of rare earth minerals than for uranium, but no commercial development was pursued. Cominco, Ltd. located claims on Mascot Creek, which flows north from the Lime Peak Pluton. Nome Creek, the Faith-, Hope-, and Charity Creek drainage, American, Porcupine, McKinley, and Bachelor creeks have long been actively mined and prospected for placer gold deposits.

Known Mineral Occurrences

Within the Lime Peak - Mt. Prindle area the most significant lode mineralization found includes chlorite-cassiterite greisen veins seen in both the Lime Peak and Mt. Prindle plutons and disseminated cassiterite found in the fine to medium grained zinnwaldite granite (TKg_3) of the Lime Peak pluton. The vein occurrences occasionally have sparse pyrite, chalcopyrite, and galena as small isolated mineral concentrations within the central fractures of the greisen veins. On the North Fork of Preacher Creek, greisen veins are accompanied by a pervasive iron and manganese oxides disseminated throughout the host granites along micro fractures and grain boundaries. Secondary green biotite and chlorite replacement of primary brown and secondary green biotite is widespread in the Hope plutonic suite. The chlorite of the Lime Peak greisens is host to rutile which microprobe analyses have shown to be of extraordinarily high Ta and Nb content (chap. 6, this volume).

The disseminated tin mineralization within the zinnwaldite granite on the southwest end of Lime peak is not apparent in hand specimen. Rocks of that pluton commonly contain white mica and topaz, and the overlying hornfelsed metaclastics are cut by a pervasive network of tourmalinized veins.

The gold mineralization in the Table Mountain area is of uncertain genesis and may have more than one source.. Menzie, and others (1987) report from 2.6-140 ppm gold in samples of

black biotite schist and in quartz veins adjacent to a fault zone that is intruded by a felsic dike. Samples having a lower concentration of gold were found northeast of Table Mountain in metamorphic rocks adjacent to a small granite stock. The gold is associated with pyrrhotite, arsenopyrite, chalcopyrite, and rare enargite and sphalerite (Menzie and others, 1987). They cite the pyrrhotite constrained sulfur fugacity of the hydrothermal system, fluid inclusion evidence of boiling and low salinity, moderate filling temperatures (320°C to 380°C for vapor-rich inclusions, and 255°C to 275°C for liquid-rich inclusions), the presence of gold in felsic dikes, and the presence of arsenopyrite in granite adjacent to a felsic dike as evidence that at least some of Table Mountain gold is genetically related to felsic dike generated hydrothermal activity.

SURFICIAL ENVIRONMENT

The Lime Peak - Mt. Prindle area lies in a region of well dissected uplands having approximately 3400 feet (1032 m) of relief. Minimum, elevations within the area are approximately 1900 feet (579 m) with Mt. Prindle representing a maximum elevation of 5286 feet (1611 m). Gentle to moderately steep vegetated slopes in areas underlain by regionally metamorphosed and sedimentary rocks contrast with moderately steep to steep bedrock-talus and rubble covered slopes in areas of plutonic igneous rocks.

Portions of the area experienced Pleistocene alpine glaciation, and glacial and glacial-fluvial deposits form locally important unconsolidated sedimentary deposits (chap. 4, this volume). Glacial features are concentrated around the major plutonic complexes, with the most extensive development of cirques and glacial valleys being associated with Mt. Prindle. There, the headwaters of virtually all the drainages show evidence of glaciation.

Mass wasting processes common to subarctic regions are seen through out the area. Important among these are solifluction, frost riving, and cryoplanation. The area's glacial history has resulted in varied sequences of unconsolidated sediments in the lower reaches of many streams. Glacial drift and outwash sediments are present down stream from cirque valleys. Rawlinson (chap. 4, this volume) has also mapped outwash, outwash-terrace, outwash-fan, alluvial-fan,and alluvial-terrace deposits.

Drainages that were sampled in the geochemical survey range from small headwater streams less than 20 inches (50 cm) deep and 3 feet (1 m) wide to large creeks that are several feet (1-2 m) deep and over 100 feet (30 m) wide during periods of normal flow.

CLIMATE & VEGETATION

The study area is subjected to annual temperature extremes ranging from -53°C to +33°C (Brown, and Kreig, 1983) with a mean annual temperature of -5.5°C and a mean summer temperature of 14°C (Reger, 1975). Precipitation at Circle Hot Springs from 1940-1969 averaged 10.9 inches (27.8 cm) per year with about half falling as rain during the summer months (Reger, 1975). Winter precipitation is in the form of snow.

Tree line in the area ranges from 3400 feet (1030 m) on the south facing slopes to 3100 feet (940 m) on the north facing slopes (Reger, 1975). Temperature, soil composition, soil water content, and permafrost all affect local vegetation. Brown and Kreig (1983) provide a diagrammatic representation of vegetative types and distribution (fig. 5.1) for Wickersham Dome, located 40 miles (67Km) west of the present map area, which summarizes the primary associations

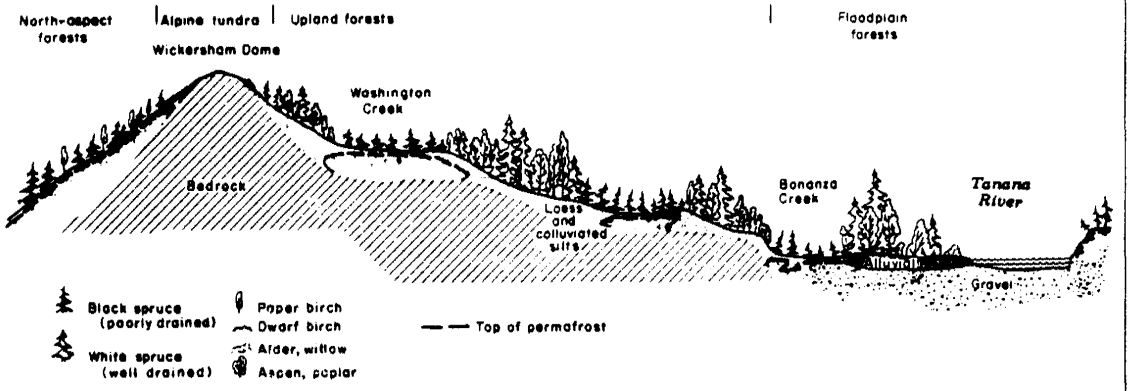


Figure 5.1 Idealized cross section of topography, vegetation, permafrost, and active layer from Fairbanks to Wickersham Dome (Brown and Kreig, 1983).

of these factors. Reger (1975) reports that two distinct types of alpine tundra are found, a sedge tundra at wet sites, and a dryas mat tundra in dry locations.

Permafrost in the area is common but discontinuous. Depth to permafrost ranges from about three feet (1 m) on upper slopes to 16-24 inches (40-60 cm) on fine-grained, wet, tussock covered lower slopes (Haugen and Brown, 1978). Vegetation provides some indication of permafrost conditions in the immediate area. White spruce, aspen and white birch are usually seen in permafrost-free areas or where the active layer is deeper than 3 feet (1 m). The sediments beneath or immediately adjacent to stream beds are usually free of permafrost, as are full south facing slopes of intermediate elevation. North facing slopes, wet lower slopes, and valley bottoms usually have extensive near surface permafrost (Brown and Kreig, 1983).

SAMPLE COLLECTION, PREPARATION, AND ANALYSIS

Sample Collection

Eight people were employed to collect samples for stream sediment and heavy mineral analysis. Prior experience of the personnel varied from that of advanced undergraduate geology students to Masters degree candidates who had several years experience in mineral exploration. The sampling team received written instructions and a day of training in collection methods during the first day of the sampling program.

Stream sediment samples were collected at 1/4 mile (400 m) intervals along primary streams and immediately above the junctions of minor side drainages. All sediment samples were taken from active stream channels at sites characterized by relatively abundant coarse- to fine-sand sized material. Near stream headwaters, accumulations of fine sediments were not always

available. In such cases the fine sediments trapped in the root mass of mosses attached to boulders in the active stream were collected. When these 'moss-trap' sediments were collected, care was taken to minimize the amount of organic matter included in the sample by washing the sediments from the roots into a standard gold pan for transfer to the sample bag. At each sample site, fine sediment material was composited from at least 6 sample aliquots collected at different sub-sites within approximately +/- 100 feet (approximately 30 m) of the location of record.

Heavy mineral samples were collected at one mile (1600 m) intervals along principal streams in the map area, and immediately above the junctions of minor side drainages. Sites were chosen at which the stream cobbles ranged in size from 1 to 4 inches (approximately 2.5-10 cm) in diameter. At these sites, areas of fine sediment are interspersed with the coarser material so that the location of record served for both a stream sediment and heavy mineral sample. A shovel was used to collect material from at least 6 different sub-sites at the sample location. This material was sieved successively through 10-, 18-, and 35-mesh screens at stream side to obtain approximately 300-500 grams of -35 mesh sediment. During the screening process an attempt was made to retain all the -35 mesh to +200 mesh material. All samples were placed in white olefin sample bags and allowed to air dry prior to shipment.

Duplicate samples were collected systematically for both stream sediment and heavy minerals. When taking a duplicate sample, the entire sample collection process was repeated on site. All samples were assigned a unique number from a randomized list of sample numbers and designated as stream sediment (S) or heavy mineral (P) samples. Duplicate samples were cross referenced in field notes but were not identified on any of the materials submitted to the laboratory. The samples and duplicates were subsequently numerically ordered prior to submittal for analysis. In addition to duplicate samples, previously prepared control samples were inserted in both the stream sediment and heavy mineral sample batches sent to the laboratory. The duplicate samples provide a basis for judging the precision of the overall sampling-analytical process. The control samples provide a basis for judging whether there has been any systematic long term drift in analytical results during the analysis of the samples, and the randomization of the samples provides a means of checking for cross contamination of samples.

The sample base for the stream sediment geochemical survey maps presented in this report consists of a combined total of 1472 samples. Of these, 30 samples are duplicates. The stream sediment sample data are tabulated in Appendix B. The sample base for the non-magnetic heavy mineral stream sediment geochemical maps presented in this report consists of a combined total of 440 samples. Of these, 15 samples are duplicates. The heavy mineral sample data are tabulated in Appendix C. Statistical analysis of the data was executed on a slightly larger sample set (tables 5.1, 5.2) because some samples immediately adjacent to the study area were included. None of those auxiliary samples were anomalous but they were helpful in defining background populations.

Sample Preparation and Analysis

Both stream sediment and heavy mineral samples were accumulated for a week prior to shipment to the contract laboratory. Samples were arranged in numerical order in a drying tent until the day of shipment. All sample shipments were prepared by one senior geochemical sampler. Samples were packed in double thickness burlap bags for shipment. Blind control samples were introduced to the sample string at this time. Submittal forms were filled out in

Table 5.1. Parameter summary statistics and number of stream sediment samples statistically analyzed from each of four major lithologic terrains in the Lime Peak - Mt. Prindle area, Circle quadrangle, Alaska. Parameter values are in parts per million (ppm) unless stated otherwise. FCS = Fossil Creek section, M/GG = Maroon and green grit, QRM = Quartz-rich metaclastics, IGN = Igneous rocks.

MEAN

Subset	Ag	As	Au(ppb)	Ba	Cu	Pb	Sb	U	W	Zn
FCS	0.8	11.1	9.8	1260.0	46.3	20.9	2.4	5.9	14.8	145.4
M/GG	0.7	10.4	10.1	1036.0	26.7	44.6	1.4	7.2	6.7	165.0
QRM	0.8	19.7	18.7	615.0	23.8	21.4	1.9	9.1	14.6	96.0
IGN	1.0	18.8	13.1	665.0	18.6	55.9	1.0	50.2	13.0	190.5

STANDARD DEVIATION

Subset	Ag	As	Au(ppb)	Ba	Cu	Pb	Sb	U	W	Zn
FCS	0.3	4.0	7.1	260.9	19.1	15.3	1.5	4.5	14.7	91.9
M/GG	0.3	4.3	8.6	439.4	8.5	41.6	1.4	7.8	3.3	112.1
QRM	0.4	24.9	91.0	174.7	13.3	34.3	2.5	19.6	19.0	93.1
IGN	1.4	18.4	8.0	234.8	12.3	63.3	0.7	57.0	9.1	170.8

MINIMUM VALUE

Subset	Ag	As	Au(ppb)	Ba	Cu	Pb	Sb	U	W	Zn
FCS	0.5	5.0	5.0	700.0	14.0	2.0	0.8	2.3	7.0	65.0
M/GG	0.5	3.0	5.0	400.0	9.0	6.0	0.3	2.0	4.0	20.0
QRM	0.5	2.0	5.0	100.0	1.0	2.0	0.3	0.9	4.0	17.0
IGN	0.5	3.0	5.0	100.0	3.5	8.0	0.2	3.0	4.0	31.0

triplicate for all types of samples and listed all samples included in the shipment. The laboratory treated each shipment of samples of a given type as a single batch. Samples were shipped by air freight.

Upon arrival at the contract laboratory, the stream sediment samples were thoroughly dried at 80°C and sieved to -80 mesh. One aliquot of the -80 mesh fraction was weighed and subjected to thermal neutron irradiation in a thermal neutron flux of 2×10^{13} thermal neutrons/cm^2 at the McMaster University 5 megawatt pool type reactor. A second -80 mesh sample aliquot was weighed and digested in hot LeFort aqua regia prior to analysis of the resulting solution for Cu, Pb, Zn, and Ag by atomic absorption spectroscopy. After irradiation, the first sample aliquot was quantitatively analyzed for 26 elements using automated Canberra Series 85 multi-channel analyzers and automated data processing algorithms. The following elements were analyzed by

Table 5.1. (Con.)

MAXIMUM VALUE

Subset	Ag	As	Au(ppb)	Ba	Cu	Pb	Sb	U	W	Zn
FCS	1.0	22.0	26.0	1900.0	86.0	74.0	8.8	26.3	41.0	530.0
M/GG	1.0	29.0	51.0	4700.0	53.0	300.0	12.0	52.5	15.0	850.0
QRM	2.0	310.0	1200.0	1500.0	160.0	920.0	26.0	334.0	170.0	1100.0
IGN	9.0	140.0	43.0	1600.0	110.0	440.0	5.7	396.0	57.0	980.0

NUMBER OF SAMPLES WITH VALUES EXCEEDING DETECTION LIMIT

Subset	Ag	As	Au	Ba	Cu	Pb	Sb	U	W	Zn
FCS	6	32	8	33	33	33	33	33	5	33
M/GG	11	178	41	179	179	179	178	179	40	179
QRM	52	1129	184	1134	1134	1131	1130	1135	406	1135
IGN	39	207	34	209	210	210	207	210	144	210

Instrumental Neutron Activation Analysis (INAA): As, Au, Ba, Ca, Co, Cr, Cs, Fe, Hf, Mo, Na, Ni, Rb, Sb, Sc, Se, Ta, Th, U, W, La, Ce, Sm, Eu, Yb, Lu.

The -35 mesh heavy mineral samples were thoroughly dried at the laboratory and processed to obtain the non-magnetic heavy mineral fraction in accord with the flow diagram shown in figure 5.2. The non-magnetic heavy mineral fraction was subsequently irradiated in the McMaster University thermal neutron reactor but was subjected to a neutron flux having primarily fast neutrons as opposed to the slower average neutron speed of the flux used to irradiate the stream sediment samples. This radiation (informally termed 'epithermal radiation') consisted of a fast-neutron flux of 5×10^{12} neutrons/cm^2 sec^{-1} and resulted in exciting only 16 elements for analysis. The epithermal irradiation allowed Ag, As, Au, Ba, Co, Cr, Fe, Mo, Sb, Sc, Sn, Ta, Th, U, W, and La to be analyzed by INAA methods. This more restrictive analytical procedure was chosen to avoid sampling problems inherent to splitting a heavy mineral sample prior to its analysis for gold, tin, and tungsten and to allow the timely recovery of the entire heavy mineral fraction for the analysis of tin. Unlike epithermally irradiated samples which can be handled routinely within a few weeks, It commonly requires several months for the radiation from thermally irradiated samples to decay sufficiently to allow them to be analyzed in an open laboratory.

Early in the planning stages for the heavy mineral geochemical survey, it was decided to dedicate limited resources to improving the quality of the data obtained rather than generate a broader range of less precisely determined analytical data from more variable original samples. This was done by developing a procedure for collecting heavy mineral samples by sieving rather than panning, and by using heavy liquid separation to acquire the final analytical fractions. These methods are inherently more expensive and result in small yields of heavy minerals but reduce

Table 5.2. Parameter summary statistics and number of heavy mineral concentrate samples statistically analyzed from each of four major lithologic terrains in the Lime Peak - Mt. Prindle area, Circle quadrangle, Alaska. Parameter values are in parts per million unless stated otherwise. FCS = Fossil Creek section, M/GG = Maroon and green grit, QRM = Quartz-rich metaclastics, IGN = Igneous rocks.

MEAN

Subset	Ag	As	Au	BA	Sb	Sn	Ta	U	W	SAWT	HMWT
FCS	0.000	0.467	0.664	272.388	0.093	17.868	0.296	1.042	2.972	201.746	0.706
M/GG	0.002	0.348	1.595	1010.279	0.061	21.046	0.437	1.070	3.021	277.320	1.099
QRM	0.010	1.612	32.497	15.299	0.366	53.440	0.733	0.582	9.065	295.781	6.083
IGN	0.019	1.300	1.687	37.585	0.161	118.990	1.312	2.447	13.757	294.735	1.747

STANDARD DEVIATION

Subset	Ag	As	Au	BA	Sb	Sn	Ta	U	W	SAWT	HMWT
FCS	0.000	0.313	1.364	564.806	0.077	51.375	0.450	1.905	4.481	89.662	0.499
M/GG	0.004	0.534	5.716	4078.835	0.142	76.238	0.835	2.283	8.187	126.380	2.630
QRM	0.014	2.705	126.768	35.630	0.756	166.953	1.411	1.136	25.574	82.654	21.536
IGN	0.024	3.594	2.307	32.571	0.543	174.447	1.965	2.467	20.023	85.504	2.254

MINIMUM VALUE

Subset	Ag	As	Au	BA	Sb	Sn	Ta	U	W	SAWT	HMWT
FCS	0.000	0.065	0.023	14.144	0.007	0.011	0.010	0.017	0.008	46.500	0.054
M/GG	0.000	0.000	0.010	0.839	0.000	0.001	0.004	0.004	0.000	41.300	0.003
QRM	0.000	0.000	0.010	0.487	0.000	0.000	0.004	0.001	0.000	51.400	0.002
IGN	0.001	0.017	0.021	2.569	0.002	0.005	0.041	0.009	0.000	122.100	0.009

random sample variability while increasing the reliability of the data. As a consequence of the higher costs incurred and the smaller analytical fractions obtained, several elements were excluded from analysis, including B, Be, Bi, Nb, and F, five elements commonly associated with tin deposits. The exclusion of these elements from the present study in favor of obtaining better heavy mineral data for tin is justified because previous regional surveys have already established broad anomalies for these elements and the presence of tin mineralization. It was believed that emphasis should be place on getting the best possible data for the distribution of tin within those broad regional anomalies.

The non-magnetic heavy mineral fraction from samples yielding sufficient material (4 grams) was pulverized and analyzed for tin by X-ray fluorescence analysis of pressed powder pellets.

Table 5.2. (Con.)

MAXIMUM VALUE

Subset	Ag	As	Au	BA	Sb	Sn	Ta	U	W	SAWT	HMWT
FCS	0.000	1.139	3.103	2090.343	0.270	179.595	1.215	6.311	12.151	339.400	1.450
M/GG	0.014	2.689	22.252	22558.820	0.911	509.950	3.338	9.538	46.359	761.700	15.600
QRM	0.063	19.485	1066.395	306.543	6.485	1015.678	15.928	10.490	198.697	670.500	6.083
IGN	0.130	24.979	6.650	110.864	3.326	672.514	12.396	9.275	89.301	613.600	13.800

NUMBER OF SAMPLES WITH VALUES EXCEEDING DETECTION LIMIT

Subset	Ag	As	Au	BA	Sb	Sn	Ta	U	W	SAWT	HMWT
FCS	0	13	5	13	13	12	8	13	10	13	13
M/GG	24	56	15	48	53	54	31	54	54	56	56
QRM	59	317	144	207	311	302	277	315	304	323	323
IGN	32	47	8	38	43	53	49	54	53	54	54

The weight of the non-magnetic heavy mineral fraction recovered from many samples, however, was less than a gram. These undersized samples were qualitatively scanned for tin using an X-ray fluorescence spectrometer. If a strong tin signal was detected, the sample was fused into a lithium tetraborate glass disk and quantitatively analyzed by X-ray fluorescence spectroscopy. If the qualitative scan of the sample showed little or no tin present, the sample was pulverized and subsequently analyzed by quantitative optical emission spectroscopy.

In addition to the analytical data, the dry weight of the total -35 mesh sediment sample was recorded as was the weight of the non-magnetic heavy mineral fraction.

All analytical work was conducted by Nuclear Activation Services, Ltd., Hamilton, Ontario, Canada and their affiliate laboratory, X-Ray Assay Laboratories, Ltd., Don Mills, Ontario, Canada under State of Alaska contract no. CC 10-7-0006 issued July 1, 1986 following competitive bid. (Note: identification of the laboratory contracted for this study does not constitute preferential State of Alaska endorsement of any particular commercial laboratory.)

Compilations of analytical results obtained from all types of samples collected in this study, except major oxide samples, are contained in Appendices B to F. These tables include results for stream sediment, heavy mineral, rock trace element, and soil samples. Major oxide analyses are summarized in chapter 3 (this volume). All data tables include location parameters referenced to the sample location map, plate 5-1. A brief statistical summary of the data for the stream sediment and heavy mineral samples is included in tables 5.1 and 5.2 respectively. Histograms and cumulative frequency diagrams generated in the process of identifying the anomalous populations of the samples presented on the summary geochemical maps are not included in this report but are available for inspection by interested parties upon request.

FLOW CHART FOR TREATMENT OF HEAVY MINERAL SAMPLES

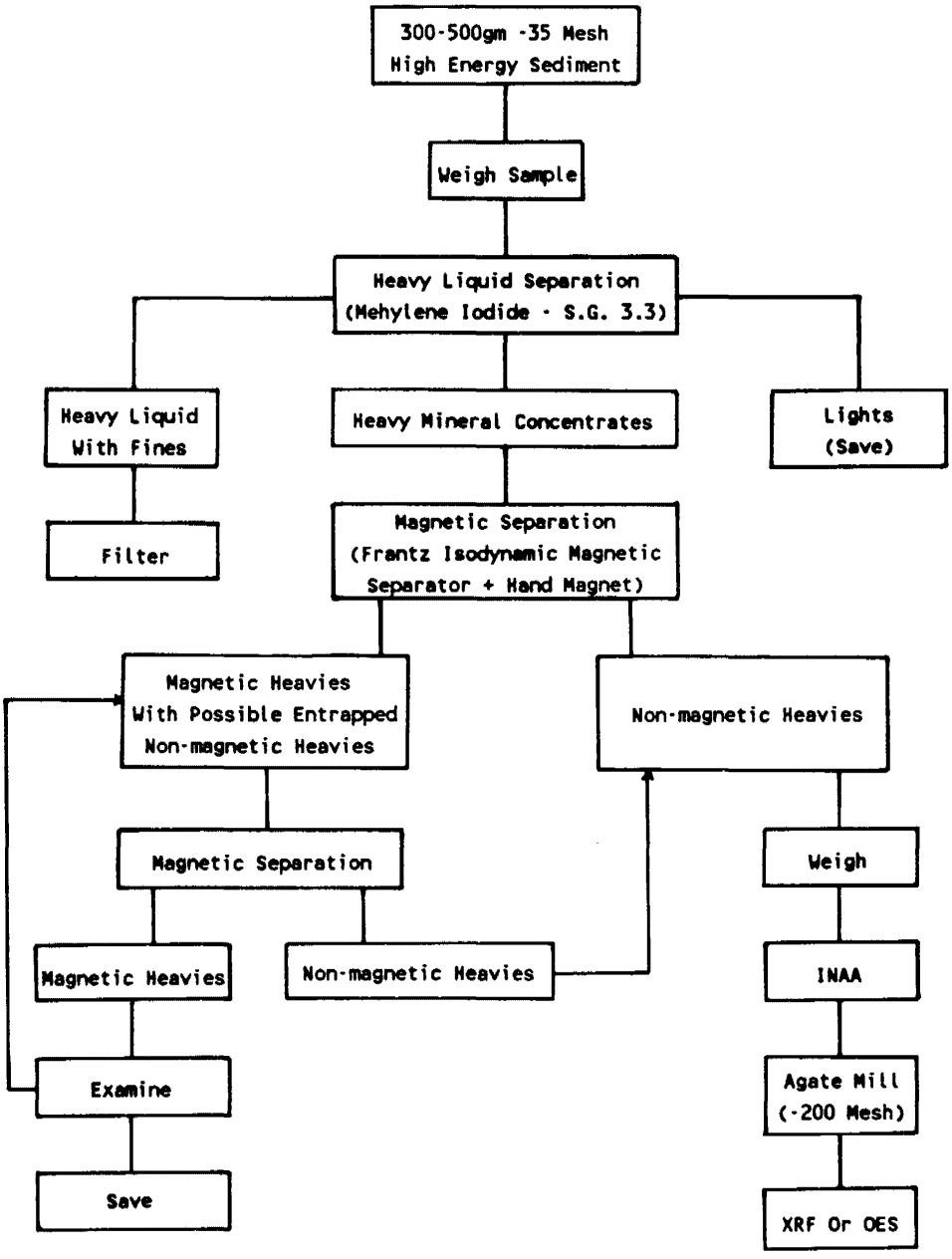


Figure 5.2 Flow chart outlining the procedure used to obtain the non-magnetic heavy mineral fraction from -35 mesh sample material.

MAP PREPARATION

Threshold Selection

Anomalous and threshold populations for 9 elements of the heavy mineral data are summarized as four-element and five-element suites respectively on plate 5-2 and plate 5-3. The anomalous and threshold values of 10 selected elements of the stream sediment data are displayed as six-element and five-element suites respectively on plate 5-4 and plate 5-5. The heavy mineral suite of elements includes Ag, As, Au, Ba, Sb, Sn, Ta, U, and W. The stream sediments were not analyzed for Sn and stream sediment Ta values were below the analytical detection limit for over half the samples and therefore were not statistically analyzed. In addition to Ag, As, Au, Ba, Sb, U, and W, the stream sediment element suite includes Cu, Pb, and Zn data that were not available for the heavy mineral samples. Although Au is below analytical detection limit for the majority of both heavy mineral and stream sediment samples, it is included in the summary maps because its high unit value as well as the history of placer mining in the study area makes any occurrence of gold of some interest.

Not all elements available for each sample type have been statistically analyzed. For example, because field mapping failed to disclose any indications of a geologic environment conducive to Cr, Ni, or Co mineralization, data for these three elements were not treated. An exploratory analysis of uranium's correlation with Rb and Th showed a high degree of correlation and thus most of the information that these elements would contribute to locating mineralization is provided by the analysis that has been made of the U data. The data for Mo were not statistically analyzed because only 260 stream sediment samples had values above detection limit and only 26 heavy mineral samples had values greater than zero.

A consistent strategy was used to define anomalous and threshold levels for a given element. An initial review of the data showed that samples taken from different geologic terrains had quite different means and standard deviations for several of the elements of interest (tables 5.1, and 5.2 and figs. 5.3, 5.4). Therefore, both the stream sediment and heavy mineral data were subset on the basis of lithology prior to further statistical analysis. This was done by segregating samples into four major lithologically-based data subdivisions: Fossil Creek section, Maroon/green grit, Quartz-rich metaclastics, and Igneous rocks. After this initial partitioning of the data, the values for each element in each of the data subdivisions were subjected to histogram - cumulative frequency analysis (HCFA) (Sinclair, 1976; Stanley, 1986).

Typical output from the cumulative frequency analysis program is shown in figure 5.5. On the cumulative frequency - probability plots generated in this study, the upper and lower 2% of sample values for a population are defined as the upper and lower threshold values respectively of that population. During data analysis, a decision must be made to use either original concentration values or log-transformed concentration values. The appropriate choice is usually apparent from visual inspection of the data histogram, normal, and log-normal cumulative frequency - probability plots.

The definition of 'anomalous values' used in selecting anomalous samples for the geochemical multi-element suite maps excludes any samples having values that fall within the area of overlap between the highest population and the second highest population. Using figure 5.5 as

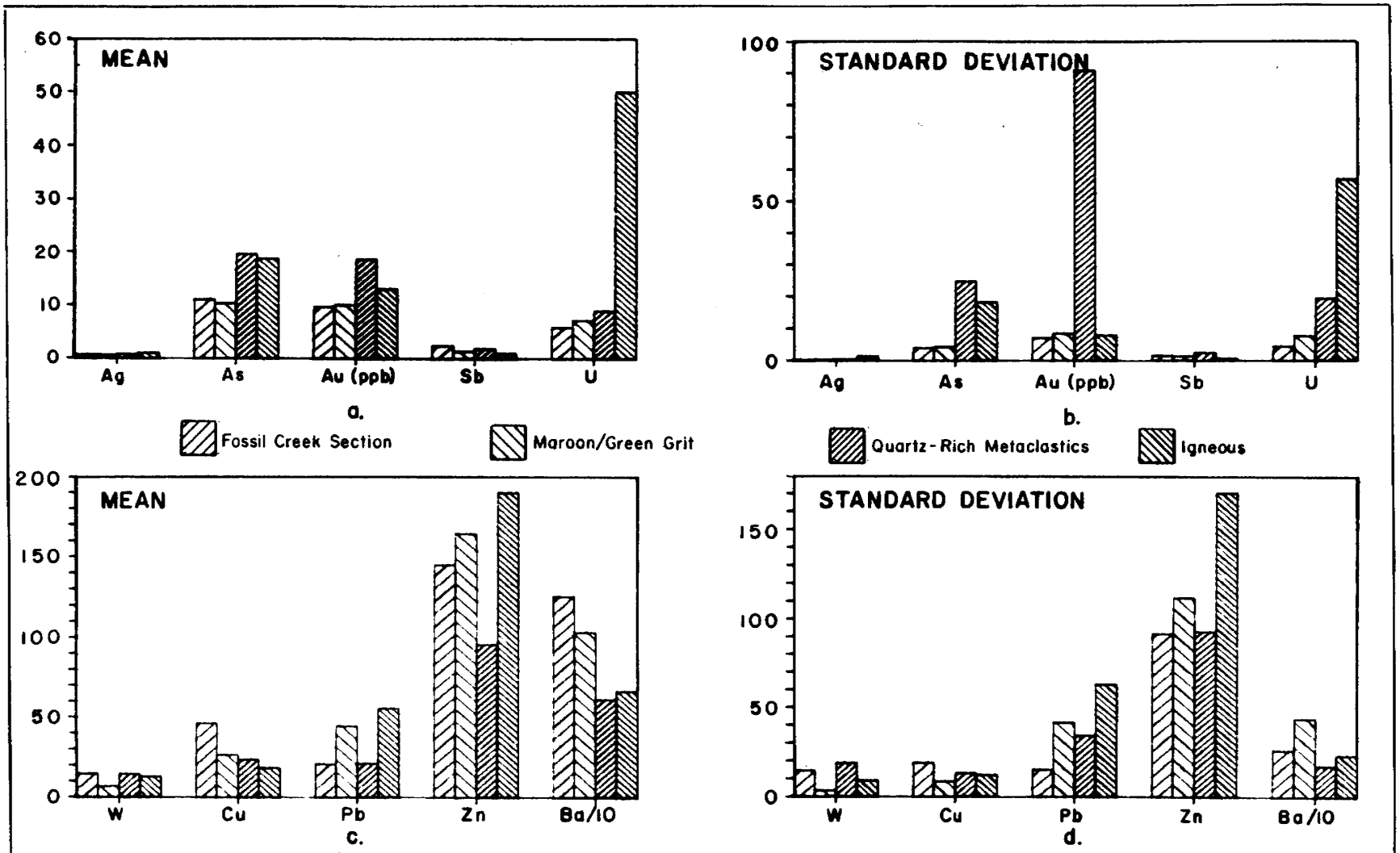


Figure 5.3 Bar graphs showing means and standard deviations of element concentration levels in the -80 mesh fraction of stream sediments collected from four lithologically defined areas in the Lime Peak-Mt. Prindle area. All values are expressed as parts per million except Au which is stated in parts per billion (ppb). Barium values are multiplied by a factor of 0.1 for display purposes.

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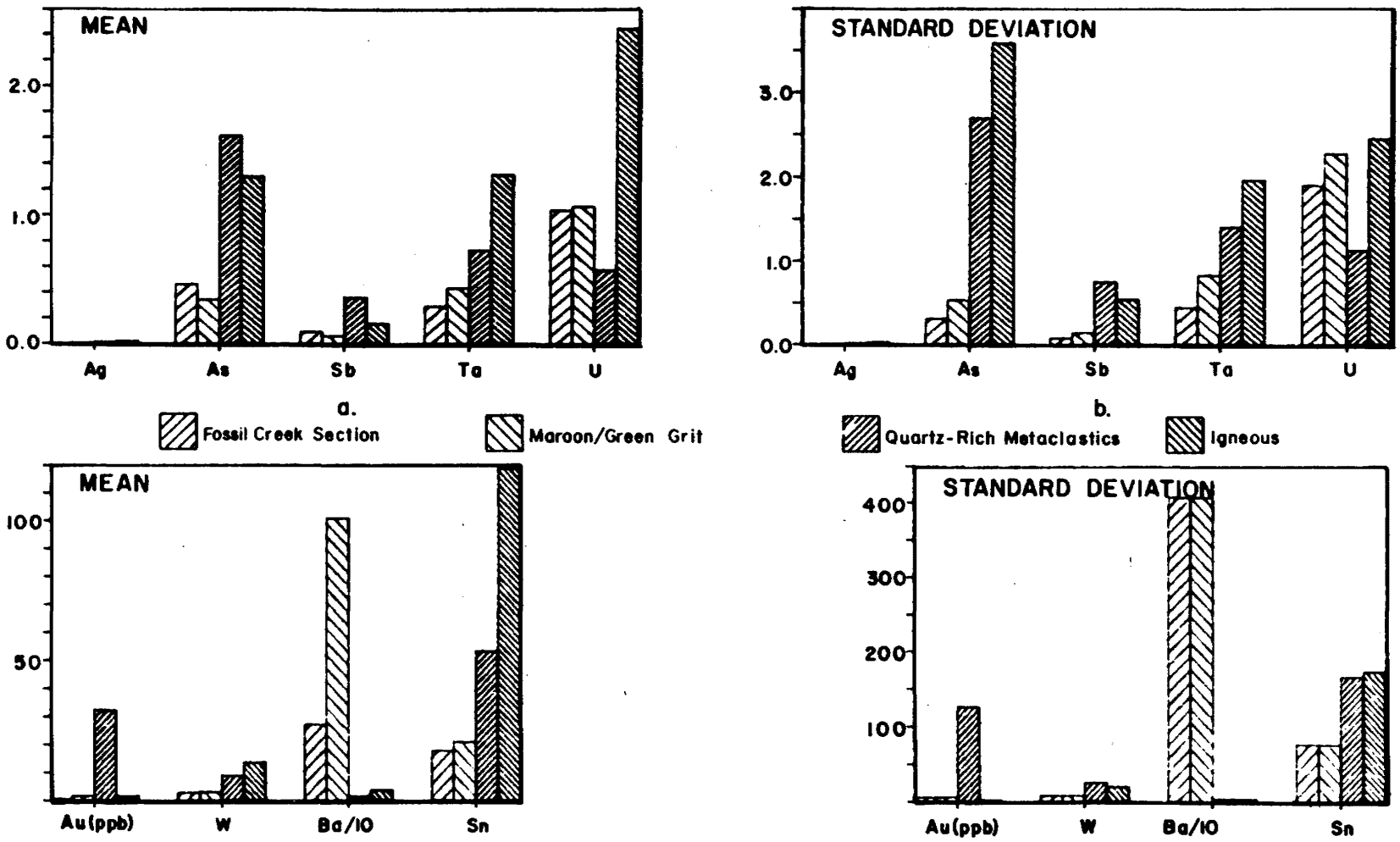


Figure 5.4 Bar graphs showing means and standard deviations of element concentration levels in the -35 mesh non-magnetic heavy mineral fraction of sediments collected from four lithologically defined areas in the Lime Peak-Mt. Prindle area. Values are in parts per million / gram of -35 mesh sample except Au (parts per billion (ppb) / gram of -35 mesh sample). Barium values are multiplied by a factor of 0.1 for display purposes.

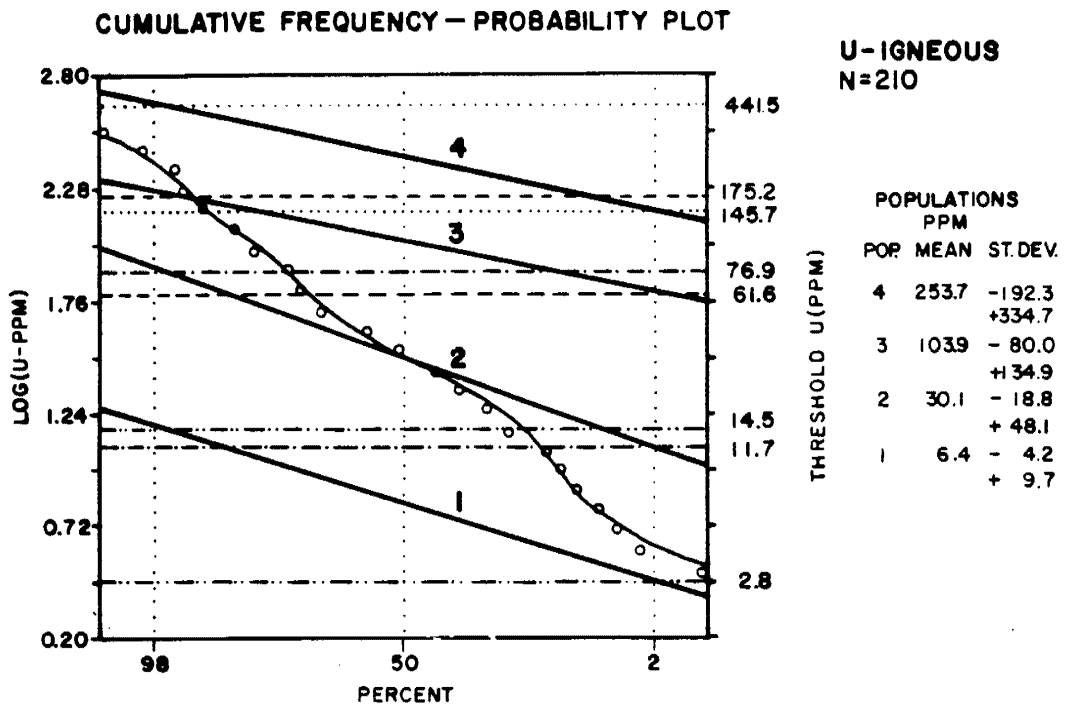


FIgure 5.5 Cumulative frequency - probability plot for uranium concentration values of samples collected in igneous terranes. The data have been Log transformed and show four distinct sample populations within the igneous subset of U data. Limiting values for each population are arbitrarily set at a lower and upper limit of 2 and 98 cumulative percent respectively. Sample numbers of population 4 having U concentration values greater than 175.2 ppm are defined as anomalous on the composite elemental suite map of Plate 5-4.

an example, examination of the cumulative frequency - probability plot shows the presence of 4 distinct log-normal populations of uranium values for samples collected within areas underlain by igneous bedrock. In this case, those samples having U concentration values greater than 175.2 ppm are defined as anomalous. Those samples whose U concentration falls in the overlap region between the highest and second highest population shown in figure 5.5 (145.73 to 175.2) are defined as the threshold or 'probable anomalous' population on the geochemical suite maps. Except for Au and Ag these criteria are adhered to in defining 'anomalous' and 'probable anomalous' values for each element shown on the geochemical stream sediment and heavy mineral multi-element suite maps.

Where possible, the above procedure was followed for each element in each of the four lithologically-controlled sample populations. For gold and silver, however, so many samples had elemental concentration values below the limit of detection that the individual lithologically subset sample populations did not provide enough data for HCFA. For the analysis of gold and silver stream sediment data, therefore, sample values for the Fossil Creek section and Maroon/green grit subsets were combined. For similar reasons, gold data from all heavy mineral samples were treated as one sample set, and heavy mineral silver data from the three non-igneous sample

subsets also were combined. Anomalous and threshold values for the precious metal data were determined by visual inspection of the data histograms only. Because fewer heavy mineral samples were collected, it was consistently necessary to combine the Fossil Creek section and Maroon/green grit heavy mineral sample values for all elements in order to obtain sufficient sample points for HCFA data analysis.

Stream sediment samples were also analyzed for 6 rare earth elements (REE's): La, Ce, Sm, Eu, Yb, and Lu. Preliminary data evaluation included the comparison of basic sample population parameters for each of the above elements plus U in each of the four lithologically-based subsets using stem-and-leaf plots and box plots (Velleman and Hoaglin, 1982), These data were then combined into two groups, non-igneous samples and igneous samples. Using the method of Zhou (1985), multivariate outliers in each sample subset were identified and removed to form two additional subsets. The result of this preliminary processing was the division of the stream sediment samples into a total of 4 data subsets: non-igneous multivariate normal (MVN) samples, non-igneous MVN-outlier samples, igneous MVN samples, and igneous MVN-outlier samples. A Pearson correlation matrix was calculated for each of the four sets of REE and U data. The correlation of each REE and U relative to La for each data subset is shown in figure 5.6. In this figure the length of the bar for each element is proportional to the magnitude of that elements correlation with La. All correlations were positive. It is clear from the high correlation coefficients

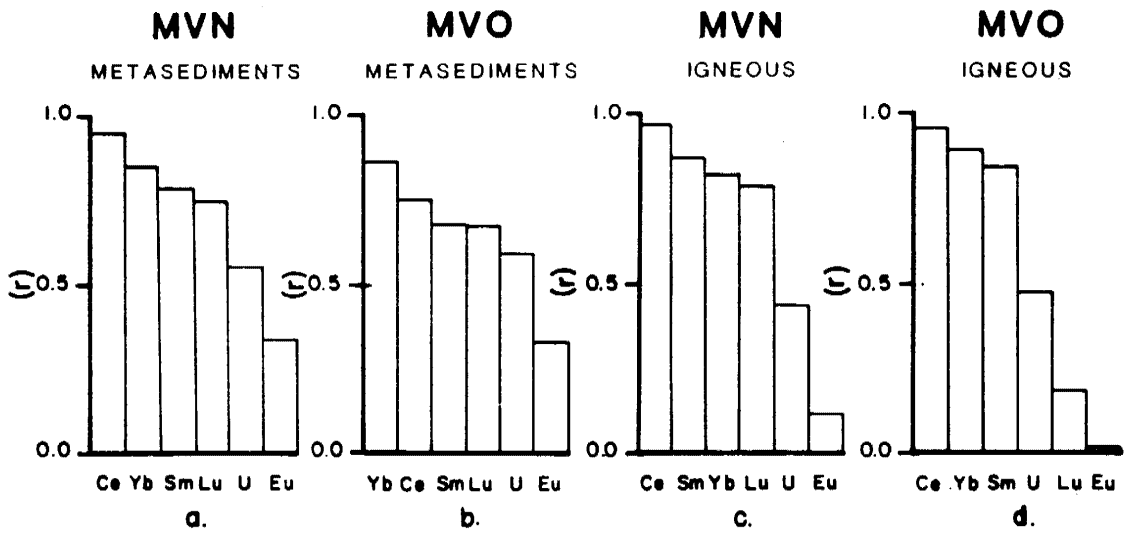


Figure 5.6 Pearson correlation coefficients (r) for La relative to U and 5 rare earth elements in the -80 mesh fraction of stream sediments from the Lime Peak - Mt.Prindle area. a.- Multivariate Normal (MVN) metasedimentary data; b.- Multivariate Outlier (MVO) metasedimentary data; c.- MVN igneous data; d.- MVO igneous data.

of all the elements, except Eu, with respect to La, that the La data alone will contain most of the information about the distribution of REE's in the study area. The high correlation between La and U indicates that, in general, the geographical distribution of the REE's will tend to parallel that of uranium. These two conclusions are valid for both anomalous and background populations of the igneous and non-igneous sample subsets.

The Lime Peak - Mt. Prindle area La data was then subjected to histogram - cumulative frequency analysis following the same strategy and using the same subsetting criteria as was used for the other elements analyzed by this method. The La data also were subjected to trend surface residual analysis. The results of these analyses may be regarded as indicating not only the geographical distribution of La but that of the other REE's as well.

DESCRIPTION OF RESULTS

As an aid in interpreting the multi-element maps, and as a precaution to avoid missing lower level anomalies, another set of maps for stream sediment and heavy mineral samples was compiled. For these maps the entire highest value population of data, including any overlap with the second highest population, was considered anomalous. Again using the uranium data distribution shown in figure 5.5 as an example, the anomalous sample population can be defined as all samples with uranium concentration values greater than the lower threshold value of the highest sample population, in this case, 145.73 ppm. The threshold population can then be defined as including all samples having uranium concentration values which fall between the lower threshold value of the anomalous population and the upper threshold of the third lowest population, in this case, 76.92 ppm. With the exception of Au and Ag, a similar procedure was used for defining the anomalous and threshold values for elements and samples of various other data subsets. Threshold and anomalous populations for some data were not redefined because to do so would have included so many samples from ranges of major overlap with background samples that all meaningful geographic distribution patterns would have been destroyed. Therefore, in some cases the anomalous areas shown in the text figures 5.7 to 5.10 are based directly on the 'anomalous' and 'probable anomalous' sample distributions compiled on plates 5-2 through 5-5. Compilations of threshold and anomalous samples based, in some cases, upon the modified definition do not significantly change any of the basic patterns of anomaly distributions shown on plates 5-2 through 5-5. The results of the application of the modified anomalous- and threshold-population definitions to the data are summarized in the page-sized multi-element suite maps shown in figures 5.7 through 5.10. On these summary figures the areas enclosed include the sample sites for both the anomalous and the threshold populations. The major effect is to broaden some of the areas previously recognized as anomalous.

The anomalous areas shown in figures 5.7 through 5.10 are interpretive with respect to the Hope intrusive suite in that they do not always enclose all samples external to the plutons that exceed the lower threshold value for the element in question. For example, Mascot Creek samples exceed M/GG threshold or anomalous values for many elements over most of that stream's length within the study area. Mascot Creek has not been shown as anomalous outside the Lime Peak pluton in the summary figures because although the samples exceed local threshold limits, the anomalous material is believed to have been derived solely from the Lime Peak pluton. Similarly, the threshold and anomalous areas for some elements on the south side of the Lime Peak pluton and for the American Creek Sn anomalies of the Mt. Prindle pluton have been confined to the

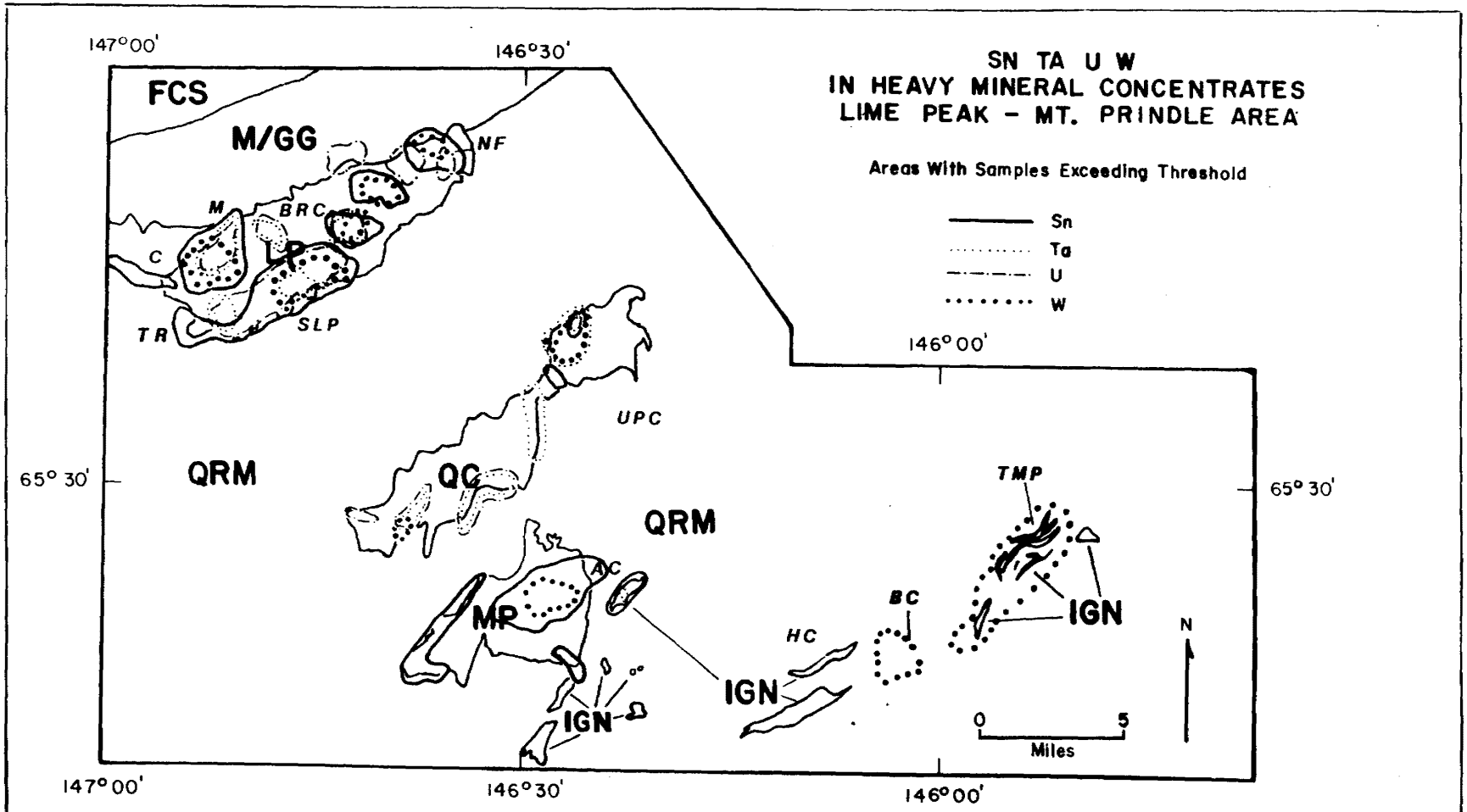


Figure 5.7 Approximate location of areas from which -35 mesh non-magnetic heavy mineral samples having above threshold concentration levels of Sn, Ta, U, and W were collected. Site names identify areas of significant anomalies or observed mineralisation. FCS=Fossil Creek section; M/GG=Maroon and green grit; QRM=Quarts-rich metaclastics; IGN=igneous rocks: M=Mascot Creek, C=The Cliff, TR=Tin Ridge, NF=North Fork prospect, UPC=Upper Preacher Creek prospect, AC=American Creek, HC=Homestake Creek, BC=Bachelor Creek, TMP=Table Mt-Pinnell Trail.

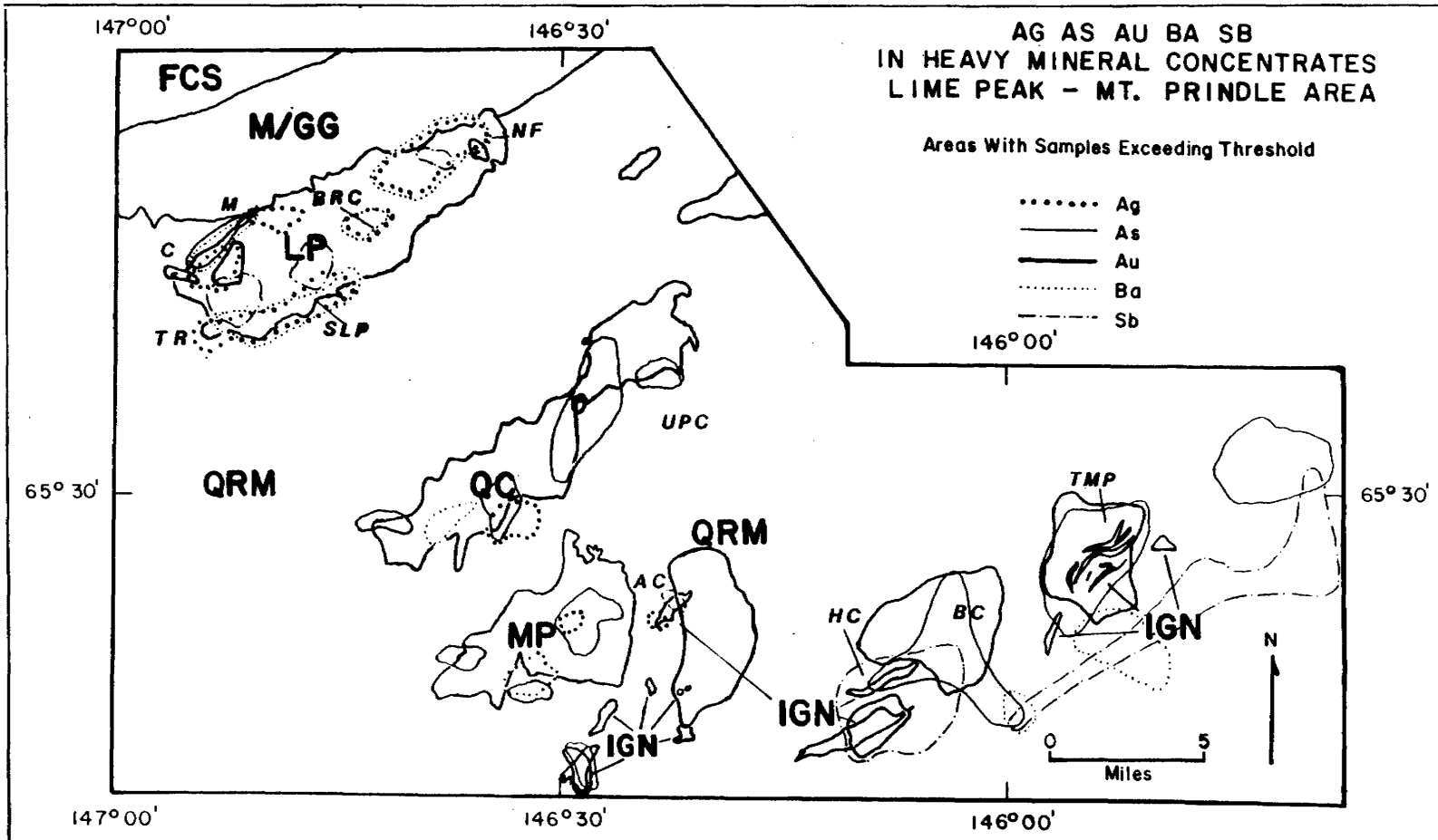


Figure 5.8 Approximate location of areas from which -35 mesh non-magnetic heavy mineral samples having above threshold concentration levels of Ag, As, Au, Ba, and Sb were collected. Site names identify areas of significant anomalies or observed mineralization. FCS=Fossil Creek section; M/GG=Maroon and green grit; QRM+Quarts-rich metaclastics; IGN=igneous rocks: M=Mascot Creek, C=The Cliff, TR=Tin Ridge, NF=North Fork prospect, BRC=Bedrock Creek prospect, UPC=Upper Preacher Creek prospect, AC=American Creek, HC=Homestake Creek, BC=Bachelor Creek, TMP=Table Mountain-Pinnell Trail.

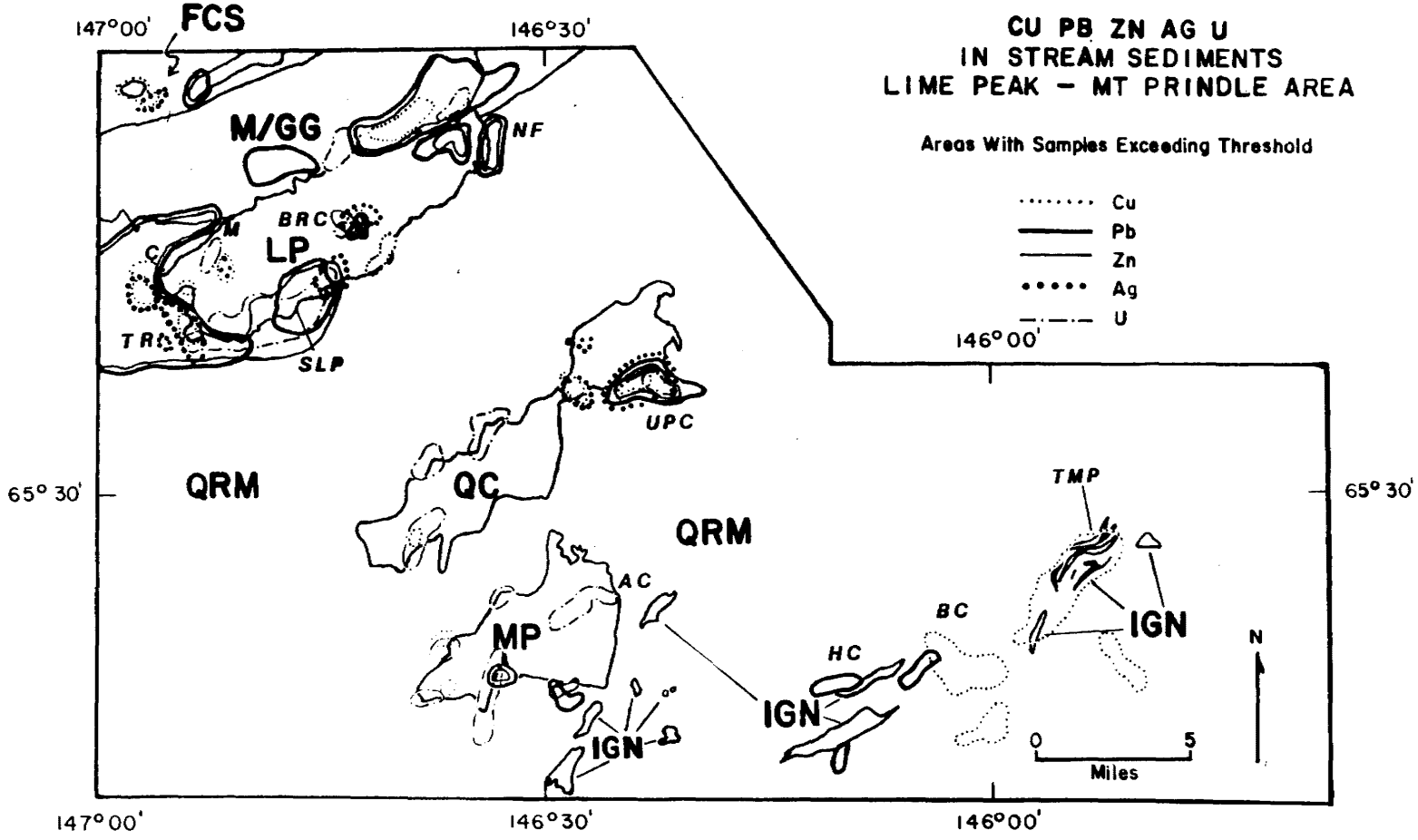


Figure 5.9 Approximate location of areas from which -80 mesh stream sediment samples having above threshold concentration levels of CU, Pb, Zn, Ag, and U were collected. Site names identify areas of significant anomalies or observed mineralization. FCS=Fossil Creek section; M/GG=Maroon and green grit; QRM=Quartz-rich metaclastics; IGN=igneous rocks: M=Mascot Creek, C=The Cliff, TR=Tin Ridge, NF=North Fork prospect, BRC=Bedrock Creek prospect, UPC=upper Preacher Creek prospect, AC=American Creek, HC=Homestake Creek, BC=Bachelor Creek, TMP=Table Mountain-Pinnell Trail.

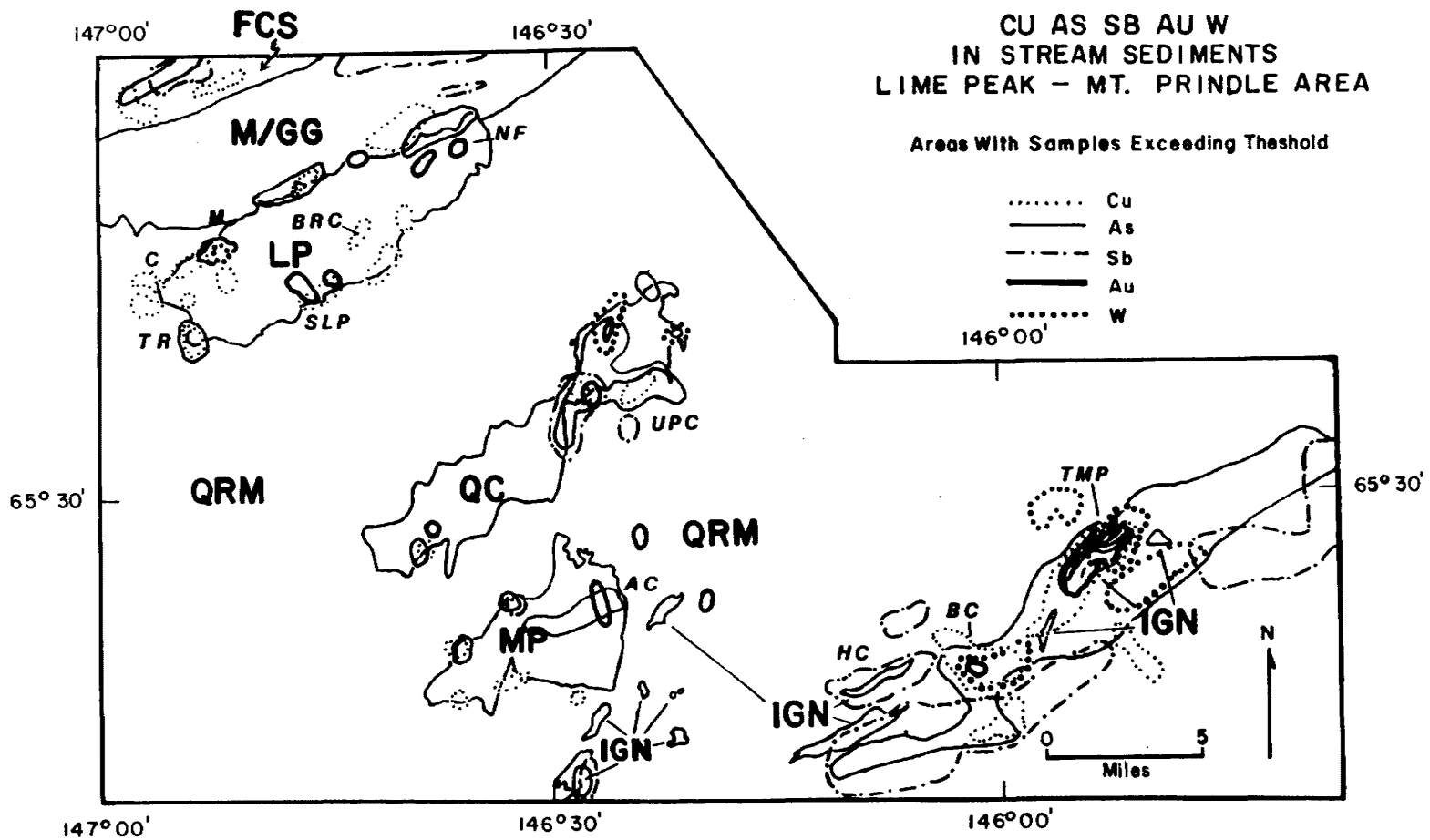


Figure 5.10 Approximate location of areas from which -80 mesh stream sediment samples having above threshold concentration levels of Cu, As, Sb, Au, and W were collected. Site names identify areas of significant anomalies or observed mineralisation. FSC=Fossil Creek section; C=The Cliff, TR=Tin Ridge, NF=North Fork prospect, BRC=Bedrock Creek prospect, UPC=upper Preacher Creek prospect, AC=American Creek, HC=Homestake Creek, BC=Bachelor Creek, TMP=Table Mountain-Pinnell Trail.

respective plutons or the adjacent narrow hornfels zones although the elemental suite maps of plates 5-2 through 5.5 show that the anomalous metal trains often extend for miles downstream in the surrounding QRM terrain. This interpretation of the data with respect to the Hope suite plutons is believed justified because, except for the northeast end of the Quartz Creek pluton, regional mapping and detailed follow-up studies of several large anomalies has failed to find any visible traces of related mineralization outside the plutonic rocks or the hornfelsed metasediments within approximately a quarter mile of the plutonic contact.

There are two major groups of geochemical anomalies within the study area. One group is spatially associated with the Hope granite suite plutons and the other is distributed around the Table Mountain felsite dikes. A third, minor group of anomalies occurs in the Fossil Creek Section (FCS) rocks in the extreme northwest corner of the study area.

The Hope granite suite anomalies include heavy mineral concentrate samples having above threshold levels of Sn, Ta, U, W, Ag, As, Ba, and rarely Sb and Au. Stream sediment samples within the Hope granite suite terrains are anomalous in Cu, Pb, Zn, U, Ag, La(REE), and more rarely As, Au, Sb, and W. There is considerable overlap in the anomalous areas for each of these elements, but in general there is a notable grouping of anomalies around known occurrences of Sn-bearing greisen veins, Sn-bearing granite TKg_3 and the plutonic - metasedimentary contact zones of granite (TKg_2) (figs. 5.7-5.10, and pls. 2-1A, and 5-2 through 5.5).

The anomalies in the Table Mountain - Pinnell Trail area contain a close association of As, Au, Cu, Sb, and W. There are virtually no La, Sn, Ta, or U anomalies, and only few anomalous Pb, Zn and Ba samples. The metallogeny of this area is complex. Currently, there is evidence suggesting as many as three types of Au-bearing mineralization: (1) W-Au skarn deposits, (2) Au-bearing quartz-tourmaline veins (Menzie and others 1987), and (3) strata-bound, and perhaps stratiform, volcanogenic precious metal-sulfide mineralization (chap. 6, this volume).

The multi-element Cu, As, Pb, Zn, Ag, (and minor Au, Sb, U) anomaly and nearby W anomalies on the northeast end of Quartz Creek pluton are spatially associated with quartz tourmaline veins within a broad zone of hornfels and Sn-W skarns (chap. 6, this volume). Some of the Cu, As, W, and Au mineralization in the Table Mountain area also is associated spatially with quartz tourmaline veins within an area of hornfelsed metasediments and Au-W skarns. At Table Mountain the pluton that generated the hornfels zone is not exposed. Despite differences in detail between the anomalies at Table Mountain and the northeast end of the Quartz Creek pluton, the similarities between the two sites invoke speculation that the buried pluton that created the the broad hornfels zone at Table Mountain is a variant of Hope granite TKg_2.

Hope Granite Suite Anomalies

Description of Hope Granite Suite Anomalies

The anomalous metal associations found associated with the Hope granite suite are compatible with the recognition of these rocks as part of a Sn-granite system (Burton and others 1985; Menzie and others 1983; Burns and Newberry, chap. 3, this volume). Heavy mineral concentrate tin anomalies, shown on plate 5-2 and in figure 5.7, are confined to the Hope granite suite plutons. No Sn anomalies were found that could be associated with the felsite dikes and monzogranite of the Table Mountain area. This consistent restriction of tin to the Hope suite

plutons reflects the affiliation of the Hope granite suite to Sn-system granites and provides a basis for interpreting the other metal anomalies associated with them.

Tungsten values in heavy mineral concentrates collected from the Hope suite terrains are often associated with high Sn values. An interesting exception is the lack of a W anomaly at Tin Ridge, the site of the most evolved Sn system so far observed in the Hope intrusive suite (chaps. 3 and 6, this volume). Stream sediment tungsten does not show this strong correlation, though anomalous W is found in one sample from the Mascot Creek drainage. Several anomalous W samples are located within the northeast end of the Quartz Creek Pluton. Because tungsten would be expected to occur in particulate resistate minerals, its distribution probably reflects a relatively nearby source. In the Quartz Creek pluton, W appears to have a spatial association with TKg_2 rocks, and Smith (chap. 6, this volume) and Fechner (pers. comm.) report abundant scheelite in streams draining quartz-tourmaline veined areas of hornfels that is in contact with TKg_2 rocks in the upper Preacher Creek area. Tungsten is inferred to have a genetic association with both the late Sn-mineralizing phase of the Hope granite suite, and perhaps with an earlier evolution of TKg_2 rocks.

Anomalous tantalum values in heavy mineral concentrates are virtually absent from rocks found south of the Quartz Creek pluton. Tantalum is generally associated with areas anomalous in Sn and W within the Lime Peak pluton (fig. 5.7) but is associated with only U and W in the absence of Sn in the Quartz Creek pluton. The almost total lack of Ta in samples from Mt. Prindle (pl. 5-2) is puzzling and no adequate explanation is offered at this time.

Uranium in heavy mineral concentrates is similar to Ta in that anomalies are confined to the Lime Peak and Quartz Creek plutons (fig. 5.7). Uranium in heavy mineral concentrates is spatially associated with areas of high Sn values only in samples collected from within and around the area of the Lime Peak pluton. In general, areas having anomalous heavy mineral concentrate U values appear to be somewhat larger and more widespread than those in which high Ta and W values are found.

Stream sediment U anomalies associated with the Hope suite rocks apparently have two distinct modes of occurrence. Anomalous stream sediment uranium occurs associated with some recognized centers of tin mineralization in the Lime Peak Pluton, and as small single element, or base metal - uranium anomalies associated with the Quartz Creek and Mt. Prindle plutons. South of the Lime Peak pluton, only the American Creek stream sediment U anomaly is spatially associated with anomalous Sn values (figs. 5.7, 5.9).

There is some indication that both anomalous and threshold level stream sediment and heavy mineral concentrate U are crudely zoned relative to centers of known Sn mineralization in the Lime Peak pluton (figs. 5.7, 5.9). A large area of threshold and anomalous stream sediment U values extends northeastward from the tin mineralization and third phase granite of Tin Ridge. This area coincides with one of the Sn anomalies seen in figure 5.7. It also overlaps areas having anomalous Cu, Pb, Zn, Ag, Ta, and La (figs. 5.8, 5.9 and 5.11). A multi-element stream sediment U anomaly is also present at Bedrock Creek where U is associated with tin-greisen veins and Cu, Pb, and Ag anomalies. At that locality, chalcopyrite is known to occur within the medial zone of chlorite cassiterite greisen veins, and it is suspected that the Pb and Ag stream sediment anomalies at that site also are derived from sulfide minerals associated with the greisen veins.

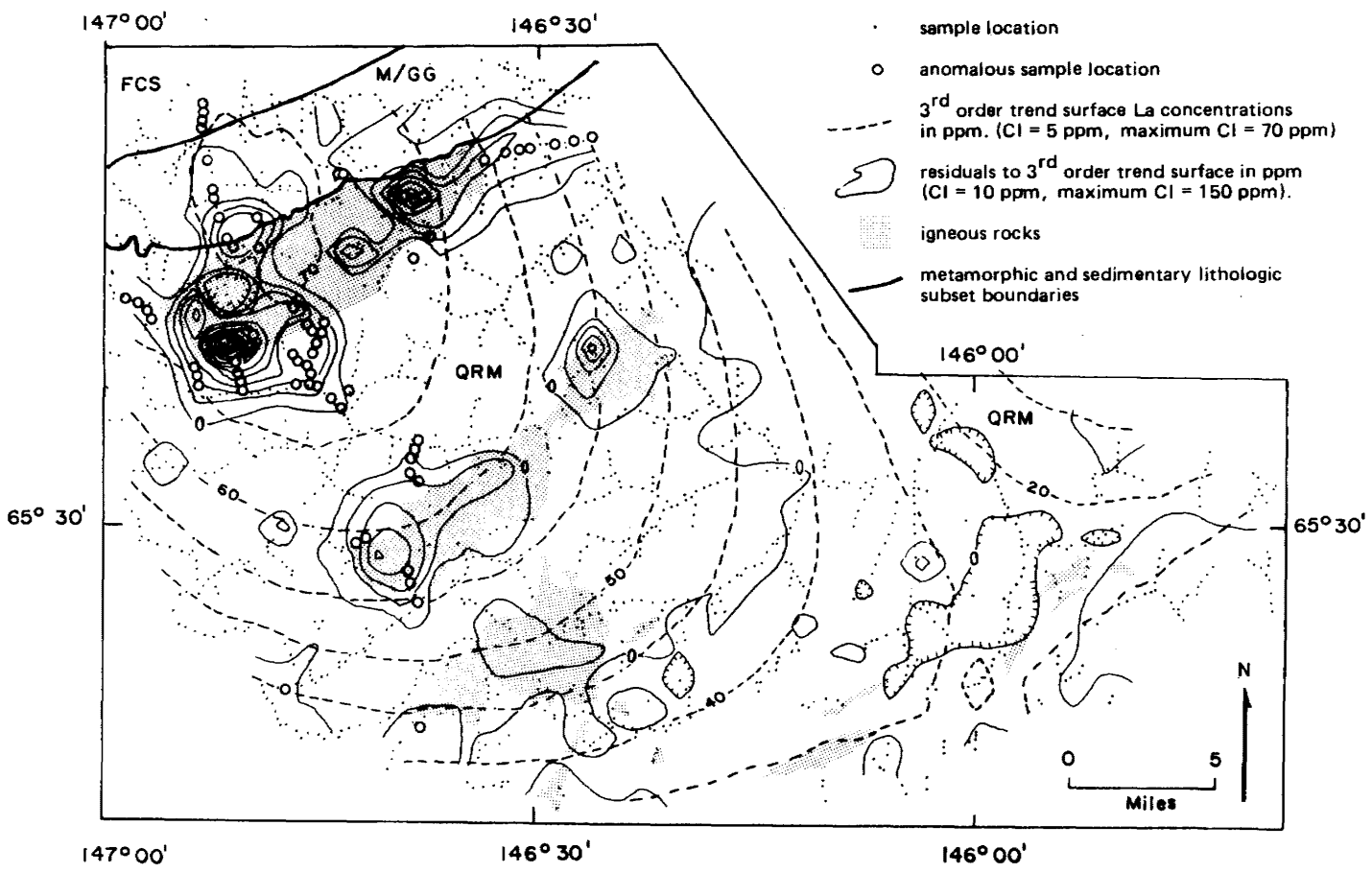


Figure 5.11 Third order residual trend surface analyses and cumulative-frequency probability analyses for La in stream-sediment samples, Lime Peak-Mt. Prindle area, Alaska. Anomalous La values for the lithologic subsets are as follows: Fossil Creek section (FSC) > 77 ppm; Maroon and green grit (M/GG) > 114 ppm; Quartz-rich metaclastics (QRM) > 76 ppm; Igneous rocks (stippled) > 169 ppm.

Some of the small U anomalies located in the headwater branches of Mascot Creek (fig. 5.7) are probably also genetically related to the evolution of the Lime Peak tin mineralization as evidenced by their spatial association with nearby chlorite-greisen veins. The relationship, if any, of the small U anomalies in the Quartz Creek and Mt. Prindle plutons and in the hornfels zone north of the North Fork prospect on the northeast end of the Lime Peak pluton with tin mineralization is less certain. It is possible that these small U, and U - base metal, anomalies are part of the distal signatures of an outer metal zonation centered on partly exhumed (for example, American Creek, North Fork prospect) and as yet unexhumed (for example, Quartz Creek) Sn mineralization. In all the Hope granite suite plutons, however, some of the small U anomalies are located within areas underlain by, or adjacent to, pre-tin mineralization TKg_2 granites. This suggests the possibility that the earlier phase also produced localized U enrichments or mineralization that is now manifested in the stream geochemical data. The fact that stream sediment U anomalies do not always coincide with heavy mineral concentrate U anomalies also suggests the possibility of two modes of uranium occurrence and thus two types of uranium-related mineralization.

There are no anomalous or threshold stream sediment U values associated with the alkalic intrusives within the study area (pl. 2-1A) or with the felsites and monzogranite of the Table Mountain - Pinnell Trail area.

Although many of the stream sediment and heavy mineral concentrate samples had Ag values below a detection limit of 0.5 ppm, those samples that had detectable or higher Ag concentrations are mostly confined to samples that are derived from areas of known tin mineralization or areas of the Hope intrusive suite that are underlain by TKg_2 granite (fig. 5.8, 5.9). There is one stream sediment sample and one heavy mineral concentrate sample (pl. 5-3) that exceed detection limits for Ag in the Table Mountain - Pinnell Trail area, and only one small area of detectable Ag in the stream sediments of the Fossil Creek Section (fig. 5.9). Stream sediment and heavy mineral concentrate Ag are associated with areas of known Sn mineralization at Tin Ridge, Bedrock Creek, and the North Fork prospect of the Lime Peak Pluton. Silver values are also found in stream sediment and heavy mineral concentrate samples collected from drainages peripheral to Sn mineralization at Tin Ridge and the North Fork prospect (fig.s 5.8, 5.9), and from a broad hornfels zone located adjacent to the southern contact on the northeast end of the Quartz Creek pluton (upper Preacher Creek anomaly). No visible tin mineralization was found in the upper Preacher Creek area during detailed follow-up studies. At the upper Preacher Creek anomaly, however, there is a notable spatial association of metal anomalies, with quartz-tourmaline veins in the hornfelsed metasediment zone near its contact with TKg_2 rocks (chap. 6, this volume). Within the area of the anomaly, the contact of TKg_2 with the metasediments dips south at a shallow angle. (chap. 6, this volume). This has resulted in a broad surface exposure of hornfelsed rocks above a shallow TKg_2 granite body.

A similar association of anomalous stream sediment Ag with TKg_2 rocks is seen on the south side of the Lime Peak pluton, approximately 5 miles northeast of Tin Ridge, (south Lime Peak anomaly, figure 5.9) where Ag anomalies occur in an area underlain by TKg_2 granite. Silver thus appears to have two fundamental associations within the Hope intrusive terrains: a direct association with tin mineralization; and a second association with TKg_2 granites or the hornfelsed metasedimentary rocks in contact with TKg_2 granites.

Threshold and anomalous stream sediment Cu, Pb, and Zn form several major anomalies that are controlled by the presence of Hope intrusive suite rocks. The Pb and Zn anomalies are

large in area and numerous in the vicinity of the Lime Peak pluton but form only one moderate sized anomaly involving the the Quartz Creek pluton and two small anomalies on the south side of the Mt. Prindle pluton. The Lime Peak Pb and Zn anomalies appear to form a zone that extends over and around centers of known tin mineralization. It is common for the Pb and Zn anomalies to encompass large areas of metasedimentary rocks adjacent to the Hope suite intrusives, and to occur in drainages that do not intercept the igneous rock contact (pl. 5-4). This suggests the former presence of hydrothermal solutions of considerable volume and mineralizing solutions that had a broad range of physical-chemical conditions over which they deposited Pb and Zn.

Areas anomalous in Cu are generally smaller than those of Pb and Zn, but they are more numerous. Some Cu anomalies are clearly associated with known tin occurrences, for example Tin Ridge and Bedrock Creek. Others are spatially associated with granite pluton contacts, usually where TKg_2 is in contact with the host metasediments (figs. 5.9, 5.10).

Cu, Pb, and Zn anomalies exhibit much the same two associations as the Ag anomalies. They are associated with tin mineralization directly, and are spatially associated with TKg_2 granites and pluton contacts. They differ from Ag anomalies in that they are more numerous and occur in all the Hope suite plutons.

Arsenic, antimony, and gold form smaller anomalies in the Hope suite terrain (figs. 5.8, 5.9, and pl. 5-3). They have a more consistent spatial relationship to TKg_2 granites and the pluton contacts with hornfelsed metasediment zones than with known centers of tin mineralization. The distribution of these anomalies is compatible with the suggestion of Smith (chap. 6, this volume) that the Hope granite suite TKg_2 rocks are associated with a mineralization event that predates the area's main Sn-mineralization.

Ba anomalies in heavy mineral concentrate are found spatially associated with both known tin mineralization and TKg_2 rocks in the Lime Peak and Quartz Creek plutons (fig. 5.8, pls. 5-3 and 5-4) and in the metasedimentary terrains adjacent to their contact with TKg_2 rocks. Barium anomalies associated with the Lime Peak pluton tend to be peripheral to the tin mineralization at the Tin Ridge and Cliff areas (pls. 5-3 and 5-4) but the heavy mineral concentrate Ba anomaly at Bedrock Creek is centered on the Sn-greisen veins of that prospect. Anomalous Ba occurs both at and peripheral to the tin mineralization located within the North Fork prospect (pls. 5-3 and 5-4). The Ba anomalies associated with the Quartz Creek pluton occur in the hornfelsed metasediments south of TKg_2 rocks found on the northeast end of that pluton and elsewhere within the hornfels zone that surrounds the pluton. Those samples within the Quartz Creek pluton that are anomalous in Ba are located near its contact with the metasediments.

In figure 5.11, a third-order trend surface of stream sediment La values and positive residuals from that surface have been plotted as contours superimposed on a map showing stream sediment sample locations and samples anomalous in La. Individual samples anomalous in La were identified from histogram - cumulative frequency analysis like that done for the elements shown on the multi-element maps of figures 5.7 through 5.10, and plates 5-2 through 5-5. It is apparent that although the most prominent La anomalies revealed by the trend surface analysis are generally in close proximity to known tin mineralization, they are, with the exception of Bedrock Creek, peripheral to such mineralization. The largest La anomaly is located just east of Tin Ridge, the largest and perhaps deepest (chap. 6, this volume) tin mineralization center located to date within Hope suite rocks. The anomaly at Bedrock Creek centers on Sn-greisen veins. The La

anomaly on the northeast end of the Lime Peak pluton is located two drainages west of the North Fork prospect in a small well defined valley surrounded by ridges that have exposed chlorite greisen veins (pl. 6-1, this volume). The North Fork prospect is not particularly anomalous in La. Weak residual La anomalies are centered on the southwest and northeast ends of the Quartz Creek pluton. No La trend surface residual, or histogram - cumulative frequency generated anomalies are present in the Mt. Prindle pluton, although numerous small chlorite greisen veins have been observed in the granite rocks on the south side of American Creek.

The geographic distribution of La anomalies in the Lime Peak pluton and their relative magnitudes suggest that they may have a genetic connection with the late phase Sn-mineralization. The systematic weakening of La anomalies away from Tin Ridge may indicate a systematic change in exposure levels relative to underlying tin mineralization centers. If, however, a systematic relationship exists between distance to a Sn-mineralization center and La concentration level, the absence of La anomalies in the Mt. Prindle pluton and their presence in the Quartz Creek pluton is puzzling. The presence of anomalous Sn in samples from the headwaters of American Creek, and visible chlorite greisen veins, versus the sparsity of both in the Quartz Creek pluton, would indicate that a relatively well developed La anomaly should be centered on upper American Creek. The Mt. Prindle pluton, however, is lacking in La anomalies. The Quartz Creek pluton has very few samples with anomalous Sn, but has two weak trend surface residual La anomalies. Thus the spatial relationship of anomalous stream sediment La to tin mineralization is not consistent throughout the Hope granite suite.

Table Mountain - Pinnell Trail Anomalies

The Table Mountain - Pinnell Trail area lacks anomalous Ag, La, Sn, Ta, U, and Zn (figs. 5.9, 5.10, and pls. 5-2 through 5.5). The absence of these elements is notable in comparison to their general presence in the Hope intrusive terrain and may be due to the absence of Hope suite rocks. Alternatively, their absence is compatible with the tendency for the presence of anomalous concentrations of these elements to systematically decrease from northwest to southeast across the study area even when Hope suite rocks are present. The Table Mountain - Pinnell Trail area also is characterized by the presence of several multi-element Cu, As, Au, W, and limited Ba anomalies. Major Sb anomalies are peripheral to the Cu, Au, and W anomalies, but do overlap part of the area's large stream sediment As anomalies.

Description of Table Mountain - Pinnell Trail Anomalies

Samples anomalous in Sb are shown in figures 5.8, 5.10, 6.8, and plate 5-5 (this volume). Although anomalous, these samples have concentration values as low as 7 ppm. In spite of this low level of Sb, the anomalies are persistent for several miles in areas that tend to parallel the regional strike of the host lithologies. The Sb anomaly near Homestake Creek (fig. 5.10) is spatially associated with small Pb anomalies (fig. 5.9). In general,however, antimony anomalies in the Table Mountain - Pinnell Trail area tend to lack association with other elements except for a partial overlap with areas having anomalous As.

Three heavy mineral concentrate samples anomalous in Ba were found in south-flowing streams on the south side of Table Mountain. The approximate outline of the drainage basins containing these samples are shown in figure 5.8. Although the combined limits of the two easternmost drainage basins extend into areas that could intercept quartz-tourmaline and W-Au skarn mineralization which might contribute Ba, the third drainage basin does not. All of these

drainages, however, are in a position to receive contributions of material from chloritic schist units within the metasediments. Present data, however, are not sufficient to establish a definitive source for the anomalous Ba.

Tungsten anomalies in the Table Mountain - Pinnell Trail area are found in the vicinity of the gray sulfide-bearing quartzite horizons on Bachelor Creek and downstream from known W-Au skarn mineralization and quartz-tourmaline veining. Even though there is a spatial coincidence of one area of anomalous W with the gray sulfide-bearing quartzite of Bachelor Creek, all W anomalies are believed to be genetically related to W-Au skarn or quartz-tourmaline vein mineralization and not to the quartzite-hosted sulfides. This inference suggests that there are as yet undiscovered quartz-tourmaline veins or W-Au skarns in the Bachelor Creek drainage.

The several large areas anomalous in the Cu, As, W, and Au element assemblage characteristic of the Table Mountain - Pinnell Trail area are best developed between Bachelor Creek drainage on the southwest and the north-flowing headwater streams of McKinley Creek located two miles northeast of Table Mountain (pls. 5- 2-5 and figs. 5.7-5.10). Some anomalous stream sediment As (fig. 5.10) and heavy mineral concentrate Au anomalies (fig. 5.8) persist beyond this highly anomalous core area. The position of the centrally located multi-element anomalies coincide with the known and projected position of a mineralized felsic schist - gray quartzite unit in the area's metasedimentary rocks, and with an area of sporadic skarn development and quartz-tourmaline veining within pervasively hornfelsed metasediments. Most notably, however, this area coincides with a high concentration of alkalic felsites.

Fossil Creek Section Anomalies

The rocks in the area designated "Fossil Creek Section" for the purpose of sample subsetting are predominantly dark shales, siltstones, and minor mafic volcanoclastic rocks intruded by minor mafic and ultramafic dikes.

Samples from this area are completely lacking in the Sn-system related elements Sn, Ta, W, U, and La (figs. 5.7 through 5.11, and pls. 5-2 through 5-5) except in the main drainage of Mascot Creek. The anomalous samples in Mascot Creek are believed to represent a train of material derived from the Lime Peak pluton to the south. The area, however, does have local overlapping areas variously anomalous in stream sediment Cu, Pb, Zn, Ag, As, Sb, and Ba. Although these areas are anomalous, the maximum values for all the elements are quite low (tables 5.1 and 5.2). This implies that the anomalies may be related to a specific lithology, for example, a metal-rich shale, rather than to significant mineralization. No detailed work has been done to substantiate this speculation and none is planned at the present time.

DISCUSSION OF RESULTS

Discussion of Hope Granite Suite Geochemical Anomalies

Tin systems are known to display systematic trace mineral and trace element zonations (Taylor, 1979). These patterns can be difficult to identify because strongly mineralized systems have often developed from several separate phases of magmatic and hydrothermal activity. Trying to discern ore-related trace element zoning from geochemical sediment and heavy mineral concentrate data is further complicated because trace elements are contributed from multiple sources. If the contribution of trace elements in specific areas, however, are sufficiently dominated

by single systems of mineralization, the stream sediment and heavy mineral concentrate data may discriminate either trace element zoning or the presence of separate mineral systems.

The Hope granite suite anomalies are spatially associated with known Sn-mineralization centers and with TKg_2 rocks. Anomalies most closely associated with tin mineralization are best characterized by those occurring at Tin Ridge, Bedrock Creek, and North Fork prospect. Anomalies most closely associated with TKg_2 rocks are best characterized by those occurring at upper Preacher Creek (Quartz Creek pluton), along the south margin of the Lime Peak pluton east of Tin Ridge, and along the margins of the Mt. Prindle pluton. The two associations are transitional because TKg_2 rocks and Sn-mineralization centers often occur in close spatial association and because drainage basins often capture material from known Sn-mineralization as well as TKg_2 rocks. However, the grouping of major versus minor, peripheral, and missing trace elements in anomalies associated with the Hope suite plutons suggests a systematic metallogenic trend across the region (table 5.3).

The grouping of elements also may indicate that two stages of mineralization have evolved in the Hope plutonic suite of rocks: an early phase associated with TKg_2 rocks; and a Sn-system mineralization that developed penecontemporaneously with the evolution and emplacement of

Table 5.3. Anomalous element assemblages in stream sediment and heavy mineral concentrate samples collected from the Lime Peak - Mt. Prindle, Quartz Creek, Mount Prindle, and Table Mountain - Pinnell Trail areas. Elements enclosed in () are absent, minor in areal extent, or markedly peripheral to the local mineralization. Dominant trace elements are underlined.

LOCATION	ELEMENTS
Lime Peak	Sn Ta La U Ag Pb Zn Cu(As W Ba Au Sb)
Upper Preacher Creek	(Sn Ta La U) Ag Pb Zn Cu As W(Au Ba Sb)
Table Mountain	(Sn Ta La U Ag Pb Zn) Cu As W Au (Ba Sb)
Mount Prindle	Sn(Ta La) U Ag (Pb Zn Cu) As W (Au Ba Sb)

TKg_3 rocks. (chap.6, this volume). Alternatively, the trace element associations may indicate a vertical and lateral zonation of trace elements derived from a single late stage Sn-mineralizing event.

The grouping of elements in table 5.3 also show a systematic progression from the element assemblage associated with the Lime Peak pluton to those seen at upper Preacher Creek and Table Mountain. These changes may be fortuitous or they may reflect a genetic link between currently recognized Hope granite suite rocks and the buried intrusive that has created the hornfels zone at Table Mountain.

Lime Peak Pluton:

Clearly, the stream sediment and heavy mineral concentrate data indicate that tin mineralization is most strongly developed within the Lime Peak pluton. Although there are weak geochemical indications of a tin mineralizing system associated with the Quartz Creek pluton, that igneous complex seems to be dominated by mineralization associated with hornfelsed metasediments in contact with TKg_2 rocks. The Mt. Prindle data identify Sn-mineralization in American Creek but in general that anomaly is not as strongly supported by associated elements, nor have field mapping efforts revealed any strongly mineralized centers.

The data for three known significant tin mineralized locations from the Lime Peak intrusive have been summarized in figure 5.12. For this figure, a location was considered to have anomalous concentrations of an element if that location had either -80 mesh stream sediments or

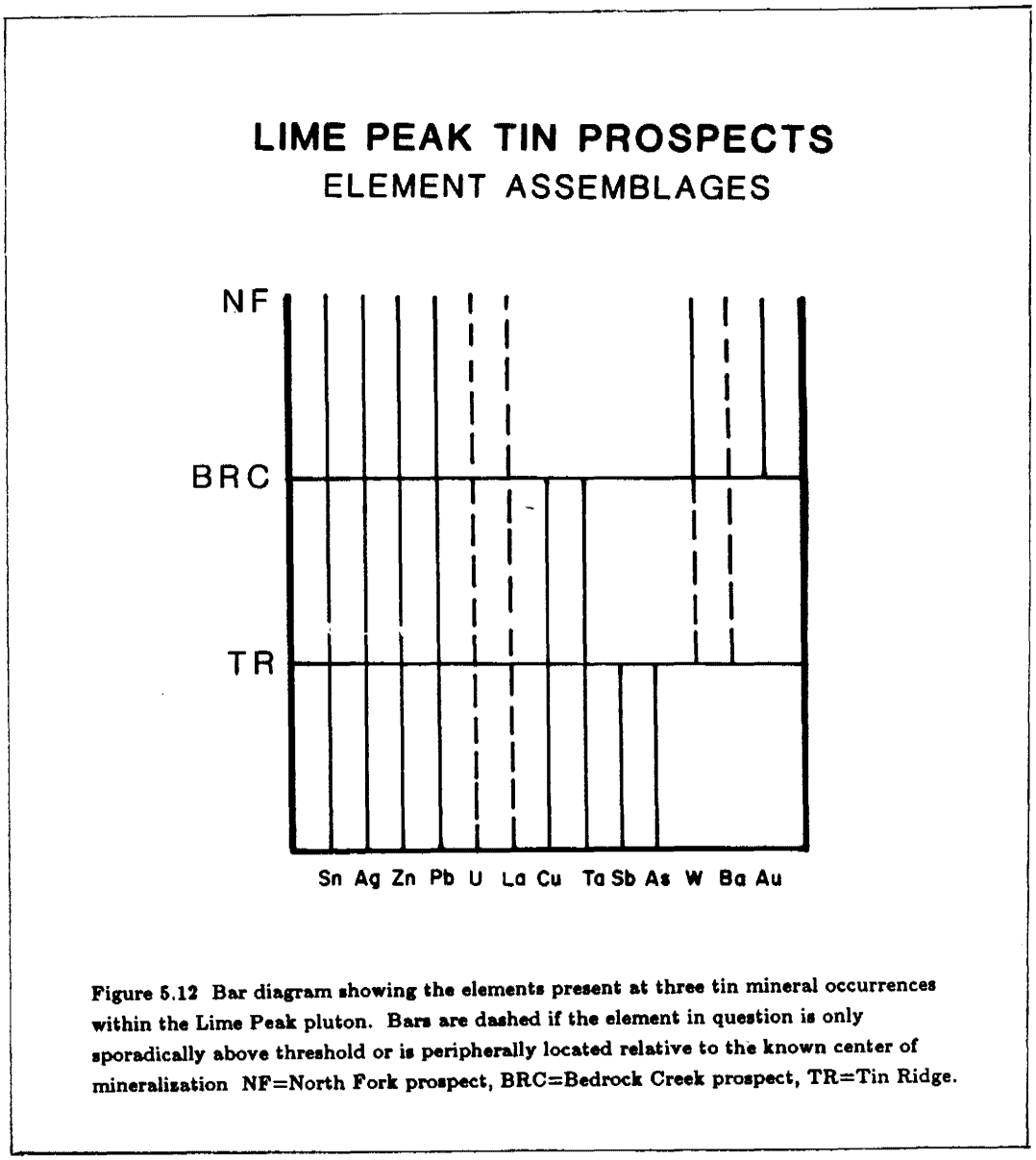


Figure 5.12 Bar diagram showing the elements present at three tin mineral occurrences within the Lime Peak pluton. Bars are dashed if the element in question is only sporadically above threshold or is peripherally located relative to the known center of mineralization NF=North Fork prospect, BRC=Bedrock Creek prospect, TR=Tin Ridge.

heavy mineral concentrates that were above threshold in that element. It is evident from figure 5.12 that the three tin occurrence anomalies have different trace element assemblages. The data suggest that the Tin Ridge, Bedrock Creek, and North Fork trace element assemblages vary in a systematic way from the southwest end of the Lime Peak pluton to the northwest end. One explanation for this grouping is that the element associations of the anomalies reflect vertical, and perhaps horizontal, distance from tin mineralization centers.

Regional and detailed mapping has led Newberry (chap. 6. this volume) to suggest that the various centers of tin mineralization seen in the Lime Peak pluton represent different erosional levels of similar hydrothermal systems. If this concept is valid, Tin Ridge would represent the deepest level of exposure, Bedrock Creek would represent portions of a tin system exposed at a higher level, and the North Fork prospect, with its extensive FeOx and MnOx flooding (chap. 6, this volume) would represent the highest level within the Lime Peak tin systems. Thus, in general, the relative depth of exposure is inferred to decrease from southwest to northeast in the Lime Peak pluton. This corresponds to the relative arrangement of the three major Lime Peak tin occurrences, noted in figure 5.12, arranged with Tin Ridge at the bottom of the diagram and North Fork prospect positioned at the top. While the above geographical arrangement of the geochemical data results in a systematic grouping of the elemental data and the prospects, it is not a unique interpretation.

Smith (chap. 6, this volume) has speculated alternatively that two distinct periods of mineralization are associated with successive evolution of Hope suite phases, an early Cu, As, W phase of mineralization associated with TKg_2 rocks followed by a separate Sn, Ta, U mineralization associated with TKg_3 rocks. If this hypothesis is correct, the trace elements seen at any site associated with the pluton could represent mixtures of material derived from two periods of mineralization, and, if sediment and heavy mineral contributions from earlier TKg_2 mineralization were great enough, it might be impossible to explain the various trace element signatures in terms of depth zonation or erosional slices through basically similar Sn centers. The stream sediment and heavy mineral concentrate data presented here is compatible with either two periods of mineralization or with trace element zoning associated with a single late stage period of mineralization.

Quartz Creek Pluton: (Upper Preacher Creek)

The multi-element anomalies associated with the northeast end of the Quartz Creek pluton occur in the apparent absence of chlorite greisen veins or TKg_3 rocks. The strongest anomaly is centered on quartz-tourmaline veins that have been formed in hornfelsed metasediments lying above the shallow south dipping contact of a TKg_2 granite. Every trace element statistically analyzed is represented at above threshold levels either within the boundaries of the northern lobe of the pluton, or within the hornfelsed rocks surrounding that portion of the pluton. Not all the elements, however, are equally represented with respect to their spatial distribution and persistence of occurrence. The multi-element anomaly located within the hornfelsed rocks includes Cu, Pb, Zn, Ag, As, U, Ba, and minor Sb and Au. Anomalous tungsten samples are more abundant within the boundaries of the pluton, although Smith (chap. 6, this Volume) believes that some of that tungsten has been derived from scheelite in the hornfelsed metasediments intercepted by the headwaters of streams flowing northward from the pluton's southern contact or let down by erosion of a former hood zone just above the present surface. Tin at above threshold levels is rare (fig. 5.7). Anomalous gold is also rare, and only two samples above threshold levels

were found in this study. One is internal to the pluton and the second is within the upper Preacher Creek anomaly.

The presence of anomalous Ta and some above threshold tin values (fig. 5.7) imply an affinity of the pluton with tin mineralization. One heavy mineral concentrate sample anomalous in tin is also anomalous in W, Ta, and U, and is associated with a stream sediment sample anomalous in Ba. This element association is similar to some of those found near Sn-mineralization centers in the Lime Peak pluton. A weak positive residual La anomaly is centered on the northeast end of the Quartz Creek pluton. By analogy to the close spatial association of the major La anomaly near the Tin Ridge tin mineralization (fig. 5.11), La in the Quartz Creek pluton suggests the presence of Sn mineralization here also. The sparsity of anomalous tin samples, however, and the sporadic distribution of samples having anomalous concentrations of related elements indicate that any tin mineralization must be weak, at least at the present level of exposure. Burns and Newberry (chap. 3, this volume) conclude that the Quartz Creek Pluton has not evolved sufficiently to have produced strong tin mineralization. If, however, tin mineralization is exclusively the result of the evolution of distinctly younger TKg_3 rocks from a common parent magma, then the evolutionary stage of the exposed TKg_1 and TKg_2 rocks of the Quartz-Creek pluton would not necessarily preclude a TKg_3 phase at depth. The observed weak Sn, Ta, and La anomalies may indicate its presence.

The most interesting geochemical signature associated with the northeast end of the Quartz Creek pluton is the multi-element anomaly associated with the quartz-tourmaline veins adjacent to the southern contact. This anomaly has several features in common with the anomalies in the Table Mountain - Pinnell Trail area discussed below. Notable similarities of the upper Preacher Creek area to to Table Mountain - Pinnell Trail area include the presence of quartz-tourmaline veins, a strong As signature, and the presence of anomalous Cu, and nearby W anomalies. Dissimilarities include the presence of anomalous Ag, Pb, Zn, and U at the upper Preacher Creek anomaly. Anomalous antimony is present at both locations, but its presence appears to be controlled by the pluton at upper Preacher Creek and by metasedimentary stratigraphy in the Table Mountain - Pinnell Trail area.

The upper Preacher Creek anomaly also has some similarity to the general area of the northeast end of the Lime Peak pluton where TKg_2 rocks in the vicinity of the North Fork prospect are in contact with hornfelsed metasediments. There also is some similarity between the element assemblages of the upper Preacher Creek and the South Lime Peak anomalies. All three of these areas include anomalous Cu, Pb, Zn, Ag, and at least sporadic Au, Sn, Ta, and W. The South Lime Peak anomaly, however, lacks As but has high Sn values, and anomalous U is lacking at upper Preacher Creek.

The southwest end of the Quartz Creek pluton appears to be poorly mineralized and exhibits only a few anomalies of limited areal extent and element association.

Mt. Prindle Pluton:

The Mt. Prindle pluton is characterized by a Sn, U, Ag, As, W, (Au) anomaly in American Creek and small sporadic anomalies located along its contact with the host metasediments. The peripheral anomalies include various assemblages of U, Cu, Pb, Zn, and Ag. The multi-element anomaly in American Creek is probably created from clastic material derived from

Sn-chlorite-greisen veins similar to those observed in the valley walls on the south side of the creek during the regional mapping phase of this study. Except for two samples, anomalous Ta, Ba, and La are absent in the Mt. Prindle pluton.

The Mt. Prindle geochemical anomalies most closely resemble those of Lime Peak. There are, however, interesting differences. The main Sn anomaly, for example, has no closely associated Cu, Pb, or Zn anomalies as is common for Lime Peak Sn-system, and there are no Ba or La anomalies associated with the Mt. Prindle Pluton and only two samples having threshold levels of Ta (pl. 5-2). If Hope suite mineralization is related only to TKg_3 rocks, then Lime Peak and Mt. Prindle trace element signatures must have different trace element contents and ratios because of differences in the degree of evolution or exposure level of TKg_3 rocks associated with each pluton.

Burns and Newberry (chap. 3, this volume) believe that the Lime Peak TKg_3 rocks have undergone a greater degree of magmatic differentiation than any other Hope suite phases, but rocks mapped as TKg_1 and TKg_2 at Mt. Prindle are more evolved than similarly designated rocks in the Lime Peak and Quartz Creek plutons. They speculate that differences in degree of TKg_1 and TKg_2 evolution among the plutons may reflect varying erosion levels or relative position of melt origin in the parent magma. If the Hope suite geochemical signatures are derived from TKg_2 and TKg_3 mineralization, then variations in the degree of evolution of the TKg_2 mineral system would contribute additional variation to the geochemical signatures.

Discussion of Table Mountain - Pinnell Trail Anomalies

Interpretation of the Table Mountain - Pinnell Trail geochemical anomalies is complicated by the presence of three types of mineral occurrences: sulfide mineral concentrations in a sequence of interlayered graphitic schists, gray quartzite and minor felsic schist; W-Au skarn mineralization developed in hornfelsed limey metasediments; and Au-bearing quartz-tourmaline veins within hornfelsed metasediments. Field data (Albanese, Smith, Solie, Newberry, this volume) suggest that significant portions of these three types of mineral occurrences may be spatially coincident, and Cu, As, and Au may be common to all three modes of mineralization.

The element assemblage of Cu, As, and Au cannot be easily partitioned between stratabound sulfide-bearing metamorphic rock occurrences like those observed in Bachelor Creek, quartz-tourmaline veins, and the W-Au skarns. In the Bachelor, Homestake, and Faith Creek drainages, Smith (chap. 6, this volume) and Albanese and Solie (chap. 6, this volume) have observed numerous exposures of float or outcrop consisting of either gray quartzites, graphitic schists, or felsic schists that elsewhere in the area are known to be part of a sequence of lithologies that are variously mineralized with chalcopyrite, arsenopyrite, pyrite, +/- sphalerite, and +/- stibnite (?).

Chalcopyrite is present in sulfide-bearing gray quartzites, and arsenopyrite is a common constituent of graphitic schists in the Bachelor Creek area and by inference in the Homestake Creek area as well. Albanese and Solie (chap. 6, this volume) have also observed felsic schist float in the hornfelsed area of Table Mountain, and arsenopyrite-bearing graphitic schists are present on the north side of Table Mountain. Based upon these observations, it seems likely that some of the area's Cu and As anomalies, and perhaps those of Sb as well, are generated from these sulfide-bearing metasediments, and that this mineralization may be genetically distinct from

the quartz-tourmaline veining and W-Au skarns. This stratiform mineralization probably is the cause of the extension of the Cu and As anomalies beyond the central portion of the Bachelor Creek - Table Mountain area. Smith (this volume) has reported quartz-tourmaline veining in the upper Preacher Creek area that resembles the quartz-tourmaline veins seen near Table Mountain. The upper Preacher Creek quartz-tourmaline veining is anomalous in Cu and As and this observation suggests that some of the anomalous Cu and As in the Table Mountain area also may be derived from quartz-tourmaline veins.

Gold in Bachelor, Faith, Homestake, and Nome Creeks is commonly associated with arsenopyrite, which is found in quartzite-graphitic schist-felsic schist sequences in those drainages. Arsenopyrite is also present in rock samples of hornfelsed schists having anomalous Au concentrations that have been collected on the north side of Table Mountain (sample 5585R). These arsenopyrite-gold-schist associations suggest that some of the area's gold is contributed from mineralization genetically related to arsenopyrite-bearing metamorphic rocks and not to the W-Au skarns or quartz-tourmaline veins of Table Mountain. Menzie and others (1987) reports very high Au values for some of the quartz-tourmaline veins found near Table Mountain, and Newberry (this volume) reports gold in the skarn deposits of Table Mountain. Gold, therefore, is indicated to be present in all three types of mineralization seen in the Table Mountain - Pinnell Trail area.

Antimony anomalies are generally peripheral to the Cu-Au-AS-W anomalies found in the region of quartz-tourmaline veining and Au-W skarn development. It is possible that the anomalous antimony may indicate the presence of a primary element zoning associated with the emplacement of the quartz-tourmaline veins and Au-W skarn deposits. The wide dispersion of the major Sb anomaly, its linear shape and orientation, its low level of Sb concentration values, and spatial association with specific types of metamorphosed lithologies, however, suggest that the Sb anomalies reflect the presence of a unique stratigraphic horizon or rock type within the area's dominantly pelitic schists.

Geologic mapping (fig. 6.7) indicates that anomalous Sb samples south of the Pinnell Trail ridge are located within drainages that intercept a distinct series of chloritic and porphyroblastic chlorite schists. These schists are similar to those that have been interpreted by Yeend (1986) to have had a mafic volcanoclastic protolith. This lithologic change from pelitic schists to chloritic schists is offset by a major northeast trending left-lateral fault, the trace of which passes through the break seen in the southeasternmost alignment of Sb anomalies shown in figures 5.10 and 6.1. As shown in figure 6.1, the distribution of the southern band of anomalous drainages is compatible with the interpretation that the anomalies are derived from the chloritic schist sequence offset by that fault.

CONCLUSIONS

The stream sediment and heavy mineral concentrate sampling program has been successful in identifying significant tin, tungsten, and gold mineralization within the study area. Major mineralized sites are listed in table 5.4 along with the principal element(s) of interest.

In addition to the above major anomalous areas, numerous sites characterized by having only a few anomalous samples, each with a limited element suite, have been located throughout the Hope granite suite terrain. Several of these anomalies have been subjected to follow-up studies that have disclosed only minor mineralization or a lack of visible mineralization, for

Table 5.4. List of major mineralized sites and their primary ore-elements identified by multiple stream sediment and heavy mineral concentrate samples variously anomalous in a suite of elements.

Tin Ridge area	Sn (U)
Cliff	Sn
Bedrock Creek	Sn
North Fork	Sn
American Creek	Sn (Au)
Upper Preacher Creek	W (Au)
Bachelor Creek	Au
Table Mountain	W Au

example, Mascot Creek (sporadic small chlorite greisen veins and a small sulfide-bearing mafic float cobbles), South Lime Peak (no visible mineralization), and the southern contact of the Mt. Prindle pluton (minor skarn).

The subsetting of the stream sediment and heavy mineral concentrate data by gross lithology prior to statistical analysis using histogram - cumulative frequency methods was effective in helping to discriminate anomalous samples in areas of high geochemical background and in enhancing low-level anomalies in areas of low geochemical background.

Stream sediment geochemistry was useful in projecting the trend of a unique chlorite-rich lithologic sequence having an elevated antimony content. If this lithologic sequence has a constant stratigraphic position relative to the precious metal sulfide-bearing felsic schist unit observed in Bachelor Creek, it may be useful in projecting the position of that unit also.

The anomalies found within and near the Hope intrusive suite plutons all appear to have been derived from mineralizing events that are directly related to the evolution of those plutons. There are, however, variations in the elemental assemblages present in various anomalous areas. These variations are believed to reflect either: fundamental differences in the evolution of a single ore mineral system associated with each pluton; a pattern that has developed as a consequence of variable levels of exposure of a single late stage ore mineral system associated with each pluton; or the variable exposure of two distinct mineralizing events associated with each pluton. The stream sediment and heavy mineral concentrate geochemical data are not sufficient to distinguish among these possibilities.

If there are two periods of mineralization associated with the Hope granite suite, the earlier mineralization is conjectured to be genetically related to TKg_2 rocks and to include Cu, Pb, Ag, U, W, As, and minor Sb and Au. These elements are found in multi-element anomalies spatially associated with TKg_2 rocks in the absence of visible Sn-mineralization. Manifestations of this inferred early mineralization may be most clearly displayed at upper Preacher Creek. The stream sediment and heavy mineral concentrate trace elements directly related to tin mineralization include the foregoing elements (except Sb) plus Sn, Ta, La, and Ba. This assemblage is inferred

from observing the trace element assemblages associated with the most well developed Sn-mineralization occurrences in the Lime Peak pluton.

In the Table Mountain - Pinnell Trail area the multi-element anomalies probably represent the presence of three separate mineralized systems: a pre-intrusive, pre-metamorphism, stratabound and possibly strataform gold-sulfide mineralization; an intrusive-related Cu-Au-As-W mineralization; and Au mineralization related to the emplacement of alkalic felsite dikes. The relationship, if any, between the Cu-Au-As-W mineralization represented by the skarns, and quartz-tourmaline veins in the Table Mountain area and the Hope intrusive suite is unclear. Newberry (chap. 6, this volume) presents persuasive evidence that suggests the skarn deposits are genetically related to a buried intrusion of monzogranite similar in composition to the exposed Pinnell Trail monzogranite. That pluton contains hornblende and is distinctly different from any rock type currently known in the Hope granite suite. Widespread hornfelsing of the metamorphic rocks in the Table Mountain - Pinnell Trail area leaves little doubt that there is a buried intrusive of some type beneath Table Mountain.

The quartz-tourmaline veins in the hornfelsed rocks of the Table Mountain - Pinnell Trail area resemble those in the hornfelsed zone surrounding the northeast end of the Quartz Creek pluton. Minor pyroxene - garnet skarns also occur in the hornfelsed metasediments on the northeast end of the Quartz Creek pluton. Stream geochemical data indicate that Cu, As, Au, and W are at least present within the Hope intrusive system, and recent work by the U. S. Bureau of Mines (S. A.Fechner, pers. comm.) shows that abundant scheelite is present in streams draining the northeast end of the Quartz Creek pluton. It also has been noted that the geochemical trace element assemblages appear to represent a systematic change that progresses from the northeast end of Lime Peak to the northeast end of the Quartz Creek pluton, to the Table Mountain - Pinnell Trail area. These gross similarities and apparent systematic changes in the anomalous trace element assemblages, however, do not provide definitive evidence for a genetic link between the Table Mountain - Pinnell Trail skarn and quartz-tourmaline vein mineralization and the Hope granite suite. The pyroxene - garnet skarns of the Quartz Creek pluton are known to have significantly higher Sn/W ratios than those of the Table Mountain - Pinnell Trail area, (pl. 5-1 and Appendix D) and Cu, As, Au, and W are common elements in both Au - W skarn systems and in some Sn systems.

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CHAPTER 6

LODE MINERALIZATION IN THE LIME PEAK-MT. PRINDLE AREA

by

R.J. Newberry, with contributions from T.E. Smith, M.D. Albanese, D.N. Solie, R.C. Swainbank, P.J. Burton, M.A. Wiltse, R.R. Reifenstuhl, and G.H. Pessel.

Overview

The Lime Peak-Mt. Prindle study area has produced gold from placer deposits. Previous studies have shown the presence of gold in lode prospects, and tin and related elements, including Ag, Ta, and Nb in placer deposits and lode prospects. Several hundred mineral occurrences were located or re-located and sampled as part of this study. Plate 6.1 shows the locations of all known mineral occurrences and appendices D and F give analytical data from all occurrences sampled. In addition to routine sampling, larger, better exposed, and more promising-looking occurrences were mapped and studied in greater detail in order to better understand the nature and economic potential of the mineral prospects in the area. These prospects, described in this chapter, are probably representative of the mineral prospects present in the study area. Given the generally poor exposures in the area, however, this chapter does not constitute an exhaustive tabulation of all occurrences actually present or of the most favorable prospects which may be present.

Figure 6.1 shows the location of prospects discussed in this chapter. The description of the mineralogy and alteration of the prospects studied is based on detailed field mapping, petrographic study of approximately 200 thin and polished thin sections, x-ray diffraction studies, neutron activation analyses of mineralized rocks for trace and minor elements, and electron microprobe studies of representative critical minerals. Analytical work was performed at Nuclear Activation Services Laboratories, Ontario, Canada; at the University of Alaska, Department of Geology; and at Washington State University, Department of Geology, Pullman, Washington.

Because there is no three-dimensional information available for prospects in the study area, we are unable to provide accurate tonnage data for the various prospects described. Consequently, our approach has been to study representative examples of the various deposit types, determine to the extent possible the controls on mineralization, and to find analogous, well-studied mineral deposits in the literature to use for grade/tonnage comparisons. By considering the available geologic data along with statistical data on these analogous mineral deposits from around the world, we have made probabalistic estimates of mineralization in the various prospects. This probabalistic information is presented in chapter 7 of the report. The geologic information upon which the probabalistic estimates are made is presented in this chapter.

GOLD-BEARING AND GOLD-ASSOCIATED PROSPECTS

Introduction

Gold-bearing and gold-associated rocks in the study area include stratabound(?) prospects, skarns, mineralized hornfels, altered plutonic rocks and vein or breccia zones. Interest in the study area for gold lodes was stimulated by reports of rocks containing more than 4 ounces/ton Au

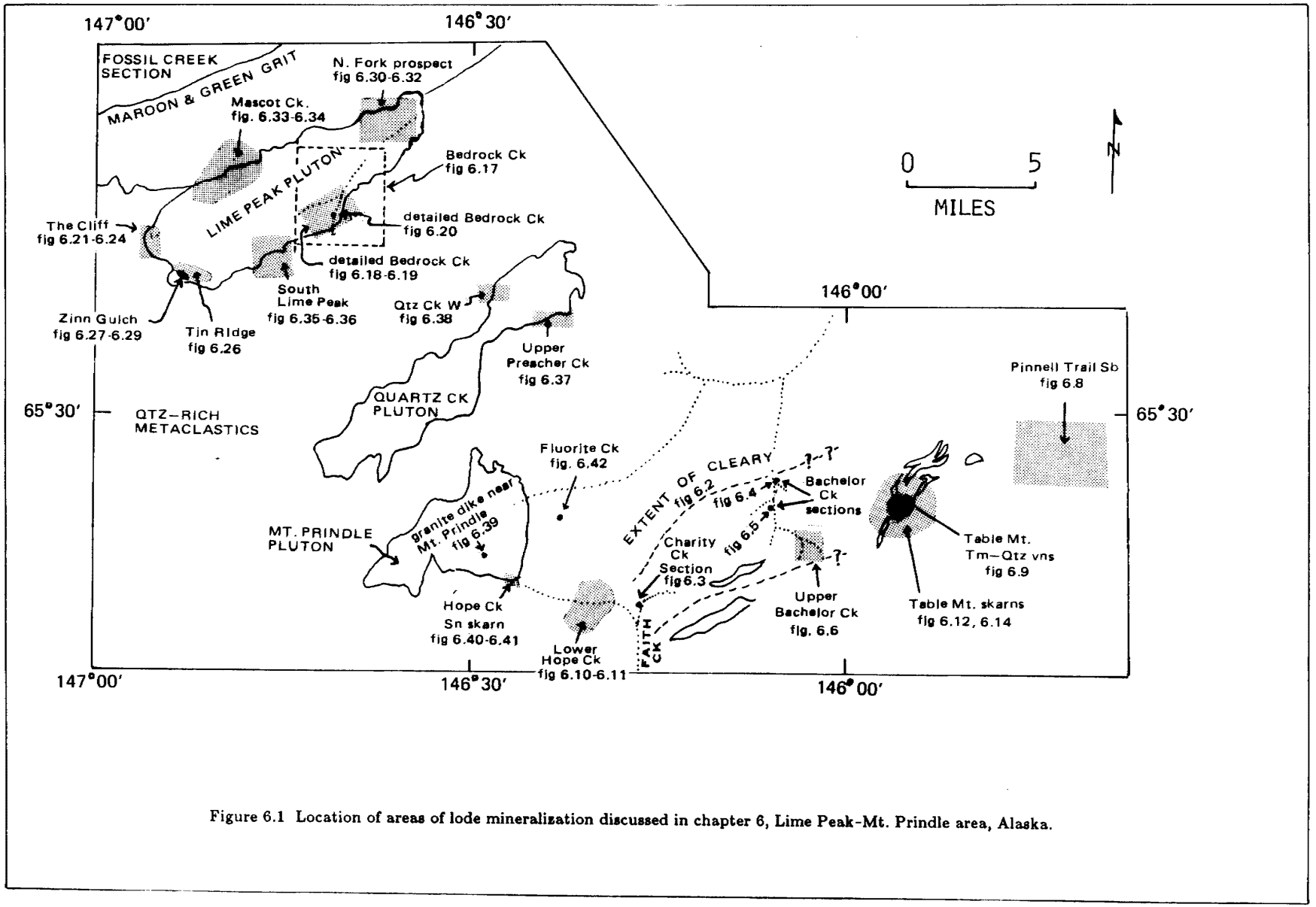


Figure 6.1 Location of areas of lode mineralization discussed in chapter 6, Lime Peak-Mt. Prindle area, Alaska.

(Menzie and others, 1987) in the Table Mountain area and the common occurrence of gold placer deposits. Our studies, described below, have concentrated on four types of gold occurrences: strata-bound volcanogenic(?) prospects, skarn prospects, hornfels prospects and vein/veinlet prospects. Our data indicate that the first and last types are most likely to be of major economic interest due to the possibility of associated large tonnage deposits.

Stratabound (?) Volcanogenic (?) Related Prospects

Cleary sequence-related gold occurrences

by

T.E. Smith, M.D. Albanese, D.N. Solie, and R.J. Newberry

Introduction

Located between the schistose quartz-rich metaclastic rocks surrounding Mt. Prindle and the higher grade schists of Table Mountain is a distinctive stratigraphic package that is characterized by an abundance of black graphitic schists, lesser black quartzites, and light-colored felsic schists and banded white quartzites. Moreover, the outcrop belt of this distinctive package generally coincides with drainages containing significant gold placers. Similarities in lithology, stratigraphic position, and association with gold placers lead us to tentatively correlate this unit with the gold-bearing Cleary sequence of the Fairbanks Mining District (Smith and others, 1981; Robinson and others, 1982). The sequence forms an ENE-trending outcrop belt in the southeast part of the study area (fig. 6.2, pl. 2.1A) and is interbedded with the upper part of the Fairbanks schist.

In addition to the characteristic graphitic and felsic rocks, the Cleary sequence(?) also includes felsic 'grit,' feldspathic quartzite, feldspathic quartz-mica schist, light gray calcareous quartzite, and marble.. Several of the lithologies contain sulfides, either as disseminations or as stratiform concentrations along bedding/foliation. Pyrite is the most common sulfide. Chalcopyrite, arsenopyrite, pyrrhotite, and enargite (?) are also locally present.

The known distribution of characteristic Cleary sequence(?) lithologies in the Lime Peak-Mt. Prindle area is shown on figure 6.2 with locations of rock samples collected for geochemical analysis. Measured stratigraphic sections and locations of lithology-controlled chip samples at sites A to D are shown in figures 6.2 thru 6.6. Analytical data for the samples are tabulated in Appendices D and F.

Field work by Albanese and Solie in 1987 suggests that there are significant lateral variations in the Cleary sequence(?) and that some of the lithologies in the Faith and Bachelor Creek drainages are similar to those exposed near the Pinnell Mountain Trail.

Specific study areas, Cleary sequence(?)

Faith-Charity Creek areas Faith Creek area Cleary sequence(?) consists of gray graphitic chlorite-muscovite schist, black to dark gray very finely laminated graphitic schist, resistant dark gray laminated quartzite, feldspathic quartz-muscovite schist, and white to light gray quartzite with clear black or bluish, elongated quartz eyes to 3 mm and yellow weathering feldspars to 2 mm (referred to as felsic 'grit'), light gray calcareous feldspathic quartzite, and minor orange-weathering, silvery white mica schist that is typically interstratified with gray quartz-mica

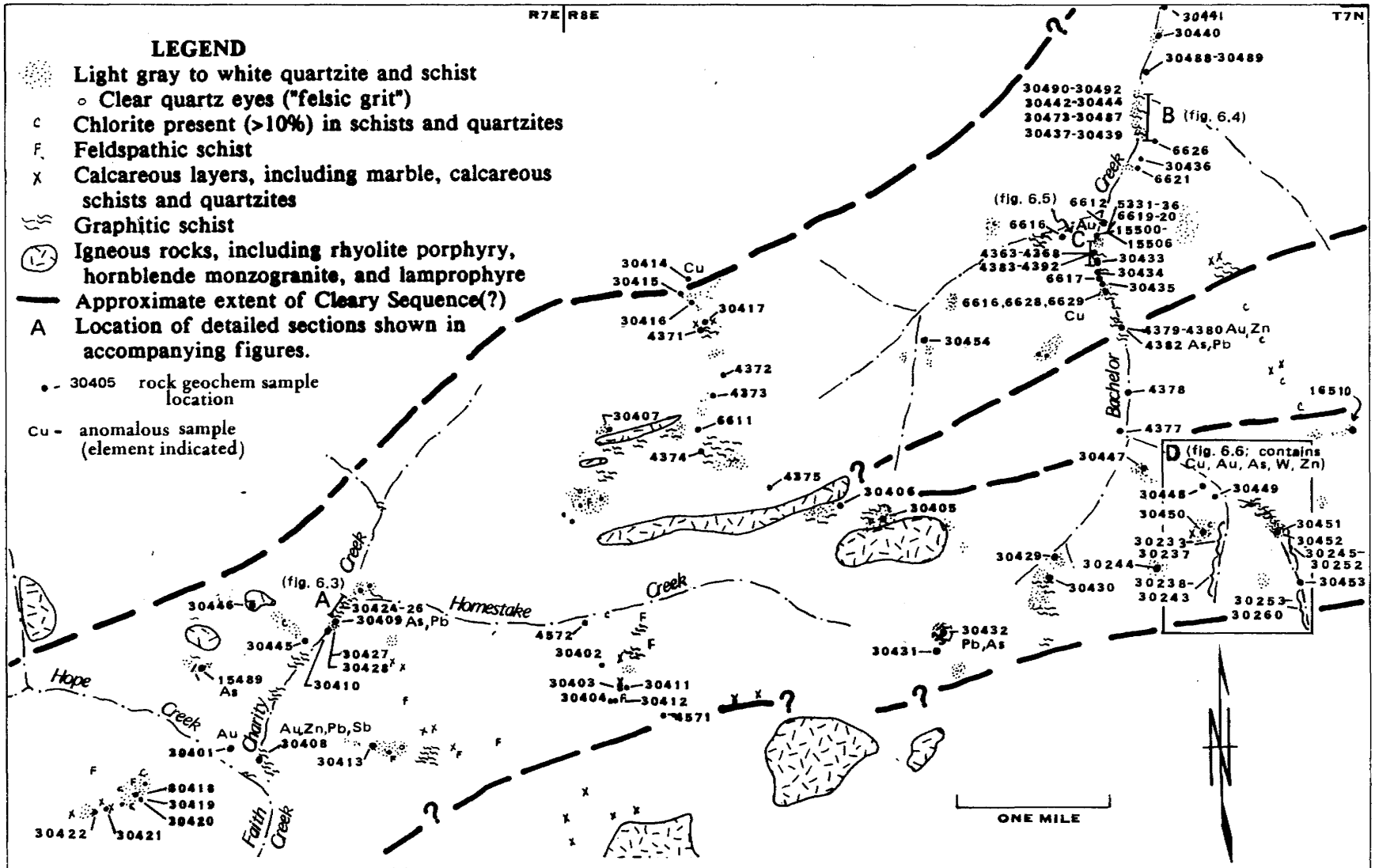


Figure 6.2 Extent of Cleary sequence(?) in Faith Creek and Bachelor Creek area (Circle B-5 Quadrangle, T. 7 N, R. 7;8 E.), with sample locations. Sample numbers < 3000 were collected in 1986 (app. D); sample numbers > 3000 were collected in 1987 (app. F).

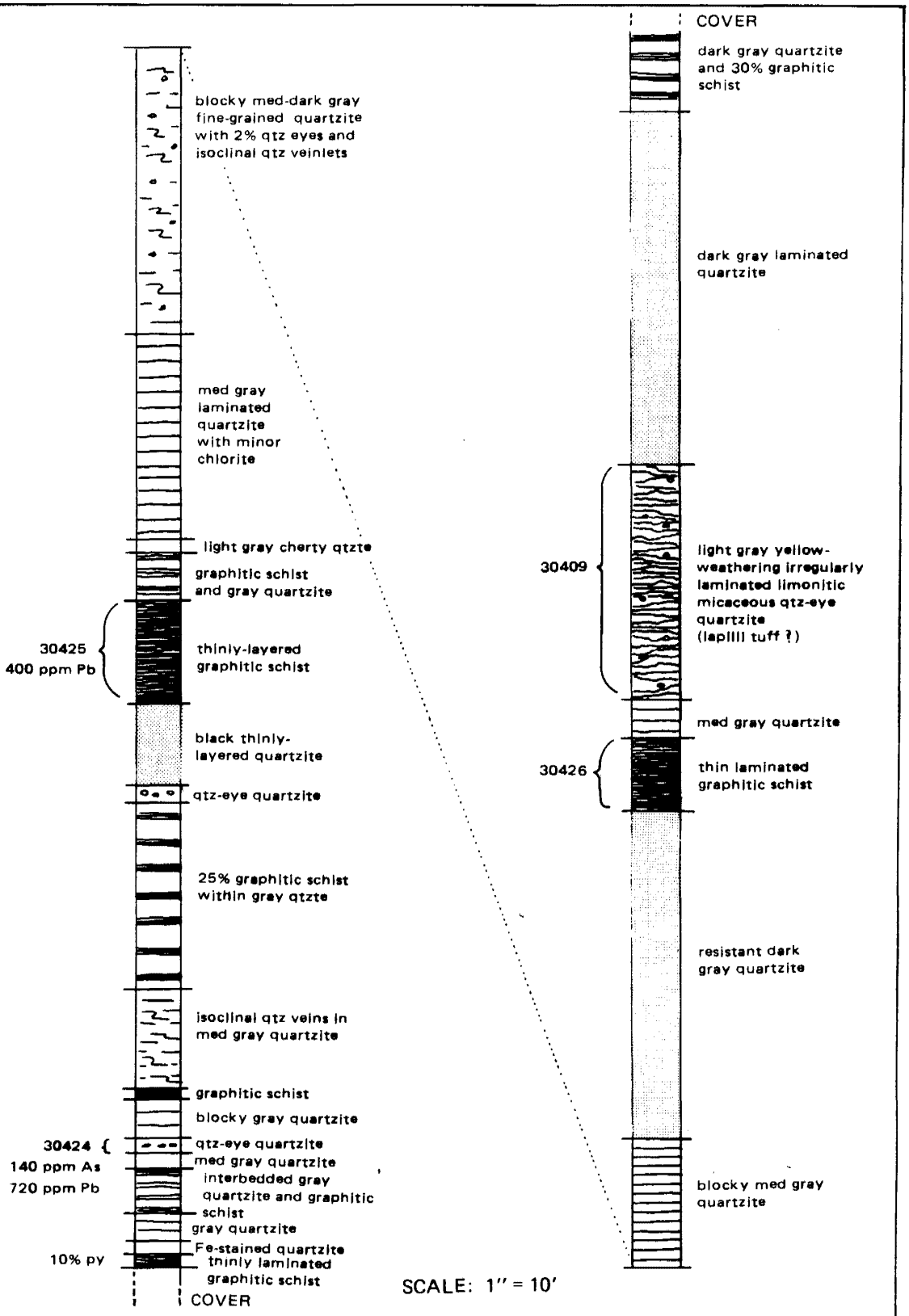


Figure 6.3 Measured stratigraphic section and rock geochemical samples within the Cleary sequence(?) at Charity Creek, Alaska (site A, fig. 6.2). Analyses listed in appendix F.

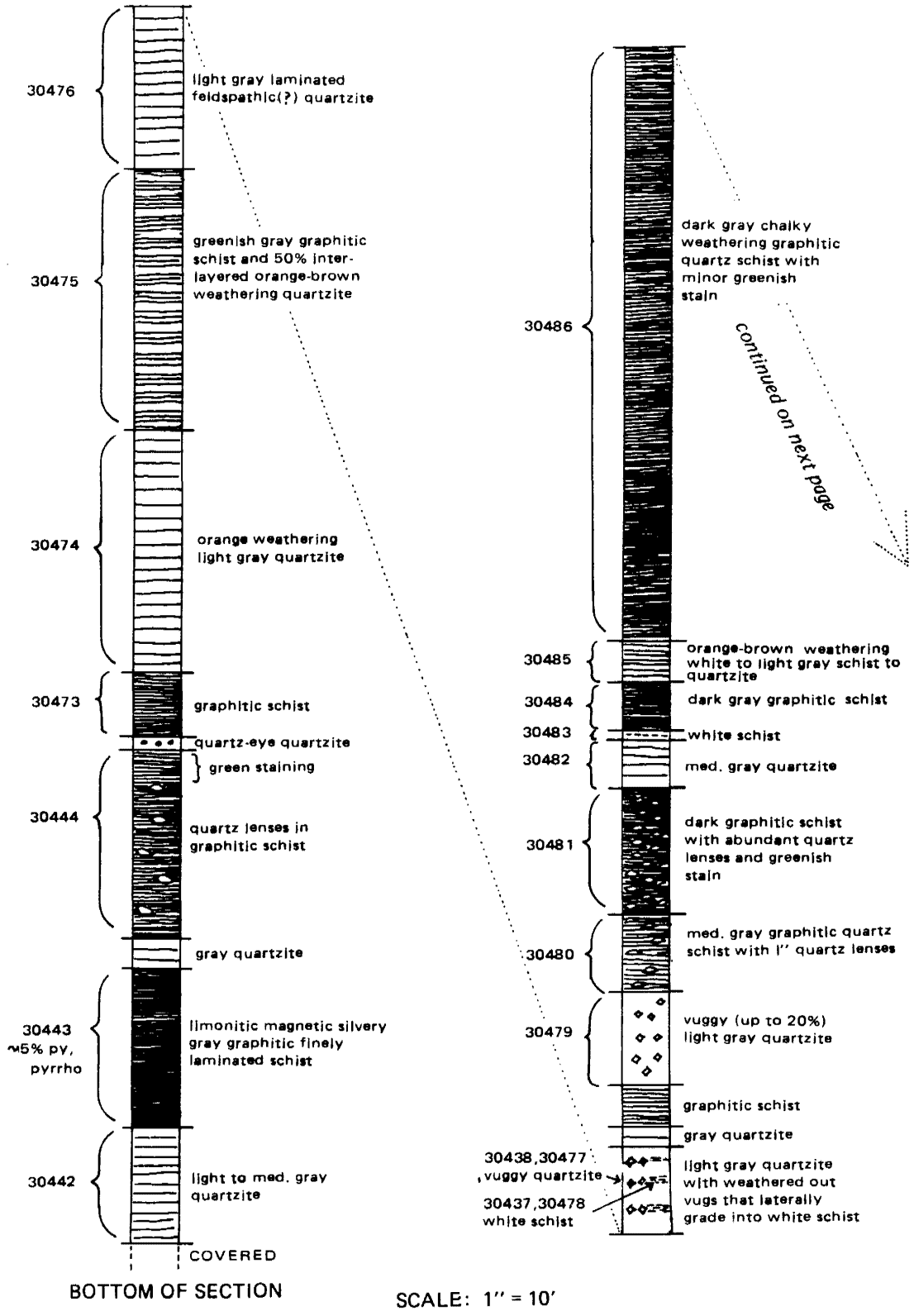


Figure 6.4 Measured stratigraphic section and rock geochemical samples within the Cleary sequence(?), Bachelor Creek (site B, fig. 6.2). Analyses listed in appendix F.

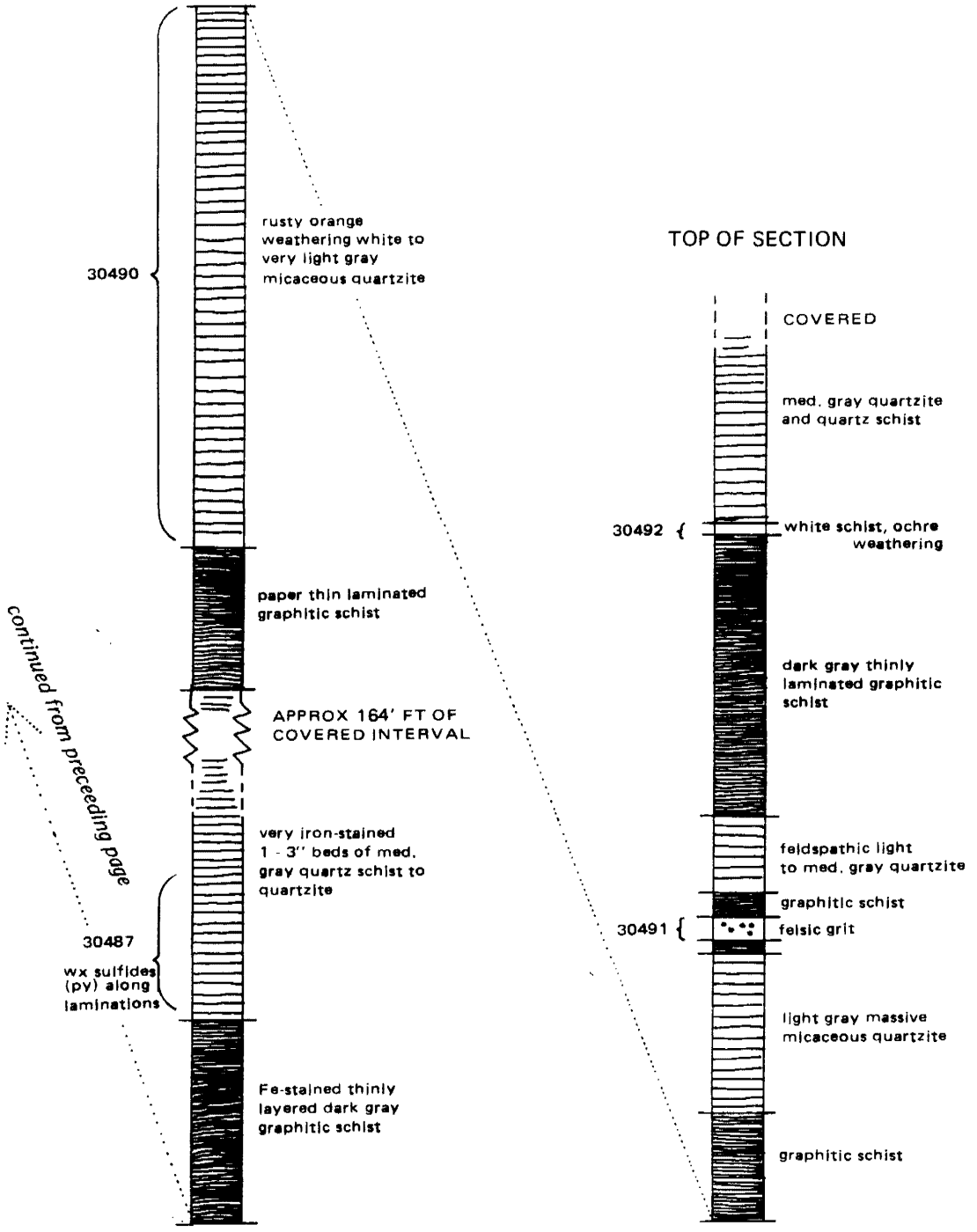


Figure 6.4 continued.

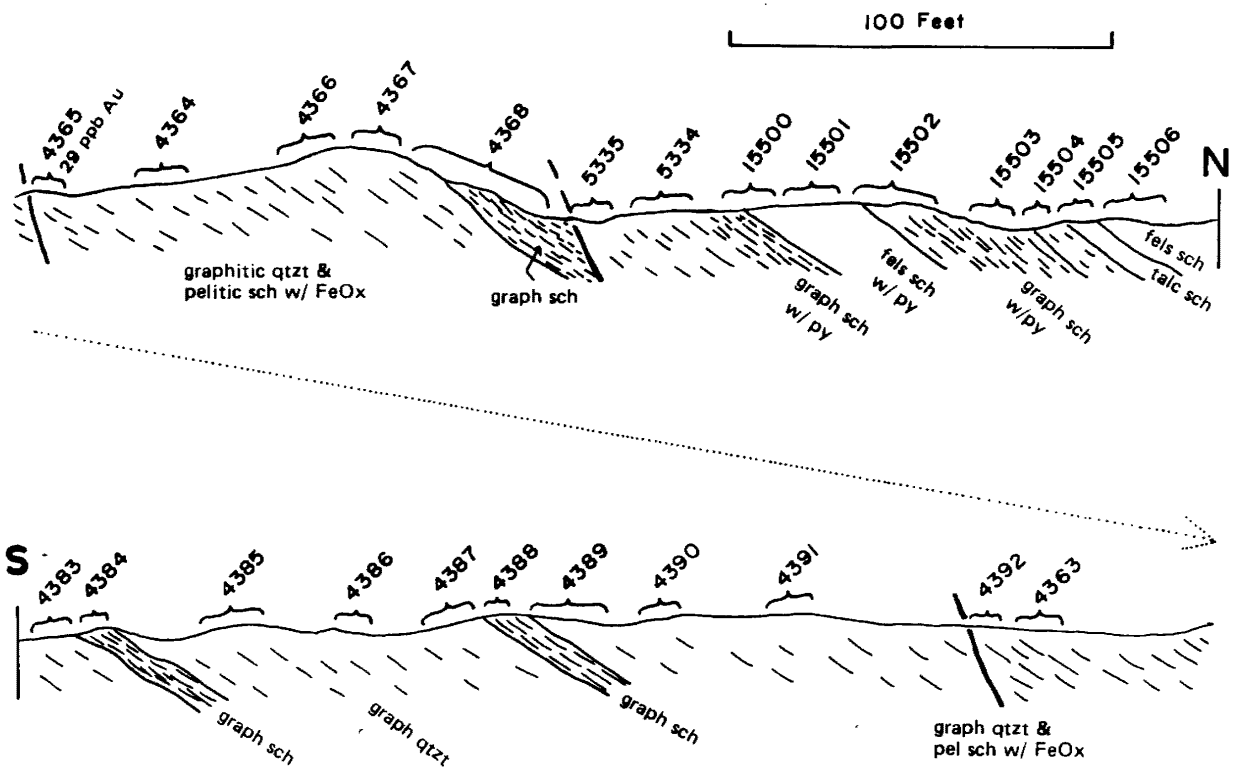


Figure 6.5 Sample locations and geologic section, Bachelor Creek placer cut (site C, fig. 6.2). North end of section includes abundant sulfide-bearing felsic and graphitic schist. Analyses listed in appendix D.

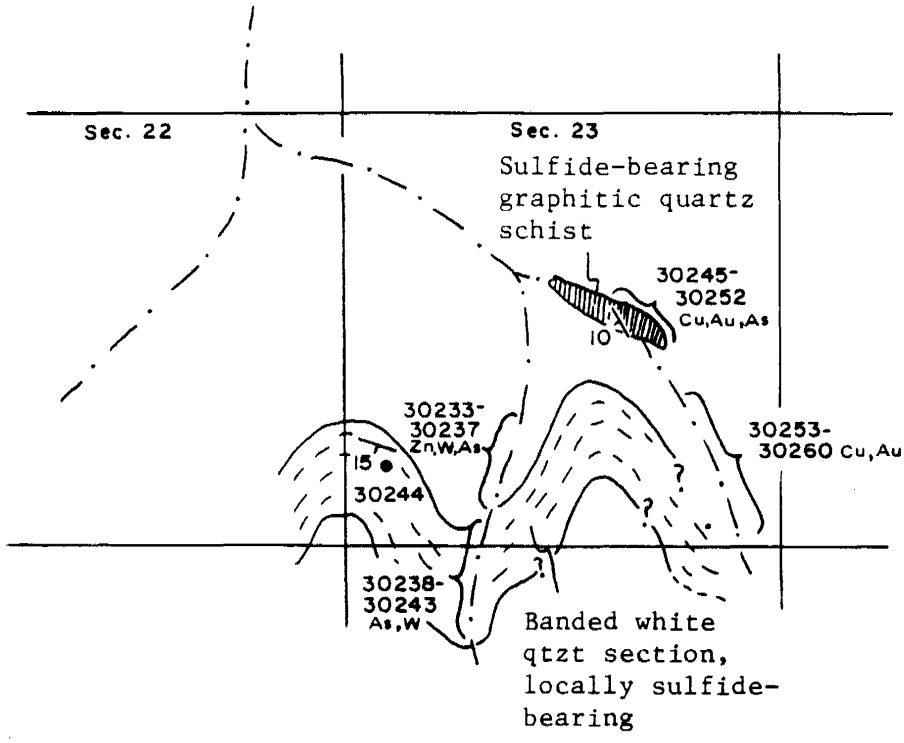


Figure 6.6 Rock sample location map and generalized geology, upper Bachelor Creek, T. 7 N., R. 8 E. Samples 30244-30248 are from outcrops; others are stream float (site D, fig. 6.2). Analyses listed in appendix F.

schist or micaceous quartzite. The latter commonly contains albite porphyroblasts to 2 mm. In general, the amount of feldspar in Cleary sequence(?) rocks of Faith Creek appears to be significantly greater than in pelitic schists and quartzites of the enclosing Fairbanks schist(?). The white to light gray quartz-mica schist and quartzites which distinguish the Cleary sequence(?) are present but very rare in the Faith Creek area. The felsic horizons are commonly limonitic, with occasional vugs after stratiform sulfides. The dark gray, thinly-laminated graphitic schist horizons typically contain disseminated pyrite in amounts up to about 10 percent.

A measured section totaling 170 feet in the Charity Creek drainage (fig. 6.3) shows the predominance of gray quartzite with lesser amounts of graphitic schist. Samples of graphitic schist from this section contained slightly anomalous (14 ppb) Au and a sample of quartz-eye quartzite contained 720 ppm Pb, 140 ppm As and 0.5 ppm Ag (app. F).

Quartz veining in the Faith Creek area varies from numerous subparallel concordant white quartz veinlets to cross-cutting veins of quartz, quartz-chlorite, or quartz-sulfide, one-half to a few inches thick. The quartz-sulfide veins contain pyrite, sphalerite, arsenopyrite, chalcopyrite, and stibnite. These sulfide-bearing veins generally occur within or directly beneath graphitic schist horizons which, in turn, underlie conspicuous orange or red weathering zones and presumably represent metamorphic remobilization of metals out of the local rocks. According to local miners, some of these veins are reported to contain anomalous silver and rarely, detectable gold. Selected grab samples of massive sulfide material from these veins contain up to 4,800 ppb Au, 67 ppm Ag,

8.4 percent Pb, 11 percent Sb, 7.3 percent Zn, 1.1 percent As, 0.4 percent Ni, and 0.17 percent Cu (app. F, samples 30423, 32421).

Bachelor Creek drainage Cleary sequence(?) lithologies in the Bachelor Creek drainage are generally similar to those in Faith Creek. However, the following differences were noted in 1987 studies by Albanese and Solie: (1) the amount of feldspar in the Bachelor Creek schists and quartzites is generally less than in rocks of the Faith Creek area, (2) quartz lenses and boudins are more common in Bachelor Creek, (3) the Bachelor Creek section includes a vuggy light gray quartzite which appears to grade laterally into friable iron-stained white schist, and (4) the dark gray laminated quartzite of the Faith Creek area was not observed in Bachelor Creek. A stratigraphic section measured in lower Bachelor Creek (site B, fig. 6.4) shows a significant proportion of graphitic schist and felsic horizons that include white micaceous schist, vuggy white quartzite, and felsic grit. Composite rock chip geochemical samples were taken across each of the major lithologies in the section. Of 23 rock samples analyzed from this section, gold values did not exceed 6 ppb, and other metals are present in low abundance.

North-dipping strata exposed along the banks of middle Bachelor Creek (examined by Newberry, site C, fig. 6.5) are primarily quartz schist and graphitic quartz schist with minor feldspar-bearing felsic schist and talcose or mixed chlorite-white mica schist. Graphitic schist is spatially associated with white felsic schist; both contain 0.1 to 2% sulfide that is primarily pyrite. Felsic schist contains a trace of pre-metamorphic (volcanogenic?) tourmaline and probably has a felsic volcanic rock protolith, whereas the talcose schist is probably a metamorphosed, altered volcanic rock. Assays of channel samples taken across the 600 foot long exposure in 1986 show generally low metal values (fig. 6.5, app. D). The highest values of As (max 51 ppm) and Au (max 14 ppb) occur in felsic schist and elevated As (max 46 ppm) and Au (max 10 ppb) are also found in graphitic and talcose schists. The highest gold value obtained (29 ppb) was from a quartz pod parallel to foliation; it may represent a pre-foliation quartz vein. Talcose schist is notably anomalous in Co, Cu, and Zn in addition to As and Au. In general, the Cleary sequence(?) rocks of central Bachelor Creek are not strongly metalliferous, suggesting that the sequence is not uniformly mineralized. Strong mineralization might be associated with a greater abundance of feldspathic (felsic tuff?) schist.

A brief examination by Smith of bedrock and stream float in uppermost Bachelor Creek (Site D, figs. 6.2 and 6.6) indicates that the outcrop belt of sulfide-bearing Cleary sequence(?) lithologies extends south and may project under the 9Table Mountain - Pinnell Trail ridge (fig. 6.2). The area was chosen for follow-up study because of anomalous arsenic and copper in stream sediments (pls. 5.3, 5.5) and the lack of nearby intrusive bodies. The geochemical signature is broadly similar to that of streams draining Table Mountain. However, unlike Table Mountain, the geology is not complicated by felsite dikes or hornfelsing by a subsurface intrusive body. Thus, upper Bachelor Creek may serve as an example of stratiform mineralization unrelated to post-metamorphic intrusive activity.

Traverses in the upper Bachelor Creek basin indicate that it is underlain, in part, by light gray or rusty-weathering felsic schists and quartzites and by abundant graphitic schist and quartzite. Sulfide minerals are present in most felsic and graphitic rocks. They appear to be concentrated in stratiform layers, especially in graphitic rocks, and in some hand specimens the sulfides make up 15 to 20 percent of the rock. Pyrite is the most common sulfide, but chalcopyrite, arsenopyrite,

and a gray mineral (tetrahedrite or enargite?) are present in many of the rocks. Pyrrhotite is common in the graphitic zones.

Numerous samples of the mineralized rocks were collected for geochemical analysis (figs. 6.2, 6.6, app. F). Both felsic and graphitic schists contain elevated abundances of gold, copper and tungsten. The felsic schists and associated light-colored quartzites contain up to 240 ppb Au, 4,300 ppm Cu, 2,100 ppm As, 4 ppm Ag, 4.5 ppm Sb, 130 ppm Sb, 14 ppm Pb, 90 ppm Sn and 3,100 ppm W. In these rocks gold correlates with copper, and to a lesser extent, with arsenic abundance. Tungsten and tin correlate well but high tungsten-tin values inversely correlate to gold-base metal values, indicating that the two groups of elements are distributed differently. Graphitic schists and quartzites are less well mineralized, with concentrations of Au to 180 ppb, Cu to 1600 ppm, and W to 110 ppm.

Summary of Cleary sequence(?) mineralization

Detailed mapping and sampling of the Cleary sequence(?) in the Lime Peak- Mt. Prindle study area shows that it is heterogeneous in lithology and mineralization. The vast bulk of the sequence appears to contain only slightly anomalous gold values, and only very local, high-sulfide grab samples are appreciably auriferous. Some late, cross-cutting veins do contain high gold, but these contrast strongly in metallogeny with the stratiform gold. Metal ratios for the most-metalliferous stratiform sulfide samples are: Cu/Au = 18,000, Pb/Au = 14, Zn/Au = 550, Ag/Au = 17, Sb/Au = 19, W/Au = 13,000, and As/Au = 10,000. Metal ratios for cross-cutting vein samples are: Cu/Au = 350, Pb/Au = 18,000, Zn/Au = 15,000, Ag/Au = 14, Sb/Au = 23,000, W/Au 20, and As/Au = 2,000. The striking contrasts in metal ratios between the stratiform and vein sulfide either indicates that the two different types of mineralization have different sources or else that the process of metal mobilization out of the stratiform sulfide lenses into veins is extremely selective--strongly favoring some elements and disfavoring others. The gross similarities in Au/Ag ratios for the two types of mineralization suggest that the latter may be the case. If highly selected element remobilization has taken place, then perhaps the Cleary sequence(?) was initially much more enriched in gold than it is presently, and this gold was selectively removed during periods of fluid movement and re-deposited in veins. Subsequent concentration of this gold by mechanical means during weathering could then account for the placer gold deposits that are in proximity to Cleary sequence(?).

Pinnell Trail antimony anomaly

by

M.A. Wiltse and R.R. Reifenstuhl

Regional geochemical surveys conducted in the Lime Peak-Mt. Prindle area during 1986 (ch. 5) identified a low level (7 ppm), but persistent, antimony anomaly south of Table Mountain (figs. 6.1, 6.7). The uppermost anomalous drainage sites define a crudely linear band that appears to be offset by the Swamp Saddle fault (fig. 6.7) with the same sense of displacement as offset of the garnet isograd (Foster and others, 1983). Although no gold anomalies were found in this area, gold is commonly associated with antimony, both in vein and stratabound (for example, the Murchison Range, South Africa, Viljoen and others, 1978) deposits. In order to investigate the possibility that the antimony anomaly might be caused by a distinct Sb-Au(?)-enriched lithologic unit, the northeastern part of the anomaly (T8N, R10E, Circle B-4 Quadrangle; fig. 6.8a,b) was

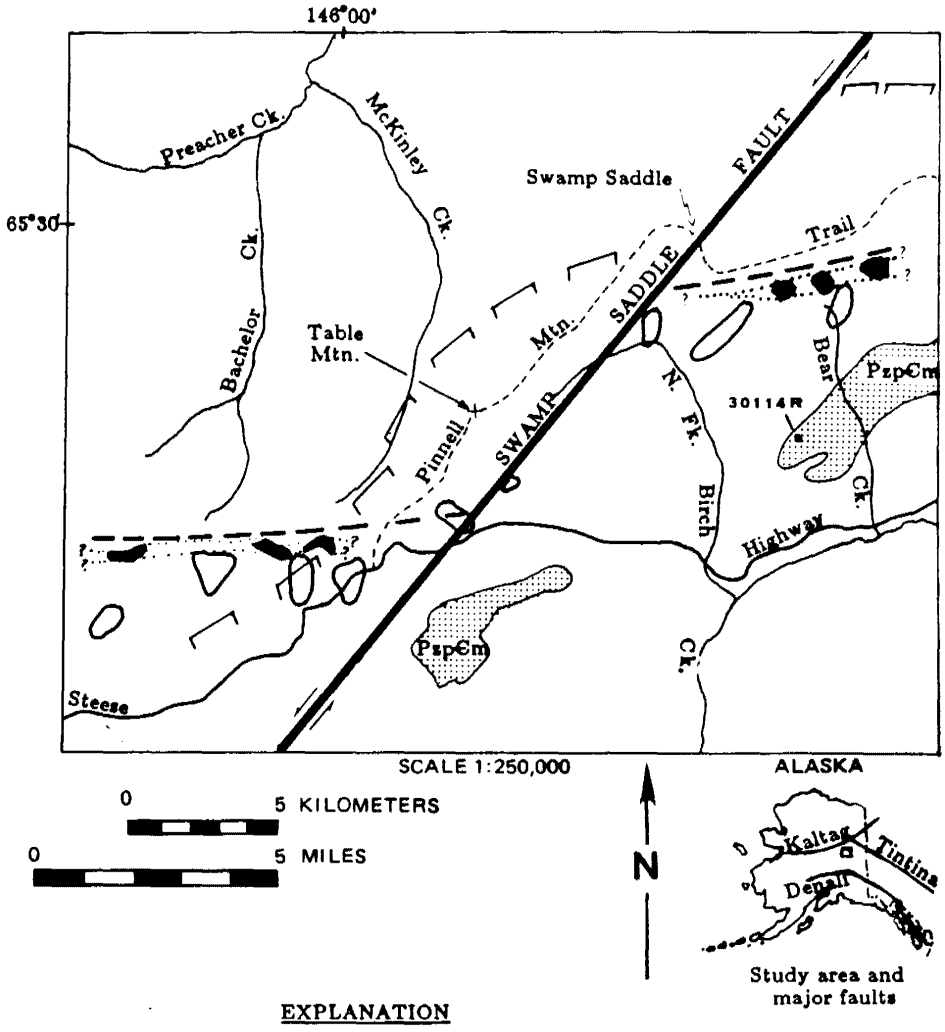
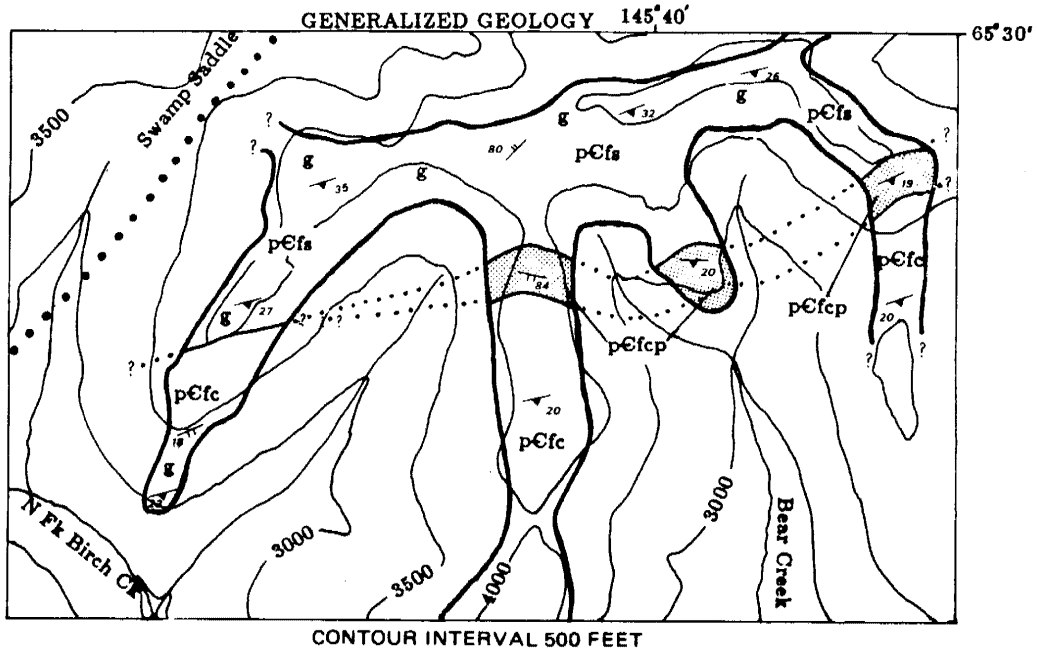
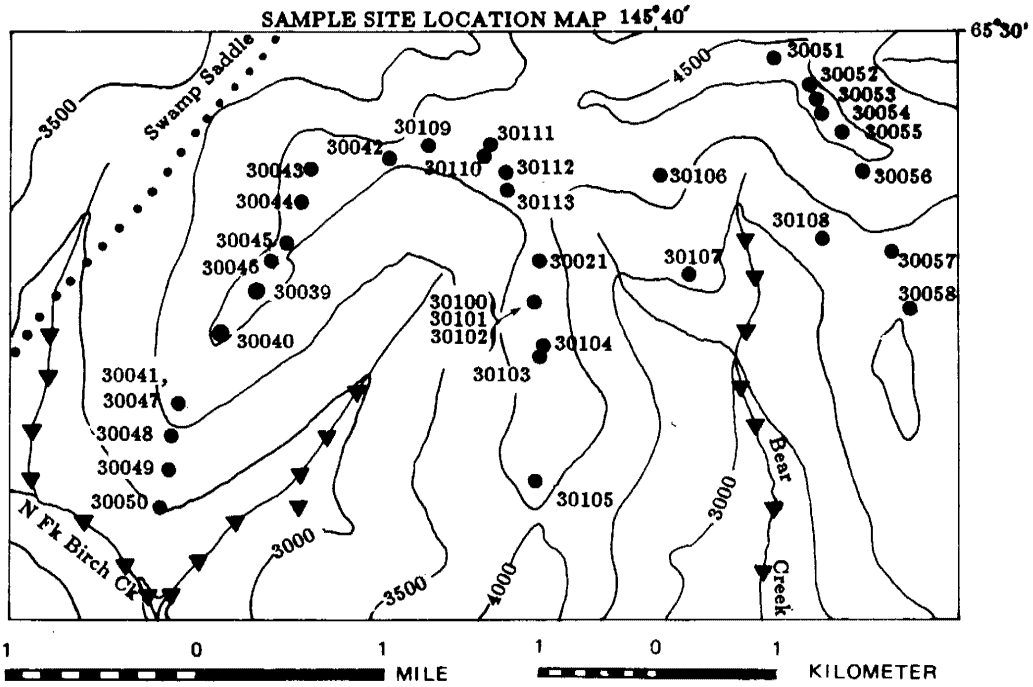


Figure 6.7 Generalized geology of the Table Mountain area showing the trace of the left-lateral Swamp Saddle fault, the offset of the regional garnet isograd (Foster and others, 1983), the inferred northern limit of porphyroblastic chlorite schist outcrops (mafic chlorite schist of Yeend, 1987), and stream drainages having samples anomalous in antimony.





EXPLANATION

pCfs	Pelitic schist and micaceous quartzite
pCfc	Chlorite-quartz schist; locally calcareous and rare marble lenses
pCfcp	Porphyroblastic plagioclase-chlorite-quartz schist
g	Garnet-bearing rocks
▼	Anomalous antimony stream sediment sample site (analyzed 1986; Appendix B)
●	Rock geochemistry sample site (analyzed 1987; see table)
84	Strike and dip of inferred original lithologic bedding
26	Strike and dip of foliation

Figure 6.8 Generalized geologic map (a) and sample-site location map (b) of part of the Pinnell Mountain Trail area. Analyses listed in appendix F.

examined in detail in June 1987. This investigation showed that the anomalous area coincides approximately with the distribution of a locally calcareous, chlorite-bearing schist sequence.

The area south of the Pinnell Mountain trail is underlain by metamorphic rocks of the Fairbanks schist unit (pls. 2.1A, 2.1B). These rocks are metamorphosed to greenschist grade and lie within an area characterized by medium-grained pink garnet porphyroblasts. A distinctive chlorite-rich lithologic sequence (fig. 6.8a) lies to the south of the dominant pelitic schists and micaceous quartzites of the Pinnell Mountain trail ridge. A chlorite-rich unit also lies above the antimony anomalies west of the Swamp Saddle fault (fig. 6.7).

The chlorite-rich sequence includes chloritic muscovite-quartz schist, quartz schist, chloritic quartzite, and porphyroblastic chlorite quartz schist, all having variable amounts of chlorite, and rare thin marble lenses. All these lithologies, except the marble, contain 0 to 4 percent, 0.1 to 4.0 mm pink garnets. The most distinctive lithology is the porphyroblastic plagioclase chlorite quartz schist, which contains 45 percent plagioclase, 25 percent chlorite, 15 percent quartz, 5 percent white mica, and 2 percent each of calcite, sphene, and zoisite. Plagioclase crystals are up to 1.5 mm in size and the other minerals are less than 0.2 mm in size.

The antimony drainage anomalies in the Pinnell trail area coincide closely with the location of the chlorite-rich rock sequence (figs. 6.7, 6.8a). The chlorite-rich unit is also similar to a mafic chlorite schist sequence identified by Foster and others (1983) south of the study area, and suggested by Yeend (1987) as a probable source for placer gold in the Circle district. No antimony or gold-bearing veins have been found in either chlorite-rich unit, however.

Thirty-six composite rock samples from the study area (fig. 6.8b) were collected and chemically analyzed (app. F). Samples were divided into two groups--(1) pelitic schists from north of the porphyroblastic schist contact and (2) chlorite-rich schists from south of the contact. Summary statistics for selected elements from each group are presented in table 6.1. With the exception of sample 30047 (19 ppm Sb), no significant Sb anomalies were found in the chloritic unit and no significant Au anomalies were found in either unit. Arsenic is slightly anomalous (54 and 61 ppm) in two samples (30057 and 30040) of the chloritic unit.

Table 6.1. Summary geochemistry for south Pinnell area(*).

	group A (n = 17)				group B (n = 19)			
element	mean	max	min	s.d.	mean	max	min	s.d.
As	5.8	21	2	5.5	12.1	61	3	17.4
Ba	365	700	100	180	417	900	d	308
Sb	1.3	4.8	0.4	1.2	2.8	19	0.3	4.6

* all concentrations in ppm, n = number of samples, s.d. = standard deviation, group A = pelitic schists, group B = chloritic unit

Although the chloritic schists have a greater range in As, Sb, and Ba concentrations than the pelitic schists, the range in elemental abundances is high in both units, such that the population standard deviations are close to or exceed the mean values (table 6.1). F-test calculations for the elements As, Ba, and Sb show there is no statistical evidence to suggest that the variances of

concentrations of As, Ba, and Sb in the pelitic and chloritic schists are significantly different. Because there is no significant difference between group A and group B variances for As, Ba, and Sb, the means of each of these elements can be compared for equality between groups using the student-t test with pooled standard deviations. For the present comparison, the group A mean for an element is significantly different from the group B mean of that element if the absolute value of the calculated statistic (t) exceeds the value of the theoretical statistic (t*).

Table 6.2. Results of comparison of means for As, Ba, and Sb in group A rocks vs. the means of As, Ba, and Sb in group B rocks. t* = +/- 1.65 at the 95% confidence level; t* = +/- 1.28 at the 90% confidence level; Sp = pooled standard deviations.

Element	Sp	t
As	13.21	-1.43
Ba	256	-.61
Sb	3.45	-1.3

The results in Table 6.2 show that at the 90% confidence level the average concentration of Sb and As is significantly greater in the chloritic schist sequence than in the pelitic schists. Clearly, the differences in average concentration levels of Sb and As between the two groups of rocks are not large, but they do tend to support the hypothesis that the chloritic sequence is the source of the low level Sb drainage anomalies. The slightly elevated As level in the chloritic sequence is of interest because of that element's common association with Au. There is, however, no evidence to suggest the immediate presence of Au mineralization in the 1987 study area.

Stratabound and/or Igneous-hydrothermal Related Prospects

Table Mountain area quartz-tourmaline-gold veins and related mineralization

Samples of tourmaline- and arsenopyrite-bearing black schist from the west end of Table Mountain (fig. 6.1) contain up to 140,000 ppb Au (Burack, 1983). A subsequent investigation by Menzie and others (1987) suggested that this mineralization was fault-controlled, based on the presence of tourmaline in a fault zone near the sample locality, and in a nearby secondary arsenopyrite-bearing quartz vein. This arsenopyrite-bearing quartz vein extends for at least 300 feet and was reported by Menzie and others (1987) to contain up to 12,600 ppb Au. In 1986, DGGS collected samples of auriferous tourmaline-quartz veins and hornfelsed biotite-tourmaline schists from the Table Mountain area, confirming earlier work. Field work in 1987 has shown that the biotite-tourmaline schists and tourmaline-quartz veins are present throughout much of the north side of Table Mountain (fig. 6.9), and that they are not restricted to fault zones. The widespread distribution of these veins is attributed to either (1) remobilization from stratiform occurrences or (2) hydrothermal mineralization associated with nearby abundant felsite dikes. In either case, the widespread occurrences suggest this area has significant lode gold potential.

The tourmaline-quartz veins on Table Mountain characteristically contain tourmaline- and quartz-rich bands from 0.1 to 0.5 inches thick, with an orange oxidation discoloration in the quartz,

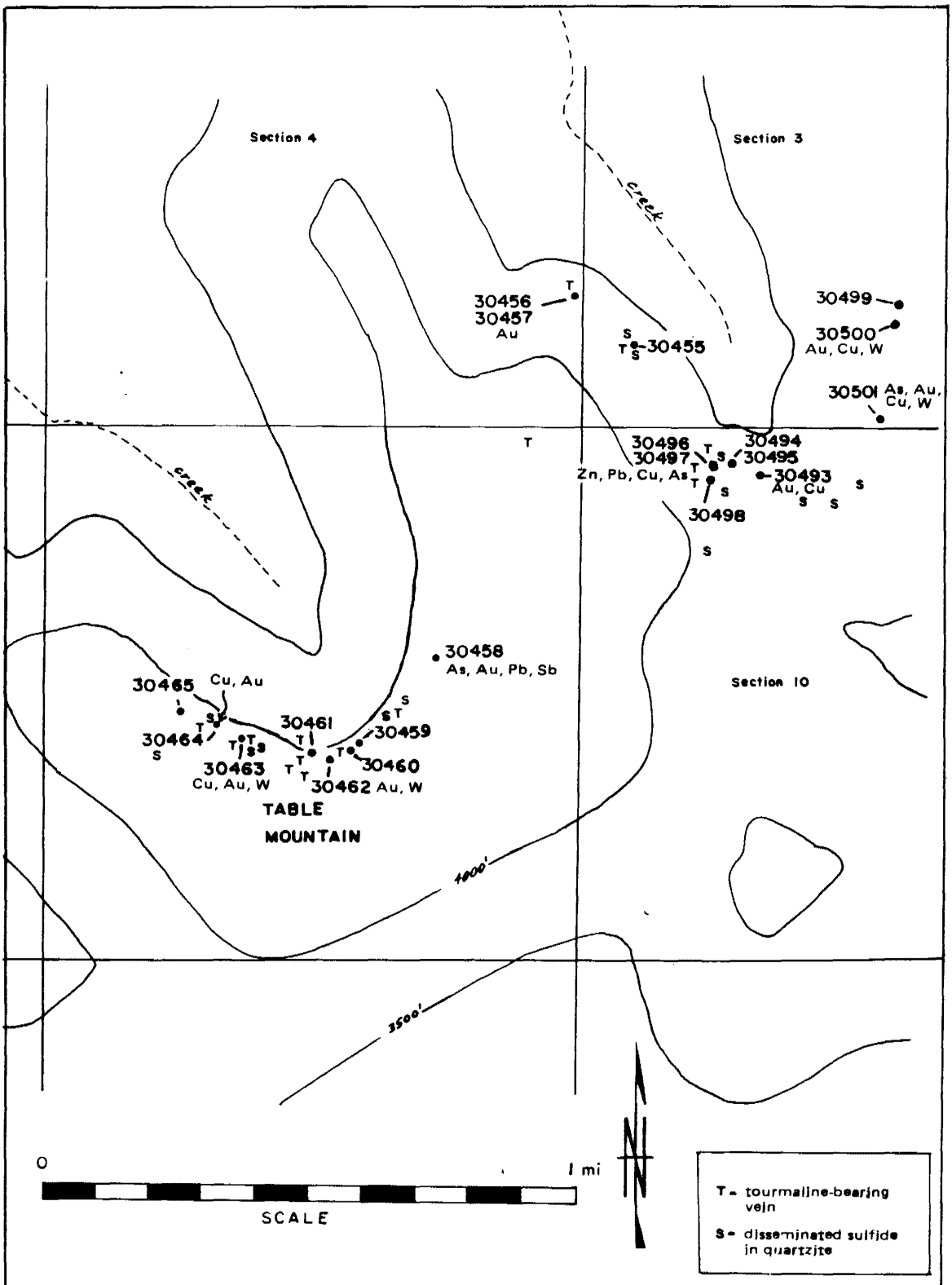


Figure 6.9 Location of rock geochemical samples and anomalies collected from the Table Mountain area, Alaska, during 1987 follow-up investigations. Analyses listed in appendix F.

probably due to the weathering of iron-sulfides. The tourmaline is very fine-grained; the quartz is commonly vuggy. Secondary tourmalinization is common around the veins (Menzie and others, 1987). Visible sulfides constitute up to 5% of the vein and fluorite is sporadically present.. Vein sulfides identified in polished section include arsenopyrite and pyrrhotite, with rare pyrite, chalcopyrite, sphalerite, enargite, and molybdenite. Metal anomalies (Menzie and others, 1987) present in mineralized samples suggest local presence of stibnite and bismuthinite.

Fluid inclusion studies of gold-quartz veins on Table Mountain (Menzie and others, 1987) indicate low CO2, moderate salinity (0.2 to 10% NaCl), moderate temperature (320° to 380° C), boiling fluids. Based on boiling temperatures, depths of vein formation were estimated at 1.4 to 2.4 km (Menzie and others, 1987).

Associated with the veins are green-grey to black, sulfide-bearing, hornfelsed tourmaline-biotite schists. Petrographically, the tourmaline in schists on Table Mountain does not resemble tourmaline in Cleary sequence(?) rocks at Bachelor Creek, nor tourmaline in metamorphosed volcanogenic sulfide deposits (Taylor and Slack, 1984). Although tourmaline is megascopically present in layers parallel to foliation, in detail tourmaline is intergrown with contact metamorphic biotite and muscovite and needles are oriented at high angles to foliation. Tourmalines are also optically unzoned, as opposed to tourmalines in Cleary sequence(?) rocks at Bachelor Creek, which are both optically and compositionally zoned.

Tourmaline-biotite hornfelsed schists also contain up to one percent very fine disseminated specks of sulfides including pyrite, pyrrhotite, arsenopyrite, chalcopyrite, and stibnite. Sulfides appear to be more common in the biotite-tourmaline schists than in adjacent porphyritic albite schists. The sulfide-bearing schists constitute up to about 20 percent of the Table Mountain lithologies.

Also present throughout much of northern Table Mountain are blue-green, siliceous, dense, sulfide-bearing quartzites. These quartzites usually occur in concordant bands up to a few inches thick within gray quartzite and albite schist. The bands are typically orange-brown weathering, and break in small equant blocks. They generally appear to be stratigraphic layers, though the presence, in both quartzite and nearby felsite dikes, of small branching and diffusing dark blue-green (chlorite +/- fluorite ?) veinlets suggests that some of the blue-green siliceous mineralization may be caused by secondary fluids. Pyrrhotite and arsenopyrite (to 5%) are ubiquitous in this rock type, which constitutes very roughly 3 to 5 percent of northern Table Mountain. These mineralized quartzites appear to be more prevalent and contain more sulfides where adjacent to the tourmaline-bearing lithologies.

At least two dozen bodies or dikes of felsite are known in the Table Mountain area (Menzie and others, 1987; this study, pl. 2.1A). Felsite rubble is widely distributed in the area and between 5 and 10 percent of all rubble consists of felsite. The felsites are pale colored aphanitic rocks with variably-abundant k-feldspar and/or quartz phenocrysts. Major and trace element analyses suggest some possess an alkalic affinity (ch. 3B). Menzie and others (1987) also report intermediate composition dikes which have immobile trace element contents similar to the lamprophyre and quartz monzonite dikes of the Homestake - Hope Creek area.

All the felsites seen in the Table Mountain area are moderately- to strongly-altered to an assemblage of sericite-carbonate-chlorite-pyrite+/-fluorite. Mineral staining indicates that at least

some of the carbonate present is ankerite. Brecciated quartz veins are common along dike margins; thin quartz +/-fluorite veinlets in the dikes have been noted by Menzie and others (1987).

Our sampling, combined with that of Menzie and others (1987) shows that gold-enriched rocks are common in the Table Mountain area. Quartz-tourmaline vein material sampled by Menzie and others (1987) contain between 3,000 and 12,000 ppb Au, more than 1 percent As, and 150 to 500 ppm Cu. Our analyses of quartz-tourmaline veins contain up to 900 ppb Au, 1.6 percent As, 4 ppm Ag, 110 ppm Sb, 310 ppm Pb, 55 ppm Se, and 930 ppm Cr. Biotite-tourmaline schists contain up to 2 percent As, 3.6 ppm Ag, 290 ppm Cu, 29 ppm Se, and 9,400 ppb Au (app. D, F). A sample of iron-stained, tourmaline-free biotite schist (30462) contains 3,200 ppb Au, 2 ppm Ag, 0.11 percent Cr and 3.7 percent W. Sulfide-bearing quartzites contain up to 400 ppb Au and 800 ppm W, but the highest Au and W values were not seen in the same sample. The porphyritic albite schists and sulfide-free biotite schists do not contain anomalous metal values. Altered felsite dikes contain up to 250 ppb Au (Menzie and others, 1987); our sampling showed maximum values of 19 ppb Au. Outside of the Table Mountain area, altered felsites contain up to 59 ppb Au (app. D) Clearly, the mineralized quartzite bands, the biotite-tourmaline schists, the quartz-tourmaline veins, and altered felsites constitute a major source for the arsenic and silver stream sediment anomalies and contribute to the copper and gold stream sediment anomalies in the Table Mountain area.

The mineralized quartzite bands and the biotite-tourmaline schists may represent a regional extension of the Cleary sequence(?) of the upper Bachelor Creek strata along its apparent structural trend into the Table Mountain area, although the Table Mountain rocks are several orders of magnitude more enriched in gold than any Cleary sequence(?) rocks sampled in the Bachelor Creek-Faith Creek-Charity Creek area. It is conceivable that some lithologies in the Table Mountain area and the Cleary sequence(?) are correlative, based on the presence of light gray to white felsic grit and quartzite in both sequences, and the presence of sulfide-bearing quartzites in Bachelor Creek and on Table Mountain. If these units are correlative, then the mineralization in the biotite-tourmaline schists and the blue-green quartzites of Table Mountain could be stratabound. Remobilization of these sulfides due to fluid emanations from underlying plutonic sources could them create the observed concentration of mineralization in the tourmaline-quartz veins of the Table Mountain area.

Alternatively, the gold mineralization on Table Mountain might be directly related to the slightly alkaline felsic dike swarm. Because the various lithologies have been hornfelsed and intruded by dikes, it is difficult to establish whether they were (1) originally auriferous and subsequently contributed gold to the quartz-tourmaline veins or (2) originally non-auriferous and received their gold during formation of the quartz-tourmaline veins.

Three features of the Table Mountain mineralization suggest an origin independent of Cleary sequence(?) sources. (1) The abundance of unzoned tourmaline on Table Mountain is not presently known anywhere else in the Cleary sequence(?) of the Fairbanks, Lime Peak-Mt. Prindle, or Circle areas. (2) Several of the elements present in large concentration on Table Mountain (for example, Mo, Se, and Cr) are not associated with the Cleary sequence(?) elsewhere. (3) Fluids associated with Table Mountain mineralization are much lower in CO2 and higher in NaCl than fluids known elsewhere to be associated with remobilized Cleary sequence ores (Metz, 1984).

As previously indicated (ch. 3B), slightly alkaline porphyritic dike rocks of the types similar to those in the Homestake Creek-Table Mountain area are commonly associated with vein gold

deposits. In most cases, these alkalic-related ores contain the ore assemblage pyrrhotite-pyrite-chalcopyrite-sphalerite-arsenopyrite+/-stibnite-bismuthinite-molybdenite-enargite. Tellurium and selenium are commonly enriched in the ores. Fluorite and ankerite are minor gangue minerals and tourmaline varies from very abundant (as at El Chivato, Chile, Ruiz and Ericson, 1962, and Klyuchi, U.S.S.R., Borodaevskaya and Rozhkov, 1974) to sparsely present (as at Rossland, British Columbia, Little, 1960, and Darasun, U.S.S.R., Borodaevskaya and Rozhkov, 1974). Other deposits with these characteristics include Beresovsk, Muruntau, Kolchkar, Berezovo, and Komunarovo, U.S.S.R. (Borodaevskaya and Rozhkov, 1974; Laznicka, 1986), deposits in the Front Range, Colorado (Lovering and Goddard, 1950), deposits in central Colorado (Laznicka, 1986) and deposits in the Little Rocky Mountains, Montana (Hastings, 1986). Fluid inclusion studies of tourmaline-sulfide breccia ores including the El Chivato, Chile, tourmaline-gold deposit (Sillitoe and Sawkins, 1971) indicate formation by moderately to highly saline (3 to 36% NaCl), low CO_2, moderate-temperature (350° to 400° C) fluids, at depths of 2 to 2.3 km. These fluids are very similar to those responsible for mineralization on Table Mountain.

In conclusion, vein/veinlet gold mineralization on Table Mountain is of potential economic importance, given the widespread presence of tourmaline-sulfide occurrences and their common auriferous character. It is not clear whether the mineralization represents a remobilized stratabound or an epigenetic occurrence. However, large, high-grade analogs for both types of deposits are known world-wide.

Igneous-hydrothermal Related Prospects

Lower Hope Creek area

by

R.C. Swainbank and P.J. Burton

Gold placer workings extend up Hope Creek (fig. 6.1) as far as Zephyr Creek, and there is evidence of old hand-worked placers in the stream channel of Zephyr Creek about one-half mile above the mouth. Anomalous levels of gold were detected in a pan-concentrate sample collected in 1986 at the mouth of Zephyr Creek, and weakly anomalous gold occurs in the stream-sediment samples collected in 1986 from two other tributaries of Hope Creek. A sample from a tributary south of Hope Creek was also anomalous in arsenic. Figure 6.10 shows the locations of these samples and the approximate extent of the placer workings. Follow-up work in 1987 to locate the sources of these geochemical anomalies has demonstrated that hornblende quartz monzonite (Tkhg) is more abundant (fig. 6.11) than previously recognized, and that in a few places the pluton's margins and hornfelsed country rock contain gold mineralization. Other possible sources of the gold in the Hope Creek basin include quartz veinlets and segregations which are prevalent in micaceous quartzites.

Bedrock exposure (fig. 6.11) is rare in the Hope Creek area, except on ridgetops, and locally along the creeks. Micaceous quartzite, typically weathering to massive slabs and blocks, is by far the most abundant rubble, and due to its resistance to erosion, forms most of the bedrock outcrops. White, sulfide-free, quartz lenses, segregations and veinlets are common in the quartzite. Quartz-mica schist and pelitic schist are subordinate to the quartzite both in rubble and outcrop. Chloritic and graphitic variants, seen in the Cleary sequence(?) belt to the north and south, were not seen in the Hope Creek area. A few pieces of light-colored muscovite schist were

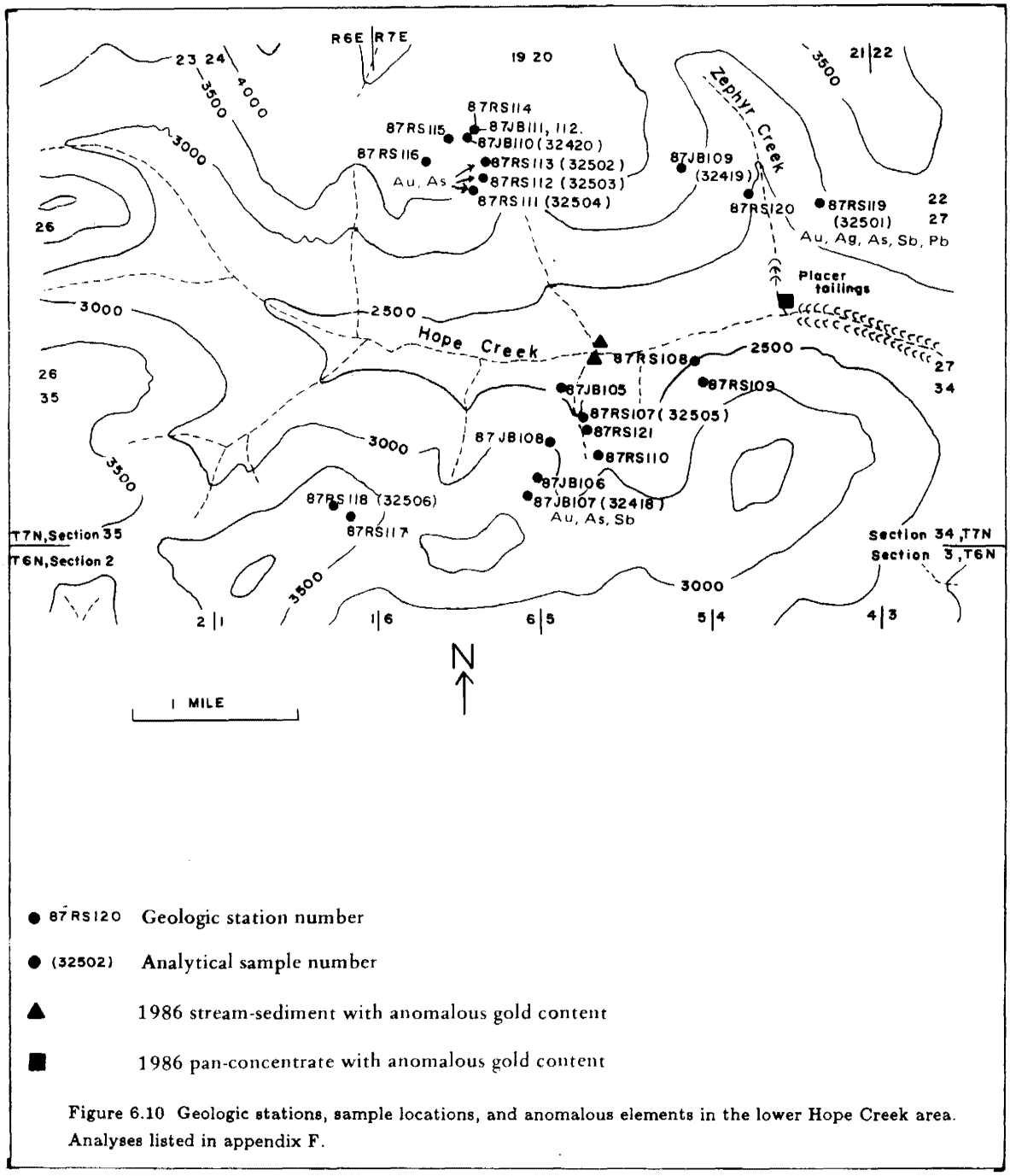


Figure 6.10 Geologic stations, sample locations, and anomalous elements in the lower Hope Creek area. Analyses listed in appendix F.

found on the ridge south of Hope Creek, but volumetrically they are insignificant. Iron-staining of the schists is uncommon except near hornblende quartz monzonite contacts.

Unfoliated hornblende quartz monzonite occurs as small bodies (fig. 6.11) in the Hope Creek, Homestake Creek, and Sourdough Creek drainages. The rock varies in composition between quartz monzonite and monzogranite, but is otherwise uniform in character. As indicated

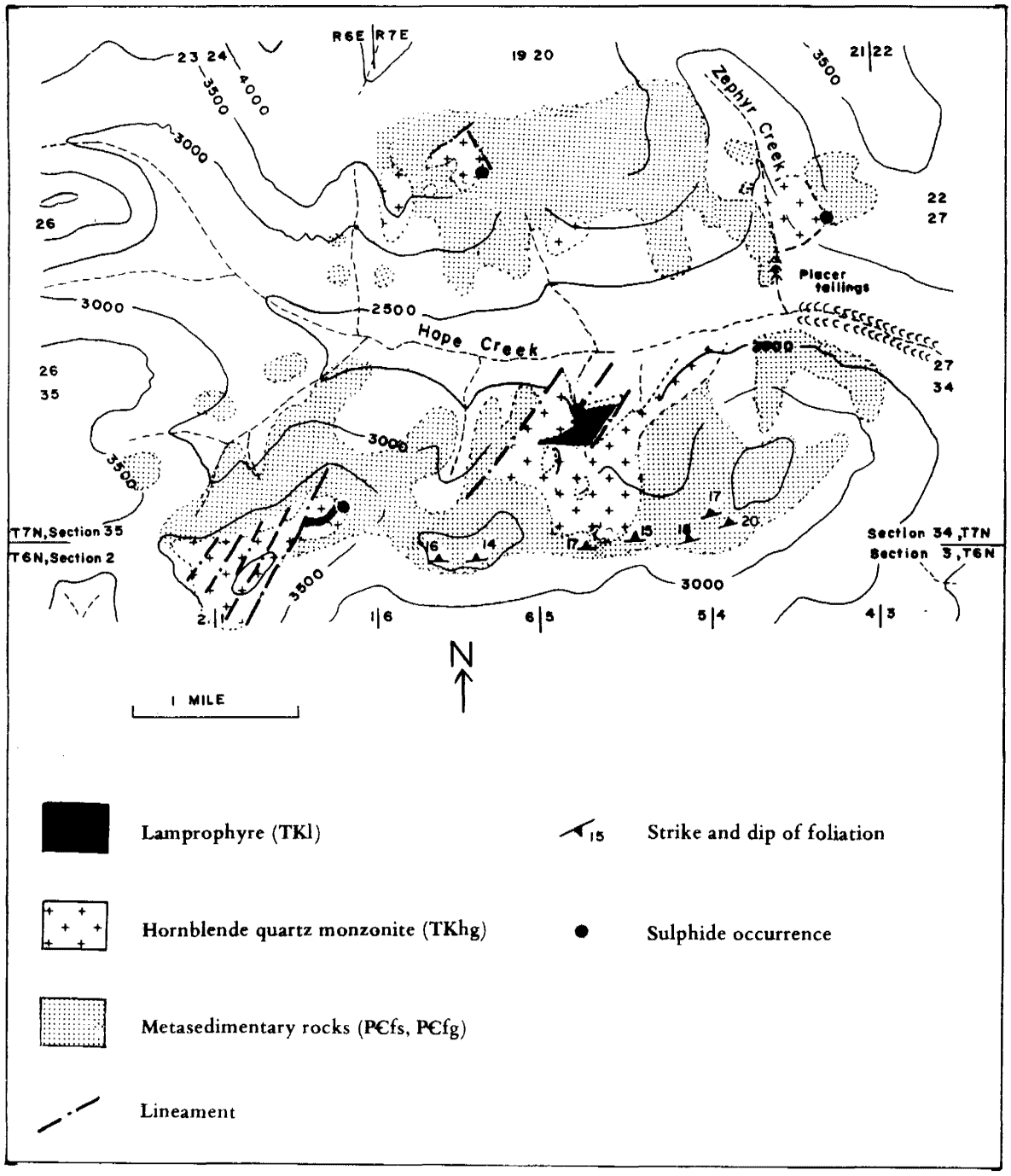


Figure 6.11 Generalized geology of the lower Hope Creek area.

in chapter 3B, the mildly alkalic rocks of the Hope-Homestake Creek area are similar to rocks associated world-wide with vein gold deposits.

No plutonic contacts were seen, but based on rubblecrop, many of the contacts appear to be low-angle, dipping to the north, sub-concordant with the prevailing foliation. Screens or xenoliths of hornfelsed schist are locally included in the quartz monzonite. Some of the contacts coincide with linear topographic features and may be faulted or fault-controlled. Greenish-grey

fine-grained felsic variants of the quartz monzonite, generally highly sheared, are present within a few feet of the contacts in many places.

Hornblende quartz monzonite in the Hope Creek area is commonly altered to chlorite-ankerite-sericite +/- pyrite. Fluorite and garnet are occasionally present. Alteration occurs along both plutonic contacts and shear zones within the plutons.

Numerous cobbles and boulders of sulfide-bearing hornfels occur in Hope Creek. Samples of sulfide-bearing hornfels and quartz monzonite from rubblecrops north of Hope Creek (32501 to 32504; app. F) are strongly anomalous in As (maximum 0.7%) and Au (maximum 550 ppb) and moderately anomalous in Sb (maximum 120 ppm). Sulfide-bearing hornfels and quartz monzonite samples from south of Hope Creek (32505, 32418) are also anomalous in these elements with maximum values of 53 ppm As, 43 ppb Au, and 29 ppm Sb. One major quartz vein in quartz monzonite was located during this study. The vein consists of sheared, iron stained, massive, microcrystalline and cockscomb quartz. Sample 32420 from this vein is very slightly anomalous in Ag (0.5 ppm) and As (12 ppm).

Virtually no mineralization was observed in metamorphic rocks away from plutonic contacts. One hematite-cemented gouge zone in quartzite (32419) was not appreciably anomalous in any of the elements analyzed.

In summary, sulfide-bearing hornfels and altered quartz monzonite samples near hornblende quartz monzonite contacts are the most gold-rich rocks found in the Hope Creek drainage during this investigation. These and similar rocks are probably responsible for the gold and arsenic anomalies and some of the gold in placer deposits of this area. Although large outcrops of mineralized rock were not located during this study, up to eight square miles of the contact zone of the north-dipping hornblende quartz monzonite could have been eroded by Hope Creek. If only a fraction of this area was mineralized as strongly as our samples, the contact zone would have contributed tens of thousands of ounces of gold to placers in Hope and Faith Creeks.

Gold-tungsten-bearing skarn prospects

General features

Stream sediment and heavy mineral geochemistry indicates that gold-bearing rocks are present in the Pinnell Mountain trail area (pls. 5.5, 5.3). Our geologic work indicates that one likely source for many of these gold anomalies are gold-and tungsten-bearing skarns. (figs. 6.1, 6.12). At least 9 skarn prospects are present in this area, all of which are small in extent and grossly similar in mineralogy, metal contents, and geologic associations. Only the largest prospect, on the NW side of Table Mountain, is described in detail for this report.

The gold-bearing skarns on Table Mountain are similar in mineralogy, metal contents, and geologic associations to tungsten-bearing skarns world-wide, especially to the well-studied gold-tungsten skarns of the Fairbanks area (Allegro, 1987). Geologically, these skarns have many common characteristics and associations, as summarized in Newberry and Swanson (1986).

World-wide, gold-tungsten skarns are associated with granodiorite to monzogranite intrusions showing evidence for moderate depths of emplacement. A subsurface intrusive (as

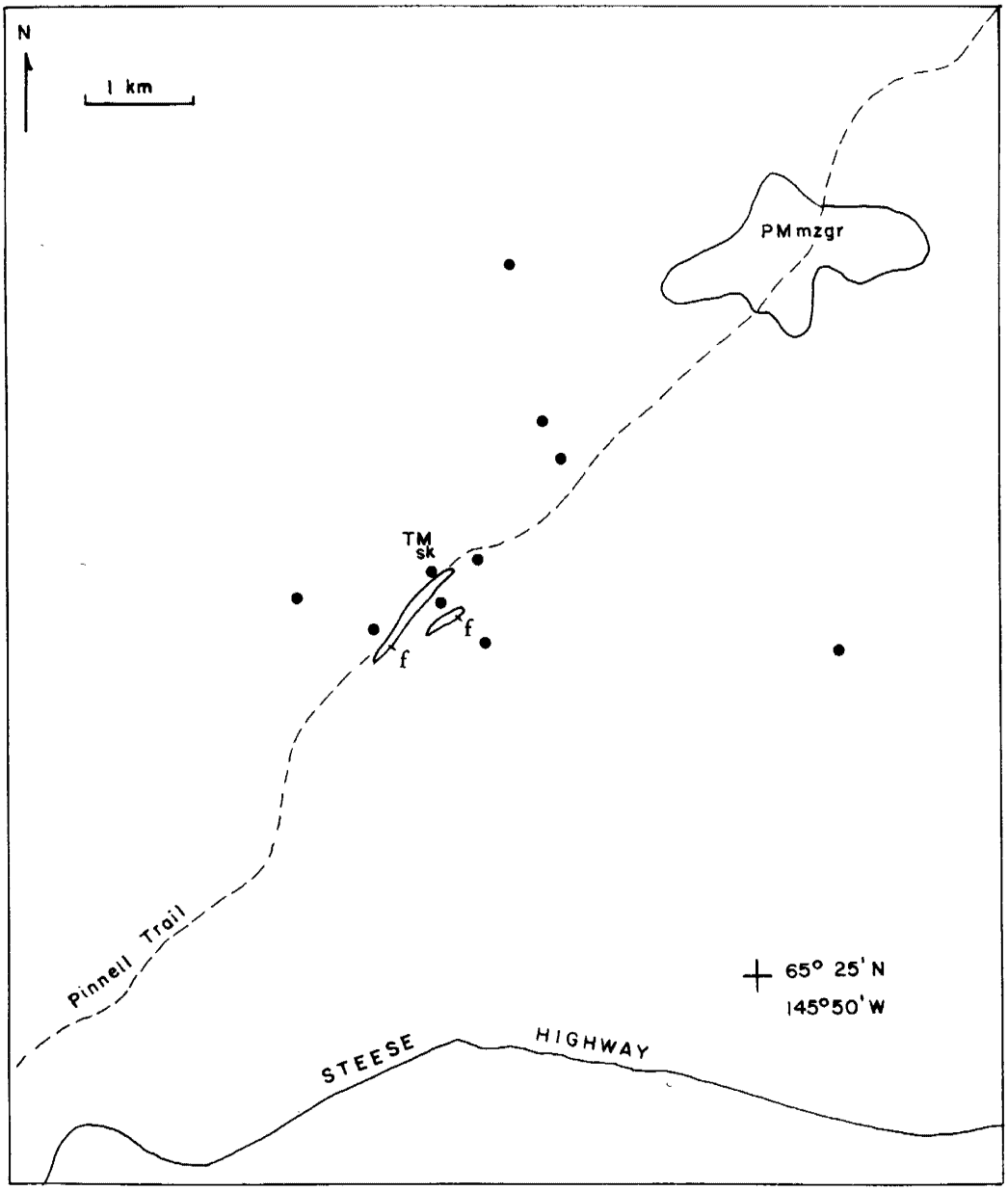


Figure 6.12 Location of W-Au skarns near Pinnell Trail (dots). PMmzgr = Pinnell Trail monzogranite, f = felsite, TMsk = Table Mountain skarn prospect.

indicated by aeromagnetic maps) similar to the Pinnell Trail monzogranite (fig. 6.12) is a logical source for the Table Mountain skarns, given their proximity to the monzogranite and the fact that the nearby felsite dikes clearly cross-cut and offset skarns and skarn zoning and therefore, post-date skarn formation. As discussed in chapter 3B, the Pinnell Trail monzogranite has mineral and major oxide compositions within the range of 'typical' tungsten skarn-related plutons

(Newberry and Swanson, 1986). Aplite geobarometry indicates this pluton crystallized at a pressure in excess of 1 kb, which is characteristic of tungsten skarn-related plutons.

The Table Mountain skarns contain garnet, clinopyroxene, chlorite, and amphibole, all with moderately-high ferrous iron contents. Figure 6.13 shows compositions for minerals in the Pinnell trail skarns, determined by electron microprobe analysis, and that all compositions plot in fields characteristic of tungsten-bearing skarns. The garnet compositions, with appreciable spessartine + almandine components, are especially diagnostic of this type of skarn.

World-wide, skarns can replace both marble and calc-silicate hornfels units, with lower grades resulting in the latter case. The immediate stratigraphy of the Pinnell trail area includes small amounts of thin marble beds and larger amounts of calc-silicate hornfels. The small amount of marble present greatly limits both the size and grades of the resulting skarns.

Typical tungsten grades in analogous skarn deposits are 0.4 to 1% WO_3 (Einaudi and others, 1981). Several of the Pinnell Trail prospects were channel sampled and several were grab-sampled (app. D); grades of up to 0.35% WO_3 were found for these samples. Grades at these prospects are lower than typical, presumably due to the 'diluting' effects of the marble-poor host rocks.

Gold is commonly present in tungsten skarns, but the amount varies considerably. Zharikov (1970) noted that world-wide, tungsten skarns commonly contain anomalous amounts of gold. Gold-tungsten skarns are known in the Sierra Nevada, California (Rinehart and Ross, 1964) and gold placers associated with tungsten skarns are common in the Tungsten Hills of Eastern California (Bateman, 1965). More locally, the tungsten skarns in the Fairbanks area, Alaska, contain anomalous to very high levels of gold (Allegro, 1987). Moderate tonnages of pyroxene-rich skarn with gold grades in excess of 1 oz/ton are known (Allegro, pers. comm., 1986). In the Pinnell trail area, gold grades of skarn vary from to 420 ppb Au, with an average of approximately 100 ppb Au.

The Table Mountain Au-W skarn

Figure 6.14 is a detailed map of the Table Mountain skarn prospect. This map shows features characteristic of the other skarn prospects in the area. 1)The skarn is small, with maximum dimensions of 200 ft by 250 ft. 2) Although adjacent to a felsite dike, there is no mineralogic zoning around the dike; indeed, relatively unaltered hornfels beds are present in contact with the dike, whereas more intensely skarn-altered rocks are present away from the dike. The skarn is thus thought to be unrelated to the felsite and more likely caused by fluids emanating from a subsurface intrusive similar to the the Pinnell Trail monzogranite. 3) No evidence exists for a receptive marble bed in the vicinity; rather, skarn apparently replaced calc-silicate hornfels, as indicated by pods of hornfels surrounded and veined by skarn minerals. Some conversion of adjacent schist to barren pyroxene-plagioclase rock ('endoskarn') also took place. Petrographic examination of the skarns indicates abundant fine-grained, low-iron minerals of probable metamorphic origin (calc-silicate hornfels) surrounded and/or cut by coarser-grained, more iron-rich, metasomatic minerals. As is common in skarns formed from impure carbonate lithologies (Einaudi and others, 1981) there is little mineralogical zonation in the skarn. 4) Gold values are erratic and generally low. Here the maximum gold assay is 280 ppb; elsewhere in the Table Mountain area, the skarns contain up to 480 ppb Au (sample 6598, app. D). Thin section

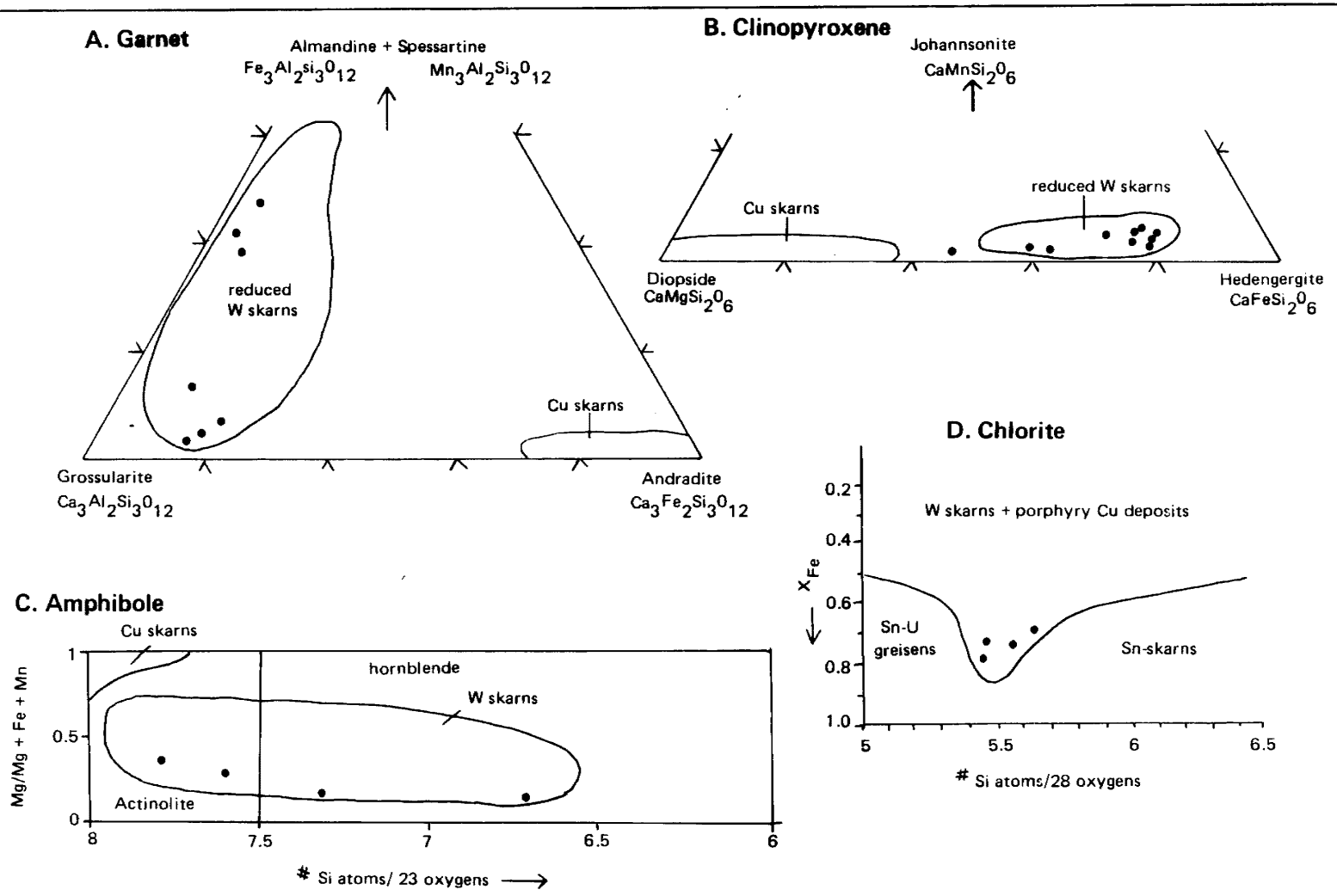


Figure 6.13 Comparison of microprobe analyses of minerals from the Pinnell Trail skarns, Alaska (black dots) compared to typical fields for several skarn types, adapted from Einaudi and Burt (1982), and Newberry (1980).

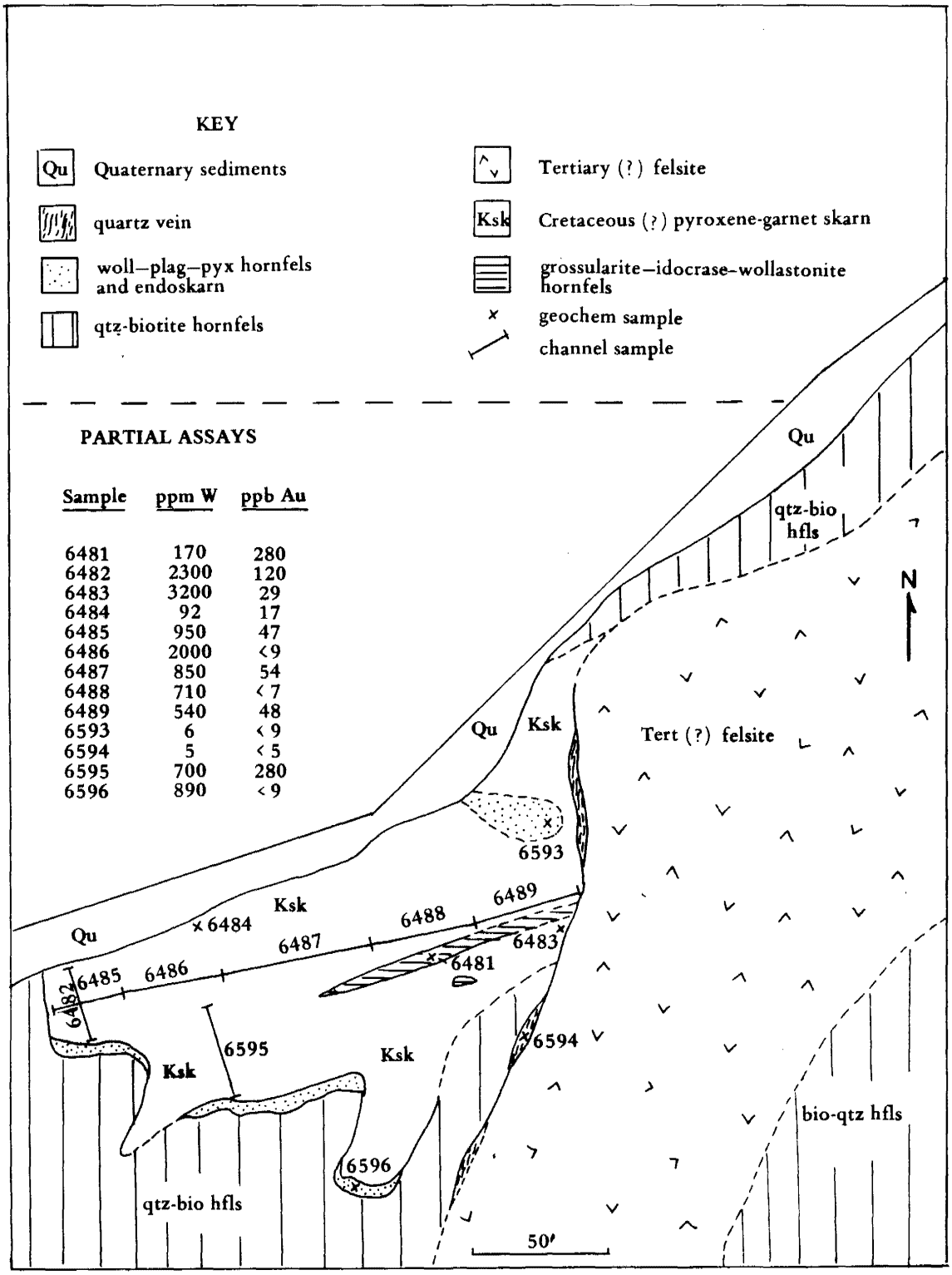


Figure 6.14 Geologic sketch map, Table Mountain skarn, Circle B-5 Quadrangle, east-central section 9, T. 7 N., R. 9 E. Analyses listed in appendix D.

examinations indicate that gold is present in pyroxene-pyrrhotite-rich skarn, which is relatively uncommon in the area.

Au-W-bearing skarns--summary

In summary, the gold-bearing skarns along the Pinnell Mountain trail resemble other Au-W skarns seen world wide, but their small sizes and low grades, probably due to scarcity of carbonate-rich host rocks, makes them unlikely targets for economic mineralization. However, our knowledge of the subsurface stratigraphy in the Pinnell trail area is incomplete, and If thick carbonate units lie in the subsurface of the Pinnell Trail area, they would make attractive exploration targets.

TIN-SILVER-TANTALUM-TUNGSTEN PROSPECTS

Overview

Large areas containing tin-bearing greisens and small areas containing tin-bearing skarns were identified by Burton and others (1985) and Warner and others (1986) in the Lime Peak area. Previous work (Foster and others, 1983) indicated that the Quartz Creek, Mt. Prindle, and Lime Peak plutons were similar, hence all three plutons and adjacent areas were considered potential hosts for greisen-related tin deposits. We have investigated prospects from the vicinity of each pluton and this detailed information is presented in this chapter. Because all the prospects examined showed similar alteration and mineralogical features, general information is presented here as an introduction to the discussion of individual prospects.

Alteration in and surrounding tin-bearing granitic rocks is traditionally referred to as 'greisen'. However, the term has been employed in different ways by different authors. Some authors (for example, Shcherba, 1970) use the term to refer to any altered rock (including weathered rocks) in or near a tin-bearing granite, whereas others (Bates and Jackson, 1980) restrict the term 'greisen' to rocks containing quartz, topaz, and muscovite. For many authors, the term greisen implies the presence of at least anomalous Sn and/or W contents in a rock, but a mineralogy which may include tourmaline, chlorite, fluorite, albite, and not necessarily include topaz or muscovite. To minimize confusion, in this report, alteration assemblages in non-carbonate rock which *commonly* contain at least several hundred ppm of tin are referred to as 'greisen', regardless of their topaz or muscovite content, whereas alteration types which are not typically associated with anomalous tin grades (for example, clay and sericitic alteration of feldspars) are not referred to as 'greisen'. By restricting the use of the term in this way, the reader will understand that the word greisen has direct mineralization connotations, and that other alteration types do not. Alteration in carbonate rocks is referred to as 'skarn', following the usage of Einaudi and others (1981). The term encompasses rocks of both largely metamorphic and largely metasomatic derivation in a plutonic contact aureole. Based on these definitions, alteration in and near the Hope plutons can be described in terms of three broad groups: non-greisen alteration, greisen-alteration, and skarn alteration.

Alteration Mineralogy

Phyllosilicates present in altered igneous rocks of the Steese area were distinguished with some difficulty using a combination of petrographic, x-ray, and micro-analytical tools. These minerals include green biotite, chlorite, zinnwaldite, and sericite. Green biotite is bright emerald green in hand specimen and pale brownish to bluish green in thin section. Microprobe analyses

and comparison with other biotite analyses (Deer and others, 1966) indicate the green color is due to the virtual absence of titanium and presence of a small amount of ferric iron. Green biotite also has very little magnesium and moderately elevated manganese, relative to the brown biotite in these rocks. Chlorite is very dark olive green in hand specimen and medium to pale green in thin section, with low order, and frequently anomalous, birefringence. Microprobe analyses also indicate low titanium-magnesium and high iron-manganese for the Hope sequence alteration and greisen chlorites. Microprobe analyses of very fine-grained chlorite intergrown with sericite yielded some potassium (0.1 to 0.5 percent), probably due to secondary x-ray excitation by the neighboring sericite. In all other respects, the greisen chlorites have normal analyses and unremarkable chemistry.

Zinnwaldite is silver-grey to bronze-colored in hand specimen, and nearly colorless in thin section. Zinnwaldite is distinguished from sericite in thin section by a generally coarser grain size, slight color, and slightly lower birefringence and relief. Chemical analyses of zinnwaldite and sericite mineral separates indicate the former has much higher lithium and iron contents. Microprobe analyses of zinnwaldite give much higher iron, lower aluminum and silica, and lower analytical totals than analyses for sericite. The low totals are because the microprobe cannot analyze for Li and was not set up to analyze for Rb. Sericite is fine- to very fine-grained, generally colorless in hand specimen and thin section, and has a composition close to end-member muscovite.

Analyses for the various micas plotted in terms of atomic Al, Si, and Fe + Mg + Mn indicate the chemical differences between the minerals (fig. 6.15). Green biotite, interpreted by Warner and others (1986) as a variety of muscovite, clearly plots in a field with magmatic biotite and different from zinnwaldite-muscovite. Sericites also plot in a discrete field, separate from zinnwaldite, reflecting a significant difference in environment of formation for the two colorless micas.

Compositions of alteration minerals from the Steese study area closely resemble alteration minerals from other Sn-greisen deposits (figs. 3.20a,b; 6.16). Most notably, chlorite compositions from the Steese area greisens do not resemble those from granite uranium deposits, porphyry Cu deposits, or skarns. Also, white micas and biotites are different from those seen in porphyry copper deposits and barren peraluminous granites (fig. 3.20a,b). Zinnwaldite, a muscovite-like mica with simultaneously high Fe and Li contents, is thought to be restricted to granite-related Sn deposits and environs.

Non-greisen alteration

Most of the plutonic rocks of the Hope Suite show the effects of semi-pervasive alteration. Alteration appears to have occurred both before and after the greisen event(s), and extends for some distance from the greisens. Alteration which appears to largely pre-date greisen includes discontinuous-patchy, tourmaline, albite, and green biotite veining. Pervasive alteration which appears to post-date greisen alteration includes seritization and clay alteration of feldspars. Alteration of uncertain timing, but probably in part contemporaneous with greisen alteration, consists of semi-pervasive alteration of magmatic biotite to green biotite and chlorite.

Thin (0.2 to 1 inch thick) veinlets, inches to feet in length, containing quartz, green biotite and/or albite and/or tourmaline occur in all the Hope suite plutons. Their distribution is erratic and seemingly bears no relationship to greisen veins. Zones of secondary tourmaline (both veinlet and

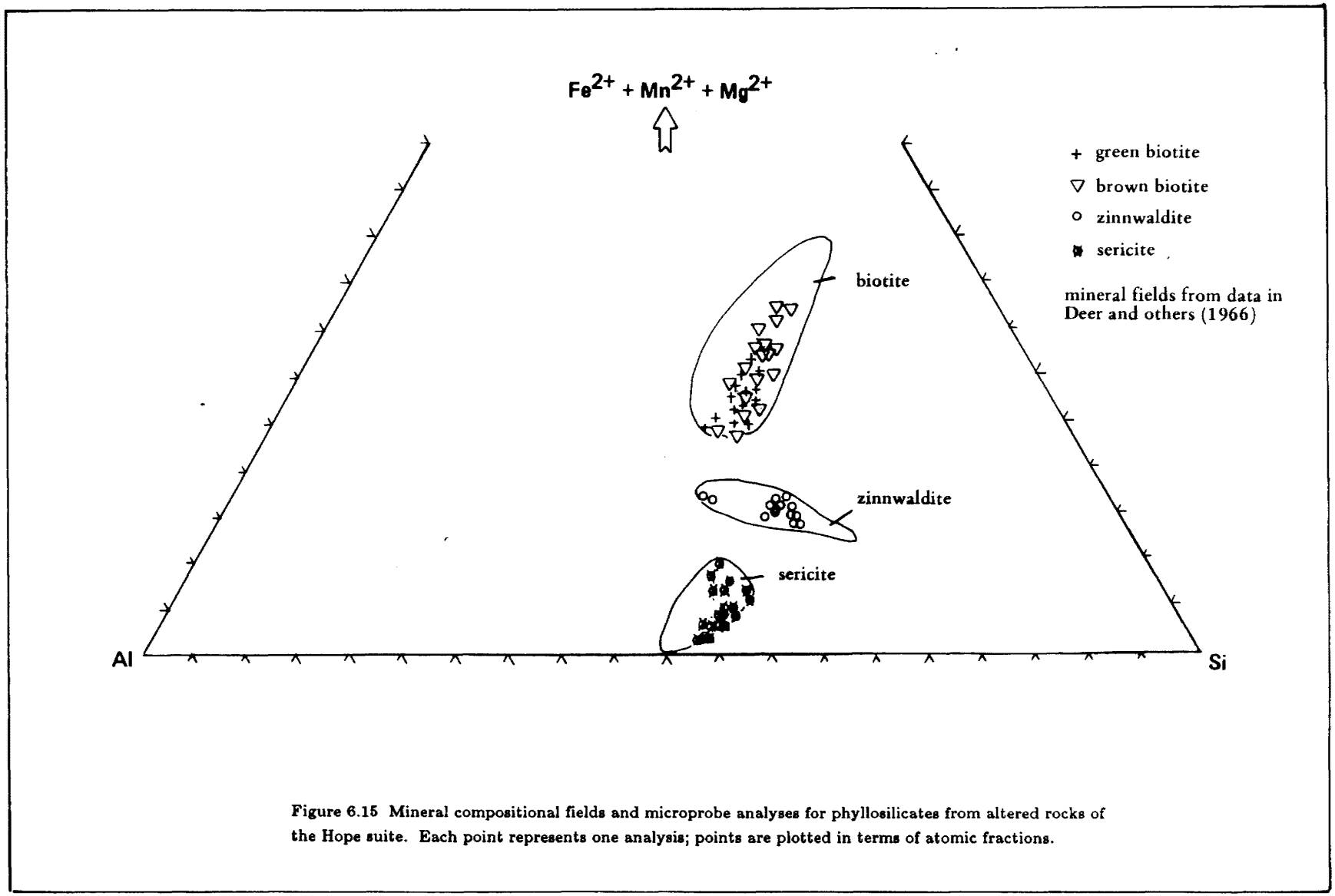


Figure 6.15 Mineral compositional fields and microprobe analyses for phyllosilicates from altered rocks of the Hope suite. Each point represents one analysis; points are plotted in terms of atomic fractions.

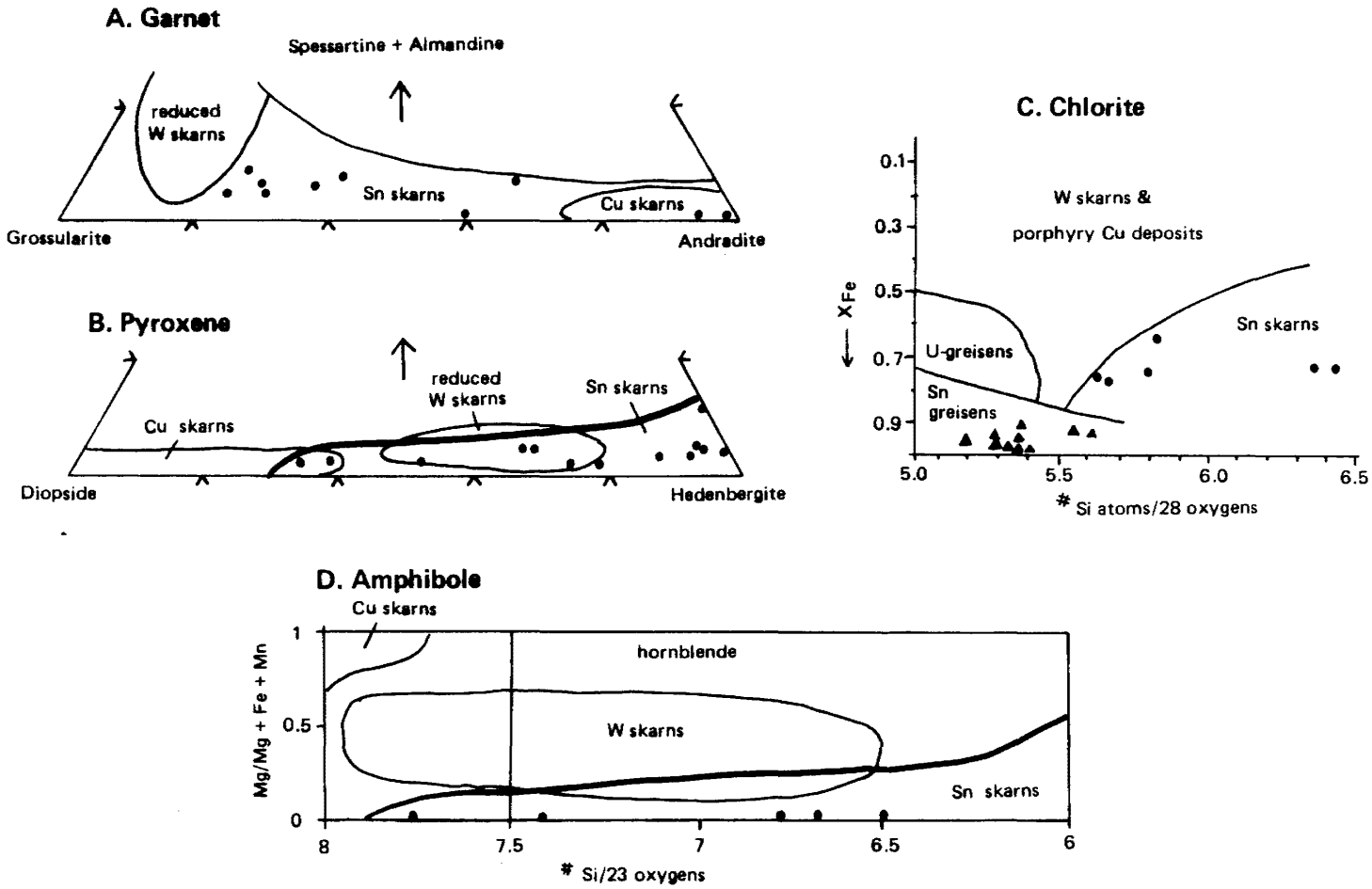


Figure 6.16 Compositions of minerals from skarns (circles) and greisens (triangles) associated with the Hope granite suite, Alaska and mineral compositional fields for Sn skarns and greisens, modified from Einaudi and Burt (1982), Newberry (1980), Dobson (1982) and Kwak and Askins (1981).

disseminated) surround some equigranular and aplitic dikes, especially in the Mt. Prindle pluton. Secondary green biotite-albite-tourmaline veinlets-veins and disseminated-veinlet tourmaline are probably genetically related. Small amounts of sulfide, including arsenopyrite, molybdenite, and alabandite (MnS) have been identified in the early green biotite-or tourmaline-bearing veinlets; they additionally contain minor to trace ilmenorutile (Fe-Nb-Ta-rich rutile), fluorite, topaz and very fine-grained cassiterite.

Some green biotite, albite, and tourmaline veinlets are cross-cut and offset by chlorite greisen veins. In a least one case, (Bedrock Creek, fig. 6.1) TKg1 contains green biotite veins which are cut off by an TKg2 dike, indicating that this alteration type pre-dated intrusion of TKg2 and was probably related to release of fluids from TKg1. As TKg2 also contains these thin veinlets, it too presumably released fluids which caused this alteration type. In other words, these early veinlet types (green biotite, tourmaline, albite) appear to be caused by water release from each of the various types of granite. The short, discontinuous nature of the veinlets may indicate that they were formed very shortly after crystallization of a given granitic unit, analogous to the formation of the early A-type veinlets in porphyry Cu deposits (Gustafson and Hunt, 1975).

U.S. Bureau of Mines sampling of zones with abundant wispy tourmaline and green biotite veins in Bedrock Creek indicates that Sn values of 5 to 250 ppm are characteristic of rocks affected by this alteration type and that it is unrelated to major tin deposition. However, given that individual veinlets are commonly 0.05 inch wide and rather widely-spaced (1 to 10 veinlets per foot), the individual veinlets probably have rather high tin contents, perhaps as high as several hundred ppm Sn.

Variably pervasive alteration of feldspars to fine-grained white mica (sericite) is a common feature of all the samples of the Hope suite studied, including most of the greisens. Such widespread sericitization is common in most granitic rocks and has no economic significance unless accompanied by minerals like pyrite, as in the case of porphyry Cu and Mo deposits. Sericite, both in greisens and in normal granitic phases of the Hope suite, has a uniform composition close to end-member muscovite (fig. 6.15) and far from end-member zinnwaldite. Sericitization of feldspars does not especially appear to border greisen zones and hence is considered not related directly to greisen. Some authors (for example, Taylor, 1979) consider sericitization of plutonic feldspars to be caused by influx of meteoric water into hot, near surface, plutonic rocks. Such an origin would be compatible with the widespread seritization seen in rocks of the Hope suite.

Alteration of brown magmatic biotite to green biotite and to chlorite is also of semi-regional extent. Petrographic examination clearly shows that brown magmatic biotite is often surrounded by a rim of green biotite, which is in turn surrounded by chlorite, indicating that recrystallization of magmatic biotite is a first stage in the conversion of magmatic biotite to chlorite. Alteration (green) biotite commonly contains fine-grained rutile needles, presumably caused by release of Ti from the magmatic biotite. Green biotite sometimes alters to chlorite + fluorite + muscovite; the occurrence of fluorite is presumably caused by release of fluorine from the biotite. Where present, sericite is intimately intergrown with the chlorite.

Green biotite related to chloritization has the same compositional range and characteristics as the green biotite in early veins and presumably reflects a similar environment of formation. Alteration chlorite has a composition similar to greisen chlorite. X-ray diffraction studies indicate

that the alteration chlorite is a septichlorite, and hence probably formed at temperatures of less than 250° C (Menzie and others, 1986).

Although alteration of magmatic biotite to green biotite and to chlorite is a regional phenomena in the Hope suite, pervasive chlorite-green biotite alteration also surrounds greisen zones, and hence is a distal alteration type related to greisen formation. Rocks which only contain biotite altered to green biotite + chlorite do not contain highly anomalous tin (100 ppm maximum, based on our sampling).

Iron and manganese staining, especially on joint surfaces, is also common throughout the Hope plutons. Microprobe analyses of secondary chlorite indicates exceptionally high iron (up to 30 percent) and manganese (up to 4 percent) contents. During weathering these elements are presumably released from chlorite, oxidized, and precipitated onto joint surfaces. Iron and manganese staining are especially common in areas with small, thin chlorite greisen veinlets, fluorite veinlets, and chalcedony veins, that is, areas that appear to be above or distal to major mineralization.

Greisen alteration

Work to date in the Lime Peak-Mt. Prindle study area has indicated the presence of three types of greisens: chlorite greisen, zinnwaldite-chlorite greisen, and albite-zinnwaldite greisen. All greisen types contain variable amounts of sericite. Chlorite greisens are by far the most abundant in the Steese area. The other two types are generally restricted to TKg3 in the Tin ridge area (fig. 6.1, pl. 2.1a).

Chlorite greisens always occur as veins between several tenths of inches and several feet in width, with apparent strike lengths of tens to perhaps thousands of feet. Typical vein widths are between 0.5 and 3 inches. Chlorite greisen veins tend to be wider in zones where veins are abundant and at vein intersections. Thicker chlorite greisen veins often contain a medial fracture with sulfide (pyrite, pyrrhotite, molybdenite, sphalerite, and/or chalcopyrite) or with limonite casts after sulfide.

Chlorite greisen veins consist predominantly of chlorite, with lesser sericite and green biotite, minor rutile, cassiterite, ilmenorutile, and zircon, and variable (usually very rare) fluorite, topaz, pyrochlore, and ytterocerite. The presence of these rare minerals was determined by qualitative microprobe analysis. Chlorite in these veins occurs as a pervasive replacement of both magmatic biotite and feldspars, imparting a dark green color on the affected rock. Quartz and zircon are the only magmatic minerals which remain unaffected in the chlorite greisen veins. The veins have a sharp outer margin where pervasive alteration of feldspar ends. However, a zone of semi-pervasive alteration of biotite typically extends 10's of meters beyond a greisen vein.

Temperatures of formation of the chlorite greisens are in the neighborhood of 250° C, as indicated by the presence of septichlorite instead of true chlorite.

Metal grades in the chlorite greisens are variable, but are commonly in excess of several hundred ppm Sn and up to about 5,000 ppm Sn. Thicker veins typically have higher Sn grades as do veins from lower elevations and lower-elevation portions of veins in a given area. Tungsten grades are uniformly low, always less than 100 ppm. Gold grades are low, rarely above 10 ppb. Base metal grades are variable; values up to several thousand ppm Cu, Zn and As have been

found, but are more commonly in the neighborhood of 100 ppm. Zinc grades are especially high around the margins of high-tin areas, whereas copper appears to correlate more directly with tin. Silver grades are also variable, with values of more than 1 ounce/short ton in some of the more sulfide-rich greisens, especially associated with high tin grades. The chlorite greisen veins studied are not sufficiently close-spaced or do not contain high enough metal grades to be considered ore, but there are indications that both metal grades and vein widths increase with depth in the Bedrock Creek and Cliff (fig. 6.1) areas. Therefore, economic mineralization can be inferred to underlie these areas.

Chlorite-zinnwaldite greisen veins are commonly present in the upper parts of TKg3 at the southwest end of Lime Peak, but are rare in other other parts of the Lime Peak-Mt. Prindle area. In the Tin ridge area chlorite-zinnwaldite greisen veins pass upward and outward into chlorite greisen veins. Chlorite-zinnwaldite greisen veins contain subequal amounts of green chlorite, grey-brown zinnwaldite and quartz, with minor but variable amounts of sericite, fluorite, topaz, and tourmaline, and rutile. Ore minerals include cassiterite, chalcopyrite, molybdenite, pyrite, and arsenopyrite--all present at concentrations of up to several percent. Chlorite-zinnwaldite greisen veins have widths of up to 5 feet and strike lengths of up to 400 feet. These greisen veins have attitudes which parallel the attitude of nearby TKg3/hornfels contacts; flat-lying under nearly horizontal contacts and steeply-dipping near steep-dipping contacts.

Limited data indicate that chlorite-zinnwaldite greisen veins formed at temperatures in the neighborhood of 350° C. X-ray diffraction studies show that the chlorites in these rocks are true chlorites, hence formed at moderately high temperature. Compositions of arsenopyrite (determined by microprobe) in equilibrium with pyrite indicate temperatures of about 350° +/- 50° C.

The highest tin assays in plutonic rocks found to date come from chlorite-zinnwaldite greisen veins. Bulk samples contain up to 1.8 percent Sn. These greisens are also anomalous in silver and bases metals, with values up to 1 oz/ton Ag and several hundred ppm Pb and Zn.

Zinnwaldite-albite greisens are only known in the lower part of TKg3 (equigranular granite) in the SW end of the Lime Peak pluton. Zinnwaldite-albite greisens occur both as veins (several inches wide) and as a pervasive alteration type. In addition to subequal amounts of zinnwaldite, albite, and quartz, these rocks commonly contain up to several percent topaz and tourmaline and traces of fluorite. In the Tin Ridge area, TKg3 shows gradational contacts from deepest pervasive albite-zinnwaldite alteration to upper, more distal pervasive chloritization, and finally to most distal, weak sericitization, over a distance of 2,000 feet. Discrete zinnwaldite-albite greisen veins are limited to the region of pervasive albite-zinnwaldite alteration; chlorite greisens occur in the area of pervasive chloritization; and zinnwaldite-chlorite greisens are present in the transition zone between the two pervasive alteration types.

We have no direct evidence for the formation temperatures of zinnwaldite-albite greisens, but the fact that they occur *below* chlorite-zinnwaldite greisen and are occasionally cut by chlorite greisen veins indicates they formed before chlorite greisens. As the overall trend is to lower temperatures with time, zinnwaldite-albite greisen probably formed at temperatures greater than formation temperatures for chlorite-zinnwaldite greisen, hence formed at temperatures above 350° C.

Metal grades of zinnwaldite-albite greisens are variable, but often high. Sn ranges from a few tens of ppms in the disseminated variety up to a few thousand ppm in the vein type. Tantalum is anomalously abundant (up to 60 ppm) and W is variably anomalous (up to 0.12 percent).

Skarn alteration

Country rock surrounding the Hope suite granites contains little carbonate rock and therefore, little skarn. However, enough skarn exists to indicate that Sn-mineralizing fluids were produced by the granites. Hope suite skarns contain garnet, amphibole, axinite, ludwigite, pyroxene, fluorite, chlorite, and idocrase. Compositions of the skarn minerals fall into the ranges characteristic of typical tin skarns (fig. 6.16), indicating that the mineralizing system in the Lime Peak-Mt. Prindle area is similar to tin-mineralized areas elsewhere in the world.

Qualitative microprobe analyses of garnet (especially andraditic garnet), axinite, and ludwigite indicated that these minerals contain Sn concentrations of approximately 0.1 to 1 percent. High Sn concentrations such as these are common elsewhere in these ferric iron, borosilicate, and borate minerals. Petrographic study suggests that early Sn-and Fe- poor garnet and pyroxene are replaced by Fe-rich pyroxene and Fe- and Sn-rich garnet; axinite is deposited with these latter minerals. Retrograde alteration of the anhydrous minerals to assemblages of chlorite, fluorite, amphibole, ludwigite, calcite and quartz followed. No cassiterite was noted in the skarn samples, which is consistent with the lack of alteration of the skarns to mica rich assemblages (compare with the Lost River Sn skarn, Dobson, 1982). Thus, although high tin grades were found in the skarns (up to 1.9 percent Sn, app. D), the apparent lack of oxide tin indicates these skarns are of little present economic value, and only serve to indicate the presence of a Sn-bearing hydrothermal system.

Specific Sn-Ag Prospects, Steese Study Area

Lime Peak area

Bedrock Creek

The Bedrock creek area (fig. 6.1; sections 9 and 4, T9N R5E) was discovered during mapping by Burton and others (1984) and sampled intensively by Warner and others (1986). This report is based on our alteration mapping and petrography of the area, new assays, and material taken from previous studies. Our investigations indicate that: (1) zinnwaldite is extremely rare and that mineralization is dominated by chlorite greisens, (2) mineralization occurs in subparallel structural zones with up to 3000 foot strike length, and (3) grades of mineralization appear to increase with depth in a given structural zone.

A generalized map of the Bedrock Creek area (fig. 6.17), modified from Warner and others (1986) shows that the chlorite greisen veins occur in relatively narrow zones with consistent orientations of about N30W, N60W, and N70W. Areas of major mineralization are identified by chlorite greisen veins which contain Sn grade times vein width of at least 200 feet x ppm (fig. 6.17). These zones appear to follow some TKg1/TKg2 contacts and to occur along shear zones which parallel these contacts. Within a given zone, mineralization quality (vein width x grade Sn) increases in topographically lower areas (for example, Bedrock Creek valley, relative to the surrounding hills; also cross-section A-B', fig. 6.17).

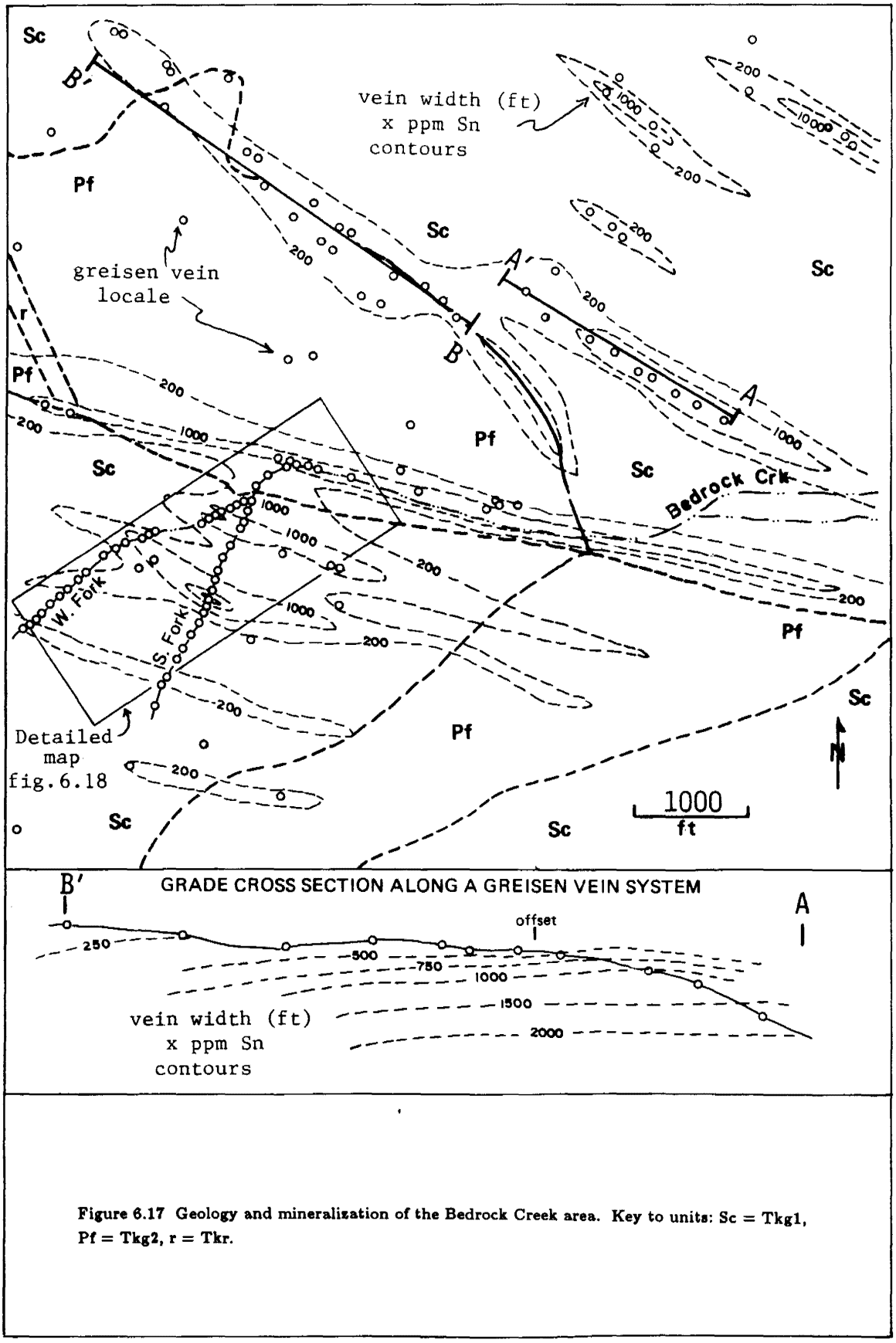


Figure 6.17 Geology and mineralization of the Bedrock Creek area. Key to units: Sc = Tkg1, Pf = Tkg2, r = Tkr.

Mapping of the upper Bedrock creek area (figs. 6.18, 6.19) shows that the highest quality mineralization is found in the vicinity of TKg1/TKg2 and TKg1/rhyolite contacts and that chloritic alteration surrounds the best mineralized areas. The high-quality mineralized areas are characterized by an anomalous greisen vein width (up to 2 feet) and by anomalously close-spacing of greisen veins (up to 5 veins/10 foot width). Sulfides, including chalcopyrite, molybdenite, sphalerite, and arsenopyrite, are present in the better mineralized area (figs. 6.18, 6.19). One thin zinnwaldite-chlorite greisen vein was found in a TKg2 dike in the general vicinity of the best-mineralized area. Notably, early green biotite, and especially early tourmaline veinlets appear unrelated to the highest quality mineralized area (figs. 6.18, 6.19). Semi-pervasive clay alteration of feldspars also appears poorly related to the high quality mineralized area.

Vein orientations are quite consistent in Bedrock Creek (N50 to 80W) with steep, both E- and W-dipping, vein orientations common. A few N-S striking, shallowly-dipping greisen veins were also seen in the Bedrock creek outcrop. These latter types may be common, but are poorly exposed in most circumstances. In many cases, minor faulting and/or shearing is present along and/or within the chlorite greisen veins. These shears are numerous but not mineralized, have apparent displacements of less than a few inches, and are not depicted on figure 6.18.

A detailed map of a near-vertical face along a better-mineralized area in Bedrock Creek shows the typical character and age relations of mineralization (fig. 6.20). Biotite-tourmaline-beryl-topaz pegmatite and aplite bodies/dikes in TKg1 are cut across by chlorite greisens. In this area, greisen veins are up to 2 feet in width and contain several hundred ppm Sn. One to four veins are common across a width of 10 feet of granite. Chlorite greisen veins are in turn cut and offset by narrow shear zones, which are sometimes coated with iron oxide (after chlorite?). Petrographic relations indicate that early green biotite-albite +/- tourmaline veinlets are also cut by the chlorite greisen veins.

Grades of up to 0.7 percent tin occur in grab samples of greisen in the Bedrock Creek area and channel samples across greisen zones commonly contain up to about 0.3 percent Sn. Rare, chalcopyrite-rich greisen veins contain several ounces/ton silver in addition to 0.1 to 0.37 percent tin (for example, samples 127, 131, Warner and others, 1986). Silver values of 0.1 to 1 ounces/ton are more characteristic of the usual sulfide-poor, but tin-enriched (500 to 2000 ppm Sn) greisens.

A distinct halo of high-zinc grades in chlorite greisens surrounds high-tin greisen zones. For example, samples 6473, 15572 and 15596, all marginal to high grade tin greisen zones (fig. 6.19) contain 1000, 490 and 570 ppm Zn, respectively (app. D). Samples 15567 and 15597, from within high-tin zones (fig. 6.19) contain 330 and 50 ppm Zn, respectively (app. D).

Tungsten and niobium are present at concentrations of tens to a few hundreds of ppm, which is, anomalous, but not economically significant. Pegmatite dikes and early green biotite veins contain especially anomalous amounts of tungsten (up to 580 ppm) and molybdenum (up to 410 ppm) as shown by samples 6474 and 6477 (fig. 6.19, app. D).

Warner and others (1986) estimated that the Bedrock Creek area contains approximately 30 million tons of rock averaging 0.03 percent Sn or 20 million pounds of tin. They estimated a higher-grade resource of 7 million tons of rock containing 0.074 percent Sn for the vein system on the ridge north of Bedrock Creek. Both estimates, which were made assuming that grades at depth were the same as grades on the surface, are at least an order of magnitude too low to be

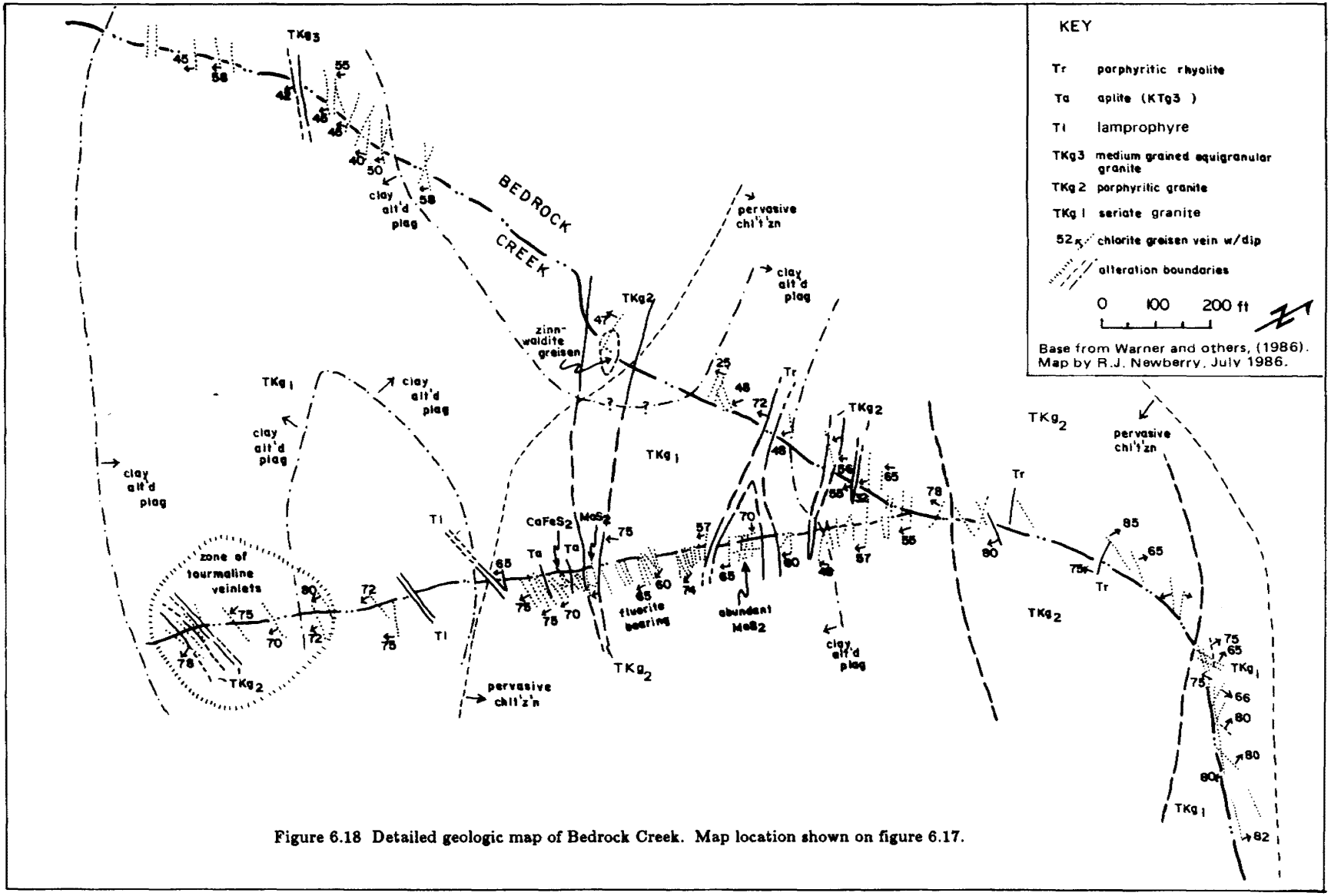


Figure 6.18 Detailed geologic map of Bedrock Creek. Map location shown on figure 6.17.

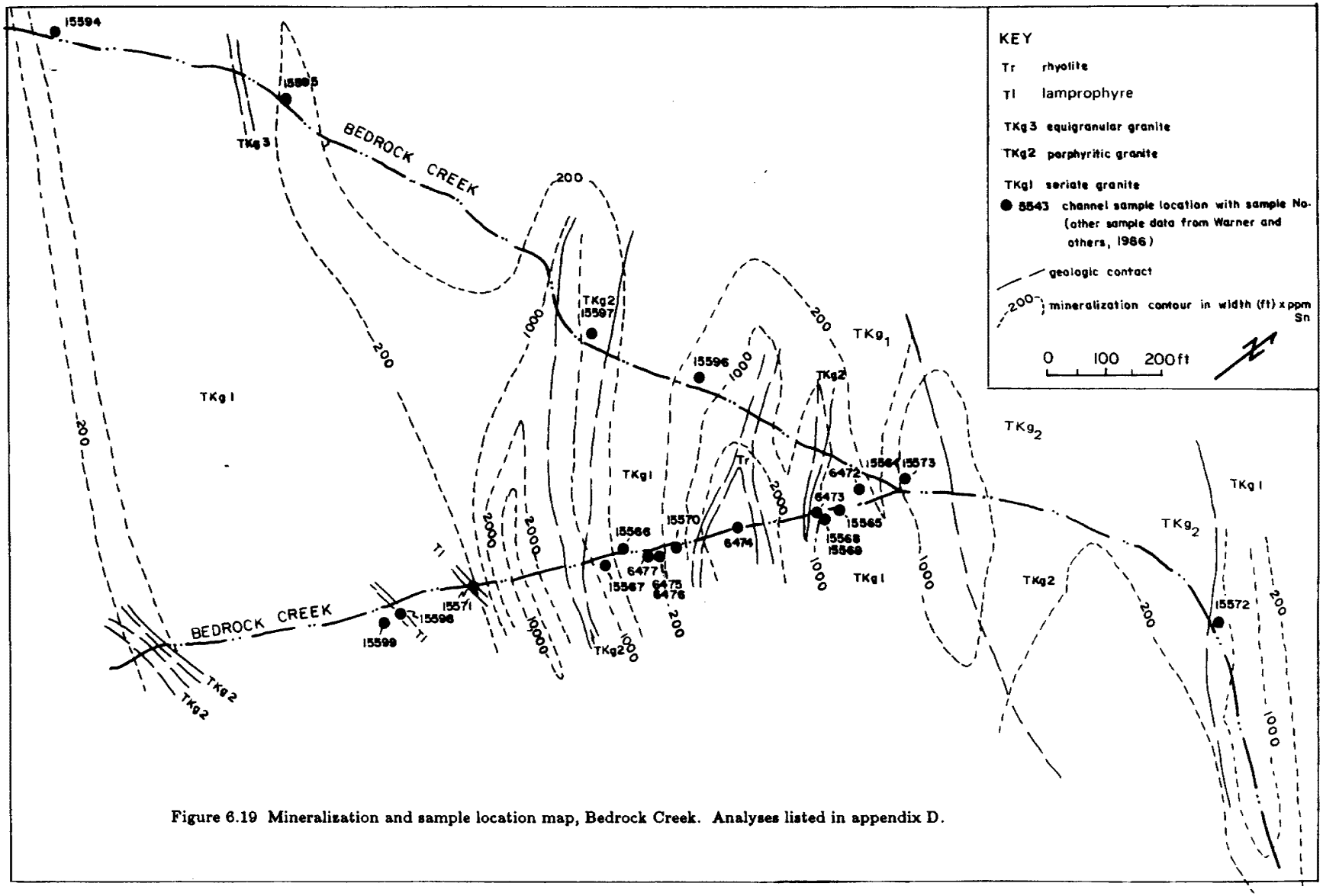


Figure 6.19 Mineralization and sample location map, Bedrock Creek. Analyses listed in appendix D.

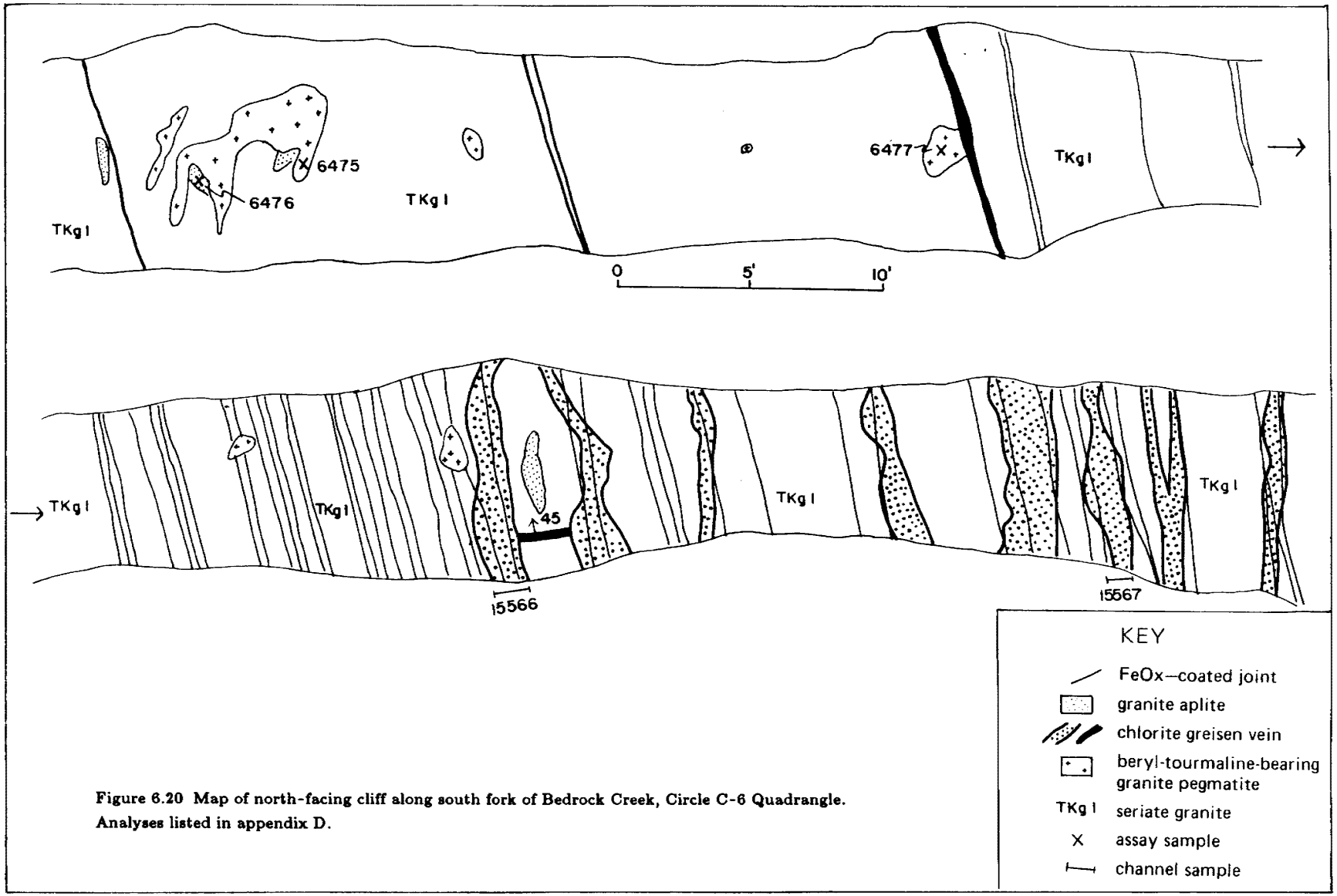


Figure 6.20 Map of north-facing cliff along south fork of Bedrock Creek, Circle C-6 Quadrangle. Analyses listed in appendix D.

considered economically significant. As previously indicated, however, the quality of mineralization in this area increases dramatically with depth in a given vein system, hence the metal estimates made by Warner and others (1986) seriously *underestimate* the true grades present at depth in the Bedrock Creek area. Based on the evidence seen here and elsewhere in the Steese study area, we suggest that the depth projections of the greisen mineralization in the Bedrock Creek area represent a very significant tin resource.

The Cliff

The Cliff is an informal name for an exposure of greisen-bearing granite located at the far west end of the Lime Peak pluton (fig. 6.1) in section 21, township 9N, range 4E. There, greisen veins are exposed over a 500 foot vertical interval and show a clear increase in width and Sn grade with depth.

Figure 6.21 shows the general geology of the Cliff area. Seriate granite (TKg1) with a chilled(?) margin of porphyritic granite intrudes the metasedimentary rocks. Narrow dikes less than 100 feet wide with strike lengths of up to 1000 feet, and consisting of porphyritic granite (TKg2), rhyolite porphyry (TKr), and rare equigranular granite (TKg3) intrude TKg1. Dike orientations vary from approximately N40W to N80W, similar to dike orientations in the Bedrock Creek area.

Major alteration and mineralization in the Cliff area generally follows along or is in the vicinity of dike contacts with seriate granite (figs. 6.21, 6.22). Iron oxide staining is common throughout the area, as is disseminated alteration of biotite to chlorite and feldspars to sericite and clay.

There is a distinct vertical zonation to alteration in the Cliff area. Chlorite greisens are extremely rare at the top of the ridge and those present are a few tenths of inches wide. Fluorite-bearing quartz veins, however, are moderately common. Downslope, in an area with many closely-spaced dikes, fluorite veins are less common, but chlorite greisen veins are more common, thicker, and higher-grade. Figure 6.23 shows the orientation, thicknesses, and spacing of chlorite greisen veins in an isolated flat terrace about halfway down the cliff. Near the lowest elevations in seriate granite, chlorite greisen veins are up to 2.5 feet wide and have vertical dimensions of at least a hundred feet.

A horizontal zoning of alteration is also present in the Cliff area. The major alteration is confined to the vicinity of dikes in seriate granite; alteration falls off in the marginal porphyritic granite and hornfels. Fluorite veins up to 7 inches wide are found in porphyritic granite approximately 1,000 feet west of the main mineralized zone. Fluorite veins and disseminated and vein pyrrhotite are also present in the hornfels to the south of the main mineralized zone.

Based on approximately two dozen bulk channel samples taken across greisen zones, mineralization at the Cliff exhibits a distinct horizontal and vertical zoning (fig. 6.24). Highest-grade greisens, containing more than 0.1 percent Sn over widths of more than 2 feet, are found at low elevations in seriate granite intruded by numerous dikes. Tin grades decrease moving up the Cliff and away from the zone of dikes in seriate granite. In cross-section (fig. 6.24), a dome-shaped series of tin grade contours are inferred, centered on the dike swarm in seriate granite.

Silver is anomalous in most greisen samples from the Cliff, with grades greater than 0.1 oz/ton common. Higher silver grades (0.5 oz/ton) immediately surround the area of highest tin

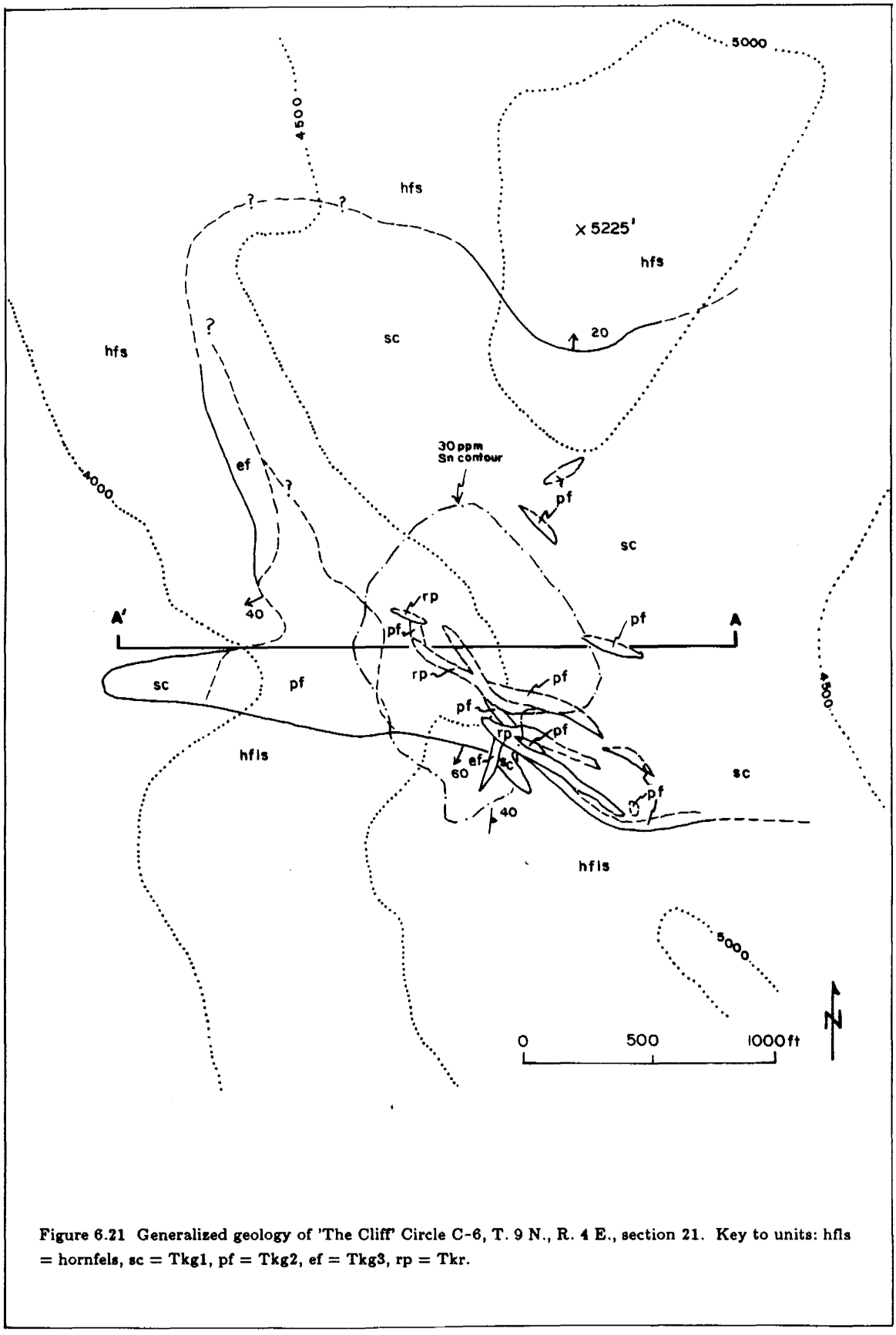


Figure 6.21 Generalized geology of 'The Cliff' Circle C-6, T. 9 N., R. 4 E., section 21. Key to units: hfls = hornfels, sc = Tkg1, pf = Tkg2, ef = Tkg3, rp = Tkr.

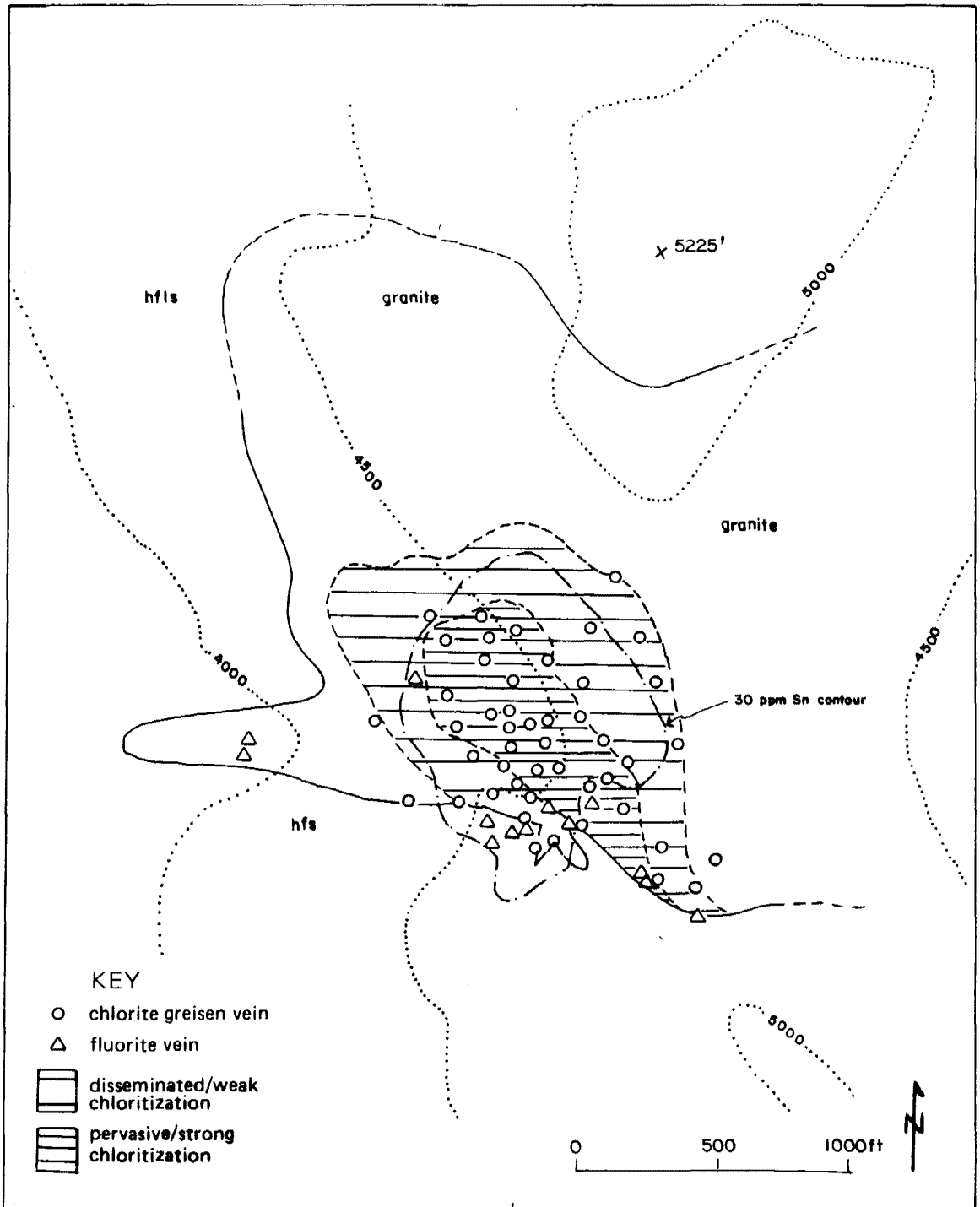


Figure 6.22 Alteration/mineralisation map of 'The Cliff'. Circle C-6 Quadrangle, T. 9N, R. 4 E., section 21.

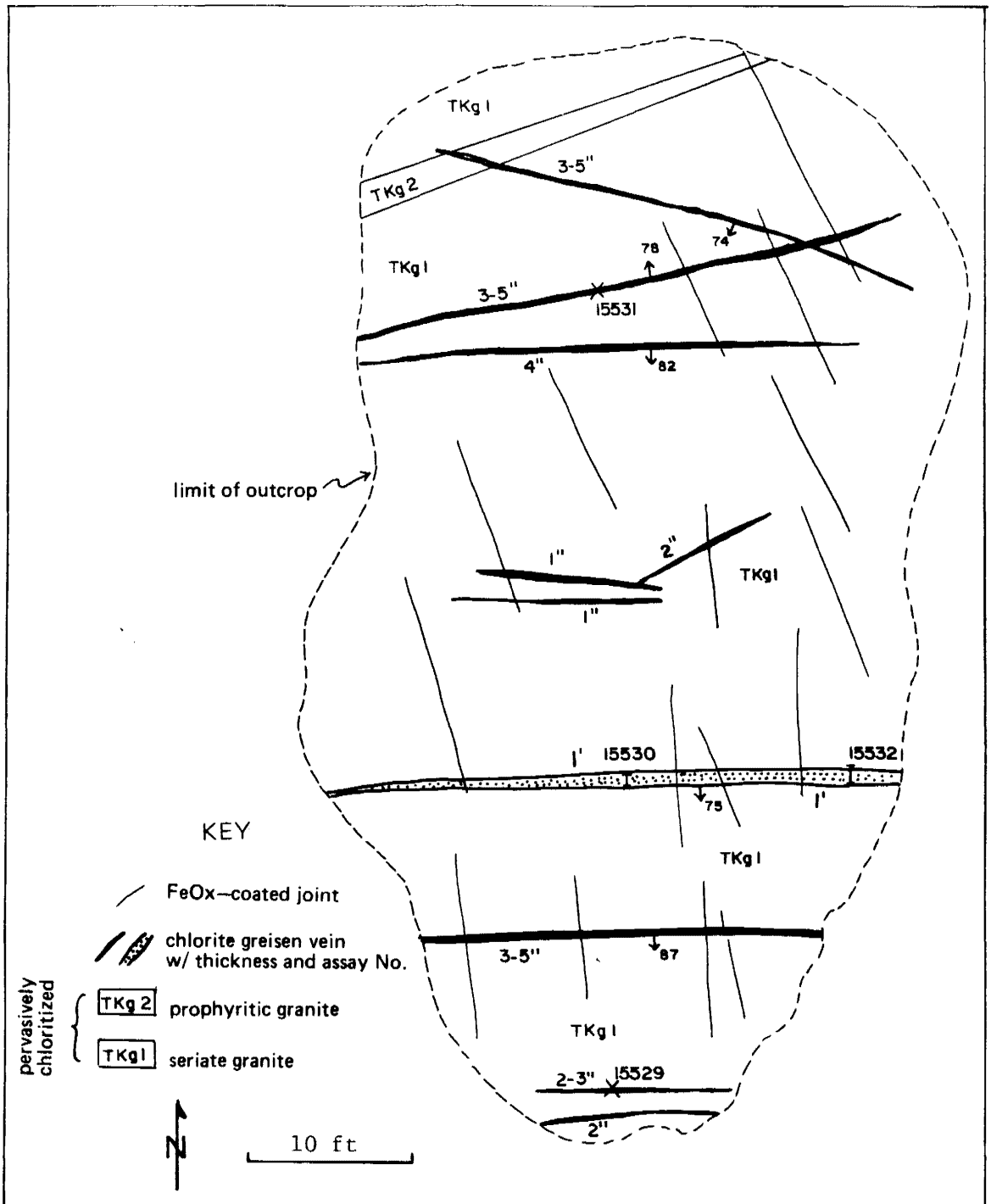


Figure 6.23 Detailed map of a ledge at 'The Cliff', SW Lime Peak area, elevation 4550'. Analyses listed in appendix D.

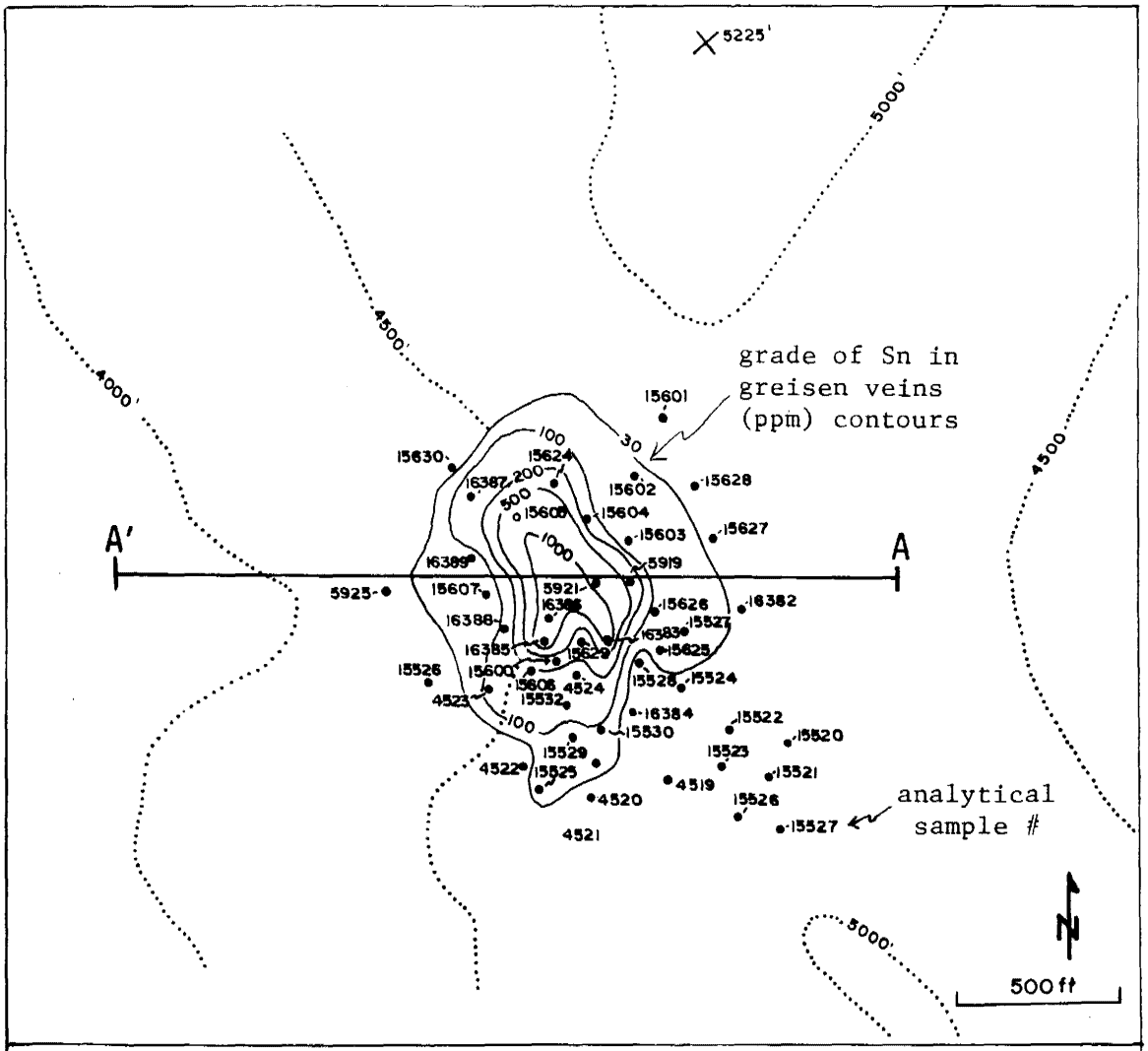


Figure 6.24 Grade of Sn in greisen veins. Contours in ppm. Analyses listed in appendix D. Key to units: hfls = hornfels, sc = Tkg1, pf = Tkg2, ef = Tkg3, rp = Tkr.

grades (samples 15603, 15607, app. D). Anomalous As (up to 200 ppm), Au (up to 63 ppb), Mo (39 ppm) and Zn (up to 0.25 percent) are present marginal to the high-tin area. This zoning pattern, with higher silver proximal to and higher zinc distal to highest tin grades occurs in other mineralized areas of the Lime Peak pluton.

Hornfels samples adjacent to the southern contact of the pluton are strongly iron-stained but not appreciably mineralized. Some samples are slightly anomalous in tin (5 to 36 ppm).

Consideration of changes in greisen tin grade with changes in elevation along the Cliff exposure show that log Sn grade increases in a linear manner with increasing depth (fig. 6.24). Figure 6.25 shows a line of projection through the main mineralized zone and the projected grade-elevation relationship. If grade continues to increase with depth below the surface, then grades of approximately 1 percent Sn, similar to grades seen a mile away at Zinn Gulch, are expected to occur within 250 feet of the surface.

Because of the uncertainty in tin grades and greisen vein widths at depth in the Cliff area, resource estimates are highly uncertain. Assuming, however, that grades do increase as projected, the block of ground surrounding the highest grade greisens and extending to 300 feet below the surface (the width of the high grade zone) contains approximately 7 million tons of rock which might average 0.1 to 0.2 percent Sn. More hypothetically, higher-grade resources consisting of chlorite-zinnwaldite and zinnwaldite greisen similar to the Zinn Gulch area may underlie the Cliff at depths greater than 300 to 500 feet below the surface. Precious metal

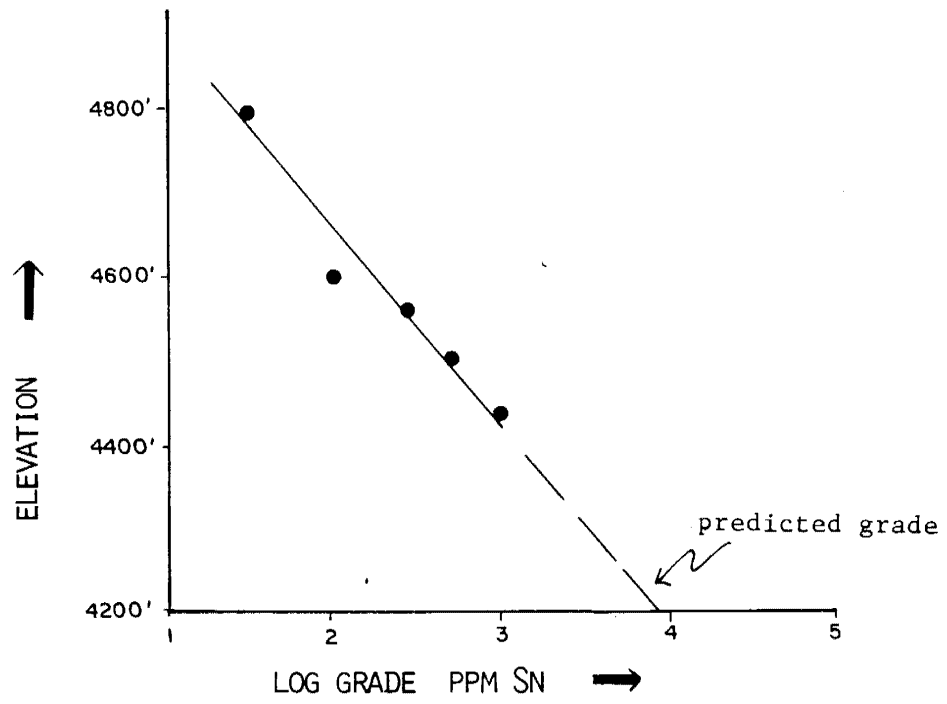


Figure 6.25 Grade - elevation relations for chlorite greisen veins along cross-section A - A'of figure 6.24.

resources might be present as either a low grade, large tonnage zone immediately surrounding or overlapping the high grade tin zone or as moderate grade, small tonnage greisen veins within the silver-rich zone.

Tin Ridge

Tin Ridge is an informal name for the area at the SW end of the Lime Peak pluton (fig. 6.1; sections 26, 27, T9N, R4E) which contains a large exposure of equigranular granite (TKg3) and abundant greisen veins. This area was mapped and sampled in August 1986 by reconnaissance methods and remapped and sampled utilizing plane table techniques in June, 1987. This area shows the clearest evidence for 'classic' Central European-style tin-related alteration and mineralization, the highest tin assays recorded to date, and clear evidence for an upward and outward zoning from high-grade zinnwaldite-chlorite greisens to lower-grade chlorite greisens.

Figure 6.26 shows the general geology of the SW end of the Lime Peak pluton. Notably, an intrusion of equigranular granite (TKg3) intrudes seriate (TKg1) and porphyritic (TKg2) granite and also surrounding metasediments. An arm of equigranular granite 10 to 150 feet thick intrudes along the pluton/hornfels contact for at least a mile from the main body of equigranular granite. Greisen veins are sporadically present throughout the area, and are especially prevalent near bodies of equigranular granite (figs. 6.26, 6.27, 6.28). Most of the greisen veins occur on or near the prominent ridge which trends through central section 27 and southern section 26, the so-called 'Tin Ridge'. Zinnwaldite alteration is abundant in the major mass of TKg3, exposed in the center of section 27, on both sides of the drainage informally called 'Zinn Gulch' (figs. 6.1, 6.26).

Figures 6.27, 6.28, and 6.29 show the detailed geology, alteration, and sample locations in the Zinn Gulch area. The major focus of the area is a body of equigranular granite. Although exposed over a 0.2 square mile area, only a thin layer of equigranular granite is topographically exposed. Small dikes and bodies of equigranular granite 300 to 1,000 feet north of the main equigranular mass indicate that either several equigranular masses or one large equigranular granite mass intrudes at depth.

Complex TKg1-TKg2 relationships are present in the northwestern part of the map (fig. 6.27), with small bodies of TKg1 apparently surrounded by an irregular mass of TKg2. One rhyolite dike was noted, which cuts both TKg1 and TKg2 and is surrounded by chlorite greisen veins.

The southern granite-hornfels contact dips steeply (about 60 degrees) to the south. A pendant of hornfels near the east-central border of the area caps a small hill and its contact with granite dips very gently to the southwest. The geometry of the granite-hornfels contact and the extensive hornfels aureole present suggests that the exposed Zinn Gulch granitic rocks are only a few hundred feet below the hornfels roof.

The main mass of TKg3 shows a consistent zoning of alteration, with central albite-zinnwaldite "apogranite" alteration (a term used in the Russian and East European literature), intermediate pervasive chloritic alteration and distal weak chloritic alteration (fig. 6.28). Zinnwaldite apogranite is mostly confined to the immediate Zinn Gulch area and includes an inner (deeper?) zone containing 0.1 to 2 percent disseminated, fined grained, tourmaline (fig. 6.28). Pervasive chloritization is present in seriate, porphyritic and equigranular granites surrounding apogranite. Alteration boundaries clearly cut across unit boundaries (fig. 6.28) and broadly parallel the outer contacts of the equigranular granite.

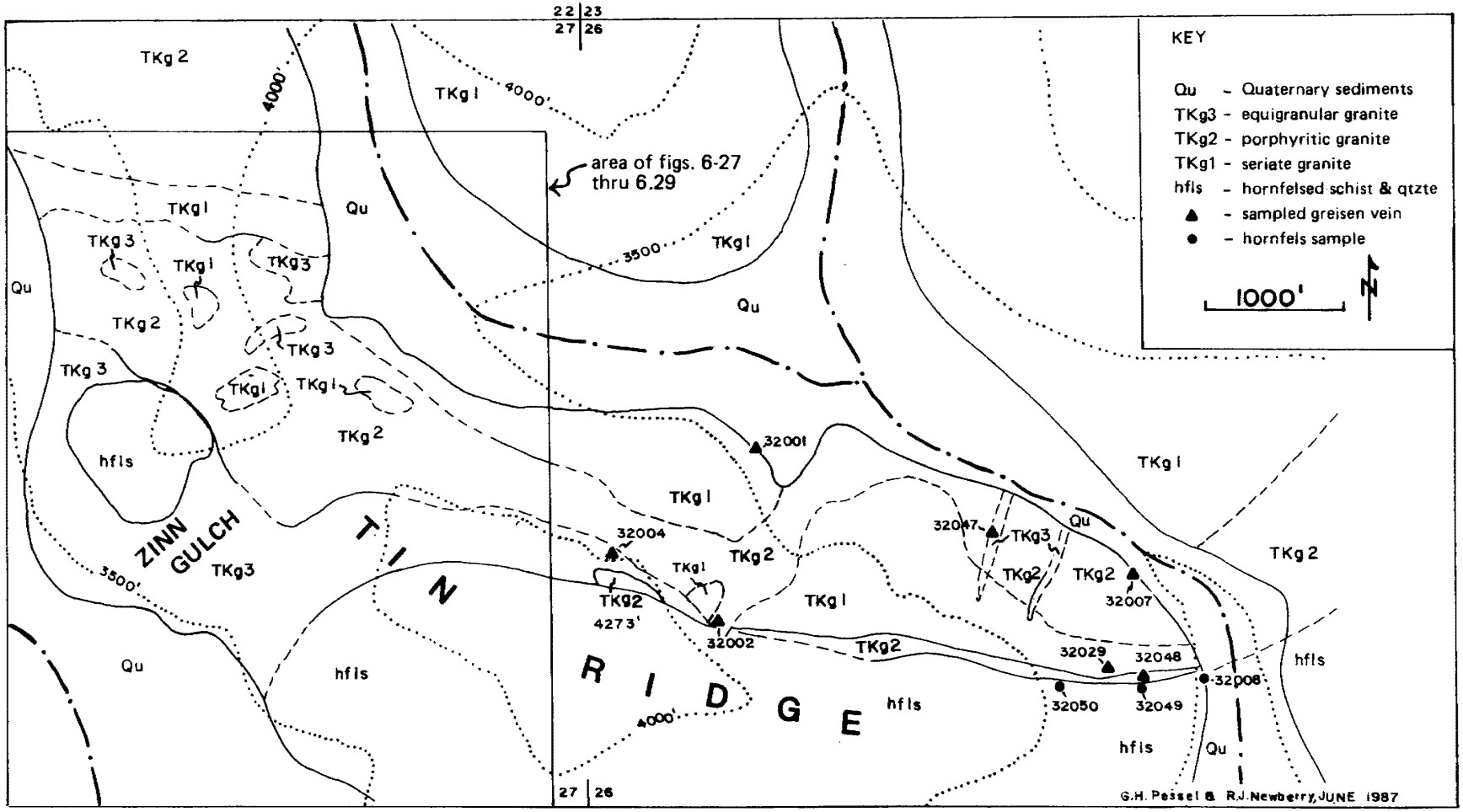


Figure 6.26 Generalized geologic map and sample locations of the southwest end of Lime Peak pluton (eastern Tin Ridge). Analyses listed in appendix F.

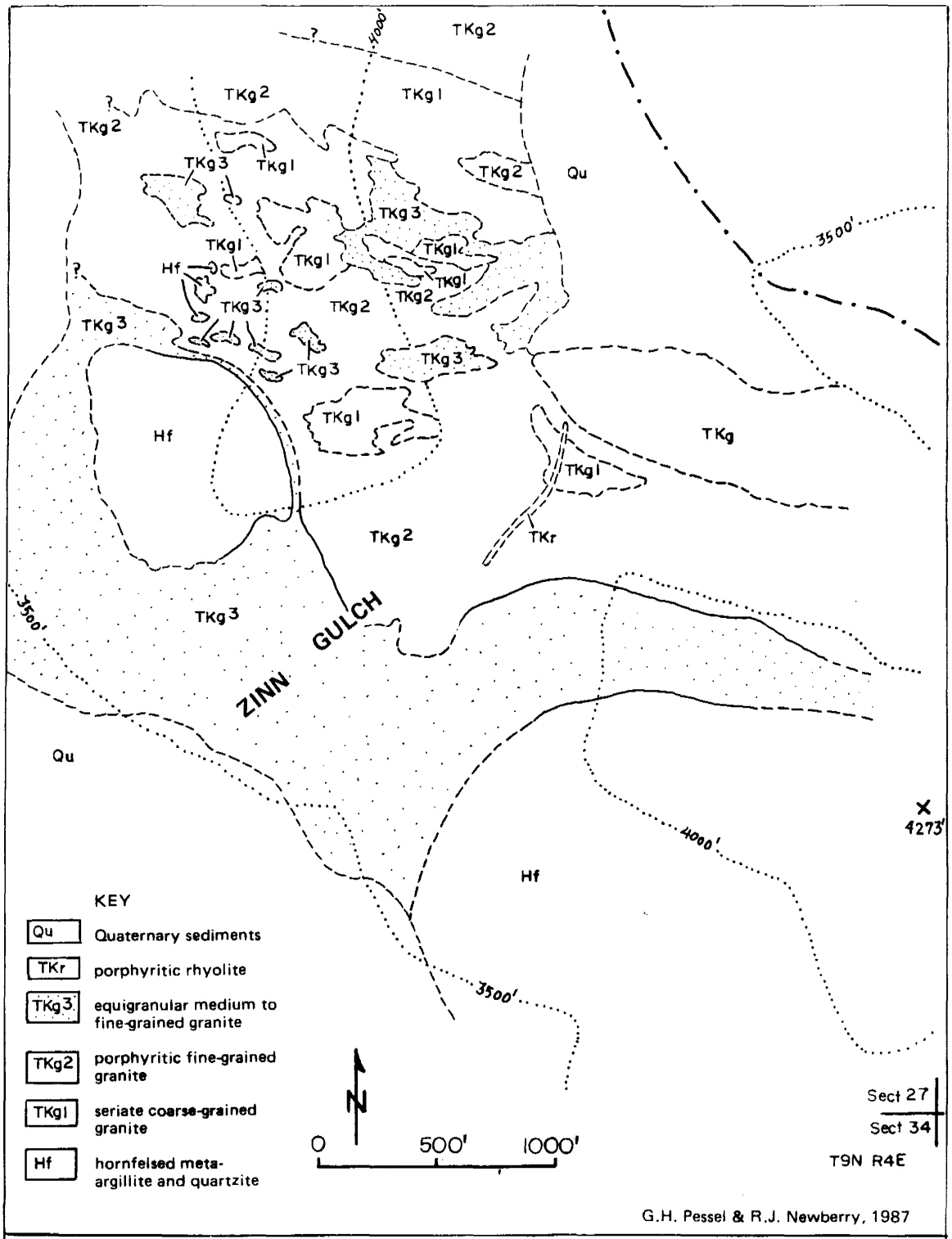


Figure 6.27 Geology of the Zinn Gulch area.

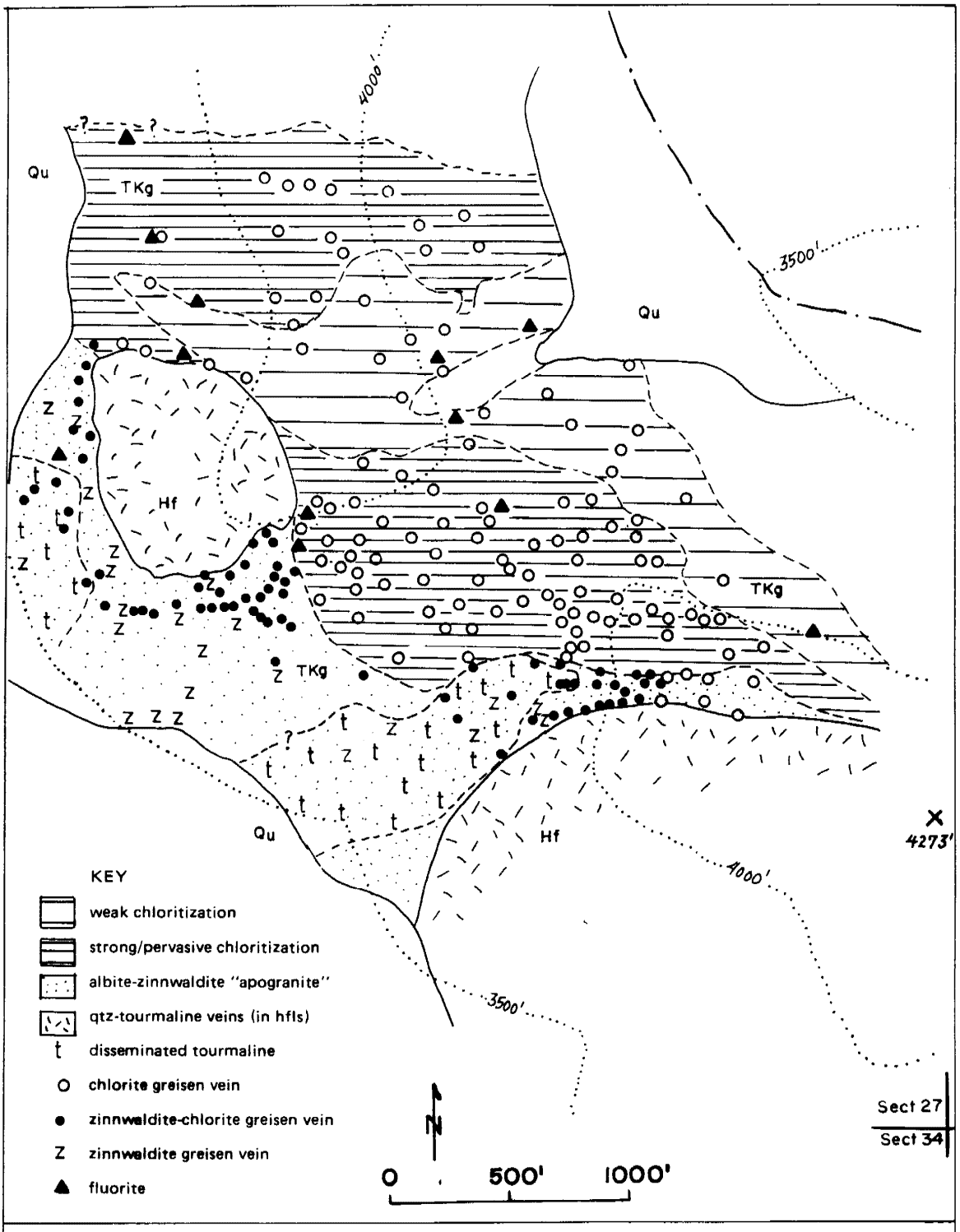


Figure 6.28 Zinn Gulch area mineralization and alteration. (TKg includes Tkg1, Tkg2, and TKg3 of plate 2-1A and figure 6.27.)

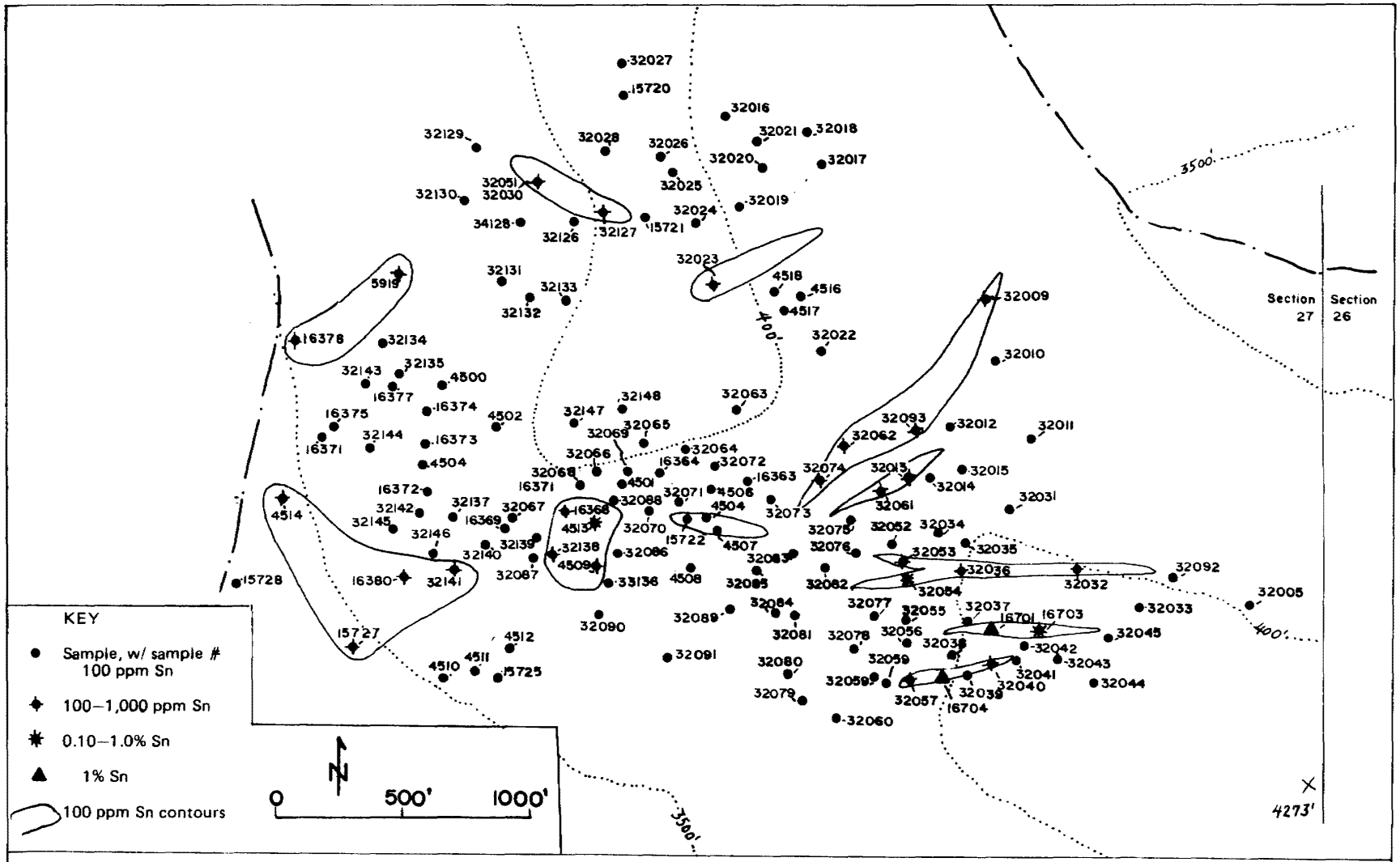


Figure 6.29 Zinn Gulch area greisen Sn geochemistry and sample locations. Analyses listed in appendix F.

Several hundred greisen vein outcrops/rubble crops are present in the Zinn Gulch area. Zoning of the greisen vein types parallels pervasive alteration zoning in the equigranular granite (fig. 6.28) and suggests that similar fluids caused the pervasive alteration and the vein formation.

Chlorite greisen veins are especially prevalent in granite just above and adjacent to chloritized equigranular granite; rare bedrock exposures suggest these veins have near-vertical dips and E-W to NE-trending strikes. Chlorite greisen veins are a few inches to four feet wide, generally becoming wider and more closely-spaced near TKg3 contacts. Megascopic fluorite is present in several chlorite greisen veins but tourmaline was not observed.

Zinnwaldite-chlorite greisen veins are restricted to zinnwaldite-altered equigranular granite. These vein orientations roughly parallel the granite-hornfels contact, being sub-horizontal under the hornfels pendent at the center of section 27 and high-angle near the southern granite-hornfels contact. In several cases (fig. 6.28), zinnwaldite-chlorite greisen veins change outward into chlorite greisen veins. Flat-lying zinnwaldite-chlorite greisen veins are 0.1 to 1 foot wide and steeply-dipping veins are 0.5 to 4 feet wide. Topaz was observed in a few zinnwaldite-chlorite greisen veins.

Pervasive albite-zinnwaldite-tourmaline-topaz alteration with rare, randomly oriented, 1 to 3 inch wide, zinnwaldite-albite veins, underlies the area of zinnwaldite-chlorite greisen veins (fig. 6.28). Zinnwaldite-albite veins contain tourmaline and very rarely, arsenopyrite and alabandite.

At contacts with the zinnwaldite-altered equigranular granite, the hornfels is veined by quartz-tourmaline-biotite. Tourmaline-cemented breccia zones 10 to 30 feet in width are locally developed.

Bulk sampling of approximately 150 veins in the Tin Ridge area (fig. 6.29) shows that mineralization is zoned around the equigranular apogranite body. Higher zinc grades (300 ppm) are in chlorite greisen veins marginal to TKg3, whereas high silver grades are in greisen veins in or immediately adjacent to TKg3. Values between 0.2 oz/ton and 1 oz/ton Ag are common in high-tin greisen veins (for example, samples 16701, 32036, 32054, fig. 6.29, apps. D, F). Within TKg3, rocks are moderately to strongly anomalous in tungsten (up to 0.12 percent), molybdenum (up to 35 ppm), and tantalum (up to 60 ppm). High concentrations of Ta (73 to 170 ppm) in zinnwaldite mineral separates indicates that Ta is directly associated with apogranite alteration.

High grade tin is restricted to zinnwaldite-chlorite greisen veins, tin grades are highest near the outer contact of TKg3, and tin grade drops off with increasing distance from the zinnwaldite-albite apogranite. Maximum tin grades of 1.6 to 1.8 percent occur across 3 to 4 foot true widths in steeply-dipping zinnwaldite-chlorite greisen veins. Grades of 0.1 to 0.2 percent tin occur in flat-lying vein sets 0.2 to 1 foot wide and 50 to 100 feet long, just underlying the hornfels pendant contact. Several veins and vein swarms have grades 0.2 percent over strike lengths of more than 100 feet (fig. 6.29).

As in other areas surrounding the Lime Peak pluton, hornfels samples contain low metal values. Tourmaline-cemented hornfels breccias are slightly anomalous in tin (30 to 40 ppm), but are otherwise not mineralized.

Two types of Sn-Ag mineralization targets are present in the Zinn Gulch-Tin Ridge area: moderate grade, low tonnage veins and low-grade, large-tonnage vein aggregates. Assuming a

dip extension to mineralization equal to one-half of the strike length for the higher-grade veins previously described, we estimate 200,000 tons of moderate-grade vein material (0.2 to 1 percent Sn with 0.1 to 0.5 oz/ton Ag and minor Ta and W), essentially at the surface in the Zinn Gulch area. Assuming that higher-grade chlorite-zinnwaldite greisen veins underlie chlorite greisen veins along Tin Ridge (as they do in the Zinn Gulch area), considering the 1000 foot x 3000 foot zone of strongly chlorite greisen-altered rock along Tin Ridge (fig. 6.28), and noting the 200 foot vertical extent of chlorite-zinnwaldite greisen veins in the Zinn Gulch area, there could be as much as 100 million tons of mineralized rock immediately underlying the ridge. If the known chlorite greisen veins become higher-grade with depth (towards the main TKg3 contact), as they appear to, average grade for the veins could be in the range of 0.2 to 2 percent tin. Assuming that greisen veins on average represent ten percent of the rock, average grade for the 100 million ton block could be in the range of 0.02 to 0.2 percent tin. In addition, possible resources of W and Ta occur in the apogranite underlying chlorite-zinnwaldite greisen veins. Locally high values for W and Ta indicate a possibility for major concentrations of these tin-associated elements in presently unexposed parts of the apogranite body. Further refinement of these resource estimates is not possible without extensive trenching and drilling in the Tin Ridge area.

North Fork Prospect

by

R.C. Swainbank, M.A. Wiltse, and P.J. Burton

Manganese and iron oxide staining is the most visible characteristic of this mineralized area located at the eastern extremity of Lime Peak pluton about 4-1/2 miles northeast of Lime Peak (fig. 6.1). Chlorite is a frequent associate of the oxide staining. Both are apparently derived from alteration of primary biotite in the two earliest intrusive phases of the pluton. Chlorite-quartz-sericite greisen veins, often with accessory fluorite, occur within the broader areas of oxide staining. The greisens are characterized by high tin, zinc, copper, and silver metal contents.

Figure 6.30 shows the distribution of the various intrusive rocks in the North Fork prospect area, and figure 6.31 shows the extent, type and intensity of their alteration. About 5 percent of the area has bedrock exposures. Plutonic units TKg1, TKg2, and TKr have been recognized in the North Fork prospect area. In the prospect area, TKg2 is a porphyritic, equigranular and seriate biotite monzogranite, generally medium-grained, but noticeably finer-grained just north of Preacher Creek in the central part of the prospect. Rubble in a small area near the center of the map is predominantly fine-grained porphyritic monzogranite. Rhyolite porphyry forms simple dikes, and also occurs as the matrix in intrusive breccias found within TKg1 outcroppings near the north bank of Preacher Creek.

The most extensively altered area occurs at low elevations north of the North Fork, centered on the rhyolite intrusive breccias (fig. 6.31). A second, more restricted zone of intense oxide flooding was found south of the North Fork at an elevation of about 3500 feet. All the types of granite show alteration, but there appears to be a spatial correlation between intense alteration and myrmekitic textures in the rocks.

Alteration of the granites of the North Fork prospect is characterized by the alteration of primary brown biotite to green chlorite, the alteration of feldspars to sericite and clay minerals and

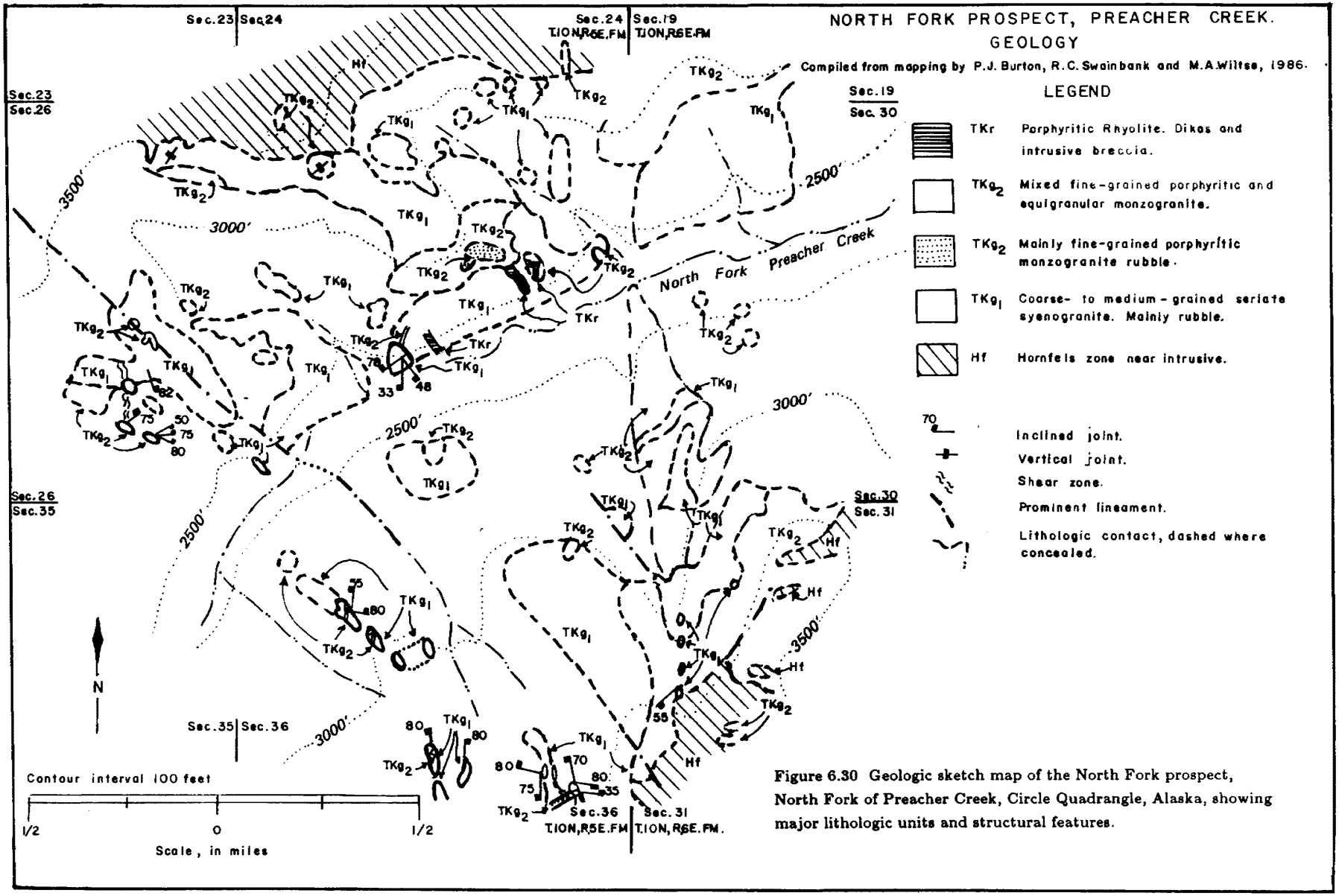


Figure 6.30 Geologic sketch map of the North Fork prospect, North Fork of Preacher Creek, Circle Quadrangle, Alaska, showing major lithologic units and structural features.

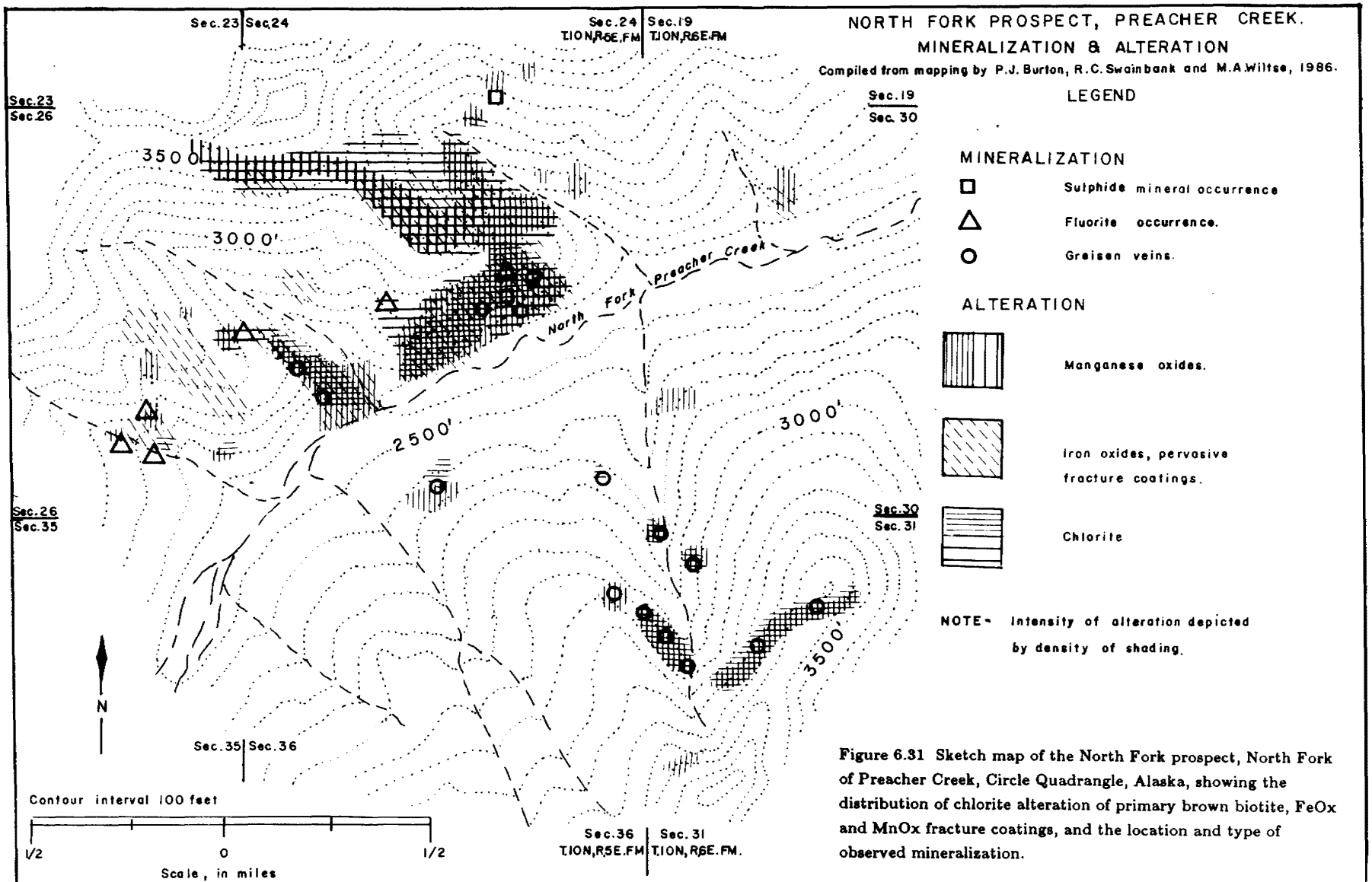


Figure 6.31 Sketch map of the North Fork prospect, North Fork of Preacher Creek, Circle Quadrangle, Alaska, showing the distribution of chlorite alteration of primary brown biotite, FeOx and MnOx fracture coatings, and the location and type of observed mineralization.

by zones of pervasive iron and manganese oxide coating of fracture, grain and cleavage surfaces. Progressive alteration results in an increasing proportion of chlorite, manganese and iron oxides, and sericite. In rocks where chlorite has formed aggregates and masses rather than isolated crystals, the oxides are not restricted to mineral cleavage planes, and are seen on fracture surfaces, and, in extreme cases, along grain boundaries, becoming pervasive throughout the rock. Traces of fluorite are usually present in the chlorite masses.

Veins of chlorite-quartz-sericite greisen are most abundant in the most intensely altered portions of the prospect area (fig. 6.31). Greisen veins are less than 5 inches thick, less than 100 feet in strike length, and far less abundant than in other areas of the Lime Peak pluton, for example, Bedrock Creek.

Analytical results for selected elements in the rock samples are presented in table 6.3. Most rocks, especially chlorite greisens, contain anomalous (0.5 ppm) Ag. One greisen sample (4439) contains nearly one oz/ton Ag and 3 samples (15662, 15664, 15667) contain more than 0.1 oz/ton Ag (fig. 6.32). The high-Ag greisen also contains 1 percent zinc, 210 ppm tin and 350 ppm copper. Gold was detected in only one rock sample (15660), a chlorite greisen.

Table 6.3. Concentrations of selected elements obtained from rock samples collected in the area of the North Fork Prospect, Circle quadrangle, Alaska. Concentration values are expressed as parts per million (ppm). Description abbreviations are those of Weglarz (this volume).

STATION	DESCRIPTION	SN	CU	ZN	AG	LA
04439R	CHL-MNOX-QTZ GREISEN IN GR2 RUBBLE	210	350	10000	29.0	99
04440R	FL VLT IN GR2 WITH TRACE CHL, AND MNOX	12	6	540	1.5	123
04441R	CHL-QTZ-MNOX-FEOX VNS IN GR2	140	28	810	2.0	81
15655R	MN-STAINED AND FRACTURED GR1	70	8	1100	1.5	89
15656R	EXTREMELY CHL ALT GR1	92	-0	510	-0.5	56
15657R	GOSSANOUS MN-STAINED FL FLOAT	4	0	430	1.5	83
15659R	CHL ALT GR1 WITH 1-2% FL	2	-0	420	1.5	156
15660R	HAIRLINE GREISEN VNS IN GR1	42	1	730	1.5	99
15661R	CHL GREISEN VLTS WITH MNOX SELVAGES	10	1	1000	1.5	80
15662R	LIM-MNOX GOSSAN	6	7	8000	7.0	59
15663R	CLAY-ALT FEOX COATED DIKE IN GR1	190	5	1600	1.0	76
15664R	SHEARED CHL-MNOX ALT GR1	200	15	1000	4.0	102
15665R	(COMP) MNOX-CLAY-ALT GR1 WITH CHL AND GN	16	3	880	1.0	127
15666R	MN-STAINED FNG PORPHYRY	4	1	510	0.5	36
15667R	(COMP) CHL ALT GR1	370	33	1700	6.0	96
15692R	WEAKLY CLAY-ALT GR1	-2	-0	220	-0.5	89
15694R	(COMP) CHL GREISEN IN GR1 TALUS	86	1	1200	0.5	96
15697R	(COMP) MNOX COATED FELSITE AND ALT GR1	10	1	850	1.0	75
15699R	MNOX-CHL-ALT GR1	66	9	140	0.5	29
15701R	WEAK CHL GREISEN IN GR1 AND GR2	96	2	240	1.0	30
15702R	MN-STAINED GR1 WITH CHL GREISEN	100	32	870	2.0	46
15703R	FNG PORPHYRY DIKE FLOAT	-2	1	-50	-0.5	32
15706R	RHYOLITE PORPHYRY WITH MNOX	550	4	130	0.5	19
15708R	MNOX COATED JOINTS IN GR1	4	1	70	1.0	66

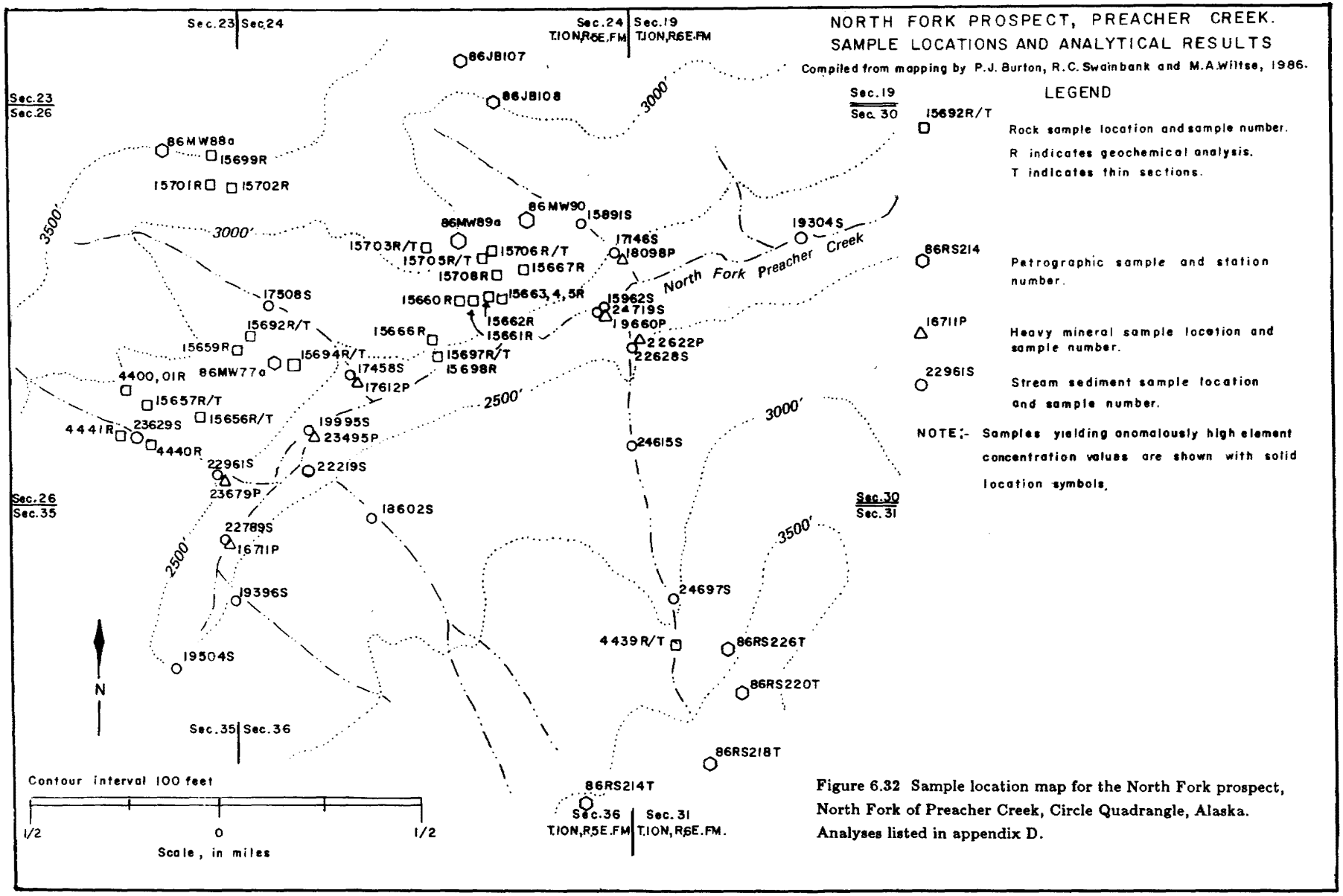


Figure 6.32 Sample location map for the North Fork prospect, North Fork of Preacher Creek, Circle Quadrangle, Alaska. Analyses listed in appendix D.

Generally speaking, only chlorite greisen veins contain appreciable tin values. Tin values are usually highest in the central, topographically lowest part of the area, whereas zinc values are generally highest in greisens around the margins of the area (table 6.3; fig. 6.32). High silver values are generally associated with high tin values, but samples with high zinc contents sometimes also contain high silver values.

Tungsten, though detectable in about 70 percent of the rocks, is present in low concentrations. Arsenic and antimony are barely detectable in most rocks. Galena was visually identified in sample 15665, but lead was not among the elements analyzed in this sample. Significant uranium was found in only one rock sample, 15662, collected from an intensely iron-stained gossan within the fine-grained porphyritic TKg2, but most samples contain 10 to 20 ppm uranium.

In a gross sense, the alteration and mineralization pattern of the North Fork prospect is more pervasive and intense at low elevations, with a few restricted, somewhat radial zones that persist to higher elevations. Alteration and mineralization are spatially associated with rhyolite intrusive breccias and a rhyolite-porphyritic granite body. This distribution of alteration and mineralization may indicate that the local erosion level intersects the upper levels of a chlorite-MnOx-FeOx alteration zone that is associated with a more deeply situated Sn-mineralization center. Conceptually, the North Fork prospect may be part of a broad zone trending roughly N-S across Preacher Creek valley.

Mascot Creek area

by

R.C. Swainbank and P.J. Burton

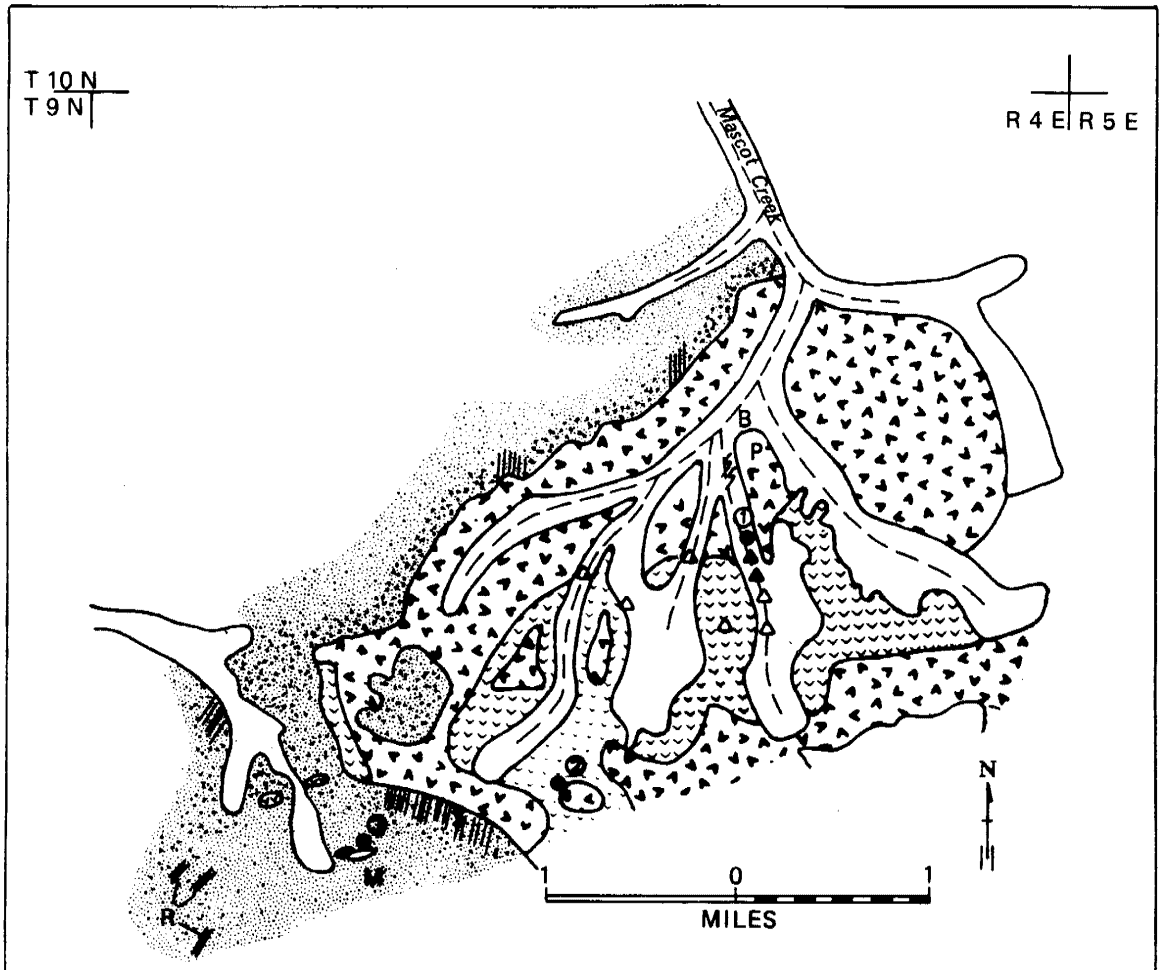
Pan concentrate samples from Mascot Creek (4 miles southwest of Lime Peak; fig. 6.1) are anomalous in tin, tantalum, uranium, tungsten, arsenic, barium, and silver. A brief examination of the area in 1987 suggests that moderate-sized mineralized zones in the creek could be responsible for the observed anomalies and that the area has some potential for appreciable greisen mineralization.

Plutonic rocks in the Mascot Creek area include large exposures of Tkg1 and TKg2 and dikes or small plugs of TKr and TKg2 in the adjacent metasedimentary rocks. A pegmatite zone is present in TKg2 (site P, fig. 6.33); beryl crystals were found downstream during geochemical sampling. A 0.2 to 0.8 mile wide hornfels zone is adjacent to the granitic contact, suggesting the pluton shallowly underlies metasedimentary rocks southwest of Mascot Creek (fig. 6.33).

Chlorite greisen rubble is present in upper Mascot Creek and the ridge south of Mascot Creek (fig. 6.33). Both locales are at or near TKg1-TKg2 contacts. Float from an altered mafic dike(?) is present near the lower greisen zone. Disseminated sulfide is also locally present in TKg2.

The hornfels is locally iron-stained due to sulfide-coated joints and fractures. Iron-stained zones are especially common adjacent to the southwest contact with the Lime Peak pluton.

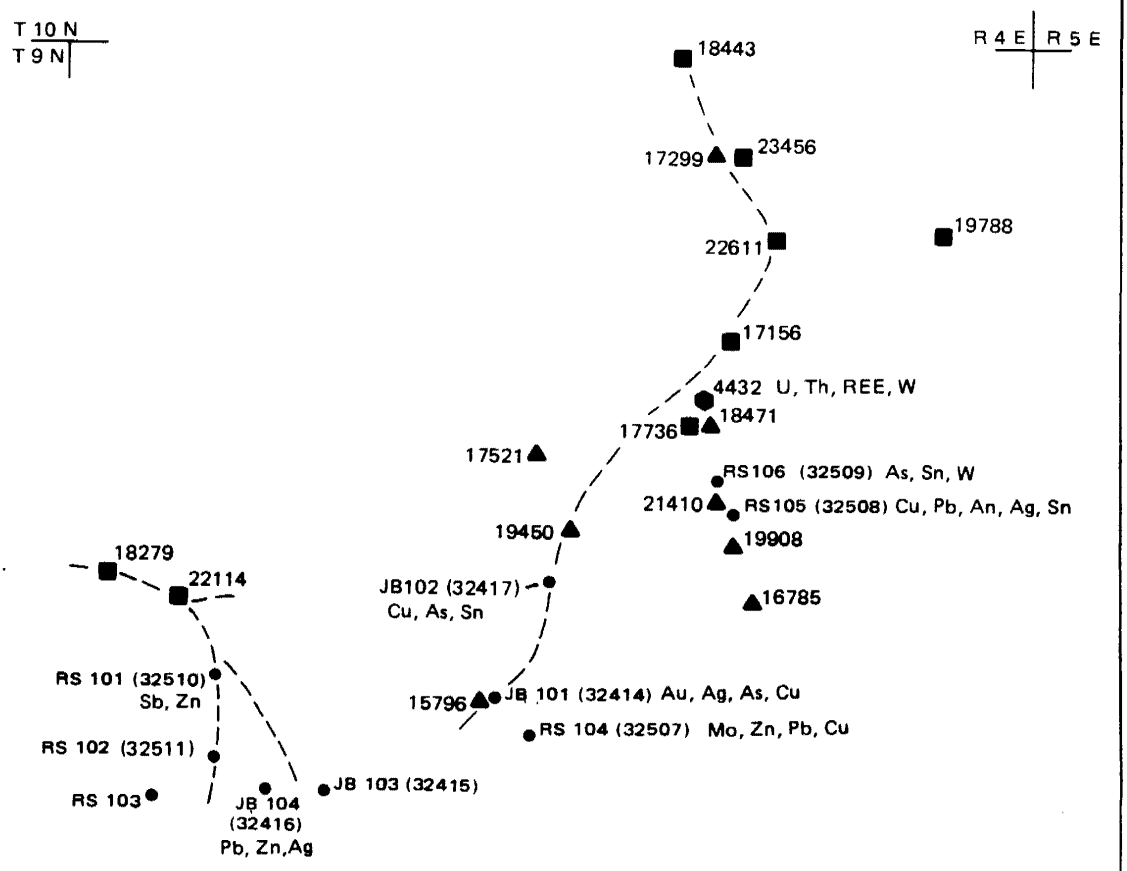
Chlorite greisen rubble was sampled in two areas (fig. 6.34; app. F). A sample from the lower greisen (32509) contains 0.1 percent As and 620 ppm Sn; a sample from the upper greisen (32507) contains 700 ppm Pb and 2.5 percent Zn. A float boulder of altered mafic dike rock



LEGEND

⚡⚡	SHEAR ZONE		MONZOGRANITE
●○	SULFIDE LOCALITY		SYENOGRANITE
▲	GREISEN, 10% RUBBLE		IRON STAINING
△	GREISEN 5% RUBBLE		HORNFELS
R	RHYOLITE	M	MARBLE
B	BERYL		GRIT
P	PEGMATITE		UNDIFFERENTIATED QUATERNARY

Figure 6.33 Geologic map of the Mascot Creek area, Circle Quadrangle, Alaska.



LEGEND

● JB 101	GEOLOGIC STATION NUMBER
● (32508)	ANALYTICAL SAMPLE NUMBER
▲ 1986	STREAM–SEDIMENT ANOMALOUS SAMPLE
■ 1986	PAN–CONCENTRATE ANOMALOUS SAMPLE
⬢ 1986	SOIL SAMPLE

Figure 6.34 Geochemical sample locations and anomalies, Mascot Creek prospect, Circle Quadrangle, Alaska. Analyses listed in appendix F.

(32508) located above, but near the lower greisen contains 0.7 oz/ton Ag, 1.5 percent Cu, 1.4 percent Pb, 4.7 percent Zn and 320 ppm Sn. A soil sample from a clay gouge zone in TKg1 100 feet below the lower greisen contains 500 ppm Ce. A sample of disseminated sulfide-bearing TKg1 from the vicinity of the upper greisen zone contains 0.1 oz/ton Ag.

Hornfels samples from the Mascot Creek area are similar to hornfels samples collected from other areas around the Lime Peak pluton, as they are abundantly iron stained but not especially enriched in metals. Samples of iron stained hornfels (32415, 32510, 32511) contain a maximum of 390 ppm Zn, 20 ppm As, 120 ppm Pb, 65 ppm Cu, and 17 ppm Sn.

As greisen rubble occupies a zone more than 2,000 feet long in upper Mascot Creek (fig. 6.33), and much of this greisen is well-mineralized, the Mascot Creek area potentially contains considerable mineralization. The rather extensive, strongly metalliferous, greisen rubble in upper Mascot Creek is probably responsible for the strong pan concentrate and stream sediment anomalies found downstream. This mineralized area is potentially large and of at least moderate grade in several metals, especially Sn and Ag.

South Lime Peak anomaly

by

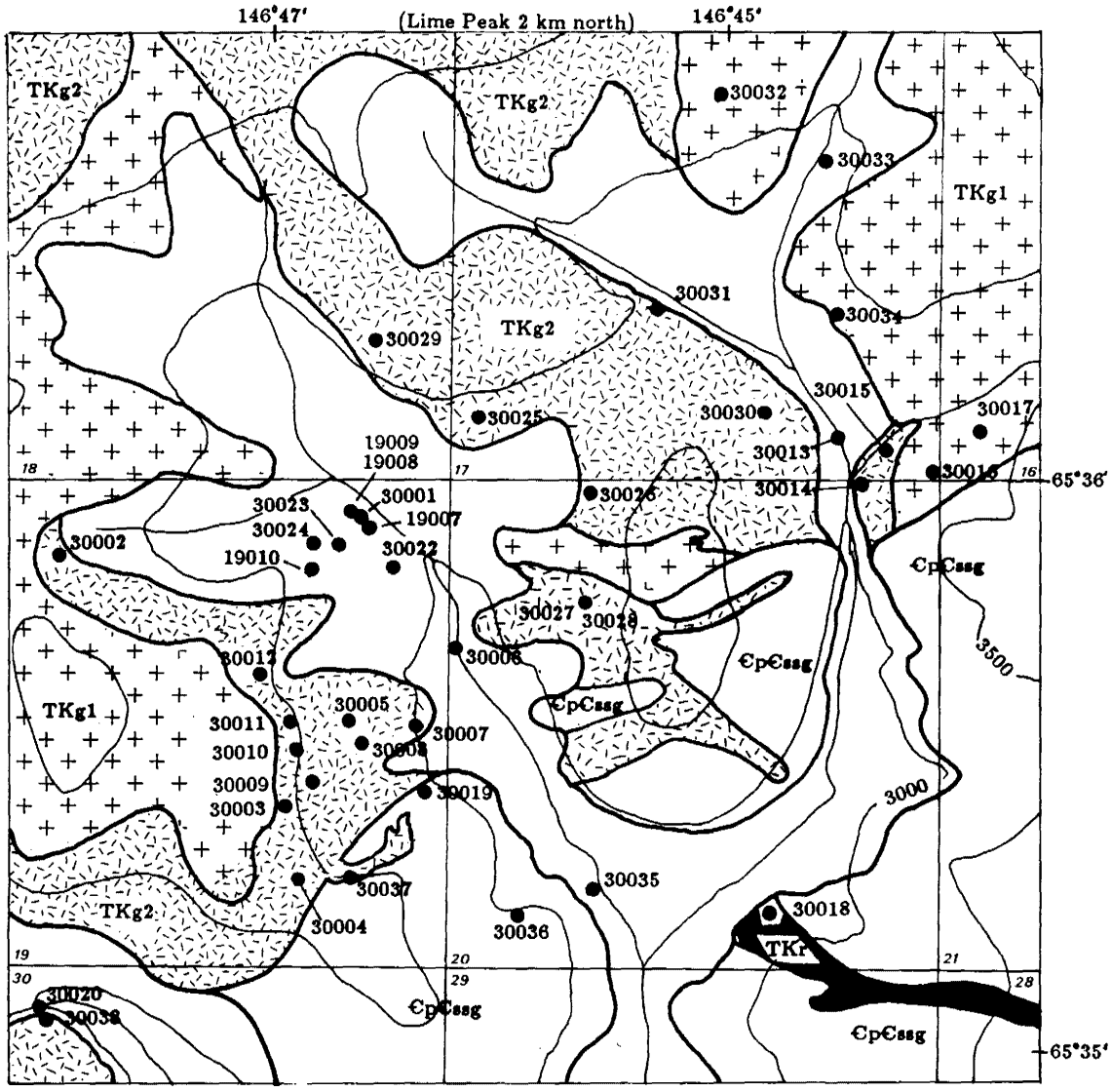
M. A. Wiltse and R.R. Reifenstuhl

Regional geochemical surveys conducted in 1986 (ch. 5) indicated that the south Lime Peak area (figs. 6.1, 6.35) contains sample sites anomalous in Sn, Ta, U, W, Pb, Ag, and Zn. The anomaly area (T9N, R5E, Circle C-6 Quadrangle) is near the southern contact of the Lime Peak pluton and in the vicinity of known chlorite greisen veins. Detailed examination of the area, made in June 1987, discovered no economic mineralization, but indicated a rock geochemical anomaly probably related to major mineralization at depth.

The south Lime Peak area contains granite phases TKg1, TKg2, and TKr intruding hornfelsed metasediments. The granites are slightly altered: brown biotite is altered to green biotite and chlorite, and feldspars are altered to clay. No chlorite greisen veins were observed, but tan- to brown-colored (iron oxide coated?) fractures were common. A few metamorphic (?) quartz veins were seen in the hornfels.

Composite rock chip samples with abundant iron oxide fracture coatings were collected from 40 sites (fig. 6.35). Analytical results (app. F) show that tin and tungsten anomalies are rare, but base metal anomalies are common. The concentration of metals in rock samples from the area is sufficiently high to indicate that similar material shed into the local creeks can account for most of the drainage anomalies observed. The small range in rock sample uranium content (7 to 47 ppm), however, contrasts sharply with much larger drainage geochemistry anomalies of up to 5,100 ppm (ch. 5) We suspect the uranium drainage geochemistry anomalies are due to concentration of high-uranium resistate minerals (for example, zircon) in the drainages.

Samples collected from an east-facing slope in section 19 (fig. 6.36) define a large anomalous area, characterized by values exceeding the following compositional levels (in ppm): Ag-1.5, As-20, Cu-180, Mo-4, Pb-200, Sn-40, W-10, Zn-200, La-100. The ranges observed for these elements are : Ag <0.5 to 17, As <2 to 1000, Cu 1.5 to 490, Mo <4 to 20, Pb <2 to 180, Sn 2 to



1 Mile

0 1 Kilometer

EXPLANATION

● 19007	Rock geochemistry sample site and number (analyzed 1987; table)
TKg1	Coarse-grained seriate syenogranite
TKg2	Porphyritic and equigranular and seriate monzogranite
TKf	Rhyolite porphyry
€pCssg	Semischistose quartzite and pelitic semischist
19	Section number (T.9 N; R 5 E.)
	Contour interval 500 feet

Figure 6.35 Generalized geology and sample locations, south Lime Peak area. Analyses listed in appendix F.

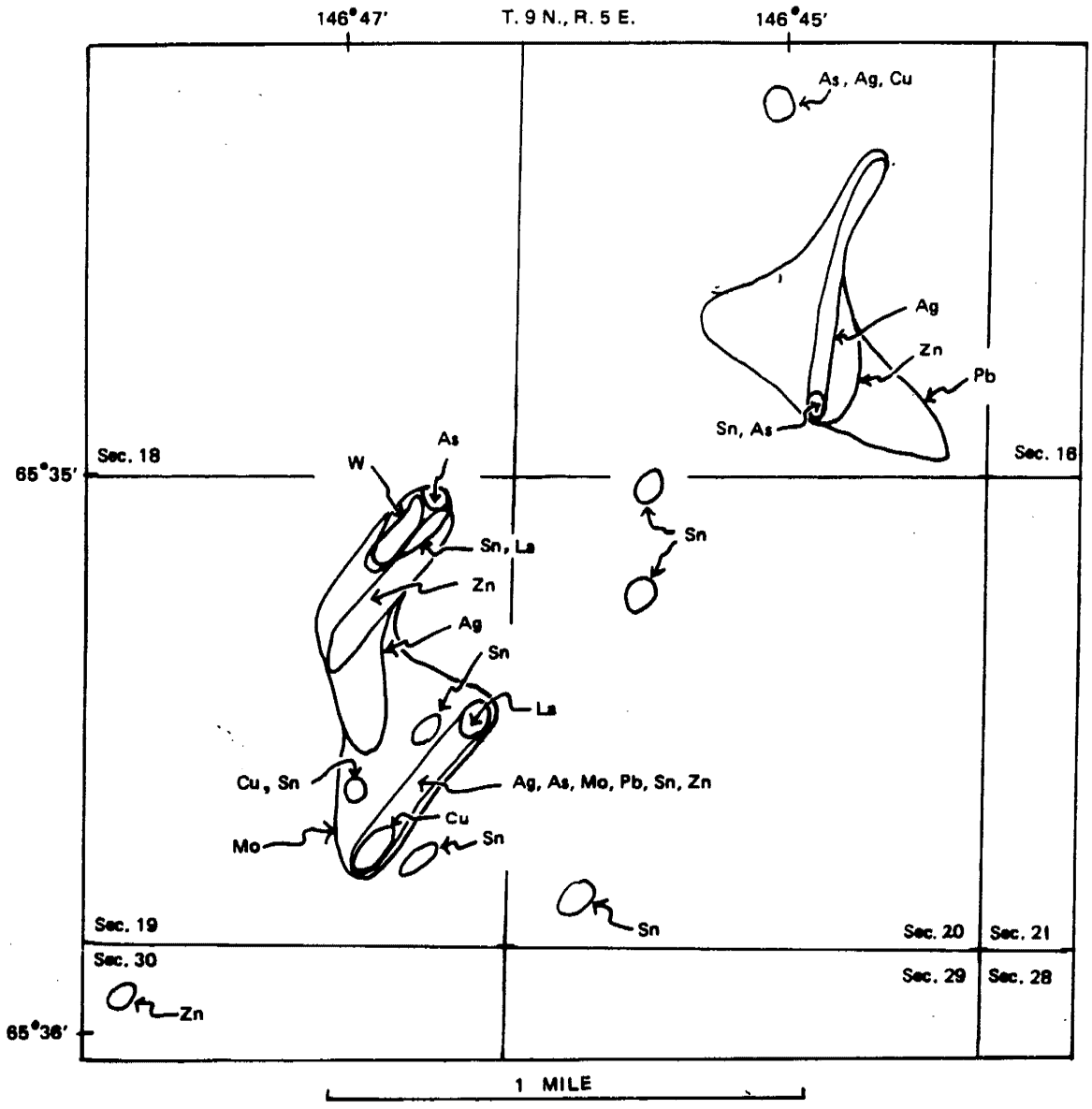


Figure 6.36 Rock trace element anomalies, south Lime Peak area, west-central Circle C-6 Quadrangle, Alaska. Rocks within the areas outlined have anomalously high concentationss of the elements indicated.

210, W <4 to 17, Zn 10 to 590, and La 6 to 352. Other samples collected in the central and northeastern part of the study area include rocks anomalous in one or several elements, but generally do not include the variety of anomalous elements seen in section 19.

Based on the location of samples simultaneously anomalous in several elements and the presence of anomalous Sn (fig. 6.35), there are three anomalous centers: (1) northeast quarter, section 19, (2) southeast quarter, section 19, and (3) southeast quarter, section 17. The trace metal concentrations are sufficiently high to indicate they are caused by secondary mineralization and not primary rock enrichments. The presence of Sn and La in the central portions of the

crudely zoned metal patterns suggests the anomalies are directly related to a tin-bearing hydrothermal system. The high Zn, Ag, and As values are similar to values seen around the periphery of the major hydrothermal systems at Lime Peak (for example, the Cliff, Tin Ridge, fig. 6.1). This area differs from others in the Lime Peak pluton in that it lacks chlorite greisen veins, and hence, the more obvious signatures of hydrothermal mineralization.

In summary, although no strongly tin-mineralized rocks were located in the south Lime Peak area, we interpret the rock geochemistry as a distal geochemical signature of hydrothermal tin mineralization occurring at depth. As drainage geochemistry anomalies in south-flowing streams located between south Lime Peak and Bear Creek (pls. 5.1 through 5.5) are similar to drainage anomalies in this area, buried Sn-Ag mineralization may well occur in a several square mile area along the south margin of the Lime Peak pluton.

Lime Peak area skarns

Burton and others (1984) reported low grade tin-bearing skarns in the Lime Peak area. Follow-up mapping has confirmed the presence of small calc-silicate hornfels horizons with chlorite and/or amphibole veining. In addition, one marble pod on Lime Peak ridge was largely replaced by fluorite over a 3 foot x 15 foot area.

Mapping has shown little or no equigranular granite (TKg3) in areas of marble or calc-silicate rocks (pl. 2.1A) and thus little reason to expect significant tin mineralization. In addition, the rocks examined consisted of contact metamorphosed, impure limestones with iron-poor garnets and pyroxenes (determined by microprobe analyses) and remnant sedimentary/metamorphic compositional layering. Garnet-pyroxene-idocrase-plagioclase rocks from the Lime Peak area average less than 20 percent alteration to chlorite-amphibole-quartz-calcite +/- sphalerite-pyrite-pyrrhotite-arsenopyrite. Our assays from bulk samples of calc-silicate rocks indicate grades of 0.003 to 0.03 percent Sn, 0.03 to 0.1 oz/ton Ag, 0.01 to 0.03 percent Cu and 0.03 to 0.8 percent Zn (app. D). Similar rocks elsewhere that show little evidence of metasomatic alteration, rarely contain appreciable metal values in any skarn-forming environment (Einaudi and others, 1981).

Massive fluorite and sphalerite-rich skarn found on Lime Peak Ridge (pl. 6.1) are most analogous to 'distal' alteration found several thousand feet from economic skarns-greisens in several tin systems (for example, Lost River, Alaska; Dobson, 1982). Zoning from central tin to silver to zinc is quite common for mineralization in the Lime Peak area (for example, the Cliff), so that the zinc-rich, but tin- and silver-poor skarns are presumably distal to major mineralization. That both the fluorite- and sphalerite-rich rocks contain low tin values does not rule out the possibility of tin-rich rocks closer to the source of mineralization. The presence of high fluorite concentrations in these distal skarns may indicate a major hydrothermal system at depth.

In summary, the Lime Peak area skarns/calc-silicate rocks are not of current or likely future economic interest, due to a combination of unfavorable host (low abundance of carbonate rocks) and considerable distance from known mineralizing granite units (TKg3). However, their occurrence is compatible with the presence of a major hydrothermal system.

Upper Preacher Creek area

by

T.E. Smith

Regional geologic mapping has shown that the northeast end of the Quartz Creek pluton (pl. 2.1A, figs. 6.1, 6.37) is the most differentiated part of that pluton, containing the Hope suite phases TKg1, TKg2, and TKr. Stream sediment and heavy mineral geochemistry show Cu, As, and sporadic W and Au anomalies in streams draining this end of the pluton (pl. 5.1, 5.2, 5.3, 5.4). Scheelite has been identified in heavy mineral concentrates from several streams draining this end of the pluton (fig. 6.36; S.A. Fechner, pers. comm., 1987). Some sulfide mineralization had been noted along the southeastern margin of the pluton (previous studies) in the area of Cu-As stream sediment anomalies. A six square mile area including part of the Quartz Creek pluton and adjacent hornfels (fig. 6.37) was chosen for detailed study in 1987 to better understand the sources of the drainage geochemistry anomalies.

The southern part of the detailed study area contains hornfelsed quartzite and pelitic schist of the 'Upper grit Unit' (CpCsg) laying above a low-angle, south-dipping contact with the TKg2 phase of the Quartz Creek pluton. The hornfels zone is about one-quarter mile wide where sampled, but widens to about 2 miles east of the pluton, coincident with an aeromagnetic low, suggesting an eastward extension of the granitic body at shallow depths. TKg2 granite appears to form a hood-like border phase of the pluton shallowly underlying metamorphic rocks. Visible alteration-mineralization noted in the hornfels includes local concentrations of pyrite and arsenopyrite(?), disseminated and veinlet controlled limonite, tourmaline quartz veins, local skarn occurrences, and rusty weathering quartz that may be related to regional metamorphism.

Locations of rock samples collected in 1987 are shown on figures 6.37 and 6.38 and assay results are given in appendix F. Similar to other areas in the Lime Peak-Mt. Prindle region, iron-stained hornfels samples are not very metal rich--only 4 out of 21 hornfels samples showed significant metal anomalies. Metal values in hornfels tend to increase towards the pluton contact and most of the metalliferous samples are located within 500 feet of the contact. Limonitic biotite hornfels samples (for example, 30203, 30211) contain a maximum of 440 ppm Cu, 190 ppm Zn, 29 ppb Au, and 37 ppm W. Quartz-tourmaline veins in the hornfels, for example samples 30212 and 30217, are slightly enriched in As (up to 73 ppm), W (up to 87 ppm) and Ag (up to 1.5 ppm). Quartz veins in TKg2 granite may be slightly better mineralized, as they contain up to 36 ppb Au, 2.5 ppm Ag, 1,200 ppm As, 800 ppm Pb, and 26 ppm W (for example, samples 30218, 30208). Most of the granite-hosted veins contain 10 to 25 ppm W and 5 to 25 ppm Sn.

Two samples of skarn collected 2 miles north of the detailed map area (4527, 4528, pl. 6.1, app. D) contain 5 to 13 ppb Au, 100 to 1800 ppm Sn, 120 to 340 ppm Zn, and 4 to 18 ppm W. Microprobe analyses of minerals from one sample show low-almandine + spessartine garnets and very high hedenbergite pyroxenes, similar to other tin skarns (fig. 6.16) and dissimilar from tungsten skarns (fig. 6.13). Geochemically, the Quartz Creek skarns are more similar to Lime Peak-Mt. Prindle Sn skarns than to the Table Mountain Au-W skarns.

The absence of strongly anomalous metal values in most rock samples collected from upper Preacher Creek contrast with the relatively strong drainage anomalies observed. Especially

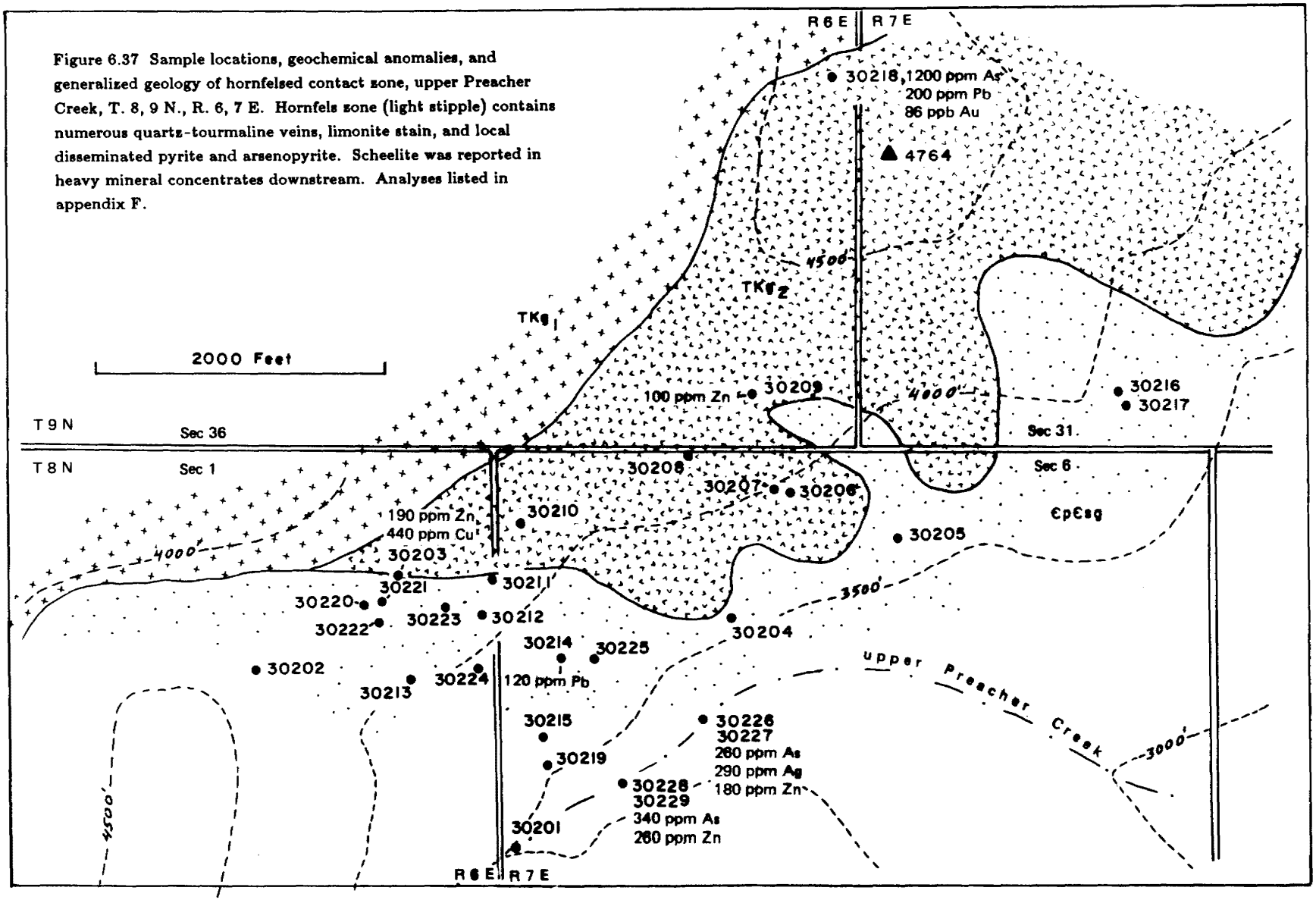


Figure 6.37 Sample locations, geochemical anomalies, and generalized geology of hornfelsed contact zone, upper Preacher Creek, T. 8, 9 N., R. 6, 7 E. Hornfels zone (light stipple) contains numerous quartz-tourmaline veins, limonite stain, and local disseminated pyrite and arsenopyrite. Scheelite was reported in heavy mineral concentrates downstream. Analyses listed in appendix F.

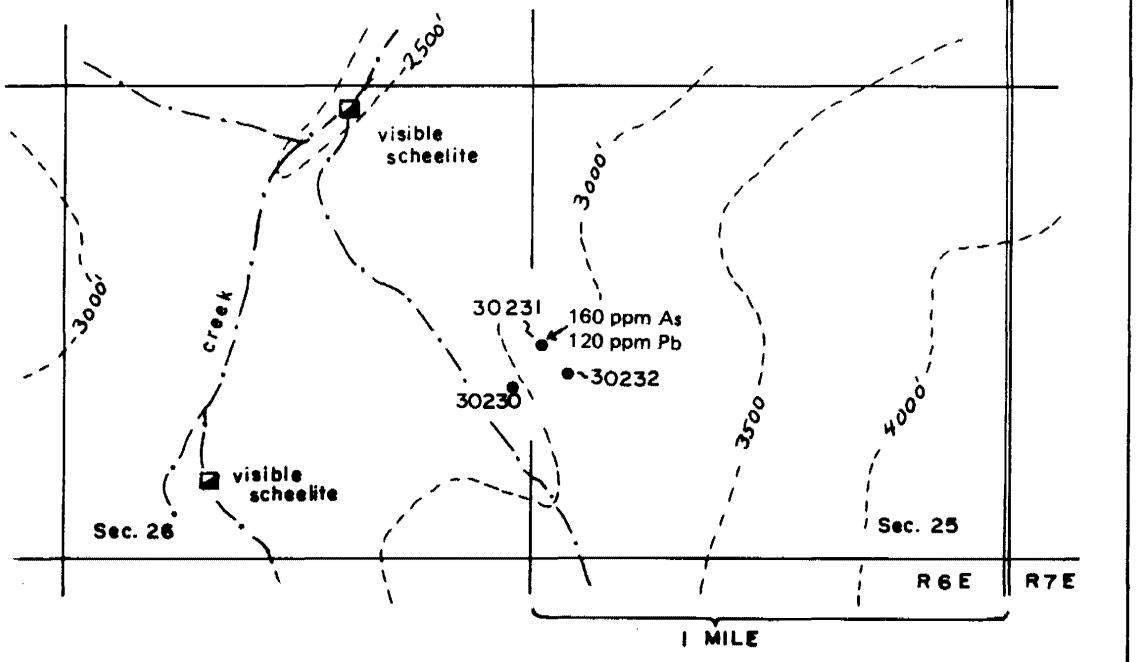


Figure 6.38 Rock sample locations and geochemical anomalies in TKg1 phase of Quartz Creek pluton, T. 9 N., R. 6 E. Analyses listed in appendix F.

puzzling is the presence of visible scheelite in heavy mineral concentrates (fig. 6.38) in contrast to the virtual absence of tungsten in hornfels, quartz vein, and skarn samples analyzed. Although not identified during this study, the most likely sources of scheelite in several drainages at this end of the pluton are small, scheelite-bearing skarns developed from calcareous beds in the hornfelsed metasediments.

Recognizing the limitations in our knowledge about sources for the upper Preacher Creek area drainage anomalies, the northeastern Quartz Creek pluton possibly provides a metallogenic link between the more evolved tin-bearing Lime Peak pluton area and the tungsten-gold skarn- and gold-tourmaline- quartz vein-bearing Table Mountain area, which is presumed to overlie an unexposed granitic body. Some broad similarities in metallogeny and drainage geochemistry of the upper Preacher Creek and Table Mountain areas suggest the (inferred) buried intrusion at Table Mountain could be a TKg2 phase of the Hope Intrusion suite, similar to that exposed at the east end of the Quartz Creek pluton. A spatial association of TKg2 with Cu, W, and As geochemical signals is present at the northeast end of the Lime Peak intrusive, although the metallogenic patterns at Lime Peak are dominated by Sn, Ta, U, or other elements typically found in tin systems, and which are thought to be related to exposed or subsurface bodies of TKg3. I speculate that where the Hope intrusive suite evolves only to the TKg2 phase, tungsten-gold-arsenic-copper will be the expected metallogeny. Where magmatic evolution proceeded to the TKg3 granites, tin-related mineralization dominated or overprinted the earlier metallogeny. Other possible explanations for the contrasting geochemistry of the Table Mountain area may be (1) the presence of one or more plutonic suites with contrasting geochemistry to the Hope Suite and (2) the presence of remobilized stratabound mineralization.

Mt. Prindle area

American Creek headwaters

Stream sediment sampling by Holm (1973), confirmed by this study, indicated a tin anomaly on upper American Creek in the Mt. Prindle intrusion (fig. 6.1). A pegmatite-aplite-equigranular granite dike and associated greisen veins are probably responsible for this anomaly (fig. 6.39). The composite dike is approximately 15 feet thick where sampled and widens to 300 to 500 feet thick to the northwest. It has a total strike length (pl. 2.IA) of nearly a mile. Mapping along its length indicated that it was most altered and mineralized near its southeastern termination.

The aplite-pegmatite dike contains abundant tourmaline and lesser topaz and coarse muscovite. A zone approximately 30 feet wide of secondary tourmaline in porphyritic granite surrounds the dike, especially notable in the hanging wall of the dike. Chlorite greisen veins are located above the dike and cutting across the dike. Reconnaissance examination suggested there are 1 to 3 such veins per 100 feet of dike strike length for the area examined. Rare muscovite veins and very common iron oxide-coated joints are also present. A channel sample across a 5-inch wide greisen vein contained 0.2 percent Sn, 1.5 ppm Ag, and 550 ppm Zn. Several other greisen samples contained 200 ppm tin (fig. 6.39). The high Zn content of the highest-grade vein is similar to those of 'distal' greisens from the Bedrock Creek, Cliff, and Tin Ridge areas, which may indicate these greisens are the expression of a larger tin-mineralized system at depth. Hence, although they are themselves of negligible economic value, the rocks on upper American Creek indicate the local development of moderate-grade chlorite greisens in the Mt. Prindle pluton and may imply the presence of higher-grade mineralization at depth..

Hope Creek skarns

Significant tin anomalies in upper Hope Creek indicate the presence of some tin mineralization. Reconnaissance mapping in August 1986 followed by detailed mapping in June 1987 showed that locally high grade tin-bearing skarns (fig. 6.1, sections 23 and 26, T7N, R6E) were probably responsible for the anomalies. Although the skarns are not large and the tin is not present in readily extractable form, these skarns indicate that some high grade tin mineralization is associated with the Mt. Prindle pluton.

The contact between the Mt. Prindle pluton and adjacent metamorphic rocks on upper Hope Creek is almost parallel to the strike of bedding in the country rocks (fig. 6.40) and can be traced along the ridge crest for more than 3,000 feet. A narrow margin of equigranular granite 30 to 100 feet wide, with local miarolitic cavities and quartz-muscovite veins characterizes the pluton's border. A narrow zone (15 to 50 feet wide) of wollastonite hornfels, and other calcareous rock, is traceable in outcrop for 600 feet near the top of the ridge. This unit gently dips (10 to 20 degrees) away from the granite contact. Scattered exposures of fluorite and/or amphibole-veined rock along strike downslope may represent the continuation of this unit. The calcareous rocks are converted to pyroxene-amphibole-garnet-chlorite rocks with visible fluorite especially where they are within 100 feet of the granite contact. Because of its low calcite content, however, the calcareous unit is an unfavorable skarn host, and at most 20 percent of it has been converted to stanniferous skarn (fig. 6.41).

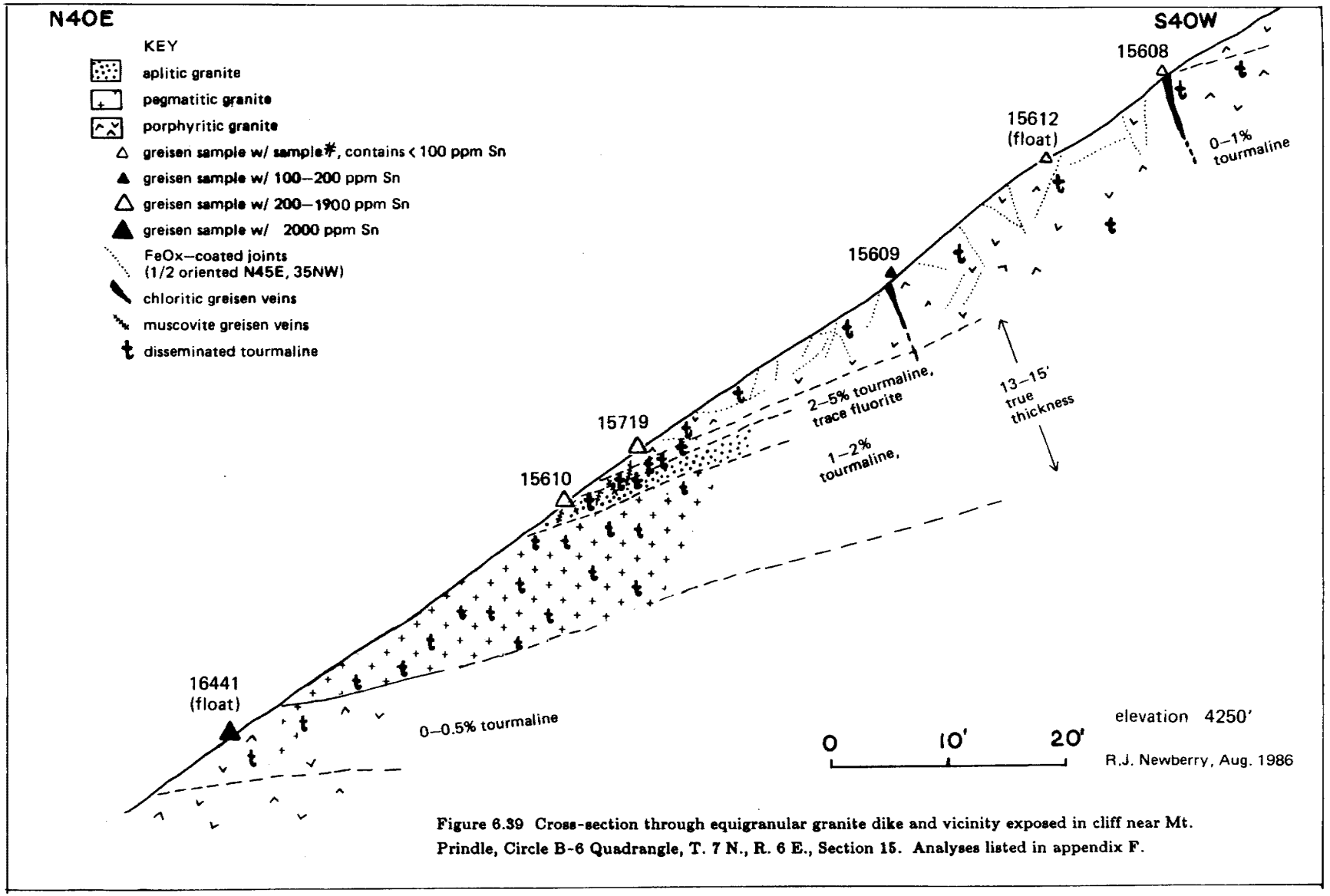


Figure 6.39 Cross-section through equigranular granite dike and vicinity exposed in cliff near Mt. Prindle, Circle B-6 Quadrangle, T. 7 N., R. 6 E., Section 15. Analyses listed in appendix F.

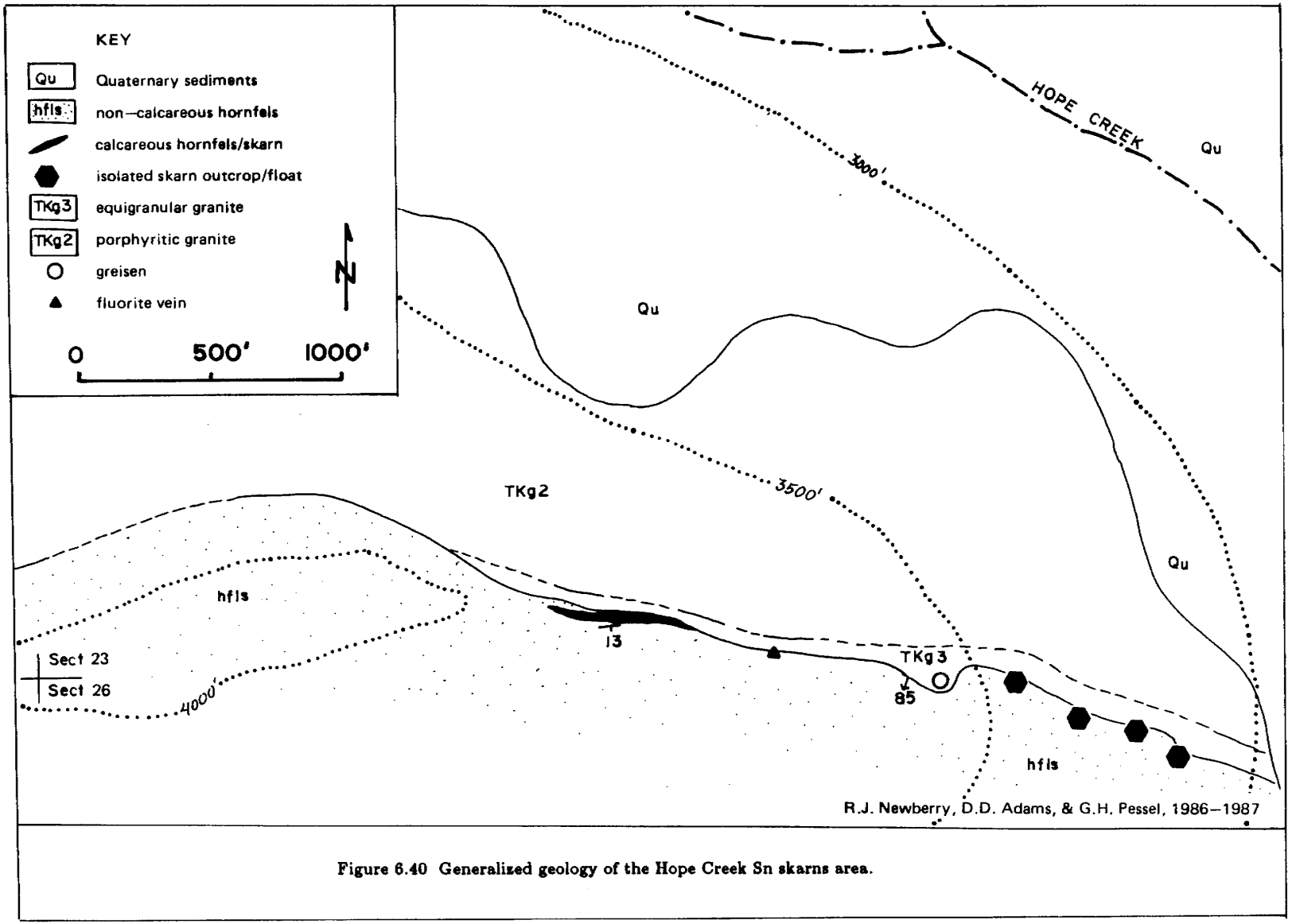


Figure 6.40 Generalized geology of the Hope Creek Sn skarns area.

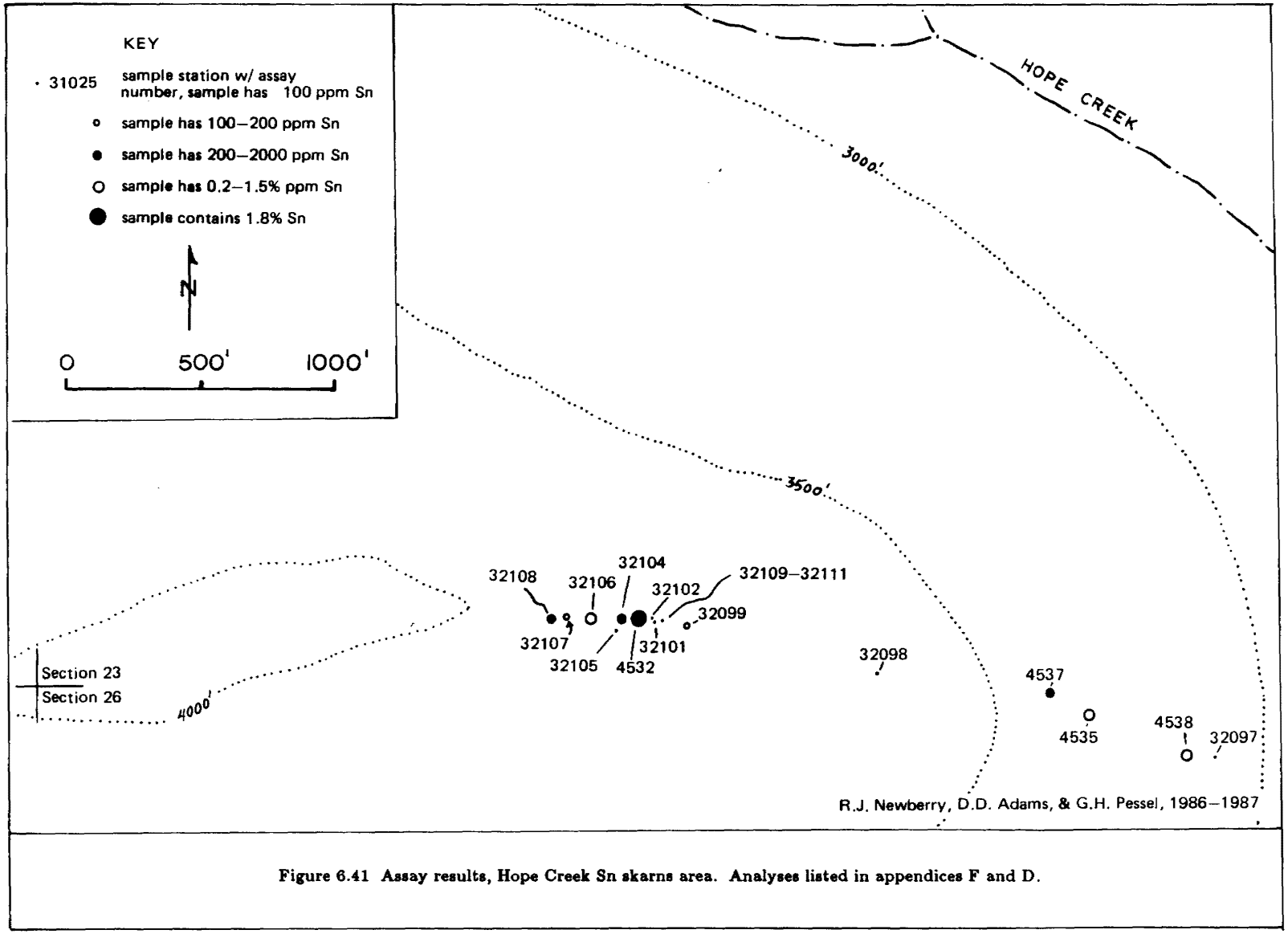


Figure 6.41 Assay results, Hope Creek Sn skarns area. Analyses listed in appendices F and D.

Grab samples of skarn contain up to 1.8 percent Sn, 2/3 oz/ton Ag, 0.13 percent W, 0.15 percent Zn, 0.1 percent Pb, and 13 ppb Au (fig. 6.39, apps. D, F). Although grades are quite variable, most samples contain several hundred to several thousand ppm tin and some accessory silver and tungsten.

Despite high tin assays, no cassiterite has been identified in the skarn and microprobe study indicates the bulk of tin is probably present in garnet, amphibole and ludwigite, and hence is not extractable by current technology. However, assuming that the calcareous unit continues to be skarn-altered at depth, given the 600 foot x 15 to 35 foot surface exposures of calcareous rocks, and assuming a dip extent of 300 feet, there could be 1/2 million tons of moderate grade (0.1 to 1 percent Sn, 0.1 to 0.7 oz/ton Ag, 0.01 to 0.1 percent W) rock on the Hope Creek ridge. Further, other pure marble units in the area, known from regional geologic mapping, may exist in the nearby subsurface and would represent important skarn targets.

Fluorite Creek

by

R. C. Swainbank

The first major northeast-flowing tributary of American Creek (figs. 6.1, 6.42) was informally named Fluorite Creek by Holm (1973), because of the prevalence of fluorite rubble in the lower reaches of the creek. Detailed mapping and sampling of the fluorite occurrence shows it is of limited extent and contains minor metal values.

Detailed mapping in Fluorite Creek show that fluorite occurs with chalcedony as a matrix to a massive quartz and chalcedony breccia. The breccia forms a crudely planar layer on the northeast wall of a small fault zone within coarse-grained granite (Tkg1). No trace of the fault was found on the southeast bank of the creek, but a shallow linear depression extends on strike across the tundra northwesterly from the fault zone. Upstream of the fault zone for about 75 feet, a small amount of pyrite and fluorite occur in chalcedonic quartz veins along joints and fractures in the granite. The feldspars of the granite are slightly altered to clay minerals in the immediate vicinity of the veins, but there is no pervasive alteration apparent, and the mineralization is restricted to the fracture-filling. Two small, southwest-trending faults in the upstream zone appear to post-date the mineralization.

As shown in figure 6.42, fourteen large samples of rock from the 150-foot wide mineralized zone were collected for analysis. Each sample weighed approximately 25 pounds, and was collected to be representative of the mineralized rock within about five feet of the sample station. These samples should be considered as composite samples rather than channel samples. Analytical results (app. D) show that the mineralized zone does not contain significant base metal, precious metal, or uranium values. One sample, however (4564), contained 350 ppm Sn (app. F).

Fechner and Balen (in prep.) report visible cassiterite in heavy mineral concentrates from lower Fluorite Creek. This cassiterite could be derived from the fluorite breccia vein, as indicated by the single, high-tin assay. Given the generally unfavorable geochemistry of the vein, however, we believe that if appreciable tin mineralization is associated with this vein, it occurs at a significant depth below the surface.

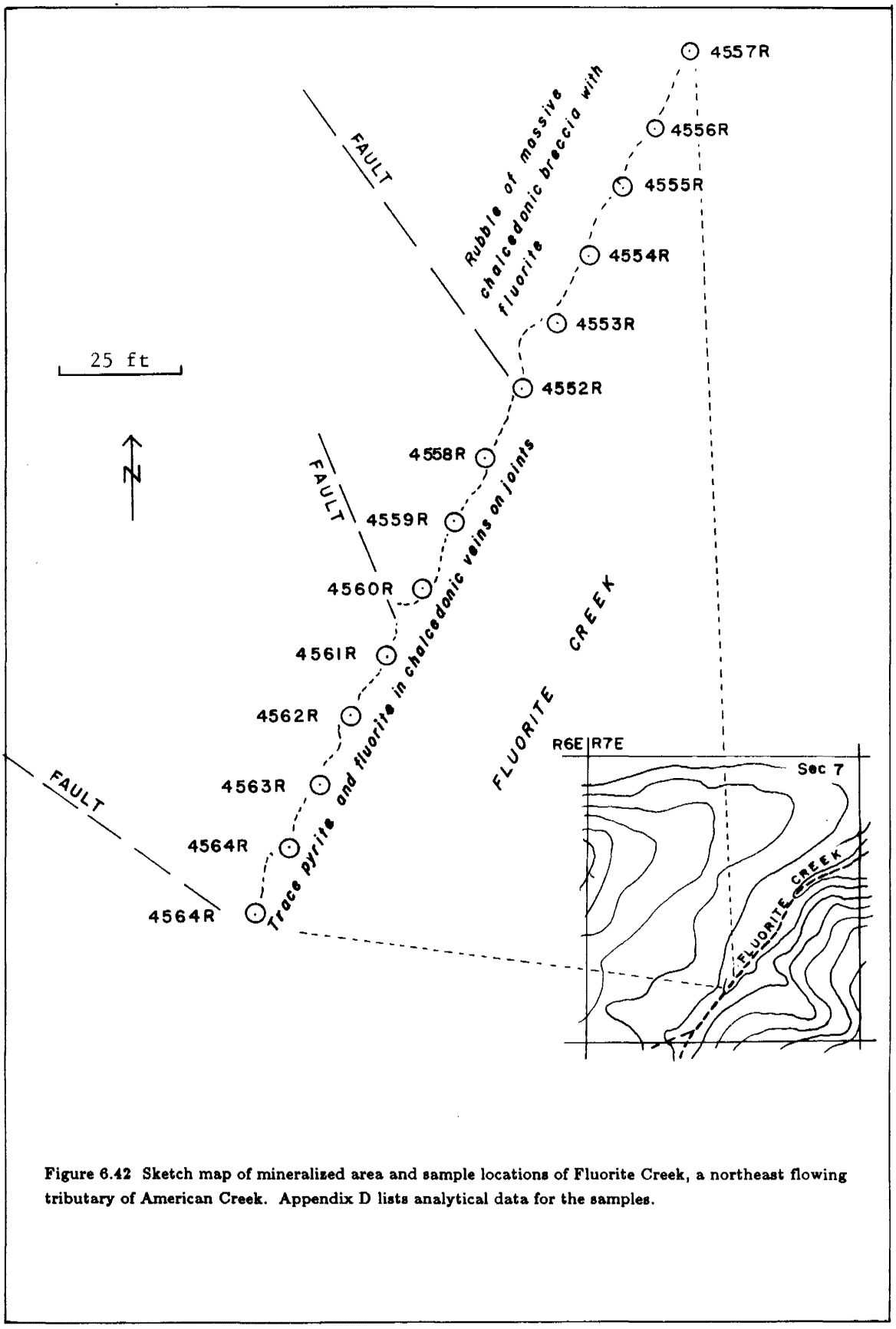


Figure 6.42 Sketch map of mineralized area and sample locations of Fluorite Creek, a northeast flowing tributary of American Creek. Appendix D lists analytical data for the samples.

Summary of Tin-Silver Prospects

Although we lack sufficient subsurface information to accurately quantify grades and tonnages of tin-silver-tantalum-tungsten mineralized rock in the Lime Peak-Mt. Prindle study area, our studies indicate that several well-mineralized areas are present and that abundant evidence exists for major ore-related hydrothermal systems in the study area. Geology of the Tin Ridge area is very analogous to several major tin deposits in Central Europe (Laznicka, 1985). At Zinnwald, Czechoslovakia, for example, a zinnwaldite-albite-tourmaline altered equigranular granite, mapped as an offshoot of the Central Bohemian granite batholith, underlies major zinnwaldite-chlorite topaz-cassiterite greisen veins. At Zinnwald, lower-grade veins lie above the main mineralized zone, and these are likely analogs to greisens in the Bedrock Creek and Cliff areas (where tin grades clearly increase with depth) and possibly analogous to other greisen-mineralized zones in the study area.

Silver and tin mineralization are commonly associated in the study area, with silver values (1/2 oz/ton Ag) commonly associated with tin (0.1 percent). Appreciable silver mineralization is consequently likely where appreciable tin mineralization occurs. Metal zoning seen in most of the prospects includes major zinc anomalies distal to (above and/or beyond) major tin-silver mineralization, a feature which suggests that major tin mineralization occurs beneath several areas which lack known greisen veins, like the south Lime Peak area. Exposures in the Tin Ridge area indicate that anomalous, potentially significant, tungsten-tantalum concentrations underlie major tin-silver vein systems.

OTHER COMMODITIES IN THE LIME PEAK - MT. PRINDLE AREA

Uranium Mineralization

by

P.J. Burton and R.J. Newberry

Uranium deposits known to occur in granitic rocks consist of hydrothermal veins containing pitchblende with a gangue of quartz, calcite, barite, and fluorite (Dahlkamp, 1978). Host rocks are typically granite, alaskite, or syenite and pegmatite-aplite dikes are common associates (Nishimori and others, 1977; Tilsley, 1978). The Hope suite is moderately enriched in uranium (app D.) relative to the 4 ppm U average for granites (De Voto, 1978), hence it has some favorability for uranium deposits.

The potential of the Lime Peak-Mt. Prindle area for uranium has long been known. Claims were staked in the 1950's on anomalously radioactive monzogranite about one mile south of Lime Peak, but no discovery was ever announced. The U.S. Bureau of Mines published a report on anomalous uranium concentrations in artesian springs and stream sediments in the Mt. Prindle area (Barker and Clautice, 1977) which resulted in a claim rush in the region by a number of companies and individuals. MAPCO had earlier made a discovery of a mineralized vein in syenite southwest of Lime Peak, outside of the study area (Burton, 1981). The vein contained up to 17 percent combined rare earth elements and 0.8 percent uranium (Zuhair Al-Shaieb, pers. comm.). MAPCO followed this discovery with a 2 year diamond drilling program, and drilled a few barren holes in the Lime Peak and Mt. Prindle plutons. Major fault intersections with seriticized granite were drilled.

Our sampling of mineralized rocks in the Lime Peak-Mt. Prindle area show slightly anomalous uranium (app. D) but no signs of major uranium mineralization are associated with Hope suite rocks. Chlorite greisen veins contain to 74 ppm U, with values of 10 to 25 ppm U typical. Samples 4406, 4470, 4549, and 5341 (app. D) are typical of chlorite greisens with elevated uranium grades. Zinnwaldite and sericite greisen veins contain 4 to 71 ppm U, with values of 30 ppm U typical (app. D).

Fluorite-quartz (chalcedony) veins, which were extensively sampled for uranium, contain 4 to 35 ppm U and typically contain 10 ppm U. Samples 4552 to 4565 from the Mt. Prindle pluton are typical of this vein type.

The highest bedrock uranium values found (144 to 204 ppm U) were in gossans, iron oxide-cemented breccias, and limonitic gouge zones. These samples probably have elevated uranium contents due to localized supergene enrichment and not hydrothermal mineralization. Samples 5928, 15662, and 15628 (app. D) are typical of the highest-grade iron oxide material. Most limonitic zones contain 20 ppm U, suggesting that this anomaly type is not very prevalent.

Outside of the Lime Peak-Mt. Prindle area tin and uranium anomalies are known to occur together in the same granite pluton (for example, the Darby Mountains and the Selawik Hills, Jones and Forbes, 1976). Uranium anomalies are also commonly associated with tin deposits. Uranium deposits and tin deposits, however, are not generally found in the same pluton; at best they occur in different plutons of the same batholith complex. The Hercynian South Mountain batholith, Nova Scotia, for example, contains a granite-hosted U deposit at Millet Brook, 110 miles from the granite-hosted Sn deposit at East Kemptville (Chatterjee and Muecke, 1982). Uranium contents of the tin-bearing greisens of the Hope suite are similar to those of the East Kemptville deposit, that is, only slightly anomalous (Chatterjee and Muecke, 1982). McGlasson (1980) has demonstrated that uranium is enriched in Li-rich igneous bodies contemporaneous with, but distinct from, tin-tungsten deposits. Microprobe analyses of chlorite from greisens at Lime Peak do not fall in the compositional range of granite-related uranium vein chlorites (fig. 6.16). Based on these data, we believe that the potential for uranium deposits in the Hope suite is low.

Syenites west of the study area do contain veins with locally high uranium contents (noted above) and monzonites contain extensive zones averaging 150 ppm uranium (Burton, 1981). Hence, the greatest likelihood for uranium deposits in the Lime Peak-Mt. Prindle area is uranium in association with small syenite bodies at the southwest edge of the area (pl. 2.1A). Given the nearby mineralization in similar rocks, the potential for U mineralization at the southwest edge of the study area is at least moderate.

Rare Earth Elements

by

P.J. Burton and R.J. Newberry

Alkali feldspar granite and syenite are the most common hosts for light rare earth element (LREE) veins. Such veins commonly have a gangue of barite, fluorite, and ankerite-dolomite (Vlasoz, 1968). Most known examples are associated with some carbonatite, carbonate alteration, and/or fennitization. Veins containing up to 17 percent total REE have been identified in the Roy Creek syenite, just west of the Lime Peak-Mt. Prindle area (Zuhair Al-Shaieb, pers. comm.)

No barite veins, carbonatite, or alkali feldspar granite were identified during mapping of the Lime Peak-Mt. Prindle area. Syenite is only present in the southwest edge of the area (pl. 2.1A).

Chlorite greisen veins, especially those from Lime Peak, however, are enriched in LREE's. These greisens contain up to 279 ppm Ce and approximately 0.06 percent total LREE (app. D). LREE abundances do not correlate well with tin grade in the chlorite greisens. Typical, higher-LREE greisens include samples 4359, 4406, 4458, 6446, 15564, 15603, 15665 16362, and 15659. Average Ce grades from Lime Peak chlorite greisens are 75 to 100 ppm Ce. A cerium phosphate mineral, identified by qualitative microprobe analysis in some of the chlorite greisens, is probably responsible for much of the Ce grade in these rocks.

In contrast to the chlorite greisens, zinnwaldite greisens typically contain < 100 ppm Ce and quartz-fluorite veins commonly contain 30 to 35 ppm Ce (app. D). The highest Ce abundance (365 ppm) is in a granite with quartz-molybdenite veinlets (sample 4463, app. D). As molybdenite is very rare in the Hope suite, this type of occurrence is probably also rare.

Although mineralized rocks from Lime Peak contain anomalous levels of REEs, the typical highest values seen are two orders of magnitude lower than grades mined elsewhere for LREEs. Hence potential for LREE deposits associated with the Hope Suite is low. However, syenite similar to the Roy Creek syenite is present at the southwest edge of the study area. This southwest edge has a distinctly higher potential for LREE deposits.

Platinum Group Elements

by

R.C. Swainbank, L.E. Burns, and R.J. Newberry

Trace amounts of platinum have been reported in placer concentrates from the Hope Creek-Faith Creek basin (D.R. Stein, pers. comm., 1986). Magmatic pyrrhotite, a common associate of platinum mineralization, occurs in a biotite-rich lamprophyre (Tkl) which intrudes some of the bodies of hornblende quartz monzonite. The lamprophyre suite (Tkl) may possibly include some platinoid-bearing biotite clinopyroxenite such as that reported near Eagle, Alaska (Keith and others, 1987). Hydrothermal arsenopyrite and pyrite, also possible Pt-carriers, occur in xenoliths of pelitic and graphitic schist that are locally present in the lamprophyre.

Samples from the Lime Peak-Mt. Prindle study area were not routinely assayed for platinum. However, some sulfide-bearing mafic rocks were assayed. Samples 32505 and 32506, pyrrhotite-bearing lamprophyres, and 30446, a sulfide-poor lamprophyre (?) all assayed less than 10 ppb platinum.

The relative scarcity of sulfide-bearing mafic-ultramafic rocks in the Lime Peak-Mt. Prindle study area and the assay results generated indicate that Pt-bearing deposits are possible, but unlikely, in the study area.

Diamonds

by

L.E. Burns and R.J. Newberry

Three diamonds have been found recently during placer gold mining at Crooked Creek, about 50 miles east of the Lime Peak-Mt. Prindle area. Our discovery of lamprophyre dikes during mapping of the study area indicated the possibility of diamond source rocks in the study area. Our rock and mineral analyses, however, (ch. 3B) indicate that the lamprophyres found are not of the type directly associated with diamonds. Lamproites (ultra-potassic rocks often associated with diamonds) are sometimes found with lamprophyres, but many known lamprophyre-bearing areas lack associated lamproites (and diamonds). Based on our current knowledge, we believe the likelihood for a bedrock diamond occurrence in the Lime Peak-Mt. Prindle area is low.

SUMMARY OF LODE MINERAL OCCURRENCes

Two major types of lode mineral deposits are present or likely to be present in the study area: 1) stratabound and 2) plutonic related.

Only one stratigraphic unit in the area, the Cleary sequence(?), appears to have much potential for mineralization, but there are a variety of plutonic rock types and each appears to have some potential for a specific mineral deposit type. Plate 6.2 highlights those areas with potential for particular deposit types, based on the geochemical, geological, and geophysical data available.

The Cleary sequence(?) is a volcanogenic unit which shows a spatial correlation with gold placer deposits in the study area. By analogy with the Fairbanks district, it is likely to contain some lode gold resources. Our data indicate that it is enriched in gold (up to 200 ppb) in a few places, and we consider areas underlain by Cleary sequence(?), shown figure 6.2 and plate 6.2, to possess a moderate potential for lode gold deposits.

The Hope plutonic suite clearly bears considerable similarities to granites hosting tin deposits worldwide (ch. 3). All three plutons of the suite are associated with prospects that contain at least 0.1 percent tin, and some contain nearly 2 percent tin; hence all show at least moderate favorability for tin deposits. The Lime Peak pluton contains six major prospect areas investigated during this study, all of which contain significant alteration and either major mineralization or distal signs of major mineralization. These six areas have a high to very high favorability for tin deposits. Our work also shows that silver is associated with tin in the Lime Peak-Mt. Prindle area, and that significant tungsten-tantalum underlies major tin-silver mineralization in the Zinn Gulch area. Areas underlain or adjacent to the Hope suite should be considered favorable for all four of these elements (pl. 6.2).

The syenites at the west edge of the study area (pl. 6.2) are similar to syenites hosting REE and U-bearing veins located just west of the study area. As there are uranium and barium anomalies downstream of these bodies, this area has a moderate potential for U and REE deposits.

Sulfide-bearing lamprophyre dikes occur in two major belts in the study area. Limited sampling of these rocks has not indicated they are anomalous in platinum group metals, although they are the most likely source for reported platinum in some local gold placers. The area

underlain by lamprophyre swarms (pl. 6.2) thus has a low potential for platinum deposits. Lamprophyres also can be broadly associated with diamond lodes. We conclude the area underlain by lamprophyres (pl. 6.2) also has a low potential for diamonds.

Moderately to slightly alkalic, phaneritic to aphanitic felsic dikes or sills are spatially associated with the lamprophyres and temporally associated with the syenites. These rocks possess compositional and alteration similarities to dike rocks known elsewhere to be associated with lode gold deposits. Our limited sampling has indicated that significant gold enrichments (more than 500 ppb) are seen in sulfidized hornfels and the adjacent, mildly alkalic dikes. Samples of vein sulfide material from this general area contain nearly 5,000 ppb Au. Based on this evidence, we consider the area (pl. 6.2) underlain by and adjacent to the alkalic dikes to have a moderate to high potential for lode gold deposits.

Tungsten and gold-bearing skarns occur in the Pinnell Mountain trail (pl. 6.2). Detailed sampling indicates highly anomalous levels (maximum 0.23 percent W, 400 ppb Au) of these elements. A pluton similar to the nearby Pinnell Trail monzogranite is a likely source for these skarns (ch. 3B). Despite the numerous occurrences of these skarns in the area, the absence of thick carbonate host rocks, a vital prerequisite to significant skarn formation, greatly limits the potential size of W-Au skarns in the Pinnell Mountain area. Consequently, the Pinnell Mountain Trail area has a low potential for W-Au skarn deposits of appreciable size.

Finally, a zone of enigmatic, sulfide- and gold-bearing, tourmaline-quartz veins and associated tourmaline- and sulfide-rich rocks occurs on Table Mountain (pl. 6.2). These veins and disseminated zones are widely distributed on Table Mountain and contain up to 120 ppm (4 oz/ton) gold. If these veins are igneous-hydrothermal related, then the nearby felsic dikes are a logical source, and these veins can be potentially found throughout the length of the felsite belt. If the veins and disseminated zones represent a tourmaline-gold enriched stratigraphic unit, locally remobilized into veins, then this stratigraphic unit may be mineralized over its entire extent. The distinctive tourmaline-sulfide rich unit has not been identified outside of the immediate Table Mountain area. Structural complications prohibit an accurate prediction of where this unit projects; however, the broad structural trends in this area are subparallel to the felsite dike trend. In consequence, the zone of moderate favorability for gold-bearing tourmaline-quartz rock is about the same, whether they represent a stratabound or igneous-hydrothermal occurrence. With either genetic model, the immediate Table Mountain area has a high favorability for lode gold deposits.

In summary, we note that considerable evidence for a variety of lode mineralization in the Lime Peak-Mt. Prindle area has been discovered in the last 5 years. Although the area has not received intensive exploration for lode mineral resources, the evidence currently available indicates that it probably contains significant amounts of such resources. An attempt to quantify the lode mineralization potential based on probabalistic methods is presented in Chapter 7.

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CHAPTER 7

PROBABILISTIC ESTIMATION OF MINERAL RESOURCES IN THE LIME PEAK - MT. PRINDLE AREA

by

G.H. Pessel and R.J. Newberry

INTRODUCTION

The use of probabilistic methodologies for estimating the possible quantities of undiscovered mineral resources in large areas is well-established (e.g. Harris, 1986; Drew and others, 1986). The mineral potential of the Lime Peak - Mt. Prindle area was assessed using a modified version of a computer-based, mineral resource simulation model developed jointly by the U.S. Bureau of Mines and the Alaska Division of Geological and Geophysical Surveys (White and others, 1987). For a complete discussion of the model and its application in the Kantishna mining district of Alaska, the reader is referred to that publication.

This particular model separates (disaggregates) the process of estimating potential resources into a series of steps, using six parameters. The opinions of a panel of experts on the particular area were used to derive the input parameters. A computer then carries out a monte carlo simulation on those parameters, mathematically reaggregating them into an estimate of potential resource. The result is a listing of the potential resources of the study area in terms of probability of occurrence. The range of potential resources given at all probability levels (a 'probability distribution') can then be said to explicitly state the relative uncertainty of the panel's opinion about amounts of potential resources. A probabilistic estimate of resources given in this format can be used to estimate the potential worth of those resources, using appropriate engineering and economic parameters.

The parameters used in this particular model include regional favorability, number of possible prospects, tonnage and grade, and the probability for both tonnage and grade exceeding a minimum cut-off value. These parameters are largely estimated by using generic distributions for particular deposit types based on compilations derived from world-wide literature (for example, Cox and Singer, 1986). The distributions were modified by the panel, where necessary, to fit the specific geologic conditions in the Lime Peak - Mt. Prindle study area.

An important characteristic of this estimation method is the fact that the lower limits of grade and tonnage (the 'cut-off' value) which are considered as potential resources in the simulation process are deliberately set somewhat below those levels which would be considered economic at current prices and production costs. The purpose of this strategy is to attempt to estimate a mineral 'endowment' which would be potentially important if price or availability of a particular commodity were to change for any reason, be it technological or political.

Regional favorability is the likelihood that a specific area based on geologic trends (for example the Lime Peak pluton) contains one or more deposits of a specific type. In some cases, assay and geologic data may indicate that a prospect or deposit is definitely present (the regional favorability is 1). An example would be where assays showed 1 percent tin, 2 oz/ton silver, or 1/2 oz/ton gold (ch. 6). In other cases, anomalous metal values combined with geologic features

(intrusive compositions and alteration types, for example) were perceived as being very similar to those known to be in association with a particular deposit type elsewhere in the world. In such cases, the panel qualitatively rated the likelihood for deposits based on a compendium of geologic, geochemical, and prospect data (ch. 6, pl. 6-2) and then converted the qualitative rating to a specific probability. Generally, a rating of high would indicate a probability of occurrence of 0.8 to 0.95, moderate = 0.4 to 0.8, and low = 0.05 to 0.4. The panel made adjustments within these ranges based on a discussion of the quality and type of evidence available for the existence of a specific deposit type.

For the purposes of resource estimates, an area of interest is divided into distinct geologic trends known as 'plays' in the model terminology. A 'play' is an area of relatively consistent geologic character that is favorable to some degree for the occurrence of a single deposit type. Such an area is generally designated by the assessment panel on the basis of geologic maps and geochemical characteristics. The size of these 'plays' depends on the amount and detail of information available for separating out different geology and favorability characteristics in a given area. The reader should note that within the logic of the resource model, 'plays' for different deposit types may overlap to any degree.

For each area or 'play' rated as having at least some favorability for a particular deposit type, a distribution of numbers of prospects within that area was created. Prospect distributions were based on 'deposit density distributions' such as those presented by Bliss and others, 1987. Distributions were also derived from previous studies of this type done in northwestern Alaska, the Kuskokwim region, and the Dalton Highway Corridor, by the U.S. Bureau of Mines, in cooperation with the Alaska Division of Geological and Geophysical Surveys and the Department of Geology, University of Alaska, Fairbanks.

The distributions of numbers of possible deposits were made by determining numbers of prospects in analogous areas of the world, where a particular deposit type had been developed and thoroughly explored. Where detailed knowledge of prospect sites was available (for example, the major tin greisen prospects at Lime Peak), the information was used to modify the 'generic' (distributions based on world-wide data) curves. In most cases, good agreement existed between the generic distributions and the ones used in the study area.

Distributions of grade and tonnage for each deposit type in the area were also based on world-wide data. A valuable source of such data is the recent compilation by Cox and Singer (1986). Another source of data was distributions derived for previous studies in Alaska, as mentioned above. For a few deposit types, the distributions were modified to reflect the geology of the study area. For example, tungsten skarns in the range of 1 to 40 million tons are common in the world. However, such tungsten skarns are found in areas where significant thicknesses of carbonate rock are intruded by plutons of the appropriate type. In the Table Mountain area, only small amounts of carbonate are present, and a negligible chance exists for finding skarn deposits of any significant size. Consequently, the deposit size (tonnage) for that area was limited to a maximum of 1 million tons for the distribution.

The probability that any given prospect would meet the minimum cut-offs for tonnage and grade set by the committee is also based on distributions derived from world-wide data. Again, such probabilities were modified, if necessary, to fit the data in the study area. For example, given that assays of 0.1 percent tin are quite common at 'Cliff' prospect (ch. 6), the likelihood that this

prospect meets the minimum cut-off grade of 0.13 percent was considered to be very high by the panel.

The results of the mineral resource simulation process indicates that significant amounts of several commodities have a high probability of occurrence in the Lime Peak - Mt. Prindle area. A discussion of each deposit type is given below. The ore tonnage and commodity probabilities calculated for each deposit type are given in the tables which accompany this chapter.

DISCUSSION OF DEPOSIT TYPES

Introduction

Gross metal values derived by multiplying the quantity of a commodity by current price are somewhat misleading, since they may be misconstrued as an economic value. An economic assessment of these resources remains to be done. However, in the discussion following and on the metallogenic map (pl. 6-2), a 'dollar index' at the 50th fractile is given as a rough guide for comparing various areas.

The reader is cautioned that the 'dollar index' does not take into account exploration, development, production, and transportation costs, and hence is **not** a measure of the potential profitability or economic significance of the resource.

A complete economic assessment of the potential resources in the Lime Peak - Mt. Prindle area is planned by the U.S. Bureau of Mines, in cooperation with the Alaska Division of Geological and Geophysical Surveys and the University of Alaska Fairbanks in November, 1987. The results of that study will be released as soon as possible, and the reader is directed to that source for more complete and pertinent information regarding economic potential.

Cut-Off Parameters

As noted above, the minimum values for grade and tonnage which will be considered by the simulation process as resources are set by the panel. Cut-off values for grade and tonnage are set below those which would be considered producible at current commodity prices. A summary of the cut-off parameters for each deposit type is given in Table 7.1.

Tin-Silver deposits

The Hope suite plutonic rocks strongly resemble plutons associated with major tin deposits elsewhere in the world, based on major oxide, trace element, and alteration chemistry (ch. 6). The chemical similarity and the high values found for tin and silver in assays of rocks from the study area indicate a moderate to very high favorability for tin-silver greisen deposits (pl. 6-2). In addition, the presence of tin skarn prospects and the local occurrence of carbonate beds indicates a high likelihood for tin skarns.

Table 7.2 shows a summary of the resource endowment for tin-related prospects in the Hope granitic suite. The results are given for each 'play' in the terminology of the resource model.

Approximately two-thirds of the estimated endowment of tin and silver is associated with the six small areas in the Lime Peak pluton with known or suspected major tin greisen prospects (pl. 6-2). The remainder of the estimated resources are associated with other parts of the Lime Peak

Table 7.1- Cut-off parameters for grade and tonnage.

Deposit type	tin greisen	
Tonnage	400,000	tons
Grade		
Sn	.13	percent
Ag	.024	oz/ton
Ta	.0005	percent
W	.1	percent

Deposit type	tin skarn	
Tonnage	136,000	tons
Grade		
Sn	.08	percent
W	.15	percent

Deposit type	igneous-hosted uranium	
Tonnage	10,000	tons
Grade		
U	.02	percent
REE	.006	percent

Deposit type	tungsten skarn	
Tonnage	6,000	tons
Grade		
W	.15	percent
Sn	.08	percent

Deposit type	bulk-mineable gold	
Tonnage:	100,000	tons
Grade		
Au	.006	oz/ton

Table 7.2. Estimated resource endowment summary for Tin-Silver deposits.

TIN-SILVER DEPOSITS

Terrane: Mt. Prindle (moderate)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	6.3	36	81
TIN (Tons)	0	0	0	0	18000	110000	220000
SILVER (10E3 OZ)	0	0	0	0	130	2900	8100
TANTALUM (Tons)	0	0	0	0	0	0	4.9
TUNGSTEN (Tons)	0	0	0	0	0	0	2600

Terrane: Lime Peak (high)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	1.3	13	45	77
TIN (Tons)	0	0	0	3400	34000	120000	220000
SILVER (10E3 OZ)	0	0	0	0	520	3800	9200
TANTALUM (Tons)	0	0	0	0	0	0	72
TUNGSTEN (Tons)	0	0	0	0	0	0	3200

Table 7.2 (Con.)

Terrane: Lime Peak (very high)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	8.5	14	29	77	120	180	210
TIN (Tons)	24000	42000	85000	210000	390000	590000	700000
SILVER (10E3 OZ)	0	290	1700	5800	15000	37000	49000
TANTALUM (Tons)	0	0	0	0	160	1300	3000
TUNGSTEN (Tons)	0	0	0	0	6000	50000	100000

Terrane: Lower Quartz Cr. (moderate)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	0	0	9.6
TIN (Tons)	0	0	0	0	0	0	24000
SILVER (10E3 OZ)	0	0	0	0	0	0	880
TANTALUM (Tons)	0	0	0	0	0	0	0
TUNGSTEN (Tons)	0	0	0	0	0	0	0

Table 7.2 (Con.)

Terrane: Upper Quartz Cr. (moderate)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	0.94	17	54
TIN (Tons)	0	0	0	0	2600	44000	150000
SILVER (10E3 OZ)	0	0	0	0	0	830	3600
TANTALUM (Tons)	0	0	0	0	0	0	0
TUNGSTEN (Tons)	0	0	0	0	0	0	0

Tin-Silver Greisens: Regional Summary

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	18	25	56	110	160	220	270
TIN (Tons)	52000	75000	160000	320000	520000	710000	840000
SILVER (10E3 OZ)	400	1000	3500	9200	23000	46000	58000
TANTALUM (Tons)	0	0	0	0	430	2200	4400
TUNGSTEN (Tons)	0	0	0	0	19000	87000	180000

pluton, the Quartz Creek pluton and the Mt. Prindle pluton. The total endowment estimated for tin skarns is low because of the small extent of the known skarns and the very low carbonate content of the host rocks.

The bulk of potential economic value is in the tin content of these areas, as the average silver grade is likely to be low (approx. 0.2 oz/ton) and significant amounts of tantalum and tungsten have a very low probability of occurrence.

Results indicate a 50 percent chance that the entire Lime Peak - Mt. Prindle area contains at least 100 million tons of ore, containing at least 320,000 tons of tin, and 10 million ounces of silver. This would be a gross metal value of approximately $3 billion at current world prices. At high confidence levels (95%), the area would contain at least one-fifth of those amounts. A small probability (5%) exists that the study area would contain three times those amounts.

Table 7.3 shows a comparison of probable tin endowment in the Lime Peak - Mt. Prindle area with production and known reserves in world-wide tin districts. Production and known reserve figures underestimate the true endowments, but nevertheless, they provide a measure of the significance of Lime Peak - Mt. Prindle tin endowment. By this measure, the study area is estimated to contain at a high (95%) probability at least as much tin as a small tin district. The area is estimated to have a 50 percent chance of containing as much as a moderate-sized tin district and is estimated to have a low (5%) chance of containing as much as a large tin district.

Considering the fact that no trenching or core drilling has been done for Sn - Ag exploration purposes in the study area, the expressed uncertainty levels reflect a very high confidence on the part of the assessment panel for the existence of those resources. The reason for such confidence is based on the many indications that the study area is similar to areas known to have tin deposits, and to the existence of many prospects in the study area having favorable indications of high tin values.

Uranium-rare earth elements

Uranium and rare earth elements (REE) may occur in association with the Hope granitic suite and with a syenite near the western boundary of the study area.

Rare earth elements in veins are known to occur in syenites outside the study area to the west, and hence the favorability for occurrence is high. However, only a very small area of the syenite terrane is known to exist in the study area, so the amounts of potential resources are very low.

The uranium potential of the Hope granitic suite is low because of unfavorable alteration chemistry and known lack of geochemical indicators (ch. 6). For this reason, the uranium and rare earth element potential of the Lime Peak - Mt. Prindle area is thought to be low, in spite of a relatively high background content of uranium.

Table 7.4 presents a summary of the estimated U - REE resource endowment of the study area. At all probability levels, the bulk of this endowment is contributed by the syenite at the western edge of the area. At probability of occurrence level of 50 percent, the area contains at least 250 tons of uranium and 530 tons of REE, for a gross metal value of approximately $40 million at current prices. At a high (95%) probability of occurrence, the value is about $1.5 million, and at

Table 7.3. Comparison of Lime Peak-Mt. Prindle area tin resources to world-wide tin districts.

DISTRICT	TOTAL TIN (TONS)	
Burma-Malaya, SE Asia	4,900,000	
Llallagua, Cordillera Oriental, Bolivia	3,500,000	
Kellguani, Bolivia	2,700,000	
Indonesian tin islands	2,600,000	VERY LARGE
Cornwall, England	2,500,000	
Cordillera Real, Bolivia	2,000,000	
Yunnan, SW China	1,650,000	
Erzgebirge, Germany/Czechoslovakia	1,000,000	
So. Kiangsi, China	850,000	
LIME PEAK-MT. PRINDLE AREA (5% PROB.)	840,000	
Potosi, Bolivia	520,000	
Oruro, Cordillera Oriental, Bolivia	500,000	LARGE
Carolina tin belt, USA	500,000	
NE Mongolia, USSR	500,000	
NW Tasmania, Australia	440,000	
LIME PEAK-MT. PRINDLE AREA (50% PROB.)	320,000	
NE Yakutia, Siberia, USSR	300,000	
NE Chukotka, USSR	250,000	
Kavalerovo, Soviet Maritime Province	250,000	MODERATE
New England, New South Wales, Australia	210,000	
NE Queensland, Asturalia	163,000	
Seward Peninsula, Alaska	150,000	
Amur area, USSR	100,000	
SW Nova Scotia, Canada	100,000	
NE Tasmania, Australia	95,000	
Madero, Durango, Mexico	80,000	
Hercynian granites, Portugal	70,000	
Lachlan belt, N.S.W. and Victoria, Australia	53,000	
LIME PEAK-MT. PRINDLE AREA (95% PROB.)	52,000	
Western Spain	50,000	SMALL
Bourke, N.S.W. Australia	36,000	
E. Kazakhstan, USSR	30,000	
New Brunswick, Canada	10,000	
E.Thailand-Laos, SE Asia	10,000	
Santa Eulalia, Mexico	10,000	
E. Thailand	10,000	
Central Kazakhstan, USSR	5,000	
Central Italy	4,000	VERY SMALL
Majuba Hill, Nevada	350	

Data from Laznicka (1985)

Table 7.4. Estimated resource endowment summary for Uranium-Rare Earth Element deposits.

URANIUM-RARE EARTH ELEMENTS

Terrane: Syenite associated (high)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0.0099	0.016	0.043	0.16	0.62	1.3	1.8
URANIUM (Tons)	8.9	19	60	250	960	3300	6100
RARE EARTHS (Tons)	11	25	110	520	2400	8700	18000

Terrane: Hope suite (low)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	0	0	0.92
URANIUM (Tons)	0	0	0	0	0	0	1000
RARE EARTHS (Tons)	0	0	0	0	0	0	2700

low confidence levels (0.5%) the value is about $600 million. The relatively large range of possibilities reflects a high degree of uncertainty on the part of the assessment panel.

Tungsten resources

Tungsten is present in tin greisens, tin skarns, and tungsten skarns in the Lime Peak - Mt. Prindle area. Significant grades of tungsten are, according to present knowledge, present only in tin skarns and tungsten skarns. Tin greisens have a small probability of having tungsten as a secondary commodity, but little has been found in samples from the study area.

The widespread occurrence of scheelite-bearing skarns in the Pinnell Trail area, and of scheelite-bearing heavy mineral concentrates in drainages around eastern end of the Quartz Creek pluton, indicates that tungsten skarn deposits are present. However, the small thickness and lateral extent of carbonates in the vicinity indicates that skarn deposits are unlikely to contribute a significant amount of tungsten to the endowment.

Table 7.5 shows estimated skarn tungsten resource endowment for the Lime Peak - Mt. Prindle area. Except at the very lowest probability levels, the bulk of tungsten endowment is in the Table Mountain - Pinnell Trail area, where it is likely to occur only in small amounts. A 50 percent probability exists that the study area contains at least 2,600 tons of tungsten. At high probability levels, the area contains an insignificant tungsten endowment, and at the 5 percent probability level, the area contains about $1 billion worth of the metal. The very large range of potential indicates the high level of uncertainty about the extent of tungsten mineralization in the study area.

Gold deposits

The lode-gold endowment of the Lime Peak - Mt. Prindle area is present in stratabound, alkalic-related, tourmaline-associated, and tungsten skarn prospects and deposits. Of these various deposit types, only the tourmaline-associated deposits are known to contain sufficiently high grades (up to 4 oz/ton) to be considered highly favorable for possible development. However, anomalous values were found in samples collected from all of the other deposit types. Also, the many gold placers in and near the study area suggest the presence of lode resources.

Gold has traditionally been mined from small volume, high-grade veins. More recently the technology has been developed to profitably produce from large volume, low-grade disseminated and vein-aggregate deposits. In the case of the alkalic plutonic rocks of the area, models were assessed for both high-grade and low-grade deposits (Table 7.6). The total gold resources for each type were compared, and at all but the lowest probability of occurrence levels, the largest estimated gold endowment was contained in the low-grade deposit types. The large tonnage, low-grade gold deposit types generally have a larger total endowment of gold because of the very low grade cut-offs, which will include more mineralized rock. No indication of high-grade gold-bearing veins exists in the alkalic rocks, but good evidence for low-grade deposits exists (ch. 6). Thus, the large tonnage, low-grade model is probably more pertinent to the study area.

From a mining perspective, high-grade veins could be mined along with lower-grade ores. The grade distributions used implicitly include the effects of such high-grade veins in the model. Hence, we would over-estimate the endowment present if we included a both a low-grade large-tonnage and a high-grade vein model for the alkalic rocks in the regional endowment. Because large tonnage, low-grade deposits appear to be more likely from the available data, this type of model is used for gold resources in the area. However, high-grade veins might still exist, and, from a planning perspective, such a possibility should be retained.

Table 7.7 shows the estimated amounts of gold endowment for the Lime Peak-Mt. Prindle area. At the highest probability of occurrence levels, the bulk of the endowment is in the Table Mountain - Pinnell Trail area in tourmaline-associated deposits. At most other probability levels, the endowment is split between alkalic-related deposits and the tourmaline-related deposits, with a small contribution from stratabound deposits, and a negligible contribution from skarns. The estimate at the 50 percent level of occurrence probability is 1.5 million ounces of gold. At the 5 percent level, the amount is about ten times as much, and at the 95 percent level, the amount is about 1/100th as great. As with some other deposit types, the large range in estimated endowment values reflects the panel's high degree of uncertainty about the endowment present.

Comparison of estimated gold endowment from the two most favorable areas with gold production from selected gold districts in Alaska (table 7.8) gives some perspective on these

Table 7.5. Estimated resource endowment summary for tungsten deposits.

TUNGSTEN DEPOSITS

Terrane: Quartz Cr. W-skarn

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	0	3	14
TUNGSTEN (Tons)	0	0	0	0	0	8700	55000
TIN (Tons)	0	0	0	0	0	7100	46000

Terrane: Pinnell Mt. W-skarn

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0.47	1.3	2.4	3.4
TUNGSTEN (Tons)	0	0	0	2700	9700	19000	27000

Tin Greisens: Regional Summary

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	18	25	56	110	160	220	270
TUNGSTEN (Tons)	0	0	0	0	19000	87000	180000

Table 7.6. Comparison of total estimated gold endowment for high grade vein model vs. low grade-large tonnage deposit model.

Model Type: Vein

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0.00036	0.037	0.33	1.8	7.8	16
GOLD (10E3 OZ)	0	0.2	20	200	1100	4400	8800

Model Type: Large tonnage-low grade deposit

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	8.8	12	26	43	63	87	100
GOLD (10E3 OZ)	260	390	810	1500	2600	4100	5000

figures. Gold production probably accounts for between one-half and one-quarter of the total endowment present in a given district (i.e. substantial low-grade reserves are probably present in most districts). Thus, estimated endowment and production figures can only be compared in a broad sense. However, comparisons do give a sense of the magnitude of gold resources. Table 7.8 indicates that a high probability (95%) is estimated for a gold endowment at Table Mountain equivalent to the production from a very small Alaskan gold district. A 50 percent probability is given for a gold endowment equivalent to production from a large Alaskan gold district in both the Table Mountain and Hope Creek areas. A small (5%) chance is given that either the Hope Creek or Table Mountain areas contain an endowment equivalent to the production from a very large Alaskan gold district.

Conclusions

In summary, we estimate, at the 50 percent level for probability of occurrence, that the Lime Peak - Mt. Prindle area contains significant amounts of tin, silver, and gold. Approximately three-quarters of the metal value is in the potential for tin-silver deposits, and about one-quarter in gold deposits. A comparison of areas on that basis indicates that the major areas of mineral resource interest are the Lime Peak pluton, the Hope Creek area, and the Table Mountain - Pinnell Trail area. The estimates indicate that parts of the Lime Peak - Mt. Prindle area would probably make attractive exploration targets for such resources.

Table 7.7. Estimated resource endowment summary for Au deposits.

GOLD DEPOSITS

Terrane: Tourmaline Au (high)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0.41	1.6	6.2	16	28	42	52
GOLD (10E3 OZ)	9.2	33	160	460	1200	2100	2900

Terrane: Tourmaline Au (moderate)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	10	28	37
GOLD (10E3 OZ)	0	0	0	0	280	1200	1900

Terrane: Table Mountain W-Au skarns

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0.47	1.3	2.4	3.4
GOLD (10E3 OZ)	0	0	0	0	0	0	0

Table 7.7 (Con.)

Terrane: Quartz Creek Alkalic Au (high)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	0.065	0.69	1.6
GOLD (10E3 OZ)	0	0	0	0	29	340	890

Terrane: Hope Creek Alkalic Au (moderate)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	0.46	2	7
GOLD (10E3 OZ)	0	0	0	0	290	1400	4200

Terrane: Hope Creek Alkalic Au (high)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0.015	0.17	1.4	1.9
GOLD (10E3 OZ)	0	0	0	5.3	83	760	2100

Terrane: Cleary Sequence stratabound Au (moderate)

	Fractile						
	0.95	0.9	0.75	0.5	0.25	0.1	0.05
Tonnage (10E6 Tons)	0	0	0	0	0.78	5.4	20
GOLD (10E3 OZ)	0	0	0	0	110	1600	4800

Table 7.8 Comparison of estimated gold endowment for selected Lime Peak - Mt. Prindle prospect areas vs. gold production (placer + lode) through 1979, for selected Alaskan districts.

DISTRICT	GOLD PRODUCTION THOUSANDS OF OZ.	
Fairbanks	7,500	
Juneau gold belt	6,900	
TABLE MT. AREA (5% PROB.)	6,000	
Nome	4,000	VERY LARGE
HOPE CREEK AREA (5% PROB.)	4,000	
Iditarod	1,300	
TABLE MT. AREA (50% PROB.)	800	
Chichagof	770	
Circle	730	LARGE
Council	705	
HOPE CREEK AREA (50% PROB.)	700	
Willow Creek	650	
Hot Springs	450	
Fortymile	415	
Ruby	390	
Innoko	350	
Candle	300	MODERATE
Solomon	250	
Hughes	210	
McKinley	175	
Chistochina	140	
Girdwood	125	
Unga Island	110	
Richardson	95	
Rampart	87	
Nabesna	64	
Ketchikan	62	SMALL
Bonnifield	45	
Eagle	40	
Chandalar	31	
Sumdum	15	
Glacier Bay	11	
TABLE MT. AREA (95% PROB.)	9	
Kodiak	5	VERY SMALL
Nelchina	3	
Delta	2.5	
Iliamna	1.5	
HOPE CREEK AREA (95% PROB.)	1	

Data from Robinson and Bundtzen, 1979

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APPENDIX A

SELECTED BIBLIOGRAPHY AND INDEX OF GEOLOGY

FOR THE

CIRCLE QUADRANGLE-AREA, EAST-CENTRAL ALASKA

Compiled by

R.R. Reifenstuhl and G.H. Pessel

[This bibliography lists most maps and reports that deal with the geology of the Lime Peak-Mt. Prindle- and Circle Quadrangle-areas. Also included are general references regarded as pertinent to these areas. The bibliography contains four sections: 1) STANDARD BIBLIOGRAPHIC LISTING, 2) AUTHOR LISTING, 3) SUBJECT LISTING, and 4) LOCATION LISTING.]

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Areal Geology

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APPENDIX B

STREAM-SEDIMENT ANALYSES FOR THE LIME PEAK - MT. PRINDLE AREA EAST CENTRAL, ALASKA

compiled by T.B. Weglarz

APPENDIX B

STREAM-SEDIMENT ANALYSES FOR THE LIME PEAK - MT PRINDLE AREA EAST CENTRAL, ALASKA

This Appendix contains analytical data sets on 1,522 stream sediment samples developed for the Lime Peak - Mt. Prindle Area mineral assessment conducted by the Alaska Division of Geological and Geophysical Surveys, 1986-87. Data for samples are Arranged in 3-page sets. Page one of each set includes the following identification information for each sample: Station numbers that correspond to sample locations shown on Plate 5-1; Latitude (Lat.); Longitude (Long.); Circle Quadrangle 15-minute map designation (Quad.); Township (T.); Range (R.); and Section (Sec.), for use in locating sample points or data of particular interest. Duplicate samples can be recognized from matching positive/negative number pairs in the column "Dup. Code." For example: 2 and -2 indicate that the two samples bearing those Dup. Codes were collected at the same sample site and treated in identical manner for all subsequent sample handling and analysis procedures. A zero in the "Dup. Code" column indicates a single stream sediment sample was collected at that site. The Station number is repeated on each of the three pages required to display the entire set of analyses for each sample. All analyses are reported in parts per million (ppm) unless indicated otherwise in the column headings. Negative numbers in the analytical data columns indicate that the element in question was not detected at a concentration equal to the absolute value of the negative value reported.

Stream sediment material analyzed was comprised of the -80 mesh fraction of clastic material collected from active stream channels. At sample sites lacking sufficient clastic material in active channels, the fine sediments entrapped in the root mass of mosses growing in active stream channels was collected and submitted for analysis.

All samples were analyzed for 30 elements. Instrumental neutron activation analytical methods were used to determine concentration levels of: As, Au, Ba, Ca, Co, Cr, Cs, Cu, Fe, Hf, Mo, Na, Ni, Pb, Rb, Sc Se, Ta, Th, U, W, La, Ce, Sm, Eu, Yb, and Lu. A hot LeFort aqua regia digestion followed by atomic absorbtion analysis of the resulting solution was used to quantify concentrations of Cu, Pb, Zn, and Ag.

Analytical work was conducted by Nuclear Activation Services, Ltd.,Hamilton, Ontario, Canada under State contract CC10-7-0006.

Appendix B Elemental analyses of the -80 mesh size fraction of stream sediments collected in the Lime Peak - Mt. Prindle area of the Circle Quadrangle, Alaska. Concentration values are expressed in parts per million (ppm) unless stated otherwise. Negative numbers indicate that the element was not detected at a concentration equal to the absolute value of the negative number reported.

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
15586S	65.619	146.293	C-5	9	7	9	0	-0.5	9.0	-6.0	700.0	1.1	15.0	80.0	5.0	26.0
15587S	65.621	146.302	C-5	9	7	9	0	-0.5	8.0	10.0	700.0	1.8	15.0	90.0	5.0	24.0
15588S	65.623	146.313	C-5	9	7	9	0	-0.5	10.0	-6.0	600.0	-1.0	20.0	110.0	4.0	34.0
15590S	65.624	146.323	C-5	9	7	8	0	-0.5	14.0	-6.0	900.0	-1.0	27.0	100.0	4.0	36.0
15591S	65.627	146.331	C-5	9	7	8	0	-0.5	8.0	-5.0	500.0	-0.9	14.0	80.0	2.0	18.0
15592S	65.630	146.331	C-5	9	7	5	0	-0.5	8.0	-5.0	700.0	-0.9	15.0	80.0	2.0	18.0
15742S	65.590	146.762	C-6	9	5	20	0	0.5	14.0	-11.0	900.0	-2.5	7.0	60.0	8.0	37.0
15743S	65.642	146.868	C-6	9	4	2	0	-0.5	8.0	-6.0	400.0	-1.9	7.0	20.0	5.0	11.0
15752S	65.510	145.845	C-4	8	9	23	0	-0.5	8.0	-5.0	500.0	1.1	13.0	50.0	3.0	14.0
15754S	65.447	146.697	B-6	7	5	10	0	-0.5	4.0	-7.0	600.0	-1.7	12.0	80.0	2.0	13.0
15755S	65.412	145.834	B-4	7	9	26	0	-0.5	6.0	-11.0	400.0	3.0	30.0	110.0	2.0	69.0
15758S	65.586	146.455	C-5	9	6	23	0	-0.5	9.0	-7.0	700.0	1.3	19.0	100.0	3.0	34.0
15759S	65.659	146.799	C-6	10	5	30	0	-0.5	12.0	-6.0	900.0	-1.5	23.0	90.0	7.0	31.0
15761S	65.496	146.758	B-6	8	5	29	0	-0.5	12.0	-5.0	300.0	-0.7	12.0	30.0	6.0	14.0
15762S	65.682	146.888	C-6	10	4	22	0	-0.5	11.0	-5.0	700.0	-1.2	10.0	40.0	4.0	14.0
15763S	65.596	146.895	C-6	9	4	22	0	-0.5	11.0	-14.0	1200.0	-3.4	12.0	80.0	8.0	17.0
15764S	65.424	146.760	B-6	7	5	20	0	-0.5	7.0	-7.0	700.0	-1.7	17.0	100.0	8.0	18.0
15766S	65.583	146.791	C-6	9	5	30	0	-0.5	9.0	7.0	700.0	-1.9	14.0	90.0	3.0	12.0
15768S	65.557	146.737	C-6	9	5	32	0	-0.5	8.0	-9.0	900.0	-2.3	15.0	60.0	5.0	18.0
15773S	65.623	146.373	C-5	9	7	7	0	-0.5	13.0	-5.0	600.0	-0.9	14.0	70.0	3.0	24.0

Appendix B (continued)

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
15586S	3.3	7.0	5.0	0.97	-200.0	26.0	140.0	2.3	13.6	-5.0	-1.0	13.0	4.1	-4.0
15587S	3.7	10.0	-4.0	1.20	-200.0	20.0	90.0	2.8	13.7	-5.0	-1.0	13.0	3.8	-4.0
15588S	4.0	8.0	-4.0	1.10	-200.0	18.0	130.0	1.9	13.9	-5.0	-1.0	11.0	3.1	-4.0
15590S	4.4	6.0	6.0	1.10	-200.0	26.0	120.0	2.8	14.5	-5.0	-1.0	13.0	4.9	-4.0
15591S	3.1	9.0	-6.0	1.10	-200.0	12.0	100.0	1.8	11.2	-5.0	-1.0	11.0	2.6	-4.0
15592S	3.1	8.0	-4.0	1.30	-200.0	14.0	100.0	1.5	11.7	-5.0	-1.0	11.0	3.2	-4.0
15742S	3.1	9.0	-4.0	1.10	-300.0	120.0	270.0	1.1	11.1	-6.0	3.0	70.0	84.9	13.0
15743S	2.3	21.0	-4.0	1.70	-200.0	32.0	360.0	0.6	8.1	6.0	3.0	98.0	28.9	14.0
15752S	2.9	13.0	-4.0	0.73	-200.0	10.0	110.0	2.2	9.2	-5.0	-1.0	7.9	1.9	-4.0
15754S	2.8	8.0	-4.0	1.20	-200.0	10.0	-50.0	0.7	11.5	-8.0	-2.0	12.0	3.4	-4.0
15755S	5.9	7.0	-4.0	1.00	-300.0	6.0	60.0	1.1	29.9	-9.0	-1.0	8.8	3.9	-6.0
15758S	4.4	25.0	-4.0	1.40	-200.0	16.0	80.0	1.0	16.6	-7.0	-1.0	10.0	3.8	-4.0
15759S	5.1	9.0	9.0	1.00	-200.0	38.0	210.0	1.1	17.5	-5.0	-1.0	21.0	4.7	4.0
15761S	2.7	4.0	-4.0	1.20	-200.0	20.0	190.0	0.9	7.0	-5.0	-1.0	11.0	4.9	-4.0
15762S	3.1	7.0	-4.0	1.50	-200.0	26.0	410.0	0.8	9.7	-5.0	3.0	33.0	8.8	-4.0
15763S	3.5	18.0	-4.0	2.00	-500.0	56.0	250.0	1.8	15.3	7.0	-3.0	96.0	35.4	6.0
15764S	4.0	6.0	-4.0	0.59	-200.0	8.0	90.0	1.2	16.1	-5.0	-2.0	14.0	3.8	-4.0
15766S	3.1	9.0	26.0	1.30	-200.0	18.0	180.0	0.8	12.6	-5.0	3.0	34.0	39.3	-4.0
15768S	3.3	8.0	-4.0	1.20	-300.0	30.0	190.0	0.5	11.4	-7.0	-2.0	35.0	18.1	6.0
15773S	3.2	11.0	-4.0	1.00	-200.0	10.0	60.0	0.8	11.2	-5.0	-1.0	10.0	3.3	4.0

Appendix B (continued)

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
15586S	110.0	46.0	77.0	5.4	1.1	2.9	0.3
15587S	90.0	52.0	90.0	5.7	1.3	2.7	0.4
15588S	82.0	50.0	87.0	5.5	2.3	2.3	0.3
15590S	94.0	46.0	85.0	5.3	1.2	2.5	0.4
15591S	64.0	45.0	77.0	4.9	1.3	2.6	0.3
15592S	67.0	43.0	68.0	4.7	1.4	2.6	0.3
15742S	860.0	109.0	188.0	23.3	1.4	11.2	2.5
15743S	140.0	155.0	282.0	24.6	-0.8	14.1	2.4
15752S	53.0	32.0	54.0	3.6	0.9	2.2	0.3
15754S	48.0	47.0	83.0	7.4	1.3	3.0	0.5
15755S	84.0	38.0	65.0	8.4	1.4	3.1	0.4
15758S	89.0	47.0	91.0	5.6	1.7	3.1	0.5
15759S	130.0	79.0	138.0	8.8	2.1	4.4	0.6
15761S	74.0	28.0	54.0	2.9	1.0	1.6	0.2
15762S	100.0	65.0	116.0	9.8	1.0	4.5	0.8
15763S	190.0	182.0	294.0	24.7	-2.4	23.0	3.2
15764S	74.0	50.0	79.0	8.4	1.8	3.4	0.5
15766S	130.0	59.0	116.0	13.4	1.3	7.3	1.4
15768S	270.0	78.0	138.0	14.5	1.4	6.9	1.3
15773S	76.0	41.0	66.0	4.8	0.9	2.7	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
15776S	65.468	146.188	B-5	7	8	6	0	-0.5	8.0	-7.0	900.0	-1.1	19.0	80.0	3.0	23.0
15777S	65.437	146.069	B-5	7	8	15	0	-0.5	47.0	-5.0	400.0	-0.5	9.0	40.0	3.0	35.0
15779S	65.672	146.558	C-6	10	6	29	0	-0.5	7.0	-8.0	600.0	-1.8	9.0	30.0	6.0	20.0
15783S	65.489	146.378	B-5	8	7	30	0	-0.5	14.0	-8.0	700.0	-2.0	14.0	60.0	4.0	24.0
15789S	65.513	145.959	C-4	9	9	18	0	-0.5	28.0	5.0	400.0	1.5	16.0	40.0	5.0	27.0
15791S	65.457	146.353	B-5	7	7	5	0	-0.5	19.0	-8.0	600.0	-1.8	8.0	50.0	14.0	22.0
15796S	65.593	146.902	C-6	9	4	22	0	1.5	19.0	-14.0	800.0	-3.1	17.0	70.0	16.0	38.0
15797S	65.525	146.208	C-5	8	7	13	0	-0.5	11.0	-5.0	400.0	-0.6	11.0	40.0	2.0	17.0
15799S	65.529	146.218	C-5	8	7	12	0	-0.5	13.0	-5.0	500.0	1.2	12.0	50.0	2.0	20.0
15800S	65.675	146.882	C-6	10	4	22	0	-0.5	6.0	-7.0	1200.0	-1.6	13.0	100.0	7.0	31.0
15802S	65.515	145.727	C-4	8	10	17	0	-0.5	35.0	-9.0	800.0	-2.0	17.0	80.0	4.0	29.0
15804S	65.534	146.037	C-5	8	8	11	21	-0.5	22.0	-5.0	400.0	-0.7	10.0	40.0	3.0	24.0
15808S	65.652	146.874	C-6	10	4	35	0	-0.5	10.0	14.0	800.0	-2.9	13.0	60.0	9.0	19.0
15810S	65.520	146.596	C-6	8	6	18	0	-0.5	13.0	-11.0	900.0	-2.3	12.0	100.0	4.0	9.5
15813S	65.517	145.649	C-4	8	10	15	0	-0.5	79.0	-6.0	500.0	-0.7	17.0	50.0	3.0	28.0
15814S	65.490	146.803	B-6	8	5	30	0	-0.5	13.0	-5.0	600.0	1.5	15.0	70.0	7.0	17.0
15815S	65.682	146.482	C-5	10	6	22	0	-0.5	11.0	-8.0	700.0	-1.9	11.0	50.0	6.0	22.0
15816S	65.474	146.650	B-6	8	5	35	0	-0.5	51.0	-9.0	400.0	-2.5	8.0	20.0	11.0	9.0
15818S	65.601	146.191	C-5	9	7	13	22	-0.5	9.0	-5.0	600.0	-0.7	14.0	60.0	3.0	22.0
15822S	65.510	146.325	C-5	8	7	21	0	-0.5	10.0	-6.0	500.0	-0.9	11.0	50.0	3.0	17.0
15823S	65.464	146.423	B-5	7	6	1	0	-0.5	10.0	-7.0	300.0	-1.1	-5.0	10.0	17.0	8.5
15830S	65.649	146.974	C-6	10	4	32	0	-0.5	11.0	-6.0	1000.0	-0.8	15.0	90.0	11.0	23.0
15831S	65.419	146.815	B-6	7	5	19	0	-0.5	6.0	-7.0	500.0	-1.5	9.0	50.0	4.0	10.0
15834S	65.513	146.364	C-5	8	7	17	0	-0.5	13.0	-7.0	600.0	-1.5	11.0	60.0	2.0	16.0
15849S	65.475	145.906	B-4	8	9	33	0	-0.5	25.0	-7.0	600.0	-1.6	13.0	70.0	4.0	34.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
15776S	3.4	11.0	-4.0	1.00	-200.0	18.0	120.0	1.2	13.1	-5.0	-1.0	13.0	4.7	-4.0
15777S	3.0	8.0	-4.0	0.36	-200.0	26.0	70.0	2.8	9.4	-5.0	-1.0	7.4	2.6	11.0
15779S	2.8	9.0	-4.0	1.40	-200.0	66.0	430.0	0.5	8.9	-5.0	-1.0	51.0	15.4	7.0
15783S	3.8	11.0	4.0	1.20	-300.0	14.0	120.0	0.9	12.1	-9.0	4.0	16.0	7.1	7.0
15789S	3.1	6.0	-4.0	0.65	-200.0	8.0	110.0	1.1	9.2	-5.0	-1.0	8.6	2.2	51.0
15791S	3.2	6.0	-4.0	1.40	-300.0	14.0	330.0	0.8	10.7	12.0	-2.0	19.0	16.6	8.0
15796S	4.5	8.0	-4.0	1.30	-500.0	110.0	270.0	2.9	16.5	-10.0	-3.0	73.0	37.3	9.0
15797S	2.6	8.0	-4.0	0.93	-200.0	10.0	100.0	1.3	7.7	-5.0	-1.0	11.0	3.4	-4.0
15799S	2.9	7.0	-4.0	0.90	-200.0	12.0	140.0	1.4	9.1	-5.0	-1.0	11.0	3.8	-4.0
15800S	3.6	7.0	-4.0	0.76	-200.0	10.0	110.0	0.7	16.3	-5.0	-1.0	17.0	3.7	-4.0
15802S	3.2	8.0	-4.0	0.75	-300.0	16.0	130.0	1.8	14.2	-7.0	-2.0	13.0	4.5	4.0
15804S	2.7	6.0	-4.0	0.65	-200.0	10.0	90.0	2.0	8.0	-5.0	-1.0	9.6	2.9	-4.0
15808S	3.3	20.0	-4.0	1.90	-500.0	68.0	380.0	0.5	12.6	6.0	-3.0	88.0	41.9	15.0
15810S	3.7	13.0	9.0	1.50	-300.0	14.0	70.0	0.6	13.8	-5.0	4.0	35.0	14.7	10.0
15813S	3.6	6.0	-4.0	0.69	200.0	20.0	110.0	6.2	11.6	-5.0	-1.0	9.7	2.1	-4.0
15814S	3.7	11.0	-4.0	1.30	-200.0	16.0	220.0	1.2	13.2	-5.0	2.0	23.0	10.3	-4.0
15815S	3.4	6.0	-4.0	1.10	-300.0	70.0	370.0	1.0	11.4	-5.0	2.0	35.0	13.4	4.0
15816S	2.2	8.0	-4.0	2.60	-300.0	22.0	380.0	0.5	6.9	-7.0	5.0	57.0	35.7	-4.0
15818S	3.3	11.0	-4.0	1.00	-200.0	16.0	80.0	1.9	10.3	-5.0	1.0	12.0	4.4	-4.0
15822S	2.9	9.0	-4.0	1.10	-200.0	12.0	80.0	1.5	10.0	-5.0	-1.0	12.0	4.9	-4.0
15823S	1.7	5.0	-4.0	2.50	-200.0	14.0	640.0	-0.2	5.3	-7.0	4.0	30.0	18.7	11.0
15830S	4.1	11.0	-4.0	1.20	-300.0	36.0	250.0	1.0	18.8	-5.0	-1.0	16.0	4.7	-4.0
15831S	2.7	9.0	-4.0	1.30	-200.0	8.0	130.0	1.2	9.2	-5.0	2.0	19.0	7.8	-4.0
15834S	3.3	6.0	-4.0	0.76	-200.0	10.0	140.0	2.2	9.7	-5.0	-1.0	11.0	3.0	-4.0
15849S	3.6	7.0	-4.0	0.75	-200.0	20.0	80.0	0.3	13.4	-8.0	-2.0	10.0	5.7	22.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
15776S	87.0	49.0	77.0	5.8	1.7	2.9	0.4
15777S	56.0	32.0	57.0	3.8	1.2	2.5	0.3
15779S	260.0	93.0	169.0	15.6	1.2	7.0	1.1
15783S	78.0	50.0	98.0	7.8	1.6	2.7	0.6
15789S	64.0	31.0	56.0	3.4	1.5	1.9	0.3
15791S	120.0	41.0	78.0	8.0	1.3	4.0	0.8
15796S	440.0	139.0	252.0	18.4	-2.3	14.1	2.0
15797S	55.0	34.0	60.0	3.8	0.7	2.4	0.3
15799S	62.0	37.0	67.0	3.9	0.9	2.2	0.3
15800S	87.0	53.0	104.0	8.8	1.5	2.9	0.6
15802S	70.0	51.0	82.0	9.1	1.9	2.9	0.5
15804S	56.0	32.0	55.0	3.6	1.1	2.2	0.3
15808S	180.0	158.0	269.0	17.7	-2.2	15.5	2.4
15810S	50.0	80.0	136.0	12.1	1.8	4.5	0.9
15813S	74.0	38.0	71.0	4.2	1.5	2.4	0.3
15814S	97.0	65.0	109.0	7.3	2.8	4.3	0.7
15815S	230.0	72.0	128.0	12.4	1.2	5.5	0.9
15816S	62.0	91.0	155.0	14.4	-1.0	5.7	1.2
15818S	70.0	44.0	75.0	4.9	0.9	2.8	0.4
15822S	61.0	42.0	66.0	4.4	1.0	2.5	0.4
15823S	56.0	43.0	84.0	9.6	-0.5	7.0	1.2
15830S	110.0	55.0	100.0	6.3	2.3	3.1	0.6
15831S	51.0	51.0	78.0	7.6	0.8	3.1	0.5
15834S	62.0	37.0	62.0	5.2	1.5	1.7	0.3
15849S	64.0	37.0	67.0	6.6	0.8	3.0	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
15854S	65.469	146.813	B-6	7	5	6	0	-0.5	9.0	-7.0	700.0	-1.5	20.0	100.0	3.0	22.0
15855S	65.507	146.334	C-5	8	7	21	0	-0.5	13.0	-5.0	600.0	-0.9	10.0	60.0	3.0	19.0
15857S	65.410	146.182	B-5	7	8	30	0	0.5	63.0	10.0	500.0	0.8	12.0	60.0	4.0	31.0
15858S	65.409	146.557	B-6	7	6	29	0	-0.5	18.0	-6.0	600.0	-1.2	10.0	50.0	6.0	21.0
15864S	65.521	145.848	C-4	8	9	14	23	-0.5	6.0	14.0	500.0	-0.7	9.0	50.0	2.0	17.0
15875S	65.516	146.386	C-5	8	7	18	0	-0.5	12.0	-7.0	700.0	-1.3	12.0	60.0	2.0	17.0
15876S	65.688	146.849	C-6	10	4	14	0	-0.5	7.0	-7.0	1300.0	-0.5	20.0	120.0	9.0	30.0
15879S	65.601	146.199	C-5	9	7	13	0	-0.5	9.0	-5.0	700.0	1.0	11.0	70.0	5.0	21.0
15885S	65.575	146.424	C-5	9	6	26	0	-0.5	40.0	-10.0	600.0	-2.4	8.0	70.0	13.0	12.0
15891S	65.669	146.603	C-6	10	5	25	0	-0.5	11.0	-10.0	900.0	-2.2	7.0	40.0	12.0	16.0
15894S	65.538	146.644	C-6	8	5	11	0	-0.5	21.0	9.0	800.0	-1.8	20.0	80.0	4.0	22.0
15895S	65.562	146.432	C-5	9	6	35	0	0.5	58.0	-6.0	700.0	-1.0	12.0	70.0	11.0	24.0
15898S	65.602	146.265	C-5	9	7	15	0	-0.5	12.0	-5.0	700.0	-0.8	13.0	80.0	3.0	17.0
15908S	65.570	146.451	C-5	9	6	35	0	1.5	50.0	-9.0	700.0	-2.1	13.0	50.0	11.0	10.0
15911S	65.491	145.935	B-4	8	9	29	0	-0.5	29.0	-5.0	200.0	-1.1	11.0	50.0	4.0	26.0
15917S	65.578	146.757	C-6	9	5	29	0	-0.5	13.0	-10.0	700.0	-2.4	10.0	60.0	8.0	22.0
15920S	65.647	146.967	C-6	10	4	32	0	-0.5	10.0	-6.0	1200.0	-0.5	18.0	120.0	9.0	24.0
15921S	65.689	146.965	C-6	10	4	17	0	1.0	14.0	6.0	1500.0	-1.4	40.0	90.0	5.0	67.0
15938S	65.518	146.114	C-5	8	8	16	24	-0.5	10.0	-5.0	500.0	-0.6	10.0	40.0	3.0	15.0
15939S	65.521	146.887	C-6	8	4	15	0	-0.5	9.0	8.0	700.0	-1.4	18.0	110.0	5.0	16.0
15943S	65.629	146.874	C-6	9	4	2	0	-0.5	15.0	5.0	800.0	-1.5	16.0	90.0	7.0	27.0
15945S	65.601	146.781	C-6	9	5	18	0	-0.5	8.0	11.0	800.0	-2.6	8.0	60.0	6.0	23.0
15952S	65.452	146.067	B-5	7	8	10	0	-0.5	43.0	-5.0	400.0	-0.5	10.0	40.0	3.0	33.0
15954S	65.558	146.867	C-6	9	4	35	0	-0.5	9.0	-8.0	1100.0	-1.7	24.0	130.0	7.0	16.0
15955S	65.498	146.317	B-5	8	7	28	0	-0.5	8.0	-5.0	700.0	-0.8	10.0	70.0	3.0	13.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
15854S	4.8	7.0	-4.0	1.10	-200.0	10.0	60.0	1.0	17.1	-5.0	-2.0	11.0	2.4	-4.0
15855S	2.9	9.0	-4.0	1.00	-200.0	12.0	130.0	1.8	9.5	-5.0	-1.0	11.0	4.1	-4.0
15857S	2.6	5.0	5.0	0.56	-200.0	86.0	80.0	10.0	10.2	-5.0	-1.0	8.2	3.7	-4.0
15858S	3.2	6.0	-4.0	0.69	-200.0	16.0	120.0	1.5	9.8	-5.0	1.0	10.0	2.2	9.0
15864S	2.6	8.0	-4.0	0.95	-200.0	10.0	80.0	1.0	9.4	-5.0	1.0	8.2	2.5	-4.0
15875S	3.1	6.0	-4.0	0.83	-200.0	12.0	100.0	1.9	9.4	-5.0	-1.0	13.0	2.8	-4.0
15876S	4.3	7.0	-4.0	0.86	-200.0	16.0	150.0	1.0	19.3	-5.0	-2.0	15.0	4.1	-4.0
15879S	3.2	9.0	-4.0	1.00	-200.0	20.0	140.0	2.1	11.8	9.0	1.0	14.0	3.9	-4.0
15885S	2.8	9.0	-4.0	1.60	-300.0	34.0	140.0	0.6	10.9	-11.0	3.0	27.0	73.6	17.0
15891S	3.7	10.0	-4.0	1.90	-300.0	170.0	560.0	0.7	11.6	-220.0	4.0	94.0	55.4	16.0
15894S	5.5	7.0	-4.0	1.30	-200.0	18.0	80.0	0.9	13.8	-5.0	-2.0	15.0	12.5	7.0
15895S	3.1	8.0	-4.0	1.30	-200.0	62.0	160.0	2.0	11.2	9.0	4.0	22.0	26.7	7.0
15898S	3.3	9.0	-4.0	1.10	-200.0	34.0	90.0	2.5	12.3	-5.0	-1.0	12.0	3.3	-4.0
15908S	2.8	13.0	-4.0	1.70	-300.0	22.0	160.0	0.9	9.5	-5.0	7.0	32.0	43.2	17.0
15911S	3.0	5.0	-4.0	0.50	-200.0	10.0	100.0	0.6	8.7	-6.0	-1.0	8.2	1.8	25.0
15917S	2.8	11.0	-4.0	1.10	-300.0	68.0	220.0	1.1	11.8	6.0	4.0	54.0	42.6	11.0
15920S	4.7	10.0	-4.0	1.10	-200.0	34.0	150.0	1.0	17.9	-5.0	-1.0	18.0	4.7	-4.0
15921S	5.1	5.0	11.0	0.56	-200.0	16.0	140.0	2.8	13.1	7.0	-1.0	12.0	7.3	-4.0
15938S	2.5	8.0	-4.0	1.10	-200.0	8.0	100.0	1.0	8.4	-5.0	1.0	12.0	5.4	-4.0
15939S	4.4	11.0	-4.0	0.89	-200.0	20.0	150.0	0.8	16.1	7.0	1.0	17.0	3.8	-4.0
15943S	4.0	9.0	-4.0	0.76	-200.0	42.0	160.0	1.6	14.8	-5.0	-1.0	17.0	3.6	4.0
15945S	3.1	15.0	-4.0	1.60	-300.0	170.0	380.0	1.0	12.1	-8.0	-2.0	120.0	49.5	12.0
15952S	2.8	5.0	-4.0	0.35	-200.0	16.0	70.0	2.9	8.5	-5.0	-1.0	7.5	1.9	5.0
15954S	4.2	9.0	-4.0	1.40	-300.0	32.0	240.0	1.0	16.7	-5.0	-2.0	18.0	6.4	-4.0
15955S	3.0	8.0	-4.0	1.00	-200.0	18.0	90.0	0.8	11.1	-5.0	-1.0	9.9	3.5	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
15854S	88.0	48.0	84.0	8.4	1.5	2.8	0.5
15855S	73.0	40.0	68.0	4.3	1.0	2.2	0.4
15857S	130.0	34.0	60.0	4.6	0.9	2.2	0.3
15858S	72.0	34.0	56.0	5.2	0.6	2.2	0.3
15864S	51.0	34.0	58.0	3.9	1.3	2.0	0.3
15875S	61.0	38.0	64.0	5.6	1.2	2.0	0.3
15876S	110.0	56.0	96.0	9.5	2.0	3.2	0.5
15879S	65.0	49.0	80.0	5.4	1.2	2.9	0.4
15885S	89.0	61.0	103.0	10.5	-1.0	4.7	0.7
15891S	520.0	130.0	241.0	39.1	1.7	24.3	3.9
15894S	71.0	51.0	88.0	8.3	1.3	3.1	0.6
15895S	150.0	58.0	102.0	6.8	2.4	4.0	0.8
15898S	89.0	46.0	82.0	5.2	2.1	3.2	0.4
15908S	75.0	76.0	131.0	12.4	1.5	5.9	1.3
15911S	56.0	27.0	59.0	4.4	1.1	1.9	0.3
15917S	670.0	100.0	167.0	19.2	-0.9	8.9	1.8
15920S	110.0	62.0	122.0	6.9	2.2	3.6	0.5
15921S	530.0	42.0	83.0	7.1	1.5	2.8	0.5
15938S	58.0	37.0	62.0	4.3	1.0	2.7	0.4
15939S	81.0	71.0	-3.0	-0.1	1.9	3.9	0.5
15943S	160.0	56.0	108.0	9.3	2.2	3.0	0.5
15945S	470.0	153.0	308.0	28.4	1.9	15.6	2.7
15952S	55.0	29.0	55.0	3.5	1.2	2.0	0.3
15954S	130.0	59.0	105.0	7.1	4.2	4.7	0.6
15955S	58.0	37.0	64.0	4.0	1.3	2.1	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
15957S	65.474	146.864	B-6	8	4	35	0	-0.5	12.0	-6.0	600.0	-1.3	18.0	70.0	6.0	19.0
15960S	65.557	146.876	C-6	9	4	34	0	0.5	7.0	6.0	900.0	-1.6	17.0	120.0	8.0	15.0
15962S	65.664	146.599	C-6	10	5	25	11	-0.5	7.0	28.0	500.0	-1.7	5.0	40.0	5.0	21.0
15968S	65.577	146.352	C-5	9	7	29	0	-0.5	24.0	-9.0	600.0	-2.2	7.0	50.0	7.0	11.0
15971S	65.418	146.459	B-5	7	6	23	0	-0.5	8.0	-7.0	300.0	-1.7	5.0	10.0	19.0	10.0
15975S	65.420	146.456	B-5	7	6	23	0	-0.5	5.0	-9.0	600.0	-2.1	6.0	60.0	12.0	8.0
15976S	65.446	145.944	B-4	7	9	8	0	-0.5	56.0	-7.0	400.0	-1.2	12.0	50.0	6.0	55.0
15994S	65.404	146.477	B-5	7	6	27	0	-0.5	24.0	-5.0	700.0	-0.7	14.0	60.0	8.0	36.0
15995S	65.520	146.420	C-5	8	6	13	0	-0.5	21.0	-5.0	800.0	1.2	14.0	60.0	3.0	24.0
16716S	65.464	146.434	B-5	7	6	1	0	-0.5	8.0	-7.0	300.0	-1.5	-5.0	20.0	16.0	9.0
16717S	65.670	146.880	C-6	10	4	27	0	-0.5	10.0	-11.0	1000.0	-2.6	14.0	70.0	6.0	20.0
16718S	65.677	146.978	C-6	10	4	20	0	-0.5	8.0	5.0	1300.0	2.4	12.0	90.0	2.0	41.0
16730S	65.679	146.465	C-5	10	6	22	0	-0.5	13.0	9.0	900.0	-1.9	27.0	90.0	4.0	25.0
16731S	65.427	145.974	B-4	7	9	18	0	-0.5	55.0	8.0	500.0	-1.3	13.0	70.0	4.0	36.0
16732S	65.601	146.392	C-5	9	6	13	0	-0.5	30.0	-10.0	600.0	-2.1	15.0	90.0	15.0	36.0
16740S	65.391	146.435	B-5	7	6	36	0	-0.5	51.0	8.0	900.0	-0.7	13.0	60.0	8.0	30.0
16743S	65.462	146.313	B-5	7	7	4	0	-0.5	17.0	-8.0	700.0	-1.9	19.0	60.0	9.0	16.0
16744S	65.613	146.397	C-5	9	6	13	0	-0.5	22.0	-5.0	600.0	-0.8	18.0	100.0	6.0	23.0
16749S	65.497	146.130	B-5	8	8	29	0	-0.5	8.0	-5.0	700.0	-0.8	12.0	70.0	2.0	18.0
16754S	65.442	146.387	B-5	7	7	7	0	-0.5	18.0	-10.0	1000.0	3.7	13.0	80.0	10.0	25.0
16769S	65.657	146.412	C-5	10	6	36	0	-0.5	4.0	-5.0	500.0	-0.7	9.0	50.0	3.0	20.0
16771S	65.508	146.445	C-5	8	6	23	0	-0.5	10.0	-7.0	500.0	-1.5	11.0	60.0	2.0	18.0
16782S	65.544	146.717	C-6	8	5	4	0	-0.5	12.0	-5.0	700.0	-0.7	13.0	70.0	3.0	27.0
16785S	65.601	146.858	C-6	9	4	14	0	1.0	21.0	-15.0	900.0	-3.4	10.0	90.0	9.0	31.0
16786S	65.620	146.367	C-5	9	7	7	0	-0.5	11.0	-5.0	600.0	-0.7	12.0	80.0	4.0	20.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
15957S	3.9	9.0	-4.0	1.20	-200.0	16.0	170.0	0.9	13.5	-5.0	-1.0	20.0	7.4	-4.0
15960S	4.1	9.0	-4.0	1.10	-200.0	30.0	190.0	0.8	17.0	-5.0	-1.0	15.0	6.6	-4.0
15962S	2.7	10.0	-4.0	1.40	-200.0	72.0	420.0	0.4	7.8	-5.0	3.0	53.0	16.2	4.0
15968S	2.4	16.0	-4.0	1.70	-300.0	24.0	250.0	0.5	9.3	26.0	5.0	32.0	26.0	45.0
15971S	1.5	4.0	-4.0	2.10	-200.0	10.0	560.0	0.5	5.2	-5.0	5.0	19.0	16.2	7.0
15975S	1.8	9.0	-4.0	2.10	-300.0	14.0	340.0	0.4	9.3	-6.0	4.0	34.0	26.8	22.0
15976S	3.3	6.0	-4.0	0.56	-200.0	14.0	80.0	0.7	11.2	-7.0	-1.0	9.8	2.9	97.0
15994S	3.4	6.0	6.0	0.88	-200.0	34.0	180.0	0.8	11.6	-5.0	-1.0	15.0	4.4	-4.0
15995S	3.8	7.0	-4.0	0.87	-200.0	18.0	130.0	2.2	11.2	-5.0	-1.0	13.0	3.5	-4.0
16716S	1.6	5.0	-4.0	2.40	-200.0	12.0	570.0	1.1	5.2	9.0	4.0	31.0	18.5	10.0
16717S	4.0	17.0	-4.0	1.70	-400.0	40.0	260.0	0.6	14.5	7.0	-2.0	67.0	27.2	11.0
16718S	3.0	5.0	-4.0	0.70	-200.0	10.0	40.0	1.4	11.4	-5.0	-1.0	7.7	3.3	-4.0
16730S	4.7	5.0	-5.0	0.69	-300.0	30.0	140.0	1.2	16.0	-10.0	-2.0	17.0	4.7	-4.0
16731S	3.2	7.0	-4.0	0.52	-200.0	14.0	60.0	1.7	10.4	-7.0	-1.0	8.1	3.1	66.0
16732S	3.8	9.0	10.0	0.85	-300.0	18.0	130.0	0.9	13.2	-10.0	-2.0	14.0	8.7	28.0
16740S	3.6	7.0	-4.0	0.80	-200.0	18.0	180.0	3.7	11.8	-5.0	1.0	17.0	4.1	-4.0
16743S	3.1	7.0	-4.0	1.40	-300.0	14.0	230.0	0.8	10.5	-8.0	3.0	20.0	22.4	10.0
16744S	4.4	6.0	-4.0	1.30	-200.0	12.0	180.0	0.8	13.6	-5.0	1.0	15.0	6.0	-4.0
16749S	3.0	9.0	-4.0	1.10	-200.0	14.0	80.0	1.0	10.8	-8.0	-1.0	11.0	3.6	-4.0
16754S	3.8	7.0	-4.0	1.30	-200.0	22.0	180.0	1.0	14.3	-9.0	-1.0	17.0	21.5	6.0
16769S	2.7	7.0	-4.0	0.81	-200.0	14.0	90.0	0.6	9.7	-5.0	-1.0	10.0	3.2	-4.0
16771S	3.3	8.0	-4.0	0.87	-200.0	14.0	70.0	5.5	10.1	-5.0	2.0	15.0	3.6	-4.0
16782S	3.5	6.0	-4.0	1.00	-200.0	20.0	110.0	1.0	12.4	-5.0	-1.0	12.0	5.3	-4.0
16785S	4.3	21.0	-4.0	1.90	-500.0	76.0	290.0	1.1	16.7	-12.0	-3.0	140.0	59.9	25.0
16786S	3.0	9.0	-4.0	0.95	-200.0	8.0	60.0	0.6	10.7	-5.0	-1.0	11.0	3.8	4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
15957S	92.0	61.0	103.0	6.7	1.7	4.5	0.6
15960S	140.0	58.0	101.0	7.0	2.5	4.3	0.6
15962S	250.0	89.0	162.0	14.9	0.7	7.4	1.2
15968S	65.0	66.0	116.0	10.5	-0.9	6.5	1.1
15971S	48.0	27.0	53.0	6.4	-0.7	4.7	0.8
15975S	43.0	51.0	100.0	11.7	-0.9	5.8	1.2
15976S	60.0	30.0	61.0	5.3	1.3	2.1	0.4
15994S	110.0	50.0	89.0	5.6	1.4	2.9	0.3
15995S	84.0	46.0	76.0	4.8	1.4	2.7	0.3
16716S	63.0	43.0	88.0	9.9	0.7	7.2	1.3
16717S	140.0	135.0	216.0	14.6	-1.9	11.7	1.7
16718S	100.0	31.0	47.0	5.2	1.1	2.3	0.4
16730S	99.0	67.0	98.0	9.1	2.1	2.5	0.4
16731S	79.0	30.0	58.0	5.3	0.8	2.4	0.3
16732S	110.0	48.0	85.0	8.7	1.5	3.6	0.5
16740S	74.0	55.0	86.0	5.8	1.6	2.8	0.4
16743S	97.0	45.0	84.0	9.0	1.0	4.4	0.8
16744S	79.0	46.0	79.0	5.2	0.8	2.9	0.4
16749S	71.0	43.0	68.0	4.8	-0.2	2.7	0.4
16754S	130.0	51.0	86.0	9.4	1.8	3.9	0.8
16769S	75.0	40.0	68.0	4.7	0.6	2.4	0.4
16771S	60.0	47.0	83.0	6.9	1.6	2.9	0.4
16782S	120.0	36.0	60.0	5.0	0.7	2.7	0.4
16785S	300.0	163.0	298.0	24.3	-2.5	24.5	3.6
16786S	74.0	39.0	64.0	4.5	1.4	2.2	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
16787S	65.582	146.863	C-6	9	4	26	0	-0.5	10.0	-16.0	1000.0	-4.2	8.0	80.0	5.0	14.0
16789S	65.487	145.891	B-4	8	9	28	0	-0.5	27.0	8.0	400.0	-1.5	13.0	60.0	3.0	22.0
16796S	65.578	146.994	C-6	9	4	30	0	0.5	10.0	-10.0	800.0	-2.2	17.0	90.0	11.0	43.0
16798S	65.414	146.322	B-5	7	7	21	0	-0.5	28.0	-5.0	700.0	-1.9	14.0	110.0	5.0	20.0
16806S	65.409	146.548	B-6	7	6	29	0	-0.5	25.0	-7.0	500.0	-1.3	12.0	60.0	8.0	28.0
16809S	65.667	146.963	C-6	10	4	29	0	0.5	9.0	-8.0	1500.0	2.6	21.0	100.0	12.0	37.0
16810S	65.617	146.854	C-6	9	4	11	0	-0.5	14.0	-12.0	500.0	-2.7	10.0	70.0	7.0	19.0
16817S	65.675	146.910	C-6	10	4	21	0	-0.5	6.0	9.0	1000.0	1.8	19.0	90.0	6.0	24.0
16826S	65.524	145.721	C-4	8	10	17	0	-0.5	38.0	-7.0	400.0	-1.5	15.0	60.0	4.0	25.0
16833S	65.380	146.665	B-6	6	5	2	0	-0.5	19.0	-7.0	900.0	2.3	16.0	100.0	10.0	10.0
16839S	65.681	146.798	C-6	10	5	19	0	-0.5	7.0	-6.0	1400.0	-1.4	22.0	90.0	6.0	16.0
16843S	65.456	145.923	B-4	7	9	5	0	1.0	280.0	26.0	600.0	-0.9	30.0	90.0	15.0	130.0
16846S	65.670	146.406	C-5	10	6	25	0	-0.5	7.0	-5.0	600.0	-0.7	12.0	60.0	3.0	22.0
16849S	65.564	146.761	C-6	9	5	32	0	-0.5	10.0	-10.0	900.0	-2.3	8.0	70.0	8.0	20.0
16852S	65.525	146.930	C-6	8	4	16	0	-0.5	9.0	-7.0	900.0	1.9	22.0	100.0	9.0	19.0
16855S	65.559	146.858	C-6	9	4	35	0	-0.5	9.0	-8.0	1100.0	-1.6	26.0	90.0	8.0	18.0
16856S	65.464	146.901	B-6	7	4	3	0	-0.5	12.0	-5.0	600.0	-1.2	12.0	60.0	6.0	17.0
16858S	65.695	146.764	C-6	10	5	17	0	-0.5	6.0	6.0	1600.0	-1.4	20.0	90.0	7.0	26.0
16860S	65.627	146.708	C-6	9	5	9	0	1.5	17.0	-11.0	500.0	-2.6	9.0	40.0	15.0	56.0
16865S	65.481	146.804	B-6	8	5	31	0	-0.5	8.0	-5.0	700.0	-1.6	17.0	90.0	3.0	22.0
16866S	65.483	146.589	B-6	8	6	31	0	-0.5	17.0	-8.0	400.0	-2.0	8.0	20.0	9.0	11.0
16870S	65.405	146.320	B-5	7	7	28	0	-0.5	27.0	8.0	700.0	-1.7	12.0	80.0	5.0	16.0
16872S	65.665	146.730	C-6	10	5	28	2	-0.5	10.0	-12.0	600.0	-2.7	13.0	70.0	11.0	12.0
16878S	65.554	146.945	C-6	8	4	4	0	-0.5	11.0	-8.0	700.0	2.6	20.0	110.0	12.0	35.0
16879S	65.443	146.103	B-5	7	8	9	0	-0.5	15.0	-5.0	600.0	-0.7	12.0	50.0	3.0	19.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
16787S	3.0	21.0	-4.0	1.60	600.0	38.0	150.0	0.9	11.8	13.0	3.0	190.0	81.2	16.0
16789S	3.2	8.0	-4.0	0.73	-200.0	10.0	40.0	0.7	11.0	-7.0	-1.0	10.0	2.8	25.0
16796S	4.0	5.0	-4.0	0.82	-300.0	110.0	110.0	0.9	16.2	-7.0	-2.0	16.0	5.7	-4.0
16798S	3.9	8.0	-4.0	1.10	-300.0	14.0	150.0	0.9	15.6	-5.0	-1.0	16.0	3.2	7.0
16806S	3.6	8.0	-4.0	0.72	-200.0	26.0	140.0	1.5	11.2	-6.0	-1.0	11.0	2.8	6.0
16809S	4.6	7.0	6.0	0.73	-200.0	14.0	170.0	1.3	17.7	-5.0	3.0	19.0	3.9	5.0
16810S	3.4	19.0	-4.0	2.30	-400.0	44.0	380.0	0.9	12.1	-8.0	-2.0	93.0	48.0	15.0
16817S	3.5	9.0	-4.0	0.85	-200.0	12.0	150.0	0.9	14.9	-5.0	-1.0	14.0	3.7	-4.0
16826S	3.4	8.0	-4.0	0.60	200.0	12.0	70.0	2.2	11.9	-6.0	-1.0	10.0	2.8	6.0
16833S	3.7	12.0	-4.0	1.40	-200.0	12.0	140.0	1.8	14.7	-5.0	-1.0	13.0	4.5	-4.0
16839S	5.0	7.0	-4.0	0.63	-200.0	10.0	220.0	0.6	17.6	-5.0	2.0	19.0	3.8	-4.0
16843S	4.7	6.0	-4.0	0.81	-200.0	36.0	130.0	1.2	16.8	-5.0	-1.0	12.0	5.1	6.0
16846S	3.2	11.0	-4.0	1.00	-200.0	12.0	90.0	0.9	11.2	-5.0	1.0	12.0	5.6	11.0
16849S	2.9	11.0	-4.0	1.30	-200.0	60.0	230.0	0.5	12.4	-6.0	-2.0	66.0	44.9	12.0
16852S	4.9	8.0	-4.0	1.00	-200.0	26.0	260.0	0.9	18.3	-5.0	-1.0	20.0	4.3	-4.0
16855S	4.1	7.0	4.0	1.10	-300.0	36.0	170.0	1.0	15.2	-5.0	-1.0	15.0	5.3	4.0
16856S	3.6	12.0	-4.0	1.20	-200.0	16.0	170.0	1.0	12.5	-5.0	-1.0	22.0	6.7	-4.0
16858S	4.8	7.0	-4.0	0.65	-200.0	10.0	220.0	0.9	17.1	-5.0	-1.0	19.0	4.9	-4.0
16860S	3.3	15.0	25.0	2.00	-400.0	350.0	610.0	0.6	10.9	12.0	-2.0	110.0	36.2	11.0
16865S	4.1	7.0	-4.0	1.20	-200.0	6.0	60.0	1.2	16.5	-5.0	2.0	11.0	4.3	-4.0
16866S	2.1	7.0	-4.0	2.20	-200.0	8.0	340.0	0.3	5.5	-9.0	4.0	28.0	38.1	-4.0
16870S	3.3	8.0	-4.0	1.10	-200.0	12.0	90.0	0.9	12.8	-5.0	-1.0	14.0	4.1	5.0
16872S	3.7	18.0	-4.0	2.20	-400.0	52.0	640.0	0.9	13.1	-11.0	2.0	78.0	31.9	5.0
16878S	4.5	10.0	-4.0	1.00	-200.0	48.0	170.0	1.3	17.2	-5.0	-1.0	18.0	4.6	-4.0
16879S	3.1	7.0	4.0	0.87	-200.0	14.0	100.0	5.2	9.6	-5.0	-1.0	12.0	3.8	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
16787S	140.0	366.0	690.0	67.2	1.6	29.0	4.6
16789S	61.0	38.0	82.0	6.3	1.9	2.7	0.4
16796S	370.0	55.0	98.0	10.2	2.5	3.2	0.5
16798S	58.0	55.0	106.0	9.0	2.5	3.1	0.5
16806S	90.0	40.0	73.0	6.3	0.9	3.3	0.4
16809S	120.0	54.0	109.0	9.9	1.6	3.3	0.5
16810S	190.0	118.0	201.0	14.5	2.0	13.8	2.4
16817S	97.0	55.0	102.0	8.6	1.4	2.8	0.5
16826S	69.0	36.0	57.0	6.3	1.0	2.6	0.4
16833S	67.0	53.0	101.0	5.8	1.4	3.2	0.4
16839S	140.0	64.0	120.0	9.7	1.5	3.2	0.5
16843S	97.0	49.0	88.0	6.5	2.8	3.1	0.5
16846S	64.0	46.0	71.0	5.5	0.6	3.1	0.4
16849S	590.0	115.0	209.0	21.8	0.8	10.2	1.8
16852S	89.0	69.0	119.0	7.9	2.4	4.1	0.5
16855S	210.0	55.0	108.0	7.0	1.6	4.5	0.6
16856S	79.0	64.0	106.0	6.9	1.8	4.5	0.6
16858S	94.0	65.0	113.0	9.3	1.4	3.0	0.5
16860S	510.0	142.0	254.0	17.5	1.8	17.1	2.6
16865S	79.0	48.0	87.0	8.4	2.3	2.9	0.5
16866S	48.0	60.0	99.0	8.7	1.1	3.7	1.0
16870S	59.0	52.0	88.0	8.2	1.7	3.2	0.5
16872S	190.0	136.0	225.0	15.1	1.9	11.5	1.8
16878S	190.0	71.0	121.0	9.2	2.2	4.0	0.6
16879S	63.0	39.0	77.0	4.4	1.6	2.5	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
16883S	65.560	146.843	C-6	9	4	35	0	-0.5	8.0	-12.0	700.0	-2.0	19.0	100.0	6.0	18.0
16891S	65.392	146.092	B-5	7	8	34	0	-0.5	33.0	-6.0	700.0	1.5	15.0	90.0	4.0	19.0
16892S	65.574	146.655	C-6	9	5	26	0	-0.5	7.0	-9.0	700.0	-2.1	14.0	90.0	2.0	29.0
16893S	65.629	146.850	C-6	9	4	11	0	-0.5	4.0	-10.0	600.0	-2.6	-5.0	20.0	5.0	9.0
16895S	65.680	146.887	C-6	10	4	22	0	-0.5	8.0	-5.0	1500.0	-1.3	20.0	120.0	6.0	53.0
16902S	65.605	146.623	C-6	9	5	13	0	-0.5	12.0	-10.0	600.0	-1.6	21.0	110.0	7.0	45.0
16904S	65.573	146.761	C-6	9	5	29	0	0.5	14.0	-12.0	1000.0	-2.6	10.0	80.0	8.0	25.0
16915S	65.437	146.602	B-6	7	6	18	0	-0.5	11.0	-8.0	400.0	-1.5	5.0	30.0	18.0	12.0
16917S	65.682	146.445	C-5	10	6	23	0	-0.5	11.0	-8.0	800.0	-1.9	11.0	50.0	5.0	24.0
16927S	65.457	146.051	B-5	7	8	2	0	-0.5	25.0	6.0	600.0	-0.7	11.0	50.0	4.0	24.0
16929S	65.539	146.530	C-6	8	6	9	0	-0.5	13.0	-7.0	600.0	-1.3	11.0	60.0	6.0	13.0
16935S	65.537	146.656	C-6	8	5	11	0	-0.5	11.0	-9.0	400.0	-1.7	12.0	70.0	4.0	19.0
16937S	65.551	146.377	C-5	8	7	6	0	1.5	230.0	-10.0	700.0	-1.8	15.0	100.0	7.0	36.0
16944S	65.541	146.235	C-5	8	7	11	0	-0.5	11.0	-5.0	600.0	-0.7	12.0	50.0	2.0	22.0
16954S	65.491	145.843	B-4	8	9	26	0	-0.5	40.0	17.0	400.0	-1.3	12.0	50.0	3.0	26.0
16957S	65.460	146.634	B-6	7	5	1	0	-0.5	12.0	-9.0	500.0	-2.0	9.0	40.0	11.0	13.0
16965S	65.608	146.871	C-6	9	4	14	0	-0.5	14.0	-14.0	1100.0	-3.2	11.0	70.0	4.0	14.0
16973S	65.643	146.822	C-6	9	4	1	0	-0.5	19.0	-12.0	1000.0	-2.9	20.0	90.0	8.0	38.0
16975S	65.477	146.838	B-6	8	4	36	0	-0.5	11.0	-5.0	600.0	-1.5	15.0	70.0	3.0	19.0
16980S	65.482	145.774	B-4	8	10	31	0	-0.5	58.0	-6.0	400.0	-1.2	14.0	60.0	3.0	20.0
16985S	65.433	146.716	B-6	7	5	16	-10	-0.5	11.0	-10.0	800.0	-2.2	14.0	40.0	7.0	10.0
16988S	65.514	146.313	C-5	8	7	16	0	-0.5	12.0	-5.0	600.0	1.5	9.0	50.0	4.0	20.0
16996S	65.397	146.774	B-6	7	5	32	0	-0.5	10.0	-7.0	600.0	-1.3	7.0	40.0	9.0	11.0
16998S	65.609	146.351	C-5	9	7	17	0	-0.5	17.0	6.0	700.0	-0.8	20.0	70.0	6.0	25.0
16999S	65.440	146.759	B-6	7	5	17	0	-0.5	7.0	-5.0	800.0	-1.6	18.0	110.0	10.0	17.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
16883S	3.8	7.0	-4.0	1.20	-300.0	34.0	220.0	0.9	15.7	-6.0	-2.0	15.0	8.5	7.0
16891S	4.5	10.0	-4.0	0.89	-200.0	14.0	90.0	8.4	14.5	-5.0	-1.0	13.0	3.2	-4.0
16892S	3.5	7.0	-5.0	0.85	-300.0	20.0	150.0	0.5	14.2	-7.0	-2.0	13.0	5.1	-6.0
16893S	2.4	19.0	-4.0	2.30	-200.0	42.0	440.0	0.3	8.0	-5.0	3.0	100.0	34.0	7.0
16895S	4.8	8.0	-4.0	0.61	200.0	20.0	220.0	1.2	16.9	5.0	1.0	19.0	3.7	-4.0
16902S	5.1	7.0	-4.0	0.70	-200.0	28.0	150.0	1.5	17.4	-5.0	-1.0	14.0	3.1	-5.0
16904S	3.3	9.0	-4.0	1.30	-300.0	74.0	230.0	1.3	14.4	-11.0	3.0	52.0	46.7	6.0
16915S	2.2	4.0	-4.0	2.50	-200.0	6.0	540.0	0.9	6.7	-5.0	4.0	24.0	11.5	15.0
16917S	3.6	8.0	-4.0	1.10	-200.0	60.0	320.0	1.0	11.1	14.0	-2.0	32.0	11.2	6.0
16927S	2.9	9.0	-4.0	0.57	-200.0	18.0	110.0	4.1	10.1	-5.0	-1.0	8.4	2.4	-4.0
16929S	3.3	5.0	-4.0	0.96	-200.0	10.0	180.0	1.1	10.4	-5.0	1.0	14.0	8.9	-4.0
16935S	3.4	9.0	-4.0	1.20	-200.0	12.0	60.0	1.2	11.6	-5.0	3.0	19.0	11.7	6.0
16937S	3.5	8.0	-4.0	0.81	400.0	120.0	160.0	1.8	12.5	-7.0	-2.0	16.0	184.0	10.0
16944S	3.0	9.0	-4.0	0.89	-200.0	12.0	90.0	0.7	10.1	-5.0	-1.0	14.0	3.9	-4.0
16954S	3.3	6.0	-4.0	0.50	-200.0	10.0	70.0	0.5	10.4	-5.0	-1.0	9.0	2.7	6.0
16957S	2.6	14.0	-4.0	1.80	-300.0	14.0	200.0	0.3	8.6	-5.0	4.0	58.0	54.4	6.0
16965S	4.2	16.0	-4.0	1.90	-500.0	66.0	220.0	0.9	16.6	10.0	-3.0	87.0	48.1	10.0
16973S	4.1	13.0	-4.0	1.50	-400.0	62.0	110.0	1.5	14.9	-8.0	-2.0	42.0	17.6	-4.0
16975S	3.9	11.0	-4.0	1.10	400.0	8.0	110.0	1.1	13.2	16.0	2.0	27.0	8.5	13.0
16980S	3.5	6.0	6.0	0.55	-200.0	10.0	-40.0	1.6	10.9	-5.0	-1.0	7.7	2.0	6.0
16985S	3.3	13.0	-4.0	1.60	-300.0	10.0	160.0	1.5	10.8	-6.0	-2.0	24.0	14.8	4.0
16988S	3.0	8.0	-4.0	1.10	-200.0	12.0	100.0	1.4	9.3	-5.0	-1.0	12.0	4.6	-4.0
16996S	2.3	7.0	-4.0	1.50	-200.0	8.0	210.0	0.8	7.5	-5.0	-1.0	13.0	7.3	8.0
16998S	3.2	9.0	-4.0	1.00	-200.0	14.0	60.0	0.9	11.6	5.0	-1.0	11.0	3.3	-4.0
16999S	4.3	7.0	-4.0	1.20	-200.0	8.0	120.0	1.7	17.3	-5.0	-2.0	14.0	4.1	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
16883S	150.0	56.0	108.0	10.3	1.5	4.9	0.7
16891S	69.0	48.0	93.0	5.6	-0.2	3.1	0.4
16892S	80.0	48.0	82.0	8.6	1.7	3.1	0.5
16893S	170.0	185.0	342.0	28.6	1.0	13.4	2.2
16895S	170.0	72.0	124.0	10.1	1.3	2.9	0.5
16902S	97.0	50.0	95.0	8.9	2.2	3.2	0.5
16904S	980.0	100.0	168.0	21.2	-0.9	10.3	2.0
16915S	52.0	39.0	70.0	8.0	1.0	4.9	0.9
16917S	220.0	68.0	117.0	11.1	1.3	4.8	0.8
16927S	63.0	36.0	67.0	4.4	0.9	2.5	0.3
16929S	57.0	43.0	77.0	6.2	1.2	2.4	0.4
16935S	62.0	57.0	104.0	8.8	1.3	3.1	0.7
16937S	250.0	53.0	79.0	10.8	2.3	3.2	-0.1
16944S	64.0	47.0	76.0	5.4	-0.2	3.2	0.4
16954S	64.0	32.0	64.0	5.7	1.1	2.5	0.4
16957S	66.0	122.0	205.0	17.9	-1.0	5.5	1.6
16965S	240.0	135.0	241.0	20.3	3.0	18.3	2.9
16973S	190.0	129.0	194.0	14.5	-0.2	8.6	1.3
16975S	82.0	74.0	134.0	12.3	1.4	4.8	0.7
16980S	76.0	29.0	59.0	5.5	1.3	2.3	0.3
16985S	61.0	63.0	109.0	5.9	-1.6	3.9	0.5
16988S	70.0	39.0	66.0	4.3	0.9	2.3	0.4
16996S	56.0	35.0	60.0	5.9	1.1	2.9	0.5
16998S	95.0	42.0	66.0	4.9	1.5	2.7	0.4
16999S	85.0	55.0	93.0	8.8	2.9	3.3	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17020S	65.546	146.455	C-5	8	6	2	0	1.0	67.0	17.0	700.0	-1.9	20.0	100.0	9.0	45.0
17021S	65.457	145.831	B-4	7	9	2	0	-0.5	41.0	-6.0	300.0	-1.3	11.0	60.0	3.0	19.0
17022S	65.507	145.670	C-4	8	10	22	0	-0.5	92.0	-9.0	600.0	-1.7	19.0	60.0	3.0	25.0
17025S	65.676	146.529	C-6	10	6	20	0	-0.5	8.0	-8.0	400.0	-2.1	10.0	50.0	6.0	19.0
17028S	65.486	146.723	B-6	8	5	28	-7	-0.5	17.0	16.0	900.0	-1.1	17.0	90.0	12.0	13.0
17033S	65.539	146.616	C-6	8	5	12	0	-0.5	11.0	-5.0	600.0	-0.8	16.0	70.0	4.0	37.0
17037S	65.537	146.027	C-5	8	8	11	0	-0.5	28.0	13.0	300.0	-0.6	9.0	30.0	2.0	23.0
17044S	65.692	146.776	C-6	10	5	18	0	-0.5	6.0	5.0	900.0	2.4	15.0	90.0	7.0	35.0
17055S	65.555	146.896	C-6	8	4	3	0	-0.5	9.0	-7.0	900.0	-1.4	17.0	100.0	10.0	18.0
17058S	65.484	145.933	B-4	8	9	32	0	-0.5	45.0	6.0	400.0	-0.6	16.0	50.0	7.0	36.0
17059S	65.549	146.575	C-6	8	6	5	0	-0.5	13.0	-8.0	700.0	-1.5	15.0	80.0	3.0	21.0
17064S	65.478	145.918	B-4	8	9	33	0	-0.5	38.0	12.0	600.0	-1.3	17.0	80.0	5.0	43.0
17066S	65.438	145.961	B-4	7	9	18	0	-0.5	56.0	13.0	400.0	-1.3	12.0	50.0	5.0	34.0
17067S	65.671	146.915	C-6	10	4	28	0	-0.5	6.0	51.0	1200.0	-1.6	17.0	110.0	7.0	21.0
17070S	65.680	146.476	C-5	10	6	22	0	-0.5	9.0	-8.0	900.0	-2.2	11.0	60.0	7.0	20.0
17072S	65.633	146.862	C-6	9	4	2	0	-0.5	20.0	36.0	900.0	-1.5	19.0	100.0	6.0	34.0
17074S	65.480	146.543	B-6	8	6	32	0	-0.5	18.0	-9.0	600.0	-1.7	12.0	70.0	3.0	19.0
17082S	65.628	146.929	C-6	9	4	9	0	-0.5	7.0	16.0	800.0	-1.5	13.0	100.0	6.0	29.0
17091S	65.450	145.847	B-4	7	9	11	0	-0.5	56.0	-8.0	300.0	-1.5	14.0	60.0	4.0	26.0
17092S	65.605	146.747	C-6	9	5	17	0	0.5	8.0	-12.0	800.0	-3.2	14.0	60.0	7.0	24.0
17093S	65.649	146.893	C-6	10	4	34	-3	0.5	14.0	-5.0	1600.0	-1.6	21.0	100.0	11.0	33.0
17095S	65.409	146.408	B-5	7	6	25	0	-0.5	16.0	-10.0	1000.0	-2.4	12.0	90.0	8.0	25.0
17099S	65.563	146.763	C-6	9	5	32	0	-0.5	6.0	-11.0	1000.0	-2.6	17.0	80.0	3.0	17.0
17112S	65.656	146.774	C-6	10	5	31	0	-0.5	22.0	12.0	1100.0	2.2	19.0	120.0	19.0	36.0
17117S	65.564	146.713	C-6	9	5	33	0	-0.5	9.0	-5.0	700.0	-0.9	14.0	60.0	6.0	21.0

Station	Fe(%)	Hf	Mg	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17020S	4.3	7.0	-5.0	1.00	-200.0	100.0	180.0	6.0	15.6	-7.0	-2.0	15.0	5.1	-4.0
17021S	3.1	8.0	-4.0	0.65	-200.0	10.0	40.0	2.4	11.0	-7.0	-1.0	8.6	2.6	7.0
17022S	4.0	8.0	-4.0	0.92	300.0	18.0	90.0	5.4	13.3	-5.0	-2.0	13.0	3.0	-4.0
17025S	3.2	14.0	-4.0	1.40	-200.0	70.0	390.0	0.7	10.3	-5.0	2.0	67.0	19.7	9.0
17028S	4.4	12.0	-4.0	1.80	-300.0	24.0	180.0	1.2	14.4	-5.0	2.0	28.0	12.1	-4.0
17033S	3.3	6.0	-4.0	0.87	-200.0	22.0	110.0	1.3	13.4	-5.0	-1.0	11.0	5.5	-4.0
17037S	2.5	10.0	4.0	0.63	-200.0	10.0	50.0	2.4	7.1	12.0	-1.0	9.8	3.1	7.0
17044S	3.6	6.0	-4.0	0.92	-200.0	10.0	150.0	0.7	15.3	-8.0	-2.0	15.0	5.1	-4.0
17055S	5.4	9.0	-4.0	0.95	-200.0	26.0	260.0	0.9	19.2	-5.0	-1.0	21.0	4.5	-4.0
17058S	3.9	6.0	-4.0	0.53	-200.0	10.0	90.0	1.1	11.9	-5.0	-1.0	7.7	2.5	12.0
17059S	3.9	7.0	-4.0	0.99	-200.0	12.0	130.0	1.4	12.9	-5.0	-1.0	13.0	3.9	-4.0
17064S	4.0	5.0	-4.0	0.83	-300.0	20.0	70.0	0.8	15.0	-9.0	-2.0	11.0	5.9	13.0
17066S	3.3	6.0	5.0	0.55	-200.0	14.0	90.0	1.7	10.8	-7.0	-1.0	9.8	4.3	21.0
17067S	3.7	9.0	-4.0	1.00	-200.0	10.0	150.0	0.6	16.4	-5.0	-2.0	15.0	4.9	-4.0
17070S	3.3	11.0	-4.0	1.30	-300.0	62.0	380.0	0.8	11.3	9.0	2.0	48.0	17.0	7.0
17072S	4.6	8.0	-4.0	0.81	-200.0	56.0	150.0	1.9	16.4	-5.0	1.0	17.0	5.2	-4.0
17074S	3.5	7.0	-4.0	1.40	200.0	12.0	100.0	2.8	12.6	-5.0	-1.0	15.0	5.7	-4.0
17082S	3.8	8.0	-4.0	0.88	-200.0	46.0	140.0	1.0	16.3	-5.0	2.0	16.0	4.8	-4.0
17091S	4.0	9.0	-4.0	0.60	-200.0	12.0	70.0	3.0	12.3	-8.0	-1.0	9.0	2.3	110.0
17092S	3.8	15.0	-4.0	1.40	-400.0	84.0	240.0	0.5	13.8	21.0	-3.0	100.0	67.9	9.0
17093S	5.1	9.0	-4.0	1.10	-300.0	38.0	190.0	1.4	20.2	-5.0	-1.0	21.0	4.5	4.0
17095S	4.0	6.0	-4.0	0.88	-300.0	32.0	110.0	0.9	15.5	-7.0	2.0	19.0	4.2	-4.0
17099S	3.3	7.0	-4.0	1.10	-300.0	26.0	170.0	0.5	13.0	-8.0	-2.0	24.0	14.4	4.0
17112S	5.0	12.0	-4.0	1.50	-300.0	86.0	250.0	1.3	18.3	-5.0	-1.0	31.0	12.7	-4.0
17117S	3.8	9.0	-4.0	0.88	-200.0	22.0	170.0	0.8	12.5	6.0	1.0	31.0	10.5	4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17020S	180.0	52.0	85.0	8.9	1.6	3.0	0.5
17021S	47.0	31.0	55.0	5.1	0.9	2.5	0.4
17022S	67.0	67.0	106.0	9.3	2.1	3.2	0.5
17025S	270.0	126.0	214.0	19.5	-0.9	8.7	1.6
17028S	81.0	73.0	129.0	8.1	1.7	5.0	0.8
17033S	110.0	44.0	73.0	5.5	1.7	2.7	0.5
17037S	47.0	31.0	59.0	3.7	0.8	2.4	0.3
17044S	56.0	45.0	86.0	7.3	1.3	2.5	0.5
17055S	130.0	75.0	132.0	8.0	3.2	3.6	0.5
17058S	65.0	27.0	53.0	3.3	0.8	2.0	0.3
17059S	64.0	50.0	87.0	7.7	2.2	2.7	0.5
17064S	77.0	40.0	79.0	7.4	2.0	3.1	0.5
17066S	75.0	33.0	62.0	5.5	1.0	2.3	0.5
17067S	88.0	54.0	94.0	9.0	1.5	4.1	0.6
17070S	240.0	102.0	188.0	17.2	0.9	8.2	1.4
17072S	200.0	61.0	117.0	9.6	1.6	3.7	0.6
17074S	63.0	52.0	84.0	7.9	1.4	3.3	0.6
17082S	170.0	56.0	103.0	9.6	1.8	3.6	0.5
17091S	59.0	34.0	57.0	6.1	1.9	2.8	0.4
17092S	530.0	138.0	241.0	32.9	2.1	16.3	3.3
17093S	89.0	67.0	113.0	7.6	3.6	4.1	0.6
17095S	68.0	73.0	119.0	12.2	3.1	3.3	0.5
17099S	130.0	63.0	126.0	12.2	-1.0	5.3	1.1
17112S	180.0	79.0	134.0	12.1	1.4	7.2	1.1
17117S	140.0	72.0	135.0	8.6	1.4	5.2	0.8

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17120S	65.473	146.846	B-6	8	4	36	0	-0.5	7.0	-8.0	800.0	-1.9	15.0	90.0	4.0	26.0
17123S	65.608	146.909	C-6	9	4	16	0	-0.5	21.0	-8.0	800.0	2.1	17.0	120.0	17.0	38.0
17124S	65.679	146.901	C-6	10	4	22	0	-0.5	17.0	-7.0	1700.0	-1.5	25.0	120.0	8.0	46.0
17126S	65.555	146.297	C-5	8	7	3	0	-0.5	32.0	-8.0	700.0	-1.8	12.0	70.0	3.0	19.0
17130S	65.449	146.374	B-5	7	7	7	0	-0.5	22.0	-8.0	500.0	-1.7	14.0	50.0	14.0	27.0
17131S	65.497	146.363	B-5	8	7	29	0	-0.5	13.0	-7.0	600.0	-1.7	13.0	60.0	4.0	22.0
17134S	65.606	146.874	C-6	9	4	15	0	-0.5	16.0	-16.0	1200.0	-3.9	13.0	80.0	10.0	18.0
17146S	65.667	146.597	C-6	10	5	25	0	-0.5	13.0	-9.0	600.0	-2.1	10.0	30.0	10.0	11.0
17158S	65.512	146.327	C-5	8	7	21	0	-0.5	7.0	-5.0	800.0	1.1	10.0	70.0	3.0	27.0
17161S	65.476	146.789	B-6	8	5	31	0	-0.5	10.0	-5.0	700.0	-0.5	23.0	90.0	3.0	22.0
17162S	65.580	146.647	C-6	9	5	26	0	-0.5	8.0	-10.0	900.0	3.1	15.0	100.0	5.0	38.0
17166S	65.686	146.889	C-6	10	4	22	0	-0.5	11.0	6.0	1200.0	-1.5	15.0	90.0	6.0	30.0
17168S	65.478	146.529	B-6	8	6	33	0	-0.5	15.0	14.0	1200.0	-1.9	12.0	110.0	6.0	20.0
17170S	65.686	146.776	C-6	10	5	19	0	-0.5	6.0	8.0	1300.0	2.5	16.0	100.0	5.0	23.0
17172S	65.680	146.648	C-6	10	5	23	0	-0.5	13.0	7.0	700.0	-1.2	16.0	80.0	11.0	42.0
17180S	65.454	146.437	B-5	7	6	12	0	-0.5	38.0	-12.0	500.0	-1.8	6.0	40.0	17.0	12.0
17183S	65.521	145.665	C-4	8	10	15	0	0.5	74.0	13.0	500.0	-1.2	13.0	60.0	3.0	23.0
17184S	65.458	145.950	B-4	7	9	5	0	-0.5	42.0	-6.0	300.0	1.5	12.0	60.0	3.0	33.0
17185S	65.448	146.445	B-5	7	6	11	0	-0.5	28.0	-10.0	600.0	-2.1	-5.0	40.0	19.0	10.0
17199S	65.523	145.822	C-4	8	9	14	0	-0.5	9.0	-5.0	600.0	-0.7	15.0	70.0	3.0	25.0
17200S	65.483	146.518	B-6	8	6	33	0	-0.5	9.0	-8.0	700.0	1.8	9.0	70.0	3.0	14.0
17205S	65.567	146.640	C-6	9	5	35	0	-0.5	6.0	-10.0	800.0	-0.5	12.0	90.0	9.0	34.0
17206S	65.668	146.699	C-6	10	5	27	0	-0.5	9.0	8.0	800.0	1.7	16.0	80.0	7.0	35.0
17207S	65.658	146.711	C-6	10	5	28	0	-0.5	7.0	13.0	900.0	-2.9	10.0	60.0	4.0	15.0
17209S	65.517	146.634	C-6	8	5	13	0	-0.5	33.0	-16.0	1200.0	-2.9	12.0	90.0	14.0	13.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17120S	4.0	8.0	6.0	1.20	-300.0	14.0	-50.0	1.1	15.6	-6.0	-2.0	11.0	3.5	-4.0
17123S	5.2	8.0	-4.0	1.50	-300.0	62.0	250.0	2.0	18.1	-5.0	-1.0	41.0	23.3	-4.0
17124S	5.5	8.0	7.0	0.94	300.0	34.0	220.0	2.4	20.2	-5.0	-1.0	22.0	6.1	-4.0
17126S	3.4	7.0	-4.0	1.10	-200.0	24.0	130.0	5.3	11.5	-5.0	-2.0	14.0	7.2	4.0
17130S	3.6	5.0	-4.0	1.30	-200.0	16.0	370.0	1.1	11.0	9.0	4.0	17.0	15.4	7.0
17131S	3.3	7.0	-4.0	1.20	-200.0	12.0	110.0	1.3	10.5	-5.0	-2.0	13.0	5.8	-4.0
17134S	4.0	25.0	-4.0	2.10	-600.0	70.0	350.0	0.9	16.1	-9.0	-3.0	170.0	102.0	20.0
17146S	3.4	8.0	-4.0	2.00	-200.0	120.0	640.0	0.6	10.4	-5.0	3.0	91.0	38.7	11.0
17158S	3.2	8.0	-4.0	0.93	-200.0	16.0	160.0	0.8	12.1	-5.0	-1.0	16.0	3.9	-4.0
17161S	5.2	7.0	-4.0	1.30	-200.0	2.0	90.0	1.2	16.9	-5.0	-2.0	12.0	2.6	-4.0
17162S	4.6	8.0	8.0	0.75	-300.0	22.0	140.0	0.9	15.9	-6.0	-2.0	16.0	3.9	-4.0
17166S	4.2	8.0	-4.0	1.00	200.0	26.0	220.0	1.6	14.9	7.0	2.0	34.0	11.7	-4.0
17168S	4.3	5.0	10.0	1.50	-300.0	16.0	200.0	1.2	16.4	-5.0	2.0	17.0	4.5	9.0
17170S	4.0	7.0	-4.0	0.93	-200.0	10.0	150.0	0.6	16.8	-5.0	-1.0	17.0	3.0	-4.0
17172S	3.7	8.0	7.0	0.87	-200.0	86.0	100.0	1.2	14.1	-5.0	-1.0	14.0	4.4	-4.0
17180S	2.0	7.0	-4.0	2.00	-200.0	16.0	440.0	0.5	8.4	15.0	5.0	34.0	88.0	19.0
17183S	3.9	9.0	-4.0	0.69	-200.0	18.0	100.0	6.3	14.2	-5.0	2.0	11.0	2.2	-4.0
17184S	3.5	5.0	-4.0	0.51	-200.0	8.0	80.0	1.0	10.7	-6.0	-1.0	8.8	2.2	21.0
17185S	2.5	11.0	-4.0	2.50	-300.0	14.0	460.0	1.0	10.4	-9.0	7.0	56.0	51.6	28.0
17199S	3.4	8.0	-4.0	0.80	-200.0	12.0	50.0	1.3	11.9	-5.0	3.0	9.8	2.8	-4.0
17200S	2.7	6.0	-4.0	1.30	200.0	8.0	120.0	1.2	10.4	-5.0	1.0	11.0	2.3	-4.0
17205S	4.1	7.0	-4.0	0.75	-300.0	24.0	120.0	0.6	14.7	-7.0	-2.0	12.0	4.2	-4.0
17206S	3.6	9.0	-4.0	0.95	-200.0	84.0	140.0	0.9	14.5	-5.0	-1.0	14.0	3.8	-4.0
17207S	3.2	18.0	6.0	1.50	-400.0	52.0	240.0	-0.3	13.2	-9.0	4.0	70.0	29.1	4.0
17209S	3.1	9.0	-4.0	1.40	-300.0	14.0	80.0	0.8	13.0	-7.0	3.0	30.0	168.0	10.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17120S	75.0	45.0	92.0	7.9	1.0	3.2	0.5
17123S	150.0	78.0	152.0	14.6	2.4	11.3	1.7
17124S	140.0	81.0	147.0	8.0	2.8	4.2	0.5
17126S	84.0	48.0	77.0	7.2	1.0	2.7	0.5
17130S	140.0	39.0	75.0	7.7	1.0	4.0	0.7
17131S	72.0	44.0	80.0	6.8	1.1	2.7	0.5
17134S	210.0	211.0	382.0	30.4	-2.7	29.4	4.8
17146S	460.0	113.0	223.0	31.0	1.2	20.4	3.2
17158S	70.0	51.0	88.0	6.0	1.6	3.2	0.4
17161S	84.0	50.0	84.0	8.9	2.3	3.0	0.5
17162S	100.0	53.0	96.0	9.6	2.3	3.1	0.4
17166S	150.0	85.0	148.0	13.3	1.4	5.8	1.1
17168S	57.0	45.0	92.0	7.8	1.4	2.8	0.4
17170S	110.0	54.0	100.0	9.0	2.3	3.2	0.6
17172S	380.0	54.0	92.0	5.9	1.7	3.0	0.4
17180S	78.0	52.0	98.0	12.6	1.5	6.4	0.7
17183S	53.0	39.0	77.0	6.2	0.8	3.1	0.4
17184S	63.0	28.0	60.0	4.8	1.0	2.1	0.4
17185S	68.0	85.0	168.0	19.5	-0.6	11.3	2.2
17199S	62.0	37.0	64.0	4.6	-0.2	2.4	0.3
17200S	51.0	43.0	69.0	6.7	1.9	2.4	0.4
17205S	82.0	47.0	78.0	8.2	1.0	2.8	0.4
17206S	240.0	54.0	99.0	5.9	-0.8	2.8	0.5
17207S	170.0	142.0	248.0	17.2	-2.0	11.4	1.8
17209S	84.0	86.0	128.0	16.8	2.4	7.3	-0.1

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17210S	65.497	145.817	B-4	8	9	25	0	-0.5	42.0	-8.0	800.0	-1.8	15.0	80.0	3.0	18.0
17211S	65.497	146.203	B-5	8	7	25	0	-0.5	10.0	-5.0	600.0	-0.8	11.0	60.0	6.0	19.0
17215S	65.694	146.727	C-6	10	5	16	0	-0.5	7.0	-9.0	900.0	-2.0	17.0	70.0	8.0	17.0
17219S	65.664	146.527	C-6	10	6	28	15	-0.5	8.0	-10.0	1000.0	-2.3	9.0	90.0	4.0	22.0
17227S	65.665	146.725	C-6	10	5	28	0	-0.5	10.0	-11.0	800.0	-1.4	15.0	80.0	6.0	22.0
17228S	65.627	146.954	C-6	9	4	8	0	-0.5	11.0	-7.0	1100.0	-1.4	19.0	110.0	11.0	31.0
17230S	65.518	146.140	C-5	8	8	17	0	-0.5	9.0	-5.0	500.0	-0.7	10.0	50.0	4.0	18.0
17232S	65.583	146.436	C-5	9	6	26	0	-0.5	33.0	-12.0	1100.0	-2.8	9.0	80.0	11.0	12.0
17233S	65.457	145.759	B-4	7	10	6	0	-0.5	52.0	-8.0	400.0	-1.2	20.0	70.0	4.0	35.0
17241S	65.477	146.642	B-6	8	5	36	0	-0.5	32.0	-14.0	1300.0	-2.7	20.0	90.0	24.0	34.0
17246S	65.510	145.957	C-4	8	9	20	0	-0.5	25.0	5.0	300.0	0.7	13.0	40.0	4.0	22.0
17247S	65.585	146.649	C-6	9	5	26	0	-0.5	6.0	-11.0	800.0	-2.5	16.0	100.0	7.0	30.0
17252S	65.388	146.026	B-5	7	8	35	0	-0.5	42.0	-5.0	600.0	-1.2	22.0	110.0	3.0	53.0
17261S	65.591	146.423	C-5	9	6	23	0	-0.5	27.0	-10.0	600.0	-2.6	11.0	70.0	6.0	15.0
17263S	65.408	146.661	B-6	7	5	26	0	-0.5	17.0	-7.0	700.0	-1.4	11.0	50.0	12.0	15.0
17265S	65.463	145.802	B-4	7	9	1	0	-0.5	44.0	-9.0	500.0	-1.7	16.0	70.0	3.0	27.0
17267S	65.418	146.497	B-5	7	6	22	0	-0.5	6.0	-7.0	300.0	-1.8	-5.0	20.0	16.0	7.5
17273S	65.616	146.390	C-5	9	6	12	0	-0.5	14.0	-9.0	600.0	-2.1	14.0	90.0	5.0	32.0
17274S	65.656	146.664	C-6	10	5	35	0	0.5	9.0	-16.0	1000.0	-3.9	8.0	80.0	8.0	16.0
17277S	65.653	146.821	C-6	10	4	36	0	-0.5	12.0	6.0	700.0	-1.7	16.0	90.0	7.0	39.0
17281S	65.661	146.827	C-6	10	4	25	0	-0.5	12.0	-6.0	1200.0	-1.5	20.0	80.0	4.0	26.0
17287S	65.662	146.734	C-6	10	5	28	0	-0.5	8.0	-10.0	500.0	-2.3	8.0	70.0	6.0	12.0
17288S	65.419	145.997	B-4	7	8	24	0	-0.5	63.0	9.0	600.0	2.0	15.0	70.0	6.0	62.0
17291S	65.551	146.939	C-6	8	4	4	0	-0.5	8.0	10.0	800.0	-1.3	18.0	90.0	13.0	18.0
17295S	65.602	146.975	C-6	9	4	17	0	-0.5	10.0	-9.0	1200.0	-1.7	17.0	120.0	7.0	46.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17210S	4.0	7.0	-4.0	0.69	-200.0	14.0	70.0	0.9	13.6	-8.0	-2.0	12.0	2.7	6.0
17211S	3.1	9.0	-4.0	1.30	-200.0	12.0	190.0	0.8	10.7	-5.0	1.0	17.0	10.8	5.0
17215S	3.7	12.0	-4.0	1.10	-300.0	36.0	140.0	0.5	12.8	-8.0	-2.0	39.0	8.6	-4.0
17219S	3.0	6.0	4.0	1.00	-300.0	18.0	90.0	0.6	15.1	-6.0	3.0	13.0	4.4	-4.0
17227S	3.5	19.0	-4.0	1.40	-400.0	42.0	300.0	0.7	13.7	-7.0	-1.0	48.0	15.4	4.0
17228S	4.4	8.0	4.0	0.97	-200.0	40.0	150.0	1.3	17.7	-5.0	-1.0	13.0	3.6	-4.0
17230S	2.7	8.0	-4.0	1.10	-200.0	10.0	110.0	1.1	8.5	-5.0	-1.0	12.0	4.9	-4.0
17232S	2.8	21.0	-4.0	2.00	-300.0	26.0	250.0	0.9	11.8	13.0	11.0	46.0	147.0	56.0
17233S	4.5	4.0	-4.0	0.65	-200.0	6.0	110.0	9.2	15.8	-7.0	-1.0	7.8	2.4	7.0
17241S	4.3	8.0	21.0	1.10	-400.0	20.0	-70.0	1.2	14.5	-9.0	-2.0	24.0	138.0	-4.0
17246S	2.9	6.0	-4.0	0.59	-200.0	6.0	60.0	1.0	8.7	-5.0	-1.0	7.8	2.4	27.0
17247S	3.6	8.0	-5.0	0.75	-300.0	24.0	170.0	0.8	15.6	-8.0	-2.0	16.0	5.6	-4.0
17252S	4.6	7.0	-4.0	0.83	-200.0	18.0	110.0	15.0	15.5	-5.0	-1.0	9.2	3.3	-4.0
17261S	3.7	20.0	-4.0	1.80	300.0	24.0	190.0	0.9	13.0	17.0	8.0	43.0	23.2	78.0
17263S	3.4	6.0	-4.0	1.50	-200.0	10.0	320.0	2.1	10.1	-5.0	2.0	17.0	6.9	11.0
17265S	4.4	12.0	-4.0	0.70	-300.0	10.0	-50.0	2.3	17.5	-9.0	-1.0	8.5	5.7	71.0
17267S	1.4	4.0	-4.0	2.60	-200.0	10.0	500.0	0.2	5.9	-5.0	4.0	20.0	12.0	6.0
17273S	4.4	9.0	5.0	1.40	300.0	12.0	180.0	0.6	14.9	10.0	-2.0	22.0	7.7	19.0
17274S	3.7	14.0	-4.0	1.30	-400.0	52.0	220.0	1.1	14.0	-5.0	-3.0	130.0	83.9	9.0
17277S	3.6	11.0	-4.0	1.20	-200.0	96.0	200.0	0.9	13.7	-5.0	-1.0	32.0	12.2	-4.0
17281S	5.2	7.0	4.0	0.95	-200.0	16.0	180.0	0.8	14.9	-5.0	-1.0	19.0	3.6	-4.0
17287S	2.9	17.0	-4.0	1.60	-300.0	80.0	300.0	0.5	10.6	-10.0	-2.0	65.0	17.4	4.0
17288S	4.2	6.0	-4.0	0.62	-200.0	12.0	60.0	2.6	13.6	-9.0	-1.0	11.0	2.8	50.0
17291S	3.9	7.0	-4.0	0.96	-200.0	32.0	130.0	0.7	15.3	-5.0	-1.0	12.0	4.3	-4.0
17295S	4.7	7.0	-4.0	0.69	-200.0	58.0	250.0	1.4	18.0	-8.0	-2.0	21.0	6.1	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17210S	59.0	40.0	65.0	6.7	1.5	2.5	0.3
17211S	72.0	48.0	88.0	5.7	1.7	3.6	0.6
17215S	160.0	97.0	148.0	8.8	2.1	5.2	0.8
17219S	62.0	46.0	82.0	8.0	1.9	2.5	0.5
17227S	170.0	138.0	240.0	14.1	3.5	8.1	1.3
17228S	110.0	50.0	92.0	6.2	2.2	2.9	0.5
17230S	63.0	36.0	60.0	4.2	0.8	2.6	0.4
17232S	70.0	102.0	172.0	17.6	1.6	9.6	1.6
17233S	62.0	24.0	56.0	4.5	0.9	2.0	0.4
17241S	98.0	74.0	151.0	15.5	2.7	5.6	-0.1
17246S	51.0	28.0	43.0	3.2	0.5	1.8	0.3
17247S	84.0	57.0	103.0	11.3	3.4	3.7	0.8
17252S	97.0	43.0	74.0	5.6	1.7	2.3	0.3
17261S	69.0	101.0	182.0	15.2	1.5	7.6	1.4
17263S	72.0	41.0	67.0	6.7	-0.5	3.1	0.5
17265S	61.0	35.0	59.0	6.6	1.5	3.3	0.6
17267S	41.0	34.0	69.0	8.2	-0.7	4.8	0.9
17273S	67.0	68.0	128.0	10.1	2.1	4.0	0.6
17274S	260.0	220.0	362.0	49.8	-1.4	19.0	3.6
17277S	210.0	87.0	153.0	11.3	2.9	6.7	1.0
17281S	140.0	62.0	118.0	9.3	1.5	3.4	0.6
17287S	170.0	113.0	183.0	10.8	-1.6	8.9	1.2
17288S	84.0	39.0	68.0	7.2	1.3	2.4	0.4
17291S	130.0	47.0	93.0	5.4	1.3	2.8	0.5
17295S	190.0	71.0	113.0	10.8	1.4	3.3	0.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17299S	65.634	146.861	C-6	9	4	2	0	-0.5	8.0	-7.0	400.0	-1.6	-5.0	-10.0	6.0	9.0
17300S	65.502	146.968	C-6	8	4	20	0	-0.5	7.0	-9.0	800.0	-2.1	14.0	110.0	3.0	19.0
17304S	65.567	146.457	C-5	9	6	35	0	-0.5	43.0	-10.0	600.0	-2.2	13.0	70.0	11.0	12.0
17305S	65.567	146.312	C-5	9	7	33	0	-0.5	36.0	5.0	600.0	-0.7	13.0	40.0	7.0	19.0
17307S	65.568	146.668	C-6	9	5	34	0	-0.5	5.0	-5.0	600.0	-0.9	12.0	60.0	3.0	29.0
17308S	65.579	146.334	C-5	9	7	29	0	-0.5	30.0	-9.0	800.0	-1.9	13.0	90.0	9.0	35.0
17309S	65.395	146.749	B-6	7	5	32	0	-0.5	18.0	-10.0	700.0	-1.9	15.0	80.0	16.0	20.0
17310S	65.628	146.375	C-5	9	7	7	25	-0.5	17.0	-6.0	600.0	-1.0	16.0	80.0	6.0	38.0
17312S	65.455	146.043	B-5	7	8	11	0	-0.5	24.0	5.0	700.0	1.0	12.0	60.0	3.0	24.0
17319S	65.644	146.961	C-6	10	4	32	0	1.0	10.0	-6.0	1000.0	-1.2	14.0	80.0	8.0	25.0
17320S	65.547	146.361	C-5	8	7	5	0	1.0	80.0	-10.0	900.0	-2.2	10.0	80.0	3.0	22.0
17321S	65.493	146.438	B-5	8	6	26	0	-0.5	14.0	-9.0	600.0	-1.8	14.0	80.0	3.0	19.0
17323S	65.396	146.532	B-6	7	6	33	0	-0.5	10.0	13.0	600.0	-1.6	10.0	60.0	3.0	17.0
17328S	65.684	146.890	C-6	10	4	22	0	-0.5	10.0	7.0	1300.0	2.4	14.0	90.0	3.0	42.0
17329S	65.664	146.527	C-6	10	6	28	15	-0.5	7.0	-10.0	900.0	-2.4	16.0	100.0	5.0	20.0
17330S	65.482	145.859	B-4	8	9	34	0	-0.5	46.0	-8.0	600.0	-1.6	19.0	60.0	6.0	42.0
17332S	65.676	146.655	C-6	10	5	23	0	0.5	17.0	-5.0	1000.0	-1.1	20.0	80.0	18.0	45.0
17340S	65.525	146.855	C-6	8	4	14	0	-0.5	7.0	-5.0	800.0	-1.4	17.0	90.0	6.0	14.0
17342S	65.445	146.092	B-5	7	8	10	0	-0.5	21.0	-5.0	900.0	-1.0	13.0	80.0	6.0	25.0
17345S	65.650	146.730	C-6	10	5	33	0	-0.5	5.0	-11.0	700.0	-2.8	13.0	80.0	7.0	14.0
17349S	65.442	145.932	B-4	7	9	8	0	-0.5	64.0	-7.0	700.0	-1.4	16.0	80.0	7.0	66.0
17353S	65.433	146.068	B-5	7	8	15	0	-0.5	61.0	-5.0	500.0	-0.6	12.0	50.0	4.0	46.0
17356S	65.413	145.917	B-4	7	9	21	0	-0.5	27.0	6.0	500.0	-1.6	17.0	90.0	3.0	27.0
17357S	65.398	146.382	B-5	7	7	31	0	-0.5	38.0	-5.0	900.0	-0.9	15.0	70.0	13.0	29.0
17358S	65.463	146.504	B-6	7	6	3	0	-0.5	12.0	5.0	300.0	-1.8	6.0	60.0	15.0	10.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17299S	2.6	17.0	-4.0	2.10	-200.0	24.0	570.0	-0.2	8.6	-9.0	4.0	95.0	28.1	14.0
17300S	3.6	8.0	-4.0	0.91	-300.0	24.0	120.0	0.6	15.6	-6.0	-2.0	15.0	3.3	-4.0
17304S	3.2	13.0	-4.0	1.60	-300.0	26.0	210.0	1.0	12.3	-7.0	3.0	34.0	43.2	14.0
17305S	2.9	5.0	-4.0	0.91	200.0	26.0	170.0	1.2	9.0	-5.0	-1.0	13.0	7.6	12.0
17307S	3.0	7.0	-4.0	0.60	-200.0	20.0	150.0	0.8	11.4	-5.0	1.0	11.0	3.4	-4.0
17308S	3.8	8.0	-4.0	0.77	300.0	16.0	130.0	1.1	13.4	-6.0	-2.0	14.0	3.9	6.0
17309S	3.4	6.0	-4.0	1.40	-200.0	14.0	210.0	1.5	12.4	-8.0	-2.0	17.0	21.9	8.0
17310S	4.1	8.0	-4.0	1.40	-200.0	14.0	160.0	0.9	14.1	-5.0	1.0	17.0	8.6	6.0
17312S	3.1	7.0	-4.0	0.68	-200.0	20.0	80.0	4.1	10.9	-5.0	-1.0	9.9	2.6	-4.0
17319S	3.8	7.0	4.0	0.90	-200.0	46.0	150.0	0.8	14.6	-5.0	-1.0	14.0	3.7	-4.0
17320S	3.3	8.0	-4.0	1.00	-300.0	130.0	150.0	2.9	13.9	-5.0	-2.0	13.0	4.0	-4.0
17321S	3.8	11.0	-5.0	1.30	-200.0	12.0	90.0	1.0	13.1	-5.0	-1.0	15.0	4.3	-5.0
17323S	3.0	8.0	-5.0	0.76	300.0	14.0	90.0	0.9	10.7	-5.0	1.0	12.0	2.7	-4.0
17328S	3.5	5.0	-4.0	1.00	-200.0	14.0	80.0	2.2	12.7	-5.0	2.0	9.5	4.3	-4.0
17329S	3.6	8.0	-4.0	1.00	400.0	22.0	70.0	0.7	14.8	-6.0	-2.0	13.0	4.2	-4.0
17330S	3.6	6.0	5.0	0.98	-200.0	18.0	120.0	0.4	11.9	-8.0	3.0	14.0	6.7	99.0
17332S	4.5	8.0	-4.0	0.83	-200.0	190.0	210.0	1.2	14.8	-5.0	1.0	17.0	4.5	4.0
17340S	3.9	9.0	-4.0	0.87	-200.0	18.0	130.0	0.9	14.9	-5.0	-1.0	16.0	3.4	-4.0
17342S	3.9	7.0	-4.0	0.91	-200.0	24.0	170.0	5.5	14.3	-5.0	-1.0	14.0	4.3	-4.0
17345S	3.5	15.0	-4.0	1.70	-300.0	52.0	260.0	0.7	14.1	-7.0	-2.0	88.0	41.9	7.0
17349S	3.6	6.0	-4.0	0.94	-200.0	12.0	110.0	1.1	14.1	-6.0	-1.0	10.0	2.3	16.0
17353S	3.6	6.0	6.0	0.40	-200.0	24.0	100.0	3.6	11.7	-5.0	-1.0	9.5	1.9	6.0
17356S	3.9	8.0	-4.0	0.79	-200.0	8.0	90.0	8.3	14.0	-5.0	-1.0	10.0	2.9	-4.0
17357S	3.9	8.0	-4.0	0.57	-200.0	20.0	190.0	3.6	13.3	6.0	-1.0	16.0	5.4	4.0
17358S	2.3	7.0	-4.0	2.20	-200.0	12.0	330.0	1.1	9.6	-5.0	4.0	36.0	25.8	11.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17299S	150.0	153.0	284.0	24.6	-0.8	13.1	2.2
17300S	81.0	59.0	106.0	9.6	1.0	3.4	0.5
17304S	81.0	85.0	134.0	13.2	1.7	6.0	1.4
17305S	110.0	40.0	78.0	4.4	1.2	2.3	0.4
17307S	93.0	46.0	79.0	5.7	1.3	2.9	0.4
17308S	120.0	46.0	82.0	8.6	1.7	3.4	0.5
17309S	96.0	49.0	89.0	9.1	0.9	3.4	0.9
17310S	76.0	55.0	95.0	6.5	1.4	3.1	0.5
17312S	69.0	35.0	61.0	4.2	-0.5	2.2	0.3
17319S	120.0	50.0	89.0	5.9	1.4	3.1	0.4
17320S	230.0	51.0	79.0	8.1	-0.9	2.8	0.6
17321S	57.0	58.0	92.0	8.6	1.4	3.4	0.6
17323S	58.0	42.0	62.0	6.9	1.0	3.0	0.5
17328S	88.0	38.0	56.0	6.0	1.1	2.6	0.5
17329S	72.0	47.0	85.0	8.2	2.3	3.2	0.5
17330S	78.0	49.0	87.0	7.1	1.6	3.0	0.4
17332S	850.0	64.0	104.0	6.9	2.1	4.2	0.5
17340S	78.0	57.0	100.0	6.6	2.8	3.4	0.6
17342S	73.0	49.0	82.0	5.5	-0.2	2.6	0.3
17345S	200.0	144.0	267.0	24.8	-1.1	11.6	2.1
17349S	77.0	36.0	63.0	6.4	1.5	2.8	0.4
17353S	71.0	36.0	68.0	4.6	1.8	2.6	0.4
17356S	63.0	40.0	70.0	6.7	1.7	2.7	0.4
17357S	73.0	57.0	104.0	6.7	1.8	3.2	0.5
17358S	54.0	59.0	113.0	12.7	1.2	8.0	1.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17363S	65.633	146.344	C-5	9	7	5	0	-0.5	7.0	-5.0	700.0	1.6	18.0	70.0	5.0	82.0
17364S	65.469	146.204	B-5	7	7	1	0	-0.5	10.0	7.0	800.0	-0.5	16.0	70.0	4.0	20.0
17368S	65.524	146.059	C-5	8	8	14	26	-0.5	46.0	13.0	500.0	-0.6	15.0	60.0	4.0	39.0
17373S	65.589	146.940	C-6	9	4	21	0	1.0	69.0	11.0	600.0	1.8	18.0	100.0	7.0	82.0
17386S	65.587	146.566	C-6	9	6	19	0	-0.5	6.0	-9.0	900.0	-1.7	10.0	90.0	3.0	14.0
17387S	65.545	146.792	C-6	8	5	6	0	-0.5	8.0	-5.0	700.0	-0.7	12.0	80.0	5.0	30.0
17388S	65.434	145.965	B-4	7	9	18	0	-0.5	14.0	-9.0	800.0	-1.8	18.0	90.0	10.0	55.0
17391S	65.446	146.328	B-5	7	7	9	0	-0.5	15.0	-10.0	900.0	-2.1	21.0	110.0	10.0	27.0
17395S	65.523	146.909	C-6	8	4	15	0	-0.5	7.0	7.0	800.0	-1.3	16.0	90.0	7.0	22.0
17400S	65.588	146.464	C-5	9	6	22	0	-0.5	6.0	-5.0	600.0	-0.9	20.0	110.0	2.0	31.0
17402S	65.460	145.763	B-4	7	10	6	0	-0.5	45.0	9.0	400.0	-1.0	15.0	60.0	2.0	40.0
17410S	65.489	146.896	B-6	8	4	27	0	-0.5	6.0	6.0	900.0	-1.6	12.0	100.0	3.0	12.0
17411S	65.443	146.686	B-6	7	5	10	0	-0.5	15.0	5.0	600.0	1.8	11.0	50.0	5.0	12.0
17412S	65.656	146.819	C-6	10	4	36	0	-0.5	10.0	-6.0	700.0	1.6	17.0	80.0	6.0	30.0
17416S	65.388	146.662	B-6	7	5	35	0	-0.5	14.0	-6.0	800.0	-1.2	20.0	90.0	5.0	18.0
17428S	65.488	145.914	B-4	8	9	28	0	-0.5	51.0	-8.0	300.0	1.4	18.0	60.0	3.0	23.0
17437S	65.422	146.242	B-5	7	7	23	0	-0.5	15.0	-5.0	700.0	-0.8	13.0	50.0	3.0	22.0
17438S	65.457	146.062	B-5	7	8	3	0	-0.5	43.0	-5.0	300.0	-0.5	10.0	40.0	3.0	31.0
17452S	65.623	146.500	C-6	9	6	9	16	-0.5	3.0	-7.0	500.0	-1.5	11.0	50.0	3.0	16.0
17454S	65.607	146.610	C-6	9	5	13	0	-0.5	10.0	-10.0	600.0	-1.8	13.0	100.0	7.0	28.0
17458S	65.663	146.621	C-6	10	5	25	0	1.0	11.0	-12.0	900.0	-2.6	9.0	50.0	18.0	16.0
17459S	65.664	146.820	C-6	10	4	25	0	-0.5	13.0	-5.0	1100.0	-0.6	19.0	80.0	7.0	27.0
17464S	65.487	146.809	B-6	8	5	30	0	-0.5	12.0	6.0	800.0	-1.4	14.0	70.0	6.0	19.0
17465S	65.647	146.872	C-6	10	4	35	0	-0.5	12.0	-5.0	500.0	-0.6	6.0	20.0	7.0	10.0
17467S	65.397	145.989	B-4	7	9	31	0	-0.5	30.0	7.0	400.0	-0.9	23.0	80.0	2.0	67.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17363S	4.0	6.0	4.0	0.62	-200.0	36.0	150.0	0.6	15.4	-5.0	-1.0	16.0	5.5	-4.0
17364S	3.3	7.0	-4.0	1.00	-200.0	14.0	170.0	1.2	12.6	-5.0	-1.0	12.0	3.5	-4.0
17368S	3.8	8.0	-4.0	0.54	-200.0	18.0	130.0	3.7	11.3	-5.0	1.0	11.0	2.8	6.0
17373S	4.3	6.0	5.0	1.00	-300.0	90.0	120.0	1.3	16.3	-9.0	-2.0	11.0	2.8	17.0
17386S	3.5	8.0	-5.0	1.10	-200.0	16.0	120.0	0.6	15.6	-5.0	-1.0	15.0	3.4	-5.0
17387S	3.4	6.0	-4.0	0.72	-200.0	24.0	100.0	0.9	14.1	12.0	-1.0	10.0	4.8	-4.0
17388S	4.6	6.0	-4.0	0.63	-200.0	20.0	240.0	2.6	15.4	-5.0	-1.0	17.0	5.2	6.0
17391S	4.3	8.0	-5.0	0.89	-300.0	30.0	190.0	0.9	16.5	25.0	-2.0	17.0	5.7	-4.0
17395S	3.9	9.0	-4.0	0.76	-200.0	24.0	150.0	1.2	15.4	5.0	-1.0	16.0	4.0	-4.0
17400S	4.0	8.0	-4.0	1.50	-200.0	12.0	80.0	0.8	13.6	-5.0	-1.0	8.4	3.5	-4.0
17402S	3.9	4.0	-4.0	0.63	-200.0	8.0	70.0	6.9	14.8	-5.0	1.0	6.8	2.7	11.0
17410S	3.8	11.0	-4.0	0.98	-200.0	10.0	100.0	0.6	14.0	-5.0	-2.0	16.0	3.8	-4.0
17411S	3.0	9.0	-4.0	1.40	-200.0	8.0	80.0	1.6	9.4	-5.0	-1.0	17.0	14.8	4.0
17412S	3.9	9.0	-4.0	0.95	-200.0	92.0	190.0	0.9	13.7	-5.0	-1.0	17.0	4.9	-4.0
17416S	3.9	9.0	-4.0	1.20	-200.0	14.0	130.0	1.5	14.7	-5.0	-1.0	13.0	3.5	4.0
17428S	4.2	4.0	-4.0	0.65	-200.0	12.0	50.0	6.6	16.2	-5.0	-1.0	7.3	2.4	6.0
17437S	3.0	5.0	-4.0	0.79	-200.0	14.0	120.0	1.1	10.0	-5.0	-1.0	10.0	4.7	-4.0
17438S	2.8	7.0	4.0	0.34	-200.0	16.0	80.0	3.1	8.0	-5.0	-1.0	8.0	2.0	7.0
17452S	3.2	7.0	-4.0	0.71	-200.0	14.0	90.0	0.4	10.4	-5.0	2.0	13.0	3.5	-4.0
17454S	3.8	5.0	-5.0	0.65	-200.0	18.0	110.0	1.8	15.0	-5.0	-1.0	14.0	2.5	-5.0
17458S	3.7	12.0	-4.0	1.50	-300.0	180.0	450.0	0.9	14.3	-18.0	3.0	110.0	45.4	-6.0
17459S	4.8	8.0	-4.0	0.97	-200.0	14.0	200.0	1.1	15.1	-5.0	1.0	17.0	3.8	-4.0
17464S	3.3	11.0	-4.0	1.10	-200.0	20.0	110.0	1.1	12.8	-5.0	-1.0	20.0	10.5	4.0
17465S	2.6	14.0	11.0	2.00	-200.0	30.0	540.0	0.8	9.0	-5.0	2.0	64.0	17.6	-6.0
17467S	4.4	7.0	-4.0	0.73	-200.0	8.0	70.0	16.0	15.1	-5.0	-1.0	8.5	2.4	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17363S	94.0	57.0	99.0	6.8	1.0	3.6	0.5
17364S	80.0	45.0	78.0	5.5	2.1	2.6	0.3
17368S	72.0	40.0	71.0	5.0	1.4	2.7	0.4
17373S	460.0	38.0	85.0	6.9	1.7	2.9	0.4
17386S	60.0	54.0	99.0	8.2	0.9	3.5	0.5
17387S	91.0	40.0	62.0	6.8	2.2	4.0	0.6
17388S	99.0	59.0	98.0	8.9	1.5	2.9	0.4
17391S	110.0	62.0	107.0	9.9	2.9	3.2	0.6
17395S	78.0	60.0	110.0	7.1	2.1	2.9	0.5
17400S	79.0	44.0	76.0	5.2	1.5	2.4	0.4
17402S	71.0	24.0	46.0	4.4	0.9	2.2	0.3
17410S	67.0	60.0	116.0	10.3	1.6	3.4	0.5
17411S	66.0	49.0	81.0	7.7	1.6	3.5	0.7
17412S	170.0	65.0	112.0	7.4	1.5	4.2	0.5
17416S	65.0	44.0	70.0	4.8	0.9	2.3	0.4
17428S	60.0	24.0	51.0	4.6	1.1	2.5	0.3
17437S	100.0	38.0	62.0	4.3	0.2	1.9	0.4
17438S	57.0	30.0	57.0	3.8	1.3	2.0	0.3
17452S	78.0	46.0	80.0	7.3	1.7	2.6	0.4
17454S	67.0	51.0	86.0	9.1	1.5	3.0	0.6
17458S	390.0	144.0	230.0	39.7	1.7	18.6	2.8
17459S	150.0	61.0	105.0	6.2	1.5	3.6	0.5
17464S	100.0	59.0	101.0	6.9	2.8	4.4	0.6
17465S	130.0	110.0	202.0	12.0	0.5	9.8	1.2
17467S	54.0	33.0	69.0	4.3	1.7	2.2	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17471S	65.488	146.946	B-6	8	4	28	0	-0.5	9.0	-10.0	800.0	-2.2	16.0	100.0	4.0	15.0
17474S	65.675	146.719	C-6	10	5	21	0	-0.5	6.0	12.0	900.0	2.6	17.0	70.0	9.0	28.0
17483S	0.000	0.000	B-6	8	5	30	0	-0.5	11.0	-5.0	400.0	-0.5	12.0	40.0	4.0	16.0
17484S	65.458	145.936	B-4	7	9	5	0	-0.5	94.0	13.0	600.0	-0.7	18.0	80.0	11.0	85.0
17492S	65.380	146.669	B-6	6	5	2	0	-0.5	20.0	-6.0	600.0	-1.1	14.0	70.0	9.0	12.0
17496S	65.598	146.955	C-6	9	4	20	0	-0.5	10.0	-8.0	500.0	-1.8	11.0	50.0	6.0	45.0
17503S	65.641	146.957	C-6	9	4	5	0	-0.5	10.0	-6.0	900.0	1.8	16.0	90.0	8.0	26.0
17506S	65.611	146.698	C-6	9	5	15	0	-0.5	4.0	-10.0	700.0	-2.5	9.0	30.0	8.0	12.0
17508S	65.665	146.628	C-6	10	5	25	0	1.5	11.0	-14.0	1000.0	-3.0	11.0	80.0	20.0	22.0
17510S	65.530	146.568	C-6	8	6	8	0	-0.5	12.0	12.0	900.0	-2.3	8.0	60.0	8.0	11.0
17521S	65.612	146.895	C-6	9	4	15	0	1.0	16.0	-8.0	800.0	-1.7	17.0	90.0	13.0	39.0
17522S	65.627	146.822	C-6	9	4	12	0	-0.5	5.0	-9.0	600.0	-2.1	6.0	40.0	5.0	10.0
17527S	65.628	146.840	C-6	9	4	11	0	-0.5	19.0	-10.0	800.0	-1.7	12.0	70.0	9.0	11.0
17529S	65.385	146.565	B-6	7	6	32	0	-0.5	25.0	-11.0	600.0	-1.9	13.0	70.0	9.0	23.0
17533S	65.486	145.770	B-4	8	10	30	0	-0.5	23.0	-5.0	300.0	-1.1	9.0	40.0	2.0	15.0
17542S	65.397	146.418	B-5	7	6	36	0	-0.5	12.0	-6.0	400.0	-1.2	9.0	40.0	2.0	22.0
17544S	65.535	146.844	C-6	8	4	12	0	-0.5	7.0	-6.0	900.0	2.1	11.0	80.0	6.0	16.0
17548S	65.394	146.769	B-6	7	5	32	0	-0.5	9.0	12.0	800.0	-1.6	13.0	80.0	3.0	13.0
17553S	65.542	146.023	C-5	8	8	1	0	-0.5	14.0	-5.0	400.0	-0.6	9.0	30.0	3.0	14.0
17554S	65.520	146.190	C-5	8	8	18	0	-0.5	11.0	-5.0	400.0	-0.7	10.0	40.0	2.0	18.0
17555S	65.470	145.780	B-4	7	10	6	0	-0.5	61.0	12.0	400.0	-1.0	13.0	40.0	2.0	20.0
17560S	65.532	146.949	C-6	8	4	9	0	-0.5	10.0	8.0	900.0	-1.4	26.0	100.0	11.0	21.0
17565S	65.581	146.904	C-6	9	4	27	0	1.5	18.0	-7.0	800.0	-1.5	17.0	70.0	19.0	41.0
17570S	65.519	145.967	C-4	8	9	18	0	-0.5	24.0	11.0	500.0	-0.6	19.0	50.0	4.0	26.0
17575S	65.490	146.410	B-5	8	6	25	0	-0.5	22.0	-9.0	600.0	-1.7	18.0	70.0	6.0	29.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17471S	3.5	6.0	-5.0	0.92	-300.0	22.0	80.0	0.8	14.1	-6.0	-2.0	15.0	4.2	-4.0
17474S	3.2	8.0	-4.0	1.00	-200.0	16.0	150.0	0.7	13.8	-5.0	-1.0	12.0	4.4	-4.0
17483S	3.2	6.0	4.0	0.85	-200.0	10.0	200.0	0.9	9.1	-5.0	1.0	14.0	5.6	-6.0
17484S	3.6	8.0	-4.0	1.00	-200.0	16.0	70.0	0.9	14.7	-5.0	-1.0	9.9	3.5	14.0
17492S	3.3	8.0	-4.0	1.00	-200.0	14.0	100.0	1.4	11.9	-5.0	-1.0	11.0	4.0	4.0
17496S	2.9	7.0	-4.0	1.00	-200.0	68.0	330.0	1.8	9.8	-5.0	-2.0	30.0	18.8	6.0
17503S	4.0	9.0	-4.0	0.92	-200.0	44.0	180.0	1.2	15.1	-5.0	-1.0	15.0	3.6	-4.0
17506S	2.5	11.0	-4.0	1.80	-300.0	140.0	410.0	0.2	9.0	-6.0	-2.0	61.0	33.2	5.0
17508S	4.2	11.0	-4.0	1.30	-300.0	170.0	330.0	1.3	17.6	-5.0	3.0	110.0	37.8	-7.0
17510S	3.1	12.0	-4.0	1.60	-300.0	14.0	150.0	0.5	12.0	-5.0	-2.0	36.0	127.0	-5.0
17521S	4.0	8.0	-4.0	1.10	-300.0	62.0	260.0	1.3	14.6	-9.0	-1.0	37.0	33.7	-4.0
17522S	2.8	10.0	-4.0	2.10	-200.0	38.0	460.0	0.5	9.2	-5.0	4.0	57.0	37.1	5.0
17527S	3.5	7.0	-4.0	0.87	-200.0	44.0	150.0	1.0	12.3	-5.0	-1.0	16.0	48.4	11.0
17529S	3.7	8.0	-4.0	0.92	-300.0	18.0	130.0	1.3	13.1	-9.0	-1.0	15.0	52.6	9.0
17533S	2.7	5.0	5.0	0.42	-200.0	6.0	60.0	2.0	7.9	-5.0	-1.0	5.1	1.4	-4.0
17542S	2.5	6.0	-4.0	0.65	-200.0	18.0	110.0	0.8	7.6	-5.0	-1.0	11.0	3.3	-4.0
17544S	3.2	5.0	-4.0	0.90	-200.0	16.0	70.0	0.9	13.6	-5.0	-1.0	9.9	2.6	-4.0
17548S	3.4	8.0	-4.0	1.10	-200.0	10.0	140.0	1.1	12.7	-5.0	-1.0	15.0	3.8	-5.0
17553S	2.2	8.0	-4.0	0.83	-200.0	6.0	70.0	0.9	6.7	-5.0	-1.0	7.9	2.2	23.0
17554S	2.7	8.0	-4.0	1.00	-200.0	8.0	80.0	1.5	8.3	13.0	-1.0	11.0	4.4	-4.0
17555S	3.1	6.0	-4.0	0.45	-200.0	8.0	80.0	11.0	10.5	-6.0	-1.0	8.8	2.3	37.0
17560S	4.2	9.0	9.0	0.91	-200.0	28.0	110.0	1.1	15.2	-5.0	1.0	16.0	3.6	-4.0
17565S	3.4	6.0	-4.0	1.00	200.0	130.0	430.0	1.8	12.4	-5.0	2.0	26.0	9.9	-4.0
17570S	2.9	6.0	-4.0	0.61	-200.0	10.0	60.0	1.1	9.1	-5.0	-1.0	8.2	2.5	35.0
17575S	4.1	9.0	-4.0	1.30	-200.0	12.0	120.0	1.2	13.1	-5.0	-1.0	19.0	8.4	8.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17471S	74.0	53.0	87.0	8.6	2.0	2.8	0.4
17474S	91.0	49.0	85.0	5.8	2.0	3.0	0.5
17483S	95.0	37.0	63.0	4.0	1.1	2.5	0.4
17484S	88.0	37.0	71.0	4.8	1.8	2.6	0.4
17492S	77.0	42.0	70.0	4.6	1.6	2.6	0.4
17496S	320.0	72.0	123.0	12.8	0.9	6.9	1.2
17503S	130.0	52.0	83.0	5.9	2.2	2.6	0.4
17506S	270.0	145.0	214.0	13.3	-1.7	8.3	1.3
17508S	310.0	161.0	259.0	46.3	1.4	19.3	3.1
17510S	69.0	91.0	151.0	15.5	-0.8	5.5	-0.1
17521S	290.0	79.0	151.0	15.5	-1.2	10.4	1.8
17522S	180.0	96.0	161.0	18.9	-0.8	10.0	1.7
17527S	230.0	48.0	82.0	9.1	1.7	3.2	0.5
17529S	89.0	52.0	78.0	9.6	2.0	3.3	1.1
17533S	54.0	17.0	36.0	2.9	0.9	1.4	0.2
17542S	54.0	35.0	66.0	5.4	1.5	2.3	0.4
17544S	69.0	39.0	80.0	4.9	2.0	2.9	0.4
17548S	63.0	49.0	83.0	8.0	1.5	3.0	0.5
17553S	40.0	27.0	59.0	3.0	-0.2	2.1	0.3
17554S	59.0	34.0	51.0	3.9	1.2	2.2	0.4
17555S	71.0	26.0	48.0	4.8	0.6	2.1	0.3
17560S	82.0	54.0	100.0	6.3	-0.2	3.1	0.5
17565S	340.0	76.0	140.0	10.6	2.5	7.3	1.1
17570S	65.0	29.0	53.0	3.4	0.7	1.8	0.3
17575S	86.0	55.0	97.0	8.7	1.0	3.0	0.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17586S	65.519	146.182	C-5	8	8	18	0	-0.5	11.0	-5.0	600.0	-0.7	10.0	60.0	2.0	21.0
17589S	65.414	146.162	B-5	7	8	20	0	-0.5	33.0	-5.0	600.0	1.2	14.0	60.0	3.0	23.0
17591S	65.556	146.369	C-6	8	6	5	0	-0.5	7.0	-10.0	800.0	-1.6	15.0	90.0	5.0	33.0
17599S	65.484	146.684	B-6	8	5	34	0	-0.5	15.0	-12.0	700.0	-1.9	17.0	40.0	23.0	7.5
17604S	65.420	146.552	B-6	7	6	20	0	-0.5	17.0	-12.0	700.0	-2.1	9.0	70.0	17.0	9.5
17606S	65.549	146.326	C-5	8	7	4	0	-0.5	50.0	-8.0	700.0	-1.8	11.0	70.0	3.0	16.0
17610S	65.440	146.690	B-6	7	5	15	0	-0.5	12.0	-6.0	600.0	-1.0	12.0	50.0	5.0	15.0
17613S	65.626	146.894	C-6	9	4	10	0	0.5	14.0	-7.0	800.0	-0.6	23.0	90.0	9.0	36.0
17614S	65.477	145.650	B-4	8	10	34	0	-0.5	34.0	12.0	400.0	1.1	12.0	50.0	2.0	18.0
17616S	65.593	146.944	C-6	9	4	21	0	-0.5	10.0	-8.0	500.0	-1.8	9.0	60.0	6.0	43.0
17619S	65.460	146.583	B-6	7	6	6	0	-0.5	12.0	-10.0	900.0	-2.1	11.0	90.0	4.0	14.0
17622S	65.658	146.851	C-6	10	4	26	0	-0.5	12.0	-5.0	800.0	-0.5	16.0	70.0	5.0	32.0
17625S	65.537	146.635	C-6	8	5	12	0	-0.5	11.0	12.0	700.0	-2.1	15.0	80.0	6.0	14.0
17626S	65.570	146.659	C-6	9	5	35	0	-0.5	3.0	-10.0	800.0	-1.9	13.0	70.0	4.0	26.0
17629S	65.658	146.862	C-6	10	4	26	0	-0.5	12.0	-6.0	800.0	-0.5	17.0	70.0	5.0	25.0
17631S	65.399	146.348	B-5	7	7	29	0	-0.5	45.0	-12.0	800.0	-2.1	25.0	90.0	13.0	17.0
17637S	65.481	145.648	B-4	8	10	34	0	-0.5	30.0	-8.0	600.0	-1.4	10.0	60.0	2.0	24.0
17638S	65.515	145.848	C-4	8	9	14	0	-0.5	10.0	-5.0	500.0	0.9	16.0	60.0	3.0	15.0
17643S	65.600	146.893	C-6	9	4	15	0	0.5	11.0	-7.0	900.0	3.1	14.0	50.0	7.0	18.0
17645S	65.426	146.627	B-6	7	5	24	0	-0.5	14.0	-12.0	700.0	-2.0	9.0	60.0	14.0	13.0
17648S	65.511	145.656	C-4	8	10	22	0	-0.5	89.0	14.0	400.0	-1.5	12.0	60.0	2.0	31.0
17653S	65.489	146.224	B-5	8	7	25	27	-0.5	9.0	-5.0	600.0	-0.8	11.0	40.0	7.0	16.0
17657S	65.411	146.143	B-5	7	8	29	0	-0.5	35.0	-5.0	500.0	-0.9	13.0	60.0	4.0	22.0
17659S	65.550	146.370	C-5	8	7	5	0	1.5	190.0	-11.0	1000.0	-2.0	14.0	80.0	9.0	30.0
17661S	65.636	146.460	C-5	9	6	3	0	-0.5	6.0	-5.0	600.0	-0.9	13.0	60.0	4.0	16.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17586S	2.8	7.0	-4.0	0.98	-200.0	14.0	110.0	1.3	9.8	-5.0	-1.0	10.0	4.5	-4.0
17589S	3.5	8.0	-4.0	0.77	-200.0	36.0	90.0	5.8	11.8	-5.0	-1.0	14.0	9.6	-4.0
17591S	5.0	7.0	-4.0	0.65	-200.0	24.0	220.0	0.6	17.5	-5.0	2.0	20.0	4.8	-5.0
17599S	3.6	15.0	-4.0	2.50	-400.0	20.0	290.0	0.7	9.7	-8.0	6.0	49.0	85.1	-4.0
17604S	3.0	8.0	-4.0	1.80	300.0	14.0	300.0	1.5	11.3	-5.0	4.0	34.0	34.1	14.0
17606S	3.0	8.0	-4.0	1.40	-200.0	50.0	150.0	4.3	10.8	-5.0	-2.0	16.0	4.0	-4.0
17610S	3.0	10.0	-4.0	1.30	-200.0	14.0	90.0	1.4	9.6	-5.0	2.0	16.0	12.6	-4.0
17613S	3.8	8.0	-4.0	0.73	-200.0	42.0	150.0	1.9	14.9	-5.0	1.0	15.0	5.7	-9.0
17614S	3.2	7.0	-4.0	0.86	-200.0	8.0	90.0	17.0	12.1	7.0	-1.0	8.1	2.3	-4.0
17616S	3.1	6.0	55.0	1.10	-200.0	58.0	400.0	3.0	11.1	-16.0	3.0	38.0	9.5	8.0
17619S	4.6	8.0	6.0	1.50	-300.0	16.0	190.0	1.0	15.3	-6.0	-2.0	17.0	4.2	-6.0
17622S	4.2	7.0	-4.0	0.94	-200.0	36.0	190.0	0.7	12.2	-5.0	1.0	16.0	4.2	-7.0
17625S	3.5	11.0	-4.0	1.60	-200.0	12.0	160.0	0.8	13.2	-5.0	2.0	33.0	19.8	8.0
17626S	3.0	7.0	5.0	0.71	-300.0	20.0	80.0	0.5	12.6	-9.0	-2.0	11.0	3.2	-4.0
17629S	4.5	7.0	-4.0	0.98	-200.0	68.0	200.0	0.8	13.3	-5.0	1.0	18.0	4.7	-8.0
17631S	3.7	7.0	8.0	0.89	-300.0	20.0	170.0	4.2	14.8	-5.0	-2.0	15.0	5.4	-6.0
17637S	3.2	6.0	-4.0	0.74	300.0	10.0	-40.0	16.0	11.6	-5.0	-1.0	8.3	2.2	-4.0
17638S	4.1	7.0	-4.0	0.59	-200.0	8.0	120.0	1.7	12.1	-5.0	-1.0	7.7	2.0	-4.0
17643S	3.4	12.0	31.0	1.60	-200.0	58.0	250.0	1.0	13.0	-5.0	3.0	76.0	44.8	6.0
17645S	2.6	6.0	-4.0	1.40	-300.0	18.0	250.0	0.8	12.9	-5.0	-2.0	18.0	17.9	9.0
17648S	3.7	9.0	-4.0	0.64	200.0	20.0	120.0	8.8	12.5	-5.0	-1.0	12.0	2.4	-4.0
17653S	2.7	6.0	-4.0	1.10	-200.0	12.0	260.0	0.9	8.2	-5.0	-1.0	12.0	6.4	5.0
17657S	3.2	7.0	-4.0	0.79	300.0	36.0	160.0	5.7	11.4	-5.0	-1.0	13.0	9.4	-4.0
17659S	3.4	6.0	-4.0	0.83	-300.0	110.0	130.0	2.1	12.1	-11.0	-2.0	17.0	177.0	8.0
17661S	3.2	10.0	-4.0	0.89	-200.0	14.0	120.0	0.4	10.6	9.0	-1.0	14.0	3.4	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17586S	69.0	38.0	64.0	4.2	0.7	2.3	0.3
17589S	110.0	45.0	75.0	6.1	1.5	3.8	0.7
17591S	94.0	61.0	103.0	9.9	1.6	3.7	0.5
17599S	95.0	115.0	161.0	9.6	-1.7	6.3	-0.1
17604S	53.0	60.0	108.0	14.3	1.1	6.8	1.5
17606S	85.0	53.0	95.0	7.8	1.4	2.9	0.4
17610S	68.0	48.0	77.0	5.2	1.5	3.0	0.6
17613S	240.0	60.0	91.0	6.3	1.8	3.5	0.4
17614S	45.0	33.0	52.0	3.8	1.1	2.1	0.3
17616S	300.0	79.0	136.0	13.0	1.0	7.4	1.0
17619S	61.0	59.0	105.0	8.9	2.2	2.9	0.5
17622S	180.0	55.0	89.0	6.0	1.5	3.4	0.4
17625S	74.0	89.0	146.0	13.4	0.9	5.0	1.2
17626S	73.0	44.0	90.0	7.7	1.8	3.1	0.5
17629S	170.0	58.0	98.0	5.9	1.3	3.3	0.4
17631S	86.0	58.0	114.0	9.8	2.5	3.3	0.5
17637S	57.0	32.0	59.0	5.5	1.0	2.0	0.4
17638S	50.0	32.0	60.0	3.7	1.2	2.1	0.3
17643S	190.0	102.0	215.0	18.0	-1.1	16.7	2.6
17645S	29.0	42.0	74.0	7.4	-0.7	3.9	0.8
17648S	64.0	44.0	75.0	6.9	1.6	3.0	0.3
17653S	61.0	31.0	50.0	3.5	-0.6	2.4	0.4
17657S	110.0	40.0	72.0	5.6	0.9	4.5	0.7
17659S	230.0	52.0	76.0	10.5	1.1	3.2	-0.1
17661S	69.0	54.0	88.0	6.1	1.7	3.4	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17668S	65.469	146.112	B-5	7	8	4	0	-0.5	11.0	-9.0	700.0	-1.9	19.0	90.0	3.0	23.0
17669S	65.502	146.316	C-5	8	7	21	0	-0.5	6.0	-9.0	800.0	-1.9	13.0	80.0	3.0	14.0
17674S	65.448	146.666	B-6	7	5	11	0	-0.5	11.0	-5.0	600.0	-0.5	11.0	40.0	6.0	10.0
17675S	65.617	146.932	C-6	9	4	9	0	0.5	9.0	10.0	900.0	-0.6	18.0	100.0	10.0	38.0
17684S	65.507	146.315	C-5	8	7	21	0	-0.5	6.0	-9.0	700.0	-1.8	15.0	90.0	2.0	13.0
17688S	65.571	146.930	C-6	9	4	28	0	-0.5	8.0	-5.0	700.0	-1.2	16.0	80.0	9.0	28.0
17698S	65.647	146.821	C-6	10	4	36	0	-0.5	11.0	10.0	700.0	-1.6	21.0	70.0	7.0	38.0
17701S	65.430	145.968	B-4	7	9	18	0	-0.5	68.0	7.0	300.0	-0.9	8.0	50.0	3.0	26.0
17705S	65.552	146.311	C-5	8	7	4	0	-0.5	35.0	-7.0	500.0	-1.5	9.0	50.0	4.0	12.0
17712S	65.677	146.518	C-6	10	6	21	0	-0.5	5.0	-10.0	600.0	-2.6	6.0	40.0	5.0	16.0
17719S	65.597	146.416	C-5	9	6	24	0	-0.5	21.0	-9.0	500.0	-2.0	10.0	70.0	7.0	17.0
17721S	65.651	146.402	C-5	10	6	36	0	-0.5	10.0	-9.0	700.0	2.7	16.0	100.0	3.0	28.0
17722S	65.573	146.844	C-6	9	4	26	0	-0.5	15.0	19.0	1400.0	-3.4	7.0	70.0	5.0	18.0
17724S	65.383	146.161	B-5	6	8	5	0	-0.5	55.0	-5.0	500.0	-0.8	22.0	60.0	3.0	19.0
17727S	65.649	146.893	C-6	10	4	34	3	-0.5	11.0	11.0	1200.0	-0.8	12.0	60.0	5.0	30.0
17730S	65.542	146.243	C-5	8	7	11	0	-0.5	10.0	-8.0	600.0	-1.6	9.0	90.0	2.0	14.0
17731S	65.563	146.265	C-5	9	7	34	0	-0.5	8.0	-9.0	800.0	-0.8	15.0	70.0	3.0	19.0
17734S	65.518	146.179	C-5	8	8	18	0	-0.5	8.0	-7.0	500.0	-1.6	9.0	60.0	6.0	15.0
17743S	65.414	146.553	B-6	7	6	20	0	0.5	35.0	-14.0	700.0	-2.0	25.0	100.0	20.0	74.0
17749S	65.588	146.758	C-6	9	5	20	0	0.5	19.0	-11.0	900.0	-2.4	6.0	60.0	7.0	41.0
17750S	65.460	146.350	B-5	7	7	5	0	-0.5	16.0	-8.0	400.0	-1.5	11.0	40.0	14.0	12.0
17761S	65.385	146.107	B-5	7	8	33	0	0.5	160.0	9.0	700.0	-1.2	12.0	90.0	3.0	14.0
17764S	65.407	146.608	B-6	7	6	30	0	-0.5	16.0	-8.0	500.0	-1.7	13.0	60.0	12.0	31.0
17767S	65.647	146.395	C-5	10	6	36	0	-0.5	8.0	-8.0	600.0	-1.7	13.0	70.0	2.0	24.0
17768S	65.426	145.890	B-4	7	9	21	0	-0.5	120.0	5.0	700.0	1.8	16.0	80.0	4.0	35.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17668S	3.6	11.0	-4.0	0.93	-300.0	16.0	130.0	1.0	12.0	-6.0	-2.0	13.0	6.1	-4.0
17669S	2.9	15.0	-4.0	1.20	-300.0	16.0	70.0	0.9	11.9	-9.0	3.0	13.0	4.8	-4.0
17674S	2.7	6.0	-4.0	1.20	-200.0	6.0	190.0	1.5	7.9	-5.0	1.0	15.0	8.6	-6.0
17675S	4.3	8.0	4.0	0.80	-200.0	92.0	190.0	1.2	16.5	-5.0	-1.0	16.0	4.7	-10.0
17684S	3.2	13.0	-4.0	1.40	300.0	12.0	90.0	0.9	13.3	-6.0	3.0	12.0	4.5	-4.0
17688S	3.3	10.0	-4.0	0.81	300.0	54.0	140.0	0.9	13.3	-5.0	-1.0	14.0	4.1	-4.0
17698S	3.7	11.0	-4.0	1.20	-200.0	74.0	180.0	0.9	13.2	-5.0	-1.0	30.0	13.8	-4.0
17701S	2.4	6.0	-4.0	0.45	-200.0	12.0	70.0	1.8	8.7	-6.0	-1.0	7.3	1.8	18.0
17705S	2.6	11.0	-4.0	0.95	-200.0	18.0	120.0	5.6	8.8	-5.0	-1.0	14.0	5.0	6.0
17712S	2.5	25.0	-4.0	1.10	-200.0	54.0	320.0	0.3	8.6	-5.0	4.0	110.0	24.1	19.0
17719S	2.7	9.0	-4.0	1.40	-200.0	16.0	200.0	0.6	10.3	-9.0	4.0	23.0	16.0	20.0
17721S	4.1	12.0	-5.0	1.20	-300.0	12.0	80.0	0.8	15.5	-9.0	-2.0	14.0	5.3	8.0
17722S	3.1	9.0	-4.0	1.40	-300.0	30.0	170.0	0.8	13.1	13.0	-2.0	83.0	265.0	18.0
17724S	3.3	6.0	-4.0	0.32	-200.0	30.0	100.0	15.0	10.7	-5.0	-1.0	11.0	3.7	4.0
17727S	12.9	5.0	-4.0	0.46	-200.0	42.0	130.0	1.7	10.9	-5.0	-1.0	12.0	3.9	-4.0
17730S	2.7	11.0	-4.0	1.30	-200.0	12.0	-40.0	1.3	11.9	-5.0	-1.0	11.0	3.2	6.0
17731S	3.3	12.0	-4.0	1.10	-200.0	18.0	140.0	2.7	12.9	-7.0	-1.0	13.0	3.8	-4.0
17734S	2.7	10.0	-4.0	1.30	-200.0	8.0	230.0	0.7	9.0	-5.0	-1.0	15.0	10.1	4.0
17743S	6.0	6.0	-4.0	0.99	-300.0	58.0	170.0	2.5	18.3	-5.0	-2.0	19.0	11.5	-7.0
17749S	2.6	7.0	-4.0	0.91	-300.0	110.0	190.0	0.8	10.9	-5.0	-2.0	55.0	102.0	7.0
17750S	2.9	4.0	-4.0	1.90	-200.0	10.0	500.0	0.7	8.2	-5.0	2.0	20.0	19.5	-4.0
17761S	3.5	6.0	-4.0	0.81	-200.0	20.0	80.0	4.2	12.7	-5.0	-1.0	10.0	3.7	-4.0
17764S	2.8	8.0	-4.0	1.50	300.0	20.0	220.0	0.9	10.3	-8.0	3.0	23.0	12.4	34.0
17767S	3.6	16.0	-4.0	1.20	-200.0	8.0	160.0	0.8	12.2	-5.0	4.0	19.0	7.1	77.0
17768S	4.2	7.0	6.0	0.75	-200.0	16.0	140.0	2.7	14.1	-5.0	-1.0	10.0	6.9	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17668S	97.0	46.0	75.0	7.7	2.1	2.5	0.5
17669S	67.0	48.0	78.0	7.5	1.5	3.1	0.4
17674S	75.0	36.0	61.0	3.6	0.8	2.3	0.3
17675S	270.0	59.0	96.0	6.6	2.0	3.2	0.5
17684S	65.0	45.0	81.0	7.4	-0.7	3.2	0.5
17688S	170.0	50.0	88.0	5.8	1.6	3.0	0.4
17698S	190.0	96.0	159.0	13.1	2.2	8.0	1.2
17701S	59.0	24.0	55.0	4.1	0.5	1.7	0.3
17705S	59.0	44.0	75.0	6.5	1.5	2.7	0.4
17712S	220.0	226.0	395.0	34.1	-1.0	14.0	2.3
17719S	70.0	59.0	100.0	9.6	0.9	4.5	0.8
17721S	67.0	55.0	93.0	9.0	1.5	3.5	0.6
17722S	170.0	173.0	319.0	41.4	-1.2	18.8	2.7
17724S	88.0	35.0	67.0	4.3	1.1	2.5	0.4
17727S	97.0	43.0	66.0	4.3	1.4	2.1	0.3
17730S	55.0	40.0	61.0	6.6	1.1	2.8	0.4
17731S	63.0	53.0	86.0	8.5	2.3	3.5	0.6
17734S	60.0	42.0	71.0	7.1	-0.6	3.5	0.6
17743S	150.0	68.0	121.0	12.0	1.9	4.2	0.7
17749S	1100.0	88.0	151.0	22.9	-0.8	12.1	2.7
17750S	75.0	39.0	69.0	7.8	0.6	5.2	0.9
17761S	51.0	42.0	65.0	4.8	2.0	2.1	0.3
17764S	75.0	47.0	91.0	9.6	1.4	4.2	0.8
17767S	61.0	61.0	97.0	9.6	1.8	4.2	0.6
17768S	88.0	47.0	76.0	6.0	1.3	2.5	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17770S	65.578	146.613	C-6	9	5	25	0	-0.5	6.0	-8.0	700.0	-1.7	12.0	70.0	2.0	35.0
17773S	65.456	146.414	B-5	7	6	1	0	-0.5	8.0	-6.0	100.0	1.5	-5.0	-10.0	15.0	5.5
17785S	65.565	146.956	C-6	9	4	32	0	-0.5	9.0	-6.0	800.0	-1.1	16.0	100.0	12.0	31.0
17786S	65.404	146.669	B-6	7	5	26	0	-0.5	18.0	10.0	600.0	-1.4	10.0	60.0	14.0	14.0
17788S	65.535	146.296	C-5	8	7	10	28	-0.5	9.0	-7.0	600.0	-1.5	13.0	60.0	2.0	18.0
17790S	65.442	146.524	B-6	7	6	9	0	-0.5	48.0	-14.0	500.0	-2.4	7.0	60.0	26.0	15.0
17792S	65.535	146.486	C-5	8	6	10	0	-0.5	14.0	-9.0	600.0	-1.9	11.0	60.0	3.0	17.0
17794S	65.570	146.895	C-6	9	4	34	0	1.5	24.0	-11.0	700.0	-0.9	130.0	60.0	16.0	59.0
17795S	65.395	146.425	B-5	7	6	36	0	-0.5	12.0	-5.0	400.0	-1.1	8.0	30.0	2.0	20.0
17797S	65.445	146.836	B-6	7	4	12	0	-0.5	7.0	-7.0	700.0	-1.4	40.0	80.0	5.0	20.0
17802S	65.398	146.564	B-6	7	6	32	0	-0.5	22.0	-9.0	800.0	1.6	12.0	60.0	9.0	21.0
17803S	65.612	146.933	C-6	9	4	16	0	-0.5	8.0	7.0	600.0	-1.7	10.0	80.0	9.0	-0.5
17804S	65.682	146.639	C-6	10	5	23	0	-0.5	15.0	-6.0	900.0	1.4	20.0	80.0	14.0	41.0
17805S	65.437	146.194	B-5	7	8	18	0	-0.5	9.0	-9.0	800.0	-1.9	13.0	90.0	1.0	18.0
17808S	65.649	146.748	C-6	10	5	32	0	9.0	12.0	-5.0	300.0	-0.6	5.0	20.0	7.0	9.0
17811S	65.539	146.545	C-6	8	6	8	0	-0.5	12.0	-8.0	500.0	-1.3	12.0	60.0	5.0	13.0
17813S	65.644	146.657	C-6	10	5	35	0	-0.5	10.0	5.0	600.0	1.9	10.0	40.0	9.0	30.0
17815S	65.523	146.200	C-5	8	7	13	0	-0.5	11.0	-8.0	600.0	-1.6	11.0	60.0	4.0	20.0
17823S	65.425	146.062	B-5	7	8	22	0	-0.5	120.0	-8.0	400.0	-0.6	15.0	60.0	8.0	78.0
17842S	65.494	146.956	B-6	8	4	29	0	-0.5	6.0	-9.0	700.0	-1.9	13.0	90.0	3.0	14.0
17861S	65.562	146.752	C-6	9	5	32	0	-0.5	8.0	-10.0	700.0	-2.3	11.0	60.0	5.0	15.0
17863S	65.516	145.963	C-4	8	9	18	0	-0.5	27.0	-7.0	600.0	-1.4	24.0	60.0	4.0	24.0
17864S	65.603	146.993	C-6	9	4	18	0	-0.5	10.0	-8.0	800.0	-1.5	19.0	120.0	5.0	49.0
17873S	65.442	146.400	B-5	7	7	7	0	-0.5	31.0	-11.0	800.0	-0.5	11.0	90.0	13.0	24.0
17875S	65.473	146.198	B-5	8	7	36	0	-0.5	9.0	-10.0	800.0	3.3	14.0	80.0	3.0	24.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17770S	3.5	6.0	-4.0	0.51	-200.0	18.0	100.0	0.5	11.2	-6.0	-1.0	11.0	4.1	-4.0
17773S	0.9	2.0	-4.0	2.00	-200.0	10.0	610.0	0.3	2.8	-6.0	3.0	13.0	11.7	6.0
17785S	3.9	11.0	5.0	0.99	-200.0	38.0	180.0	0.9	15.0	-5.0	-1.0	14.0	3.9	-4.0
17786S	3.1	7.0	-4.0	1.70	-200.0	28.0	310.0	1.1	10.1	15.0	3.0	22.0	15.4	15.0
17788S	3.0	10.0	-4.0	0.94	300.0	12.0	70.0	1.1	10.3	-5.0	-1.0	15.0	4.0	-4.0
17790S	3.6	9.0	-4.0	1.70	-300.0	26.0	390.0	4.2	12.8	-6.0	5.0	40.0	71.7	12.0
17792S	3.1	16.0	-4.0	1.10	-200.0	18.0	100.0	1.5	10.3	-7.0	3.0	19.0	21.7	-4.0
17794S	3.1	8.0	-4.0	1.30	-200.0	140.0	360.0	1.6	12.9	-5.0	4.0	24.0	42.6	29.0
17795S	2.2	6.0	-4.0	0.59	-200.0	12.0	70.0	0.8	5.9	-5.0	2.0	8.6	2.4	-4.0
17797S	4.1	7.0	-5.0	1.00	-200.0	20.0	100.0	0.8	14.9	-5.0	-1.0	11.0	4.1	4.0
17802S	3.4	7.0	-4.0	0.88	-200.0	18.0	160.0	1.1	10.9	-5.0	2.0	14.0	50.2	11.0
17803S	2.8	5.0	-4.0	0.67	-200.0	-2.0	130.0	1.6	13.7	-5.0	2.0	12.0	4.4	-4.0
17804S	4.2	7.0	-4.0	0.91	-200.0	100.0	190.0	1.0	15.2	-5.0	-1.0	15.0	6.0	-4.0
17805S	3.2	12.0	-4.0	1.00	-200.0	14.0	140.0	0.9	12.7	-6.0	-1.0	12.0	5.0	-4.0
17808S	2.6	12.0	-4.0	2.10	-200.0	38.0	550.0	0.6	7.9	-5.0	2.0	73.0	13.8	7.0
17811S	3.4	7.0	-4.0	1.10	-200.0	10.0	110.0	0.9	10.0	-5.0	3.0	15.0	6.7	-4.0
17813S	3.8	10.0	-4.0	1.40	-200.0	80.0	450.0	0.8	10.7	-5.0	2.0	57.0	34.4	6.0
17815S	3.0	10.0	-4.0	1.00	-200.0	14.0	60.0	1.1	10.1	-5.0	-1.0	14.0	4.4	-4.0
17823S	3.8	7.0	-4.0	0.41	-200.0	30.0	80.0	3.7	12.7	-8.0	-1.0	9.3	3.0	28.0
17842S	3.4	7.0	-5.0	0.81	-300.0	22.0	120.0	0.7	13.2	-6.0	2.0	14.0	4.0	-4.0
17861S	2.9	8.0	-4.0	1.00	-300.0	28.0	160.0	0.6	10.7	-6.0	-2.0	36.0	17.9	5.0
17863S	3.6	7.0	4.0	0.60	-200.0	10.0	80.0	1.5	12.0	-11.0	-1.0	10.0	1.4	16.0
17864S	4.0	6.0	-4.0	0.55	-200.0	26.0	150.0	1.2	14.7	-5.0	-1.0	15.0	2.4	-4.0
17873S	3.6	5.0	-4.0	1.70	-300.0	20.0	280.0	1.2	14.4	-5.0	3.0	19.0	60.2	-6.0
17875S	3.4	11.0	-4.0	1.00	-300.0	16.0	150.0	1.3	13.3	-6.0	2.0	14.0	4.5	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17770S	93.0	39.0	65.0	6.6	1.9	2.5	0.4
17773S	38.0	18.0	38.0	4.2	-0.5	3.3	0.6
17785S	120.0	59.0	104.0	6.7	1.7	3.8	0.5
17786S	79.0	48.0	85.0	9.0	1.2	4.6	0.8
17788S	64.0	50.0	80.0	7.6	1.1	3.4	0.5
17790S	81.0	70.0	120.0	14.6	-0.8	7.9	1.9
17792S	70.0	55.0	98.0	9.0	2.3	3.4	0.8
17794S	810.0	89.0	160.0	16.5	2.2	20.4	3.1
17795S	46.0	28.0	49.0	4.4	1.4	1.7	0.2
17797S	120.0	51.0	95.0	6.7	2.6	3.3	0.5
17802S	84.0	41.0	72.0	7.8	0.9	3.4	0.5
17803S	350.0	51.0	76.0	8.9	1.9	2.7	0.5
17804S	370.0	56.0	89.0	6.4	1.9	3.4	0.5
17805S	85.0	47.0	70.0	7.5	2.0	2.7	0.5
17808S	130.0	126.0	232.0	12.8	0.6	9.6	1.2
17811S	59.0	43.0	71.0	6.5	1.0	2.6	0.4
17813S	320.0	92.0	167.0	11.4	0.9	8.9	1.4
17815S	71.0	41.0	68.0	6.4	-0.6	2.6	0.4
17823S	110.0	34.0	76.0	5.9	1.7	2.2	0.3
17842S	66.0	54.0	88.0	8.5	2.2	2.9	0.4
17861S	200.0	78.0	153.0	14.4	1.1	7.4	1.2
17863S	61.0	34.0	64.0	5.9	0.8	2.4	0.3
17864S	97.0	51.0	92.0	7.8	1.3	2.6	0.4
17873S	110.0	45.0	77.0	10.3	1.5	4.8	1.3
17875S	84.0	50.0	87.0	8.1	1.4	2.6	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
17878S	65.403	146.641	B-6	7	5	25	0	-0.5	20.0	-7.0	300.0	-1.6	6.0	40.0	14.0	21.0
17885S	65.586	146.519	C-6	9	6	21	0	-0.5	5.0	-10.0	400.0	-2.0	13.0	80.0	-1.0	17.0
17886S	65.558	146.829	C-6	9	4	36	0	-0.5	9.0	-11.0	500.0	-2.0	13.0	90.0	5.0	28.0
17900S	65.553	146.713	C-6	8	5	3	0	-0.5	8.0	-11.0	600.0	-2.2	11.0	70.0	4.0	25.0
17921S	65.619	146.491	C-5	9	6	10	0	-0.5	6.0	-10.0	900.0	-2.1	13.0	90.0	4.0	29.0
17923S	65.518	145.793	C-4	8	9	13	0	-0.5	7.0	-7.0	400.0	1.4	12.0	60.0	-1.0	27.0
17924S	65.572	146.765	C-6	9	5	32	0	-0.5	12.0	-16.0	1000.0	3.7	13.0	80.0	8.0	22.0
17936S	65.396	146.763	B-6	7	5	32	0	-0.5	15.0	-9.0	500.0	-1.8	12.0	60.0	14.0	18.0
17937S	65.498	146.778	B-6	8	5	29	0	-0.5	15.0	-5.0	500.0	-0.5	13.0	60.0	6.0	18.0
17940S	65.544	146.497	C-5	8	6	3	0	-0.5	12.0	-8.0	900.0	-0.9	7.0	70.0	7.0	16.0
17949S	0.000	0.000	C-6	10	4	20	0	-0.5	21.0	12.0	1400.0	-0.5	10.0	90.0	6.0	73.0
17952S	65.464	146.619	B-6	7	5	1	0	-0.5	12.0	-5.0	500.0	0.5	10.0	40.0	5.0	10.0
17959S	65.665	146.560	C-6	10	6	29	0	-0.5	13.0	-10.0	1000.0	-1.8	13.0	90.0	7.0	19.0
17961S	65.559	146.821	C-6	9	4	36	0	-0.5	3.0	-10.0	600.0	2.7	9.0	60.0	6.0	16.0
17970S	65.457	146.406	B-5	7	6	1	0	-0.5	10.0	-7.0	200.0	-1.5	-5.0	-10.0	15.0	5.5
17972S	65.465	146.120	B-5	7	8	4	0	-0.5	7.0	8.0	800.0	-1.4	13.0	60.0	2.0	18.0
17991S	65.524	145.965	C-4	8	9	18	0	-0.5	4.0	-7.0	600.0	-1.4	13.0	60.0	1.0	17.0
17994S	65.652	146.739	C-6	10	5	32	0	-1.2	10.0	-8.0	500.0	-1.1	7.0	30.0	6.0	23.0
17998S	65.563	146.486	C-5	9	6	34	0	-0.5	21.0	-9.0	700.0	-1.4	13.0	110.0	8.0	25.0
18000S	65.487	146.592	B-6	8	6	30	0	-0.5	22.0	-9.0	300.0	-0.5	9.0	10.0	8.0	7.0
18033S	65.624	146.638	C-6	9	5	11	0	-0.5	9.0	-5.0	700.0	-1.0	14.0	90.0	7.0	36.0
18034S	65.657	146.811	C-6	10	4	36	0	-0.5	10.0	-6.0	700.0	-1.1	18.0	80.0	7.0	26.0
18037S	65.624	146.928	C-6	9	4	9	0	-0.5	12.0	-5.0	800.0	-0.5	15.0	100.0	9.0	35.0
18039S	65.438	146.116	B-5	7	8	16	0	-0.5	20.0	-8.0	600.0	-1.7	32.0	60.0	3.0	22.0
18040S	65.476	146.580	B-6	8	6	31	0	-0.5	17.0	-7.0	600.0	-1.5	10.0	40.0	3.0	15.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
17878S	2.1	6.0	-4.0	1.50	-200.0	14.0	330.0	0.8	7.3	-6.0	3.0	18.0	55.6	25.0
17885S	3.3	12.0	-5.0	0.98	-300.0	12.0	110.0	0.4	12.3	-6.0	-2.0	14.0	5.1	-4.0
17886S	3.2	6.0	10.0	0.63	-300.0	20.0	120.0	1.3	13.4	-6.0	-2.0	12.0	3.7	5.0
17900S	2.9	9.0	-6.0	0.58	-300.0	18.0	70.0	0.7	10.9	-10.0	-2.0	11.0	2.3	-5.0
17921S	4.0	14.0	-4.0	0.97	-300.0	18.0	70.0	0.7	14.9	-6.0	-2.0	15.0	4.0	-4.0
17923S	3.4	10.0	-4.0	0.58	200.0	8.0	50.0	1.2	11.6	-6.0	-1.0	8.1	2.2	4.0
17924S	3.8	10.0	-4.0	1.20	-300.0	48.0	130.0	1.3	15.3	-12.0	-2.0	61.0	102.0	14.0
17936S	3.0	6.0	-4.0	1.40	-200.0	16.0	220.0	1.2	10.9	-5.0	-1.0	17.0	16.8	13.0
17937S	3.7	6.0	-4.0	0.88	-200.0	14.0	220.0	1.2	11.1	-5.0	1.0	16.0	6.9	-7.0
17940S	2.4	11.0	-4.0	1.20	-300.0	18.0	110.0	0.9	12.9	-7.0	3.0	17.0	17.0	-4.0
17949S	4.3	7.0	10.0	0.66	-200.0	24.0	120.0	2.5	12.4	-5.0	-1.0	11.0	5.1	-8.0
17952S	2.6	5.0	-4.0	1.10	-200.0	10.0	190.0	3.4	7.6	-5.0	1.0	12.0	4.7	-6.0
17959S	3.7	7.0	-4.0	1.00	-200.0	140.0	220.0	0.9	14.8	-5.0	-1.0	21.0	5.9	-5.0
17961S	2.5	7.0	-4.0	0.94	500.0	32.0	140.0	-0.2	10.3	-7.0	3.0	23.0	11.3	7.0
17970S	0.9	3.0	-4.0	1.80	-200.0	8.0	630.0	-0.2	3.3	-5.0	3.0	15.0	10.2	8.0
17972S	3.3	9.0	-4.0	0.81	-200.0	12.0	110.0	1.0	10.3	-7.0	-1.0	12.0	5.6	-4.0
17991S	3.0	8.0	-4.0	0.87	-200.0	10.0	80.0	0.9	9.1	-5.0	2.0	9.9	2.8	-4.0
17994S	2.5	25.0	-4.0	2.00	-200.0	110.0	390.0	0.8	9.8	-5.0	2.0	98.0	21.2	-10.0
17998S	4.1	6.0	-4.0	0.88	-200.0	14.0	110.0	1.4	15.8	-5.0	1.0	14.0	3.6	-5.0
18000S	2.2	5.0	-4.0	2.20	-200.0	8.0	170.0	0.3	5.0	10.0	3.0	33.0	37.2	-4.0
18033S	4.0	10.0	11.0	0.65	-200.0	34.0	170.0	1.3	15.5	-5.0	-1.0	16.0	3.7	-4.0
18034S	4.1	8.0	-4.0	1.00	-200.0	84.0	160.0	0.7	14.2	5.0	1.0	19.0	4.4	-4.0
18037S	4.2	8.0	-4.0	0.85	-200.0	66.0	150.0	1.6	15.4	-5.0	1.0	15.0	4.9	-9.0
18039S	4.9	9.0	-4.0	0.51	-200.0	20.0	90.0	2.3	11.3	-6.0	-1.0	12.0	2.4	-4.0
18040S	2.5	5.0	-4.0	1.00	-200.0	20.0	120.0	5.9	7.4	-5.0	-1.0	12.0	7.4	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
17878S	88.0	37.0	68.0	7.8	-0.6	4.1	1.2
17885S	82.0	49.0	84.0	8.0	-0.8	3.6	0.4
17886S	71.0	40.0	85.0	7.2	1.6	2.6	0.3
17900S	80.0	44.0	77.0	7.4	1.1	2.5	0.4
17921S	88.0	63.0	107.0	10.5	2.0	3.7	0.7
17923S	50.0	32.0	57.0	5.7	0.6	2.2	0.3
17924S	480.0	114.0	195.0	28.4	1.9	12.5	2.9
17936S	91.0	47.0	76.0	8.3	1.3	3.8	0.6
17937S	96.0	44.0	74.0	4.7	0.9	2.9	0.4
17940S	61.0	51.0	80.0	9.0	1.6	3.5	0.9
17949S	55.0	43.0	69.0	4.5	1.3	2.8	0.3
17952S	61.0	33.0	52.0	3.2	0.6	2.1	0.3
17959S	250.0	65.0	107.0	11.7	1.8	4.1	0.6
17961S	130.0	60.0	110.0	11.2	1.4	5.6	1.0
17970S	44.0	21.0	41.0	4.8	0.7	3.5	0.6
17972S	70.0	37.0	75.0	5.5	1.0	2.2	0.3
17991S	66.0	33.0	63.0	5.0	1.2	1.9	0.3
17994S	360.0	163.0	253.0	15.8	0.7	13.9	1.7
17998S	65.0	50.0	90.0	7.8	2.3	3.3	0.5
18000S	47.0	64.0	101.0	9.1	1.6	3.6	1.0
18033S	100.0	57.0	102.0	6.6	1.5	3.5	0.5
18034S	150.0	66.0	-3.0	-0.1	1.4	3.8	0.6
18037S	230.0	54.0	85.0	6.2	1.5	3.8	0.5
18039S	89.0	44.0	79.0	7.7	1.2	3.0	0.4
18040S	72.0	32.0	52.0	4.7	1.4	1.6	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
18048S	65.499	146.516	B-6	8	6	28	0	-0.5	19.0	-8.0	700.0	-1.5	15.0	60.0	2.0	13.0
18051S	65.451	146.034	B-5	7	8	11	0	-0.5	18.0	-9.0	800.0	-1.7	11.0	70.0	3.0	21.0
18065S	65.580	146.707	C-6	9	5	28	0	-0.5	7.0	-5.0	700.0	-0.9	14.0	70.0	5.0	25.0
18066S	65.647	146.640	C-6	10	5	35	0	-0.5	11.0	-10.0	700.0	-2.0	12.0	80.0	6.0	21.0
18070S	65.602	146.402	C-5	9	6	13	0	-0.5	26.0	-9.0	600.0	-1.9	11.0	70.0	9.0	19.0
18071S	65.403	146.563	B-6	7	6	29	0	-0.5	15.0	-7.0	600.0	-1.2	12.0	60.0	6.0	27.0
18075S	65.633	146.327	C-5	9	7	5	0	-0.5	5.0	-9.0	600.0	-1.7	22.0	100.0	2.0	33.0
18079S	65.399	146.375	B-5	7	7	30	0	-0.5	12.0	-6.0	400.0	2.4	7.0	30.0	5.0	16.0
18081S	65.576	146.604	C-6	9	5	25	0	-0.5	9.0	-9.0	600.0	-2.2	14.0	90.0	3.0	36.0
18084S	65.493	146.089	B-5	8	8	27	0	-0.5	10.0	-10.0	800.0	-2.0	16.0	80.0	3.0	23.0
18085S	65.488	146.705	B-6	8	5	27	0	-0.5	16.0	5.0	700.0	-1.3	15.0	70.0	11.0	11.0
18087S	65.602	146.335	C-5	9	7	17	0	-0.5	22.0	-10.0	900.0	-1.9	20.0	90.0	7.0	25.0
18088S	65.543	146.690	C-6	8	5	3	0	-0.5	10.0	-7.0	800.0	-1.2	17.0	80.0	11.0	17.0
18089S	65.478	145.665	B-4	8	10	34	0	-0.5	9.0	-6.0	400.0	-1.2	6.0	40.0	-1.0	7.5
18101S	65.616	146.364	C-5	9	7	7	0	-0.5	11.0	-8.0	800.0	-1.6	13.0	80.0	5.0	18.0
18106S	65.528	146.826	C-6	8	4	12	0	-0.5	4.0	-10.0	600.0	-2.2	12.0	80.0	3.0	16.0
18107S	65.637	146.375	C-5	9	7	6	0	-0.5	11.0	-9.0	500.0	-1.9	19.0	90.0	3.0	30.0
18112S	65.441	146.018	B-5	7	8	13	0	-0.5	31.0	-9.0	500.0	-0.8	15.0	100.0	-1.0	36.0
18113S	65.548	146.322	C-5	8	7	4	0	-0.5	13.0	-10.0	700.0	-2.0	17.0	80.0	4.0	20.0
18115S	65.608	146.675	C-6	9	5	15	0	-0.5	9.0	-7.0	600.0	-1.3	16.0	80.0	9.0	36.0
18117S	65.454	145.645	B-4	7	10	11	0	-0.5	25.0	-10.0	600.0	-2.0	19.0	70.0	2.0	28.0
18120S	65.666	146.920	C-6	10	4	28	0	-0.5	8.0	7.0	1100.0	1.0	14.0	110.0	6.0	13.0
18122S	65.406	146.463	B-5	7	6	26	0	-0.5	20.0	-9.0	800.0	-1.8	12.0	70.0	9.0	36.0
18125S	65.603	146.973	C-6	9	4	17	0	-0.5	9.0	-9.0	500.0	-1.9	13.0	70.0	7.0	49.0
18129S	65.577	146.781	C-6	9	5	30	0	-0.5	13.0	-12.0	900.0	4.7	7.0	80.0	7.0	18.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
18048S	3.5	8.0	-4.0	0.94	-200.0	18.0	140.0	2.9	10.4	-5.0	2.0	16.0	6.3	-5.0
18051S	3.1	10.0	-4.0	0.81	-200.0	20.0	90.0	2.5	12.2	-6.0	-1.0	11.0	3.2	-4.0
18065S	3.0	6.0	-4.0	0.85	-200.0	24.0	110.0	0.7	12.1	-5.0	-1.0	11.0	3.8	-4.0
18066S	3.6	10.0	-4.0	1.20	-200.0	82.0	240.0	1.0	13.4	-5.0	-1.0	38.0	23.3	-5.0
18070S	3.0	9.0	-4.0	0.96	-300.0	14.0	110.0	0.5	10.9	-8.0	-2.0	15.0	11.0	35.0
18071S	3.4	4.0	-4.0	0.65	-200.0	18.0	230.0	1.4	10.9	-5.0	-1.0	13.0	5.8	7.0
18075S	5.0	10.0	8.0	1.10	-300.0	12.0	70.0	0.5	15.8	-6.0	-1.0	11.0	2.4	-4.0
18079S	2.1	7.0	-4.0	0.78	-200.0	12.0	110.0	0.7	6.1	-5.0	2.0	12.0	7.6	6.0
18081S	4.2	7.0	-4.0	0.56	-300.0	16.0	60.0	0.6	13.6	-6.0	-1.0	13.0	3.9	-4.0
18084S	3.8	15.0	-4.0	1.20	-300.0	16.0	120.0	1.0	12.3	-7.0	-2.0	16.0	5.8	-4.0
18085S	3.5	12.0	-4.0	2.00	-200.0	28.0	190.0	0.7	12.4	-5.0	2.0	32.0	15.0	-4.0
18087S	3.6	12.0	6.0	1.00	-300.0	12.0	120.0	0.9	13.2	-6.0	-2.0	13.0	3.2	-4.0
18088S	4.2	10.0	-4.0	0.91	-200.0	14.0	190.0	1.0	14.2	-5.0	1.0	15.0	4.5	6.0
18089S	1.9	6.0	-4.0	0.53	-200.0	6.0	60.0	3.1	6.5	-5.0	-1.0	4.8	1.0	-4.0
18101S	3.3	10.0	-4.0	0.84	300.0	8.0	100.0	0.8	11.4	-5.0	2.0	12.0	4.8	4.0
18106S	2.7	6.0	-5.0	0.69	-300.0	14.0	120.0	0.8	11.5	-10.0	2.0	12.0	2.3	-4.0
18107S	4.5	9.0	-4.0	1.30	400.0	10.0	130.0	0.7	16.0	-6.0	2.0	13.0	4.2	-4.0
18112S	4.3	9.0	-4.0	0.97	-300.0	16.0	-50.0	2.5	17.1	-5.0	-2.0	9.6	3.7	6.0
18113S	4.0	9.0	-4.0	0.88	-300.0	16.0	100.0	1.9	11.7	-10.0	-2.0	12.0	3.7	-4.0
18115S	3.6	6.0	7.0	0.62	-200.0	44.0	240.0	1.1	14.2	-5.0	-1.0	18.0	3.8	-4.0
18117S	3.5	6.0	-4.0	0.79	-300.0	10.0	80.0	10.0	12.5	-6.0	4.0	11.0	2.3	-4.0
18120S	3.4	11.0	7.0	0.94	-200.0	10.0	120.0	0.8	14.5	-5.0	1.0	14.0	3.3	-10.0
18122S	3.7	10.0	-4.0	0.85	-200.0	32.0	200.0	0.7	13.1	-6.0	-2.0	15.0	8.3	4.0
18125S	3.4	5.0	-4.0	0.78	-200.0	62.0	230.0	1.5	11.2	-5.0	-2.0	23.0	12.5	4.0
18129S	3.2	13.0	-4.0	1.30	-300.0	54.0	190.0	0.8	13.3	14.0	3.0	86.0	68.5	25.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
18048S	62.0	49.0	83.0	7.2	1.1	2.8	0.5
18051S	64.0	38.0	61.0	6.1	1.3	2.4	0.4
18065S	75.0	42.0	76.0	5.8	1.6	2.9	0.4
18066S	190.0	96.0	163.0	15.5	1.0	6.2	1.1
18070S	76.0	44.0	80.0	7.2	1.1	3.0	0.6
18071S	97.0	32.0	65.0	5.1	0.9	2.2	0.3
18075S	73.0	44.0	89.0	7.2	1.5	2.4	0.4
18079S	48.0	31.0	64.0	5.6	1.2	2.3	0.5
18081S	86.0	53.0	95.0	8.6	1.3	2.7	0.4
18084S	71.0	51.0	78.0	7.9	1.9	2.8	0.5
18085S	73.0	77.0	130.0	8.0	1.4	5.1	0.8
18087S	86.0	49.0	95.0	8.6	1.7	3.1	0.4
18088S	67.0	61.0	102.0	6.8	1.9	3.6	0.5
18089S	27.0	21.0	35.0	3.2	1.1	1.4	0.2
18101S	60.0	44.0	70.0	6.8	0.9	2.4	0.4
18106S	68.0	43.0	83.0	7.5	1.0	3.0	0.3
18107S	69.0	49.0	104.0	8.4	1.3	2.6	0.5
18112S	72.0	38.0	64.0	6.9	1.0	2.9	0.4
18113S	120.0	44.0	81.0	7.2	0.9	3.0	0.4
18115S	130.0	59.0	112.0	7.1	2.1	3.7	0.5
18117S	74.0	41.0	65.0	7.1	1.1	2.8	0.3
18120S	72.0	50.0	88.0	5.4	1.3	3.4	0.5
18122S	120.0	55.0	105.0	8.4	1.2	2.5	0.6
18125S	260.0	61.0	110.0	10.8	1.4	5.1	0.9
18129S	310.0	144.0	262.0	29.1	0.9	13.2	2.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
18134S	65.583	146.513	C-6	9	6	28	0	-0.5	10.0	-12.0	500.0	-2.4	16.0	110.0	3.0	23.0
18136S	65.508	145.650	C-4	8	10	22	0	-0.5	88.0	14.0	400.0	-1.6	10.0	50.0	2.0	30.0
18139S	65.488	145.839	B-4	8	9	26	0	-0.5	68.0	-11.0	600.0	-2.0	17.0	70.0	5.0	40.0
18145S	65.452	146.423	B-5	7	6	12	0	0.5	24.0	-11.0	600.0	-2.0	6.0	60.0	12.0	19.0
18146S	65.552	146.928	C-6	8	4	4	0	-0.5	6.0	11.0	900.0	-1.4	18.0	90.0	12.0	19.0
18148S	65.472	146.784	B-6	8	5	31	0	-0.5	13.0	-7.0	700.0	-0.5	17.0	90.0	3.0	23.0
18149S	65.683	146.846	C-6	10	4	23	0	-0.5	6.0	-7.0	1100.0	-0.6	16.0	110.0	8.0	26.0
18150S	65.473	146.583	B-6	8	6	31	0	-0.5	13.0	-8.0	500.0	-1.4	11.0	50.0	4.0	15.0
18153S	65.567	146.676	C-6	9	5	34	0	-0.5	5.0	-11.0	700.0	-2.1	13.0	60.0	5.0	25.0
18156S	65.622	146.496	C-5	9	6	9	0	-0.5	8.0	-10.0	800.0	-2.0	19.0	80.0	4.0	29.0
18174S	65.450	145.861	B-4	7	9	10	0	-0.5	58.0	15.0	400.0	-1.8	15.0	50.0	4.0	32.0
18177S	65.598	146.554	C-6	9	6	20	0	-0.5	6.0	-10.0	600.0	-1.8	12.0	70.0	2.0	27.0
18178S	65.657	146.828	C-6	10	4	36	0	-0.5	13.0	-6.0	900.0	-1.1	19.0	80.0	7.0	29.0
18181S	65.489	146.739	B-6	8	5	28	0	-0.5	15.0	-5.0	400.0	-1.0	16.0	80.0	5.0	19.0
18190S	65.665	146.933	C-6	10	4	28	0	-0.5	10.0	6.0	1100.0	-0.5	15.0	140.0	9.0	23.0
18200S	65.549	146.403	C-5	8	6	1	0	2.0	270.0	-12.0	600.0	-2.0	13.0	80.0	8.0	46.0
18202S	65.683	146.719	C-6	10	5	21	0	-0.5	8.0	-5.0	900.0	-1.1	15.0	80.0	7.0	23.0
18205S	65.526	146.164	C-5	8	8	17	0	-0.5	7.0	-9.0	700.0	-1.7	13.0	80.0	2.0	20.0
18208S	65.558	146.810	C-6	9	4	36	0	-0.5	8.0	-10.0	600.0	-2.0	12.0	70.0	3.0	22.0
18212S	65.559	146.902	C-6	9	4	34	0	-0.5	8.0	-6.0	800.0	-1.2	16.0	90.0	9.0	24.0
18221S	65.494	146.205	B-5	8	7	25	0	-0.5	5.0	-8.0	500.0	-1.7	10.0	70.0	3.0	18.0
18223S	65.511	145.842	C-4	8	9	23	0	-0.5	8.0	-7.0	600.0	-1.4	13.0	60.0	3.0	19.0
18228S	65.668	146.429	C-5	10	6	26	0	-0.5	9.0	-9.0	700.0	-1.8	13.0	90.0	3.0	13.0
18235S	65.537	146.549	C-6	8	6	8	0	-0.5	12.0	11.0	700.0	-1.9	7.0	20.0	12.0	5.5
18236S	65.596	146.589	C-6	9	6	19	0	-0.5	8.0	-10.0	400.0	-1.9	13.0	70.0	3.0	36.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
18134S	3.9	13.0	-6.0	1.10	-300.0	14.0	120.0	0.9	14.4	-8.0	-2.0	15.0	4.2	6.0
18136S	3.3	7.0	-4.0	0.56	-200.0	18.0	80.0	9.0	12.5	-5.0	-1.0	12.0	2.0	-4.0
18139S	3.2	6.0	-4.0	0.92	-300.0	16.0	120.0	0.5	12.7	-10.0	-2.0	12.0	4.7	39.0
18145S	3.3	4.0	-4.0	0.94	-300.0	38.0	180.0	0.5	10.5	-7.0	-2.0	15.0	85.9	-5.0
18146S	3.5	6.0	-4.0	0.83	-200.0	38.0	170.0	1.1	13.8	-5.0	-1.0	12.0	3.7	-4.0
18148S	4.4	7.0	-4.0	1.10	-200.0	6.0	80.0	2.2	14.5	-5.0	-1.0	9.2	2.9	-9.0
18149S	3.7	7.0	-4.0	0.85	-200.0	8.0	170.0	1.0	15.9	-5.0	-1.0	15.0	4.1	-9.0
18150S	2.6	5.0	9.0	1.10	-200.0	16.0	100.0	1.5	8.3	-5.0	2.0	13.0	8.4	-4.0
18153S	2.9	7.0	-6.0	0.64	-300.0	18.0	-60.0	0.6	11.8	-7.0	-2.0	10.0	3.6	-5.0
18156S	4.7	12.0	-5.0	0.87	-300.0	20.0	150.0	0.6	16.1	-7.0	-2.0	15.0	4.0	-5.0
18174S	3.5	6.0	-4.0	0.61	-300.0	8.0	90.0	5.3	11.7	-6.0	-2.0	9.1	2.7	49.0
18177S	3.2	7.0	-4.0	0.84	-300.0	18.0	80.0	1.0	12.8	-7.0	-2.0	12.0	2.5	-4.0
18178S	4.2	7.0	-4.0	1.00	-200.0	86.0	210.0	0.8	14.9	-5.0	-1.0	19.0	6.0	-4.0
18181S	4.1	7.0	-4.0	1.40	-200.0	26.0	110.0	1.2	12.3	-5.0	-1.0	17.0	4.3	-4.0
18190S	3.9	10.0	4.0	0.78	-200.0	8.0	160.0	0.9	16.0	-5.0	1.0	15.0	4.0	-9.0
18200S	3.8	7.0	-6.0	0.64	400.0	220.0	130.0	2.8	13.0	-7.0	-2.0	17.0	4.9	-5.0
18202S	4.0	8.0	-4.0	1.10	-200.0	16.0	160.0	0.7	14.1	-5.0	1.0	14.0	3.4	-4.0
18205S	3.1	11.0	-5.0	0.98	-200.0	16.0	90.0	0.5	12.2	-6.0	-1.0	12.0	2.7	-4.0
18208S	3.2	6.0	-4.0	0.70	-300.0	18.0	70.0	1.0	12.6	-7.0	-1.0	12.0	4.3	-5.0
18212S	3.5	8.0	-4.0	0.87	-200.0	50.0	130.0	0.6	14.4	-5.0	-1.0	14.0	3.8	-4.0
18221S	3.2	12.0	-4.0	1.00	500.0	12.0	120.0	1.2	11.6	-5.0	3.0	15.0	5.3	-4.0
18223S	3.2	9.0	-4.0	0.77	-200.0	10.0	90.0	1.1	12.0	-5.0	-1.0	9.1	2.0	-4.0
18228S	3.5	10.0	-4.0	1.10	-200.0	14.0	100.0	1.0	13.0	-5.0	-2.0	11.0	3.7	-4.0
18235S	2.1	9.0	-4.0	2.20	-200.0	16.0	340.0	0.5	7.0	8.0	7.0	48.0	45.6	-4.0
18236S	3.5	6.0	-5.0	0.46	-300.0	24.0	120.0	0.7	12.1	-6.0	-2.0	13.0	4.5	-5.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
18134S	73.0	56.0	97.0	9.2	3.1	3.4	0.5
18136S	60.0	40.0	71.0	6.2	1.1	2.9	0.4
18139S	67.0	39.0	69.0	6.5	1.2	2.3	0.4
18145S	68.0	29.0	52.0	7.5	-0.7	3.2	-0.1
18146S	170.0	44.0	79.0	5.4	1.5	2.9	0.5
18148S	78.0	43.0	66.0	4.8	1.5	2.5	0.3
18149S	95.0	52.0	84.0	5.9	1.5	3.0	0.4
18150S	71.0	35.0	66.0	5.5	1.3	1.8	0.4
18153S	77.0	40.0	70.0	7.2	0.9	2.8	0.4
18156S	94.0	57.0	94.0	9.3	-0.8	3.0	0.5
18174S	61.0	35.0	64.0	7.0	2.2	2.4	0.4
18177S	75.0	42.0	71.0	7.0	0.9	2.7	0.4
18178S	170.0	69.0	116.0	8.0	1.3	4.2	0.6
18181S	79.0	51.0	90.0	5.5	1.1	2.6	0.3
18190S	110.0	53.0	94.0	5.9	1.5	3.5	0.4
18200S	330.0	49.0	79.0	7.6	1.6	3.4	0.4
18202S	100.0	58.0	107.0	6.3	1.5	3.4	0.5
18205S	73.0	46.0	72.0	6.8	1.2	2.4	0.3
18208S	87.0	34.0	59.0	6.5	1.0	2.2	0.4
18212S	170.0	51.0	98.0	5.6	1.2	3.0	0.4
18221S	58.0	49.0	84.0	7.4	2.0	3.0	0.4
18223S	55.0	33.0	52.0	5.7	1.3	2.6	0.3
18228S	64.0	43.0	70.0	7.0	2.5	2.7	0.4
18235S	64.0	83.0	139.0	12.1	-0.6	5.7	1.2
18236S	110.0	44.0	72.0	7.3	1.9	2.1	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
18239S	65.640	146.815	C-6	9	4	1	0	-0.5	8.0	-6.0	800.0	-1.2	10.0	70.0	6.0	17.0
18240S	65.473	146.202	B-5	8	7	36	0	-0.5	7.0	-8.0	900.0	-0.8	17.0	80.0	2.0	20.0
18241S	65.584	146.442	C-5	9	6	26	0	-0.5	5.0	-9.0	600.0	2.7	15.0	90.0	2.0	31.0
18244S	65.510	146.691	C-6	8	5	22	0	-0.5	13.0	-6.0	600.0	1.5	11.0	50.0	16.0	10.0
18247S	65.574	146.307	C-5	9	7	28	0	-0.5	51.0	-8.0	600.0	-1.6	25.0	50.0	3.0	29.0
18256S	65.410	146.802	B-6	7	5	30	0	-0.5	8.0	-8.0	600.0	-1.5	11.0	70.0	6.0	13.0
18258S	65.663	146.698	C-6	10	5	27	0	-0.5	10.0	-6.0	700.0	2.0	13.0	80.0	10.0	25.0
18263S	65.462	146.630	B-6	7	5	1	0	-0.5	11.0	-5.0	500.0	-0.5	9.0	40.0	6.0	11.0
18266S	65.457	145.754	B-4	7	10	6	0	-0.5	19.0	-9.0	400.0	1.5	17.0	80.0	2.0	36.0
18273S	65.464	146.447	B-5	7	6	2	0	-0.5	11.0	9.0	300.0	-1.4	-5.0	10.0	18.0	9.5
18279S	65.521	146.875	C-6	8	4	14	0	-0.5	6.0	-5.0	700.0	-1.1	14.0	90.0	4.0	13.0
18281S	65.614	146.685	C-6	9	5	15	0	-0.5	5.0	-9.0	-300.0	-1.9	7.0	10.0	5.0	13.0
18282S	65.623	146.726	C-6	9	5	9	0	0.5	12.0	-7.0	900.0	-1.4	8.0	50.0	7.0	21.0
18285S	65.447	146.903	B-6	7	4	10	0	-0.5	9.0	9.0	600.0	-1.0	17.0	90.0	4.0	22.0
18286S	65.622	146.582	C-6	9	6	7	0	-0.5	7.0	-10.0	900.0	-1.7	12.0	100.0	5.0	30.0
18287S	65.644	146.389	C-5	10	6	36	0	-0.5	9.0	-8.0	500.0	-1.5	14.0	80.0	4.0	29.0
18288S	65.518	146.402	C-5	8	7	18	0	-0.5	17.0	-7.0	600.0	-1.5	12.0	60.0	2.0	24.0
18289S	65.511	145.727	C-4	8	10	20	0	-0.5	51.0	-9.0	600.0	-1.5	10.0	60.0	3.0	20.0
18291S	65.455	146.292	B-5	7	7	10	0	-0.5	9.0	-6.0	500.0	-0.6	13.0	60.0	2.0	19.0
18294S	65.419	146.044	B-5	7	8	23	0	-0.5	100.0	-9.0	700.0	-0.7	14.0	80.0	7.0	47.0
18297S	65.631	146.707	C-6	9	5	4	0	-0.5	8.0	-8.0	500.0	3.6	7.0	30.0	10.0	20.0
18303S	65.400	146.786	B-6	7	5	30	12	-0.5	11.0	7.0	500.0	-1.5	11.0	50.0	12.0	13.0
18310S	65.460	146.329	B-5	7	7	4	0	-0.5	14.0	8.0	400.0	-1.4	9.0	30.0	13.0	17.0
18318S	65.556	146.507	C-6	8	6	3	0	-0.5	6.0	-10.0	500.0	-2.1	14.0	90.0	-1.0	17.0
18321S	65.687	146.886	C-6	10	4	15	0	-0.5	5.0	-5.0	900.0	0.8	13.0	90.0	6.0	35.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
18239S	3.1	11.0	-4.0	1.40	-200.0	38.0	160.0	0.6	12.5	-5.0	-1.0	32.0	9.7	-4.0
18240S	3.6	10.0	-4.0	1.00	-200.0	14.0	80.0	0.9	14.4	-6.0	-2.0	13.0	3.1	-4.0
18241S	3.7	12.0	-5.0	1.20	-300.0	14.0	-50.0	0.8	14.5	-5.0	4.0	11.0	4.2	-4.0
18244S	3.0	10.0	-4.0	1.80	-200.0	16.0	230.0	1.1	9.4	-5.0	3.0	37.0	25.2	4.0
18247S	3.1	9.0	-4.0	0.71	400.0	56.0	100.0	4.8	10.8	-7.0	-1.0	12.0	2.7	5.0
18256S	2.7	7.0	-4.0	1.30	-200.0	12.0	170.0	0.8	10.8	-5.0	2.0	14.0	6.3	-4.0
18258S	3.6	12.0	-4.0	1.30	-200.0	80.0	230.0	1.0	14.3	-5.0	-1.0	39.0	12.4	-4.0
18263S	2.8	12.0	-4.0	1.30	-200.0	10.0	130.0	1.8	8.6	-5.0	2.0	20.0	15.4	8.0
18266S	4.5	11.0	-4.0	0.86	-200.0	8.0	-40.0	10.0	18.5	-5.0	-1.0	9.1	2.8	-4.0
18273S	1.8	6.0	-4.0	2.10	-200.0	16.0	610.0	0.8	5.8	-5.0	5.0	32.0	20.0	12.0
18279S	3.5	9.0	-4.0	0.82	-200.0	18.0	120.0	0.8	13.3	-5.0	-1.0	13.0	3.6	-4.0
18281S	2.4	9.0	-4.0	1.90	400.0	140.0	530.0	0.4	7.3	10.0	-1.0	55.0	21.9	5.0
18282S	2.9	10.0	-4.0	1.40	-200.0	44.0	270.0	0.7	11.1	-5.0	2.0	66.0	87.8	5.0
18285S	3.8	11.0	-4.0	1.20	300.0	12.0	70.0	1.6	13.9	-5.0	1.0	10.0	3.4	-4.0
18286S	3.8	7.0	-4.0	0.71	-200.0	30.0	180.0	1.2	15.5	-5.0	1.0	16.0	5.4	-6.0
18287S	3.5	10.0	-4.0	1.00	-200.0	12.0	110.0	0.5	13.0	-5.0	2.0	14.0	5.5	6.0
18288S	3.5	8.0	9.0	0.94	-200.0	14.0	140.0	2.8	10.9	-5.0	2.0	13.0	4.0	-4.0
18289S	3.0	5.0	-4.0	0.73	-200.0	14.0	120.0	1.4	10.6	-8.0	-1.0	9.5	2.7	5.0
18291S	3.1	10.0	-4.0	0.89	-200.0	16.0	50.0	1.1	10.1	-5.0	-1.0	12.0	4.1	-4.0
18296S	3.5	11.0	-4.0	0.61	-200.0	22.0	110.0	3.6	14.1	-9.0	-1.0	12.0	3.7	29.0
18297S	2.4	9.0	-4.0	1.70	-200.0	84.0	690.0	0.6	6.9	-5.0	2.0	64.0	26.5	9.0
18303S	2.9	8.0	-4.0	1.50	-200.0	10.0	210.0	1.3	10.5	-7.0	-1.0	16.0	12.2	9.0
18310S	2.6	4.0	-4.0	1.40	-200.0	10.0	410.0	0.6	7.8	-5.0	2.0	17.0	10.4	-4.0
18318S	3.6	12.0	6.0	1.20	-300.0	12.0	120.0	1.2	13.3	-7.0	2.0	11.0	3.2	5.0
18321S	3.4	10.0	-4.0	0.94	-200.0	74.0	170.0	1.0	12.8	-5.0	1.0	24.0	11.9	-9.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
18239S	130.0	79.0	146.0	9.7	-0.2	6.0	0.9
18240S	83.0	50.0	80.0	8.7	1.4	2.6	0.4
18241S	74.0	46.0	72.0	7.7	1.6	2.9	0.4
18244S	71.0	90.0	150.0	8.7	1.5	4.9	0.9
18247S	270.0	47.0	72.0	7.7	1.7	2.8	0.4
18256S	62.0	42.0	72.0	6.9	1.4	3.1	0.5
18258S	230.0	92.0	156.0	11.4	1.5	7.4	1.0
18263S	60.0	53.0	84.0	5.2	1.4	3.8	0.5
18266S	70.0	31.0	60.0	5.8	1.1	2.5	0.4
18273S	48.0	45.0	86.0	10.2	-0.5	7.0	1.2
18279S	75.0	57.0	101.0	6.5	2.3	3.0	0.5
18281S	400.0	127.0	180.0	11.3	-1.2	6.9	1.0
18282S	360.0	89.0	166.0	12.8	-0.9	10.1	2.3
18285S	69.0	40.0	74.0	4.9	1.6	3.1	0.4
18286S	110.0	55.0	102.0	9.9	1.6	3.3	0.6
18287S	71.0	49.0	80.0	7.9	0.8	3.2	0.5
18288S	77.0	41.0	77.0	5.9	0.8	2.0	0.3
18289S	62.0	30.0	50.0	4.9	0.5	2.0	0.4
18291S	69.0	39.0	64.0	6.0	0.8	2.0	0.3
18294S	93.0	44.0	74.0	7.8	0.7	2.8	0.5
18297S	310.0	82.0	145.0	10.7	1.3	11.5	1.8
18303S	72.0	45.0	77.0	7.6	1.6	3.7	0.7
18310S	81.0	31.0	56.0	6.1	0.7	3.4	0.6
18318S	99.0	45.0	86.0	7.5	0.9	2.6	0.4
18321S	130.0	65.0	103.0	7.4	1.3	5.3	0.7

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
18322S	65.542	146.704	C-6	8	5	10	0	-0.5	18.0	-5.0	500.0	-0.8	16.0	60.0	4.0	16.0
18325S	65.474	146.262	B-5	8	7	35	0	-0.5	7.0	-8.0	600.0	-1.5	14.0	60.0	2.0	21.0
18327S	65.633	146.987	C-6	9	4	6	0	-0.5	8.0	-10.0	800.0	-1.9	11.0	80.0	6.0	20.0
18330S	65.506	145.951	C-4	8	9	20	0	-0.5	29.0	-6.0	300.0	-1.2	15.0	40.0	3.0	25.0
18335S	65.532	146.220	C-5	8	7	12	0	-0.5	14.0	-7.0	500.0	-1.4	11.0	50.0	3.0	19.0
18336S	65.604	146.978	C-6	9	4	17	0	0.5	9.0	-11.0	600.0	-2.6	12.0	60.0	6.0	48.0
18340S	65.412	146.176	B-5	7	8	30	0	-0.5	23.0	-9.0	800.0	-1.8	14.0	70.0	5.0	25.0
18344S	65.442	146.336	B-5	7	7	8	0	-0.5	19.0	-9.0	400.0	-1.6	7.0	80.0	5.0	17.0
18346S	65.440	146.117	B-5	7	8	16	0	-0.5	12.0	-10.0	700.0	-1.9	10.0	70.0	4.0	19.0
18347S	65.656	146.561	C-6	10	6	32	0	-0.5	6.0	-11.0	900.0	3.0	17.0	110.0	5.0	20.0
18353S	65.552	146.470	C-5	8	6	2	0	0.5	45.0	-11.0	800.0	-2.0	14.0	60.0	7.0	31.0
18356S	65.562	146.752	C-6	9	5	32	0	-0.5	5.0	-11.0	600.0	-2.5	10.0	70.0	4.0	15.0
18364S	65.544	146.030	C-5	8	8	2	0	-0.5	17.0	-6.0	400.0	-1.2	11.0	40.0	3.0	18.0
18368S	65.479	146.415	B-5	8	6	36	0	-0.5	12.0	-11.0	700.0	-2.1	13.0	70.0	5.0	33.0
18371S	65.495	146.545	B-6	8	6	29	0	-0.5	27.0	14.0	500.0	-1.9	14.0	70.0	9.0	20.0
18376S	65.411	146.652	B-6	7	5	26	0	-0.5	16.0	-9.0	600.0	-1.5	12.0	50.0	13.0	18.0
18385S	65.482	146.057	B-5	8	8	35	0	-0.5	42.0	-7.0	400.0	-0.6	12.0	50.0	3.0	37.0
18386S	65.422	146.758	B-6	7	5	20	0	-0.5	5.0	-6.0	500.0	-0.5	12.0	80.0	6.0	13.0
18387S	65.549	146.722	C-6	8	5	4	0	-0.5	7.0	-9.0	600.0	-1.8	10.0	50.0	5.0	21.0
18393S	65.625	146.587	C-6	9	6	7	0	-0.5	6.0	-11.0	900.0	-1.8	17.0	90.0	7.0	38.0
18398S	65.605	146.892	C-6	9	4	15	0	-0.5	7.0	-9.0	600.0	-1.8	8.0	50.0	5.0	12.0
18404S	65.444	146.691	B-6	7	5	10	0	-0.5	3.0	-9.0	600.0	-1.8	10.0	80.0	2.0	17.0
18405S	65.431	145.894	B-4	7	9	16	0	-0.5	68.0	36.0	700.0	-0.8	15.0	60.0	4.0	32.0
18414S	65.459	145.647	B-4	7	10	3	0	-0.5	26.0	-10.0	500.0	-1.7	14.0	70.0	2.0	31.0
18417S	65.412	146.441	B-5	7	6	26	0	-0.5	23.0	-8.0	700.0	-2.0	9.0	70.0	14.0	13.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
18322S	3.7	7.0	-4.0	1.10	-200.0	12.0	160.0	1.2	11.2	-5.0	1.0	12.0	5.3	-4.0
18325S	2.8	11.0	-4.0	0.89	-200.0	16.0	60.0	0.9	9.6	6.0	-1.0	11.0	3.9	-4.0
18327S	3.0	8.0	-5.0	0.90	-300.0	20.0	140.0	0.5	13.3	-6.0	-1.0	11.0	2.8	-5.0
18330S	3.0	8.0	5.0	0.54	200.0	8.0	40.0	1.1	9.1	-6.0	-1.0	8.6	2.6	51.0
18335S	2.9	12.0	-4.0	0.95	300.0	10.0	70.0	1.8	9.4	-5.0	-1.0	14.0	4.8	13.0
18336S	2.9	11.0	-4.0	0.77	400.0	90.0	180.0	1.3	9.8	-7.0	3.0	65.0	15.6	14.0
18340S	3.4	11.0	-4.0	0.75	-200.0	32.0	90.0	3.9	13.2	-5.0	-1.0	12.0	7.4	-4.0
18344S	2.9	7.0	4.0	0.83	-200.0	16.0	130.0	1.1	11.2	-5.0	-1.0	10.0	3.1	-4.0
18346S	3.1	10.0	5.0	0.96	-200.0	14.0	140.0	12.0	11.9	-7.0	-2.0	13.0	3.7	5.0
18347S	3.7	8.0	-5.0	0.99	-200.0	68.0	160.0	0.8	15.6	-5.0	-1.0	16.0	3.3	-6.0
18353S	3.6	7.0	-4.0	0.84	-300.0	86.0	90.0	3.2	11.2	-7.0	-2.0	15.0	14.4	5.0
18356S	2.6	12.0	5.0	0.93	-300.0	24.0	110.0	0.5	10.6	-60.0	-2.0	44.0	12.5	9.0
18364S	2.6	7.0	-4.0	0.60	-200.0	8.0	120.0	1.6	8.1	-6.0	-1.0	9.0	2.5	6.0
18368S	3.1	7.0	-5.0	0.95	-300.0	18.0	90.0	1.2	11.2	-7.0	-2.0	13.0	4.4	-5.0
18371S	3.6	11.0	-4.0	1.60	-200.0	34.0	180.0	2.1	12.8	-5.0	-1.0	30.0	20.7	-6.0
18376S	3.4	6.0	-4.0	1.50	-200.0	12.0	320.0	1.4	11.0	-7.0	2.0	19.0	7.7	16.0
18385S	3.4	9.0	-4.0	0.43	-200.0	20.0	90.0	3.1	10.7	-5.0	-1.0	10.0	2.9	5.0
18386S	3.0	9.0	-4.0	0.97	-200.0	4.0	70.0	1.1	11.2	-5.0	1.0	10.0	3.1	-8.0
18387S	3.0	10.0	-4.0	0.87	-200.0	28.0	230.0	0.9	10.4	-5.0	2.0	31.0	11.3	12.0
18393S	4.6	9.0	7.0	0.67	-200.0	34.0	200.0	1.4	17.3	-5.0	-1.0	19.0	3.8	-6.0
18398S	2.6	13.0	-4.0	1.80	-200.0	46.0	380.0	0.7	10.6	-5.0	4.0	62.0	31.0	5.0
18404S	2.6	8.0	-5.0	1.00	-200.0	12.0	80.0	0.6	10.6	-5.0	-1.0	11.0	4.5	4.0
18405S	3.8	5.0	5.0	0.50	-200.0	12.0	130.0	4.4	13.5	-5.0	-1.0	11.0	2.5	6.0
18414S	3.0	7.0	-5.0	0.66	-300.0	12.0	60.0	11.0	11.8	-6.0	-2.0	10.0	3.3	-5.0
18417S	2.6	7.0	-4.0	1.60	-300.0	18.0	350.0	1.1	10.2	-5.0	2.0	18.0	46.4	10.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
18322S	67.0	37.0	66.0	3.9	1.3	2.3	0.4
18325S	83.0	39.0	64.0	6.3	0.6	2.2	0.3
18327S	55.0	41.0	67.0	7.1	1.0	2.6	0.7
18330S	58.0	31.0	50.0	4.6	0.8	2.2	0.3
18335S	66.0	43.0	74.0	6.8	1.2	3.4	0.5
18336S	220.0	139.0	261.0	23.9	2.0	10.0	1.7
18340S	120.0	46.0	79.0	8.7	1.0	3.1	0.6
18344S	62.0	40.0	73.0	6.0	1.5	2.3	0.4
18346S	62.0	48.0	93.0	7.9	1.2	2.8	0.4
18347S	170.0	63.0	113.0	10.6	1.0	3.5	0.6
18353S	160.0	46.0	89.0	8.2	2.2	3.0	0.6
18356S	130.0	104.0	198.0	18.5	-0.9	7.9	1.1
18364S	56.0	29.0	59.0	4.6	1.3	1.9	0.3
18368S	86.0	47.0	77.0	7.6	1.3	2.4	0.5
18371S	100.0	73.0	120.0	10.9	-0.7	4.7	0.8
18376S	72.0	47.0	80.0	8.0	1.0	3.5	0.5
18385S	69.0	39.0	65.0	6.7	1.5	2.6	0.4
18386S	62.0	40.0	66.0	4.2	1.4	2.8	0.4
18387S	210.0	75.0	140.0	13.4	1.1	5.6	1.1
18393S	110.0	65.0	118.0	11.3	1.5	4.1	0.7
18398S	160.0	84.0	154.0	12.7	1.2	15.7	2.1
18404S	53.0	42.0	69.0	6.5	2.2	2.7	0.4
18405S	61.0	35.0	73.0	3.8	0.6	2.2	0.2
18414S	74.0	39.0	69.0	7.0	1.3	2.3	0.4
18417S	58.0	40.0	73.0	8.6	-0.8	4.4	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
18421S	65.576	146.709	C-6	9	5	28	0	-0.5	6.0	-5.0	700.0	-0.5	14.0	70.0	7.0	25.0
18426S	65.672	146.719	C-6	10	5	21	0	-0.5	11.0	5.0	800.0	-1.0	17.0	70.0	9.0	28.0
18434S	65.380	146.095	B-5	6	8	4	0	-0.5	36.0	7.0	600.0	-0.9	15.0	60.0	3.0	21.0
18438S	65.473	145.861	B-4	8	9	34	0	-0.5	55.0	-7.0	500.0	-1.4	15.0	60.0	7.0	38.0
18441S	65.495	146.355	B-5	8	7	29	0	-0.5	9.0	-7.0	600.0	-1.6	11.0	70.0	1.0	14.0
18444S	65.555	146.435	C-5	8	6	1	0	0.5	58.0	-9.0	800.0	3.8	16.0	80.0	12.0	25.0
18466S	65.439	146.392	B-5	7	7	18	0	-0.5	16.0	-10.0	900.0	-1.7	17.0	90.0	6.0	23.0
18468S	65.435	146.708	B-6	7	5	15	0	-0.5	8.0	-5.0	400.0	-0.7	6.0	30.0	4.0	7.0
18471S	65.614	146.865	C-6	9	4	14	0	0.5	15.0	-11.0	700.0	-2.3	6.0	40.0	8.0	22.0
18473S	65.461	146.387	B-5	7	7	6	0	-0.5	10.0	-7.0	400.0	-1.3	8.0	30.0	11.0	15.0
18478S	65.568	146.659	C-6	9	5	35	0	-0.5	6.0	-8.0	800.0	-1.8	11.0	100.0	5.0	27.0
18482S	65.390	145.989	B-4	7	9	31	0	-0.5	40.0	-6.0	400.0	1.3	33.0	120.0	2.0	80.0
18493S	65.578	146.430	C-5	9	6	26	0	-0.5	32.0	14.0	800.0	-2.7	9.0	70.0	12.0	13.0
18495S	65.628	146.821	C-6	9	4	12	0	-0.5	7.0	-11.0	800.0	-2.7	6.0	50.0	5.0	8.5
18505S	65.488	145.934	B-4	8	9	29	0	-0.5	32.0	-6.0	300.0	-1.1	11.0	40.0	4.0	34.0
18506S	65.588	146.953	C-6	9	4	20	0	1.0	19.0	-10.0	1000.0	4.1	21.0	110.0	18.0	55.0
18507S	65.688	146.801	C-6	10	5	18	0	-0.5	15.0	5.0	1200.0	-0.6	23.0	110.0	7.0	31.0
18509S	65.504	145.951	C-4	8	9	20	0	-0.5	6.0	-7.0	500.0	-1.4	8.0	60.0	1.0	16.0
18521S	65.657	146.779	C-6	10	5	31	0	-0.5	17.0	-6.0	900.0	-1.2	21.0	90.0	9.0	34.0
18524S	65.551	146.017	C-5	8	8	1	0	-0.5	22.0	-5.0	300.0	-1.0	10.0	40.0	2.0	20.0
18526S	65.563	146.697	C-6	9	5	34	0	-0.5	6.0	-9.0	900.0	-2.0	14.0	80.0	4.0	24.0
18527S	65.526	146.730	C-6	8	5	16	0	-0.5	23.0	-8.0	600.0	-1.7	10.0	60.0	5.0	18.0
18528S	65.492	146.375	B-5	8	7	30	0	-0.5	17.0	-7.0	800.0	-1.6	13.0	60.0	5.0	21.0
18529S	65.481	146.209	B-5	8	7	36	0	-0.5	9.0	-8.0	800.0	-1.6	17.0	80.0	3.0	21.0
18531S	65.549	146.358	C-5	8	7	5	0	1.0	99.0	11.0	700.0	-1.9	13.0	80.0	6.0	18.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
18421S	2.9	6.0	-4.0	0.80	-200.0	24.0	100.0	0.8	12.1	-5.0	-1.0	12.0	3.7	-4.0
18426S	3.8	8.0	6.0	1.00	-200.0	62.0	190.0	0.9	14.3	-5.0	-1.0	19.0	5.8	-4.0
18434S	3.5	7.0	-4.0	0.63	-200.0	18.0	80.0	9.2	11.5	-5.0	-1.0	10.0	3.8	-4.0
18438S	3.2	5.0	-4.0	0.70	-200.0	16.0	80.0	0.5	11.3	-8.0	-1.0	10.0	3.5	67.0
18441S	3.0	10.0	5.0	0.96	-200.0	10.0	100.0	3.0	10.9	-5.0	2.0	12.0	3.5	4.0
18444S	3.9	8.0	-4.0	1.40	-300.0	62.0	130.0	2.2	12.8	-10.0	-2.0	26.0	34.6	6.0
18466S	3.8	7.0	-4.0	1.20	-200.0	16.0	120.0	0.8	14.6	-8.0	-1.0	14.0	5.9	6.0
18468S	2.0	5.0	-4.0	1.30	-200.0	8.0	110.0	1.2	6.3	-5.0	1.0	12.0	6.8	-4.0
18471S	2.6	23.0	-4.0	1.70	-300.0	92.0	330.0	0.7	11.3	-7.0	-2.0	120.0	61.5	38.0
18473S	2.8	6.0	-4.0	1.80	-200.0	10.0	370.0	0.6	7.7	-5.0	3.0	22.0	16.4	13.0
18478S	4.0	8.0	-4.0	0.71	-300.0	20.0	120.0	1.0	15.1	-6.0	-2.0	13.0	3.4	-4.0
18482S	9.6	7.0	-4.0	1.10	-200.0	4.0	70.0	4.8	35.9	-5.0	-1.0	6.8	2.3	-4.0
18493S	2.7	12.0	-4.0	1.50	-300.0	24.0	220.0	0.7	11.5	-12.0	-3.0	32.0	83.7	43.0
18495S	2.6	31.0	-4.0	2.10	400.0	34.0	410.0	0.4	10.5	7.0	3.0	140.0	48.2	23.0
18505S	3.0	10.0	-4.0	0.53	200.0	10.0	50.0	0.9	9.1	-5.0	-1.0	8.1	2.7	36.0
18506S	4.4	6.0	-5.0	0.83	-300.0	82.0	180.0	1.4	17.0	-7.0	-2.0	16.0	4.9	7.0
18507S	5.6	7.0	-4.0	0.67	-200.0	14.0	270.0	1.2	18.7	-5.0	-1.0	20.0	3.9	-11.0
18509S	4.2	9.0	-4.0	1.00	-200.0	8.0	110.0	2.2	9.9	-5.0	-1.0	10.0	4.3	-4.0
18521S	4.6	8.0	4.0	1.00	-200.0	80.0	170.0	0.9	16.2	-5.0	-1.0	21.0	6.4	-4.0
18524S	2.5	7.0	-4.0	0.63	200.0	10.0	80.0	2.1	7.6	-5.0	-1.0	9.8	2.7	-4.0
18526S	3.5	8.0	-4.0	0.66	-300.0	16.0	100.0	0.8	13.3	-5.0	2.0	13.0	3.8	-4.0
18527S	3.0	14.0	-4.0	1.00	-200.0	18.0	170.0	0.9	11.4	-7.0	-1.0	28.0	9.1	5.0
18528S	3.8	6.0	-4.0	1.10	-200.0	10.0	190.0	0.8	12.2	6.0	-2.0	14.0	5.0	-4.0
18529S	3.3	11.0	-4.0	1.10	200.0	12.0	100.0	1.0	12.5	-5.0	-1.0	14.0	7.7	-4.0
18531S	3.4	8.0	-4.0	1.10	-300.0	70.0	100.0	3.1	12.7	-7.0	-2.0	16.0	51.7	4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
18421S	100.0	42.0	66.0	5.7	1.2	2.9	0.4
18426S	190.0	64.0	113.0	7.1	2.1	3.8	0.5
18434S	72.0	44.0	69.0	4.8	1.6	2.4	0.4
18438S	63.0	36.0	62.0	6.0	0.9	2.0	0.4
18441S	54.0	45.0	73.0	7.0	1.6	3.4	0.5
18444S	130.0	67.0	118.0	10.9	1.6	4.3	1.0
18466S	78.0	48.0	75.0	8.2	1.1	2.9	0.6
18468S	47.0	33.0	54.0	3.4	0.8	2.2	0.3
18471S	370.0	151.0	261.0	20.5	-1.5	23.5	3.5
18473S	63.0	39.0	71.0	7.6	-0.4	4.9	0.9
18478S	59.0	50.0	87.0	8.4	1.2	3.4	0.5
18482S	67.0	25.0	48.0	3.9	1.8	3.4	0.4
18493S	81.0	77.0	129.0	14.6	-1.1	7.0	2.0
18495S	150.0	197.0	351.0	34.8	1.5	19.2	3.1
18505S	58.0	26.0	44.0	4.5	1.3	2.2	0.3
18506S	220.0	65.0	104.0	12.1	2.4	3.4	0.6
18507S	120.0	69.0	110.0	6.4	1.6	3.5	0.4
18509S	44.0	37.0	69.0	6.5	0.9	2.7	0.4
18521S	160.0	63.0	107.0	8.0	1.8	4.8	0.5
18524S	48.0	30.0	49.0	4.9	1.2	2.3	0.3
18526S	76.0	50.0	94.0	8.8	1.8	3.3	0.6
18527S	100.0	69.0	118.0	11.6	1.2	4.8	0.8
18528S	71.0	47.0	79.0	7.2	1.5	2.9	0.4
18529S	69.0	47.0	80.0	8.1	1.6	3.0	0.5
18531S	150.0	50.0	87.0	8.9	1.0	2.7	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
18536S	65.488	146.389	B-5	8	7	30	0	-0.5	13.0	-8.0	700.0	2.9	14.0	80.0	3.0	23.0
18540S	65.474	146.725	B-6	8	5	33	0	-0.5	6.0	-7.0	800.0	-1.2	20.0	90.0	8.0	23.0
18541S	65.560	146.838	C-6	9	4	36	0	-0.5	8.0	-14.0	1000.0	-3.1	7.0	60.0	7.0	13.0
18543S	65.478	146.893	B-6	8	4	34	0	-0.5	-2.0	-5.0	600.0	0.5	9.0	80.0	3.0	10.0
18545S	65.533	146.668	C-6	8	5	11	0	-0.5	49.0	8.0	700.0	1.2	21.0	100.0	8.0	34.0
18549S	65.571	146.266	C-5	9	7	27	0	-0.5	6.0	-7.0	800.0	-1.4	12.0	60.0	3.0	22.0
18551S	65.605	146.691	C-6	9	5	15	0	-0.5	13.0	5.0	800.0	-1.3	20.0	90.0	18.0	40.0
18552S	65.496	146.535	B-6	8	6	28	0	-0.5	37.0	-10.0	700.0	2.8	13.0	60.0	9.0	18.0
18553S	65.658	146.842	C-6	10	4	26	0	-0.5	10.0	-6.0	700.0	-0.5	15.0	80.0	5.0	25.0
18556S	65.400	146.408	B-5	7	6	25	0	-0.5	13.0	-5.0	500.0	-1.2	10.0	40.0	3.0	20.0
18558S	65.532	146.895	C-6	8	4	10	0	-0.5	9.0	-8.0	900.0	-1.5	12.0	100.0	3.0	18.0
18562S	65.473	145.720	B-4	8	10	32	0	-0.5	14.0	-8.0	700.0	-1.5	13.0	80.0	2.0	22.0
18568S	65.579	146.443	C-5	9	6	26	0	-0.5	38.0	-9.0	700.0	-2.1	9.0	40.0	12.0	10.0
18576S	65.543	146.254	C-5	8	7	2	0	-0.5	9.0	-6.0	500.0	-1.3	11.0	60.0	2.0	17.0
18582S	65.535	146.297	C-5	8	7	10	-28	-0.5	6.0	-7.0	600.0	-1.3	13.0	50.0	3.0	19.0
18583S	65.493	146.212	B-5	8	7	25	0	-0.5	9.0	-6.0	500.0	-1.2	10.0	40.0	5.0	18.0
18585S	65.431	146.762	B-6	7	5	17	0	-0.5	-3.0	-7.0	600.0	1.0	15.0	100.0	10.0	18.0
18586S	65.626	146.883	C-6	9	4	10	0	-0.5	30.0	10.0	700.0	-0.6	24.0	80.0	13.0	44.0
18587S	65.427	146.632	B-6	7	5	13	0	-0.5	13.0	-9.0	600.0	-1.7	10.0	50.0	12.0	22.0
18588S	65.639	146.656	C-6	9	5	2	0	-0.5	9.0	-5.0	500.0	-1.0	11.0	50.0	9.0	28.0
18602S	65.657	146.618	C-6	10	5	36	0	-0.5	5.0	-10.0	1000.0	-2.1	9.0	70.0	5.0	14.0
18605S	65.583	146.755	C-6	9	5	29	0	-0.5	14.0	-14.0	800.0	-2.1	10.0	70.0	9.0	26.0
18610S	65.477	146.850	B-6	8	4	35	0	-0.5	6.0	-5.0	600.0	1.0	12.0	70.0	5.0	20.0
18615S	65.613	146.358	C-5	9	7	18	0	-0.5	21.0	-7.0	800.0	-1.4	20.0	70.0	6.0	26.0
18627S	65.580	146.503	C-6	9	6	28	0	-0.5	8.0	-10.0	800.0	-2.2	21.0	110.0	3.0	40.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
18536S	3.8	7.0	4.0	1.30	-300.0	16.0	130.0	0.6	13.4	5.0	-2.0	16.0	5.1	-4.0
18540S	4.6	9.0	-4.0	1.40	-200.0	16.0	110.0	1.0	17.9	-5.0	-1.0	12.0	3.6	-4.0
18541S	2.6	15.0	-4.0	1.90	-300.0	32.0	450.0	0.6	9.7	-5.0	6.0	130.0	121.0	25.0
18543S	2.7	8.0	-4.0	-0.05	-200.0	12.0	100.0	0.7	10.9	-5.0	-1.0	11.0	2.8	-8.0
18545S	4.8	8.0	-4.0	0.99	200.0	26.0	140.0	2.4	16.9	-5.0	-1.0	12.0	4.0	5.0
18549S	3.1	8.0	-4.0	0.84	-200.0	16.0	130.0	1.7	11.6	-5.0	2.0	15.0	3.9	4.0
18551S	4.1	9.0	6.0	0.76	-200.0	160.0	230.0	1.4	16.2	-5.0	-1.0	18.0	4.9	-4.0
18552S	3.6	9.0	-4.0	1.50	-200.0	38.0	180.0	2.7	11.4	-5.0	2.0	30.0	20.1	-6.0
18553S	4.1	7.0	-4.0	0.88	-200.0	34.0	180.0	0.8	12.5	-5.0	-1.0	17.0	4.2	-9.0
18556S	2.7	5.0	-4.0	0.67	-200.0	12.0	130.0	0.7	7.7	6.0	-1.0	10.0	2.6	-4.0
18558S	3.3	11.0	-4.0	0.92	-200.0	18.0	120.0	1.0	13.9	-5.0	2.0	13.0	4.8	-4.0
18562S	3.9	9.0	-4.0	0.99	300.0	14.0	110.0	7.0	13.5	-5.0	-1.0	10.0	3.2	-4.0
18568S	2.7	14.0	-4.0	2.00	-300.0	20.0	280.0	0.7	9.1	-11.0	7.0	37.0	28.5	57.0
18576S	2.8	13.0	-4.0	0.96	-200.0	10.0	90.0	0.9	9.7	-5.0	-1.0	16.0	3.7	-4.0
18582S	3.0	10.0	-4.0	0.90	200.0	12.0	90.0	1.2	9.5	-5.0	-1.0	16.0	4.7	-4.0
18583S	2.7	11.0	-4.0	1.20	-200.0	10.0	170.0	0.6	9.0	-5.0	1.0	16.0	10.2	4.0
18585S	3.7	8.0	5.0	1.00	-200.0	10.0	120.0	1.2	13.8	-5.0	1.0	12.0	2.8	-10.0
18586S	4.3	7.0	-4.0	0.74	-200.0	74.0	130.0	1.9	12.8	-5.0	-1.0	13.0	4.3	-10.0
18587S	2.9	12.0	-4.0	1.70	-200.0	12.0	320.0	1.1	9.8	-5.0	5.0	38.0	15.5	52.0
18588S	3.6	11.0	-4.0	1.40	-200.0	58.0	470.0	1.1	10.2	-5.0	2.0	59.0	21.6	8.0
18602S	3.4	12.0	-4.0	1.40	-200.0	58.0	210.0	0.9	13.1	-8.0	-1.0	45.0	10.9	-6.0
18605S	3.3	9.0	-4.0	1.20	-300.0	86.0	260.0	1.2	13.6	-8.0	2.0	56.0	56.5	9.0
18610S	3.0	9.0	5.0	0.93	-200.0	12.0	110.0	0.9	11.9	-5.0	1.0	14.0	7.5	-9.0
18615S	4.1	9.0	-4.0	0.83	-200.0	14.0	110.0	0.8	11.3	-5.0	-1.0	12.0	3.6	-4.0
18627S	4.8	7.0	10.0	1.20	500.0	12.0	180.0	0.6	20.2	-6.0	-2.0	13.0	3.7	5.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
18536S	70.0	53.0	93.0	8.3	1.8	3.3	0.5
18540S	86.0	54.0	94.0	6.2	1.9	3.1	0.5
18541S	160.0	275.0	513.0	50.6	1.0	23.3	4.2
18543S	54.0	45.0	74.0	4.9	0.9	2.4	0.3
18545S	100.0	49.0	94.0	6.0	2.7	3.3	0.5
18549S	74.0	50.0	81.0	8.2	1.7	2.5	0.6
18551S	270.0	60.0	123.0	7.6	1.2	3.9	0.5
18552S	97.0	73.0	125.0	11.1	1.6	4.5	0.9
18553S	140.0	53.0	83.0	5.2	1.6	2.8	0.4
18556S	47.0	34.0	56.0	5.2	1.6	1.8	0.3
18558S	65.0	48.0	84.0	8.4	1.4	2.8	0.5
18562S	57.0	43.0	72.0	7.8	0.8	2.3	0.4
18568S	73.0	82.0	146.0	12.0	1.2	5.9	1.1
18576S	55.0	47.0	86.0	7.7	1.6	3.3	0.6
18582S	63.0	49.0	85.0	7.8	1.1	2.9	0.5
18583S	67.0	43.0	68.0	7.6	1.1	3.4	0.6
18585S	76.0	46.0	76.0	4.9	1.2	3.0	0.4
18586S	200.0	46.0	73.0	5.5	1.6	2.5	0.4
18587S	75.0	72.0	133.0	13.9	0.6	7.3	1.1
18588S	250.0	95.0	158.0	10.9	1.0	8.2	1.2
18602S	140.0	103.0	179.0	16.5	1.5	7.1	1.1
18605S	940.0	106.0	173.0	21.6	1.1	11.3	2.1
18610S	88.0	48.0	79.0	5.3	1.0	3.6	0.5
18615S	86.0	42.0	69.0	7.7	1.4	2.5	0.6
18627S	84.0	52.0	102.0	9.0	1.2	3.1	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
18634S	65.605	146.535	C-6	9	6	17	0	-0.5	5.0	-7.0	500.0	-1.4	13.0	60.0	3.0	20.0
18635S	65.582	146.630	C-6	9	5	25	0	-0.5	17.0	-10.0	600.0	-2.6	10.0	50.0	8.0	16.0
18638S	65.531	146.545	C-6	8	6	8	0	-0.5	13.0	-10.0	700.0	-2.3	6.0	20.0	15.0	5.0
18644S	65.632	146.855	C-6	9	4	2	0	-0.5	8.0	-10.0	500.0	-2.4	5.0	50.0	6.0	15.0
18646S	65.478	145.776	B-4	8	10	31	0	-0.5	100.0	-7.0	400.0	-1.3	19.0	70.0	3.0	26.0
18647S	65.484	146.099	B-5	8	8	33	0	-0.5	8.0	-5.0	600.0	-1.1	-5.0	50.0	1.0	13.0
18650S	65.417	146.786	B-6	7	5	19	1	-0.5	9.0	-5.0	600.0	-0.5	10.0	50.0	5.0	15.0
18652S	65.503	146.082	C-5	8	8	22	0	-0.5	9.0	-7.0	700.0	-1.1	14.0	60.0	2.0	21.0
18653S	65.572	146.326	C-5	9	7	29	0	-0.5	10.0	-10.0	700.0	-2.4	15.0	90.0	5.0	38.0
18660S	65.527	146.413	C-5	8	6	13	0	-0.5	16.0	-7.0	600.0	-1.4	12.0	80.0	2.0	26.0
18662S	65.402	146.678	B-6	7	5	27	0	-0.5	12.0	-7.0	500.0	-1.3	7.0	40.0	9.0	13.0
18663S	65.470	145.894	B-4	8	9	33	0	-0.5	120.0	26.0	600.0	-1.4	21.0	80.0	9.0	89.0
18669S	65.435	145.955	B-4	7	9	17	0	-0.5	49.0	9.0	500.0	-1.5	10.0	70.0	5.0	34.0
18672S	65.702	146.840	C-6	10	4	11	0	-0.5	9.0	-5.0	1300.0	-0.5	21.0	170.0	5.0	42.0
18676S	65.627	146.887	C-6	9	4	10	0	-0.5	10.0	-5.0	800.0	1.5	17.0	80.0	7.0	31.0
18678S	65.474	146.108	B-5	8	8	33	0	-0.5	9.0	-6.0	600.0	-1.2	15.0	50.0	1.0	16.0
18682S	65.658	146.415	C-5	10	6	25	0	-0.5	4.0	-7.0	800.0	-1.5	9.0	80.0	3.0	17.0
18684S	65.461	146.578	B-6	7	6	6	0	-0.5	16.0	7.0	600.0	-1.4	10.0	50.0	6.0	21.0
18692S	65.524	146.541	C-6	8	6	16	0	-0.5	3.0	-9.0	400.0	2.7	-5.0	20.0	8.0	3.5
18695S	65.511	146.355	C-5	8	7	20	0	-0.5	13.0	-7.0	600.0	-1.5	11.0	60.0	2.0	16.0
18697S	65.518	146.738	C-6	8	5	16	0	-0.5	18.0	6.0	600.0	0.9	12.0	70.0	7.0	16.0
18699S	65.687	146.724	C-6	10	5	16	0	-0.5	9.0	-6.0	900.0	-1.2	17.0	80.0	9.0	18.0
19051S	65.419	146.770	B-6	7	5	20	0	1.0	5.0	-5.0	400.0	-0.5	7.0	30.0	4.0	6.5
19052S	65.389	146.564	B-6	7	6	32	0	-0.5	16.0	-10.0	600.0	-1.7	9.0	60.0	7.0	18.0
19054S	65.640	146.625	C-6	9	5	1	0	-0.5	10.0	-10.0	800.0	-1.9	10.0	80.0	5.0	22.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
18634S	3.7	9.0	-4.0	0.74	-200.0	14.0	120.0	0.7	12.3	-5.0	-1.0	13.0	5.8	4.0
18635S	2.3	9.0	-4.0	1.50	-400.0	18.0	150.0	0.5	9.6	-12.0	5.0	22.0	30.0	16.0
18638S	2.6	14.0	-4.0	2.60	-200.0	18.0	370.0	0.6	8.8	-5.0	5.0	75.0	58.3	-5.0
18644S	2.5	18.0	-4.0	1.90	-200.0	50.0	340.0	0.3	10.2	-5.0	4.0	100.0	52.5	-6.0
18646S	3.8	5.0	-4.0	0.52	200.0	12.0	60.0	2.6	12.7	-7.0	-1.0	9.6	3.1	6.0
18647S	2.8	12.0	-4.0	0.92	200.0	10.0	90.0	0.7	8.1	-5.0	1.0	11.0	3.8	-4.0
18650S	3.0	8.0	-4.0	1.00	-200.0	2.0	160.0	1.0	9.5	-5.0	1.0	16.0	6.2	-7.0
18652S	3.5	11.0	-4.0	0.92	-200.0	16.0	170.0	0.6	11.2	-5.0	-1.0	13.0	4.3	-4.0
18653S	4.6	7.0	-5.0	0.80	-400.0	22.0	210.0	0.9	17.1	-7.0	-3.0	16.0	4.8	4.0
18660S	3.5	10.0	-4.0	1.00	-200.0	16.0	100.0	2.9	11.1	-5.0	2.0	15.0	5.2	-4.0
18662S	2.3	6.0	-4.0	1.40	-200.0	12.0	210.0	0.8	7.6	-5.0	2.0	17.0	9.1	11.0
18663S	4.2	6.0	-4.0	0.78	-200.0	16.0	130.0	1.0	15.5	-9.0	2.0	11.0	4.3	52.0
18669S	3.2	6.0	-4.0	0.70	-200.0	14.0	110.0	1.5	11.9	-7.0	-1.0	13.0	11.6	17.0
18672S	4.3	5.0	-4.0	0.62	-200.0	14.0	120.0	1.9	13.2	-5.0	-1.0	10.0	2.3	-9.0
18676S	3.7	8.0	8.0	0.84	-200.0	56.0	140.0	1.5	14.5	-5.0	1.0	13.0	3.9	-11.0
18678S	3.2	9.0	-4.0	0.79	-200.0	10.0	60.0	0.8	8.9	-5.0	1.0	12.0	4.2	-4.0
18682S	2.9	11.0	-4.0	0.98	-200.0	16.0	50.0	0.7	12.6	-5.0	-1.0	12.0	3.7	-4.0
18684S	3.1	8.0	-4.0	1.10	-200.0	10.0	220.0	0.9	9.0	-5.0	2.0	18.0	12.9	6.0
18692S	1.5	13.0	-4.0	2.00	-200.0	14.0	220.0	0.4	6.4	-5.0	8.0	40.0	31.2	9.0
18695S	3.4	6.0	-4.0	0.81	-200.0	10.0	160.0	1.7	10.8	-5.0	-1.0	12.0	2.7	-4.0
18697S	3.1	9.0	-4.0	1.00	-200.0	12.0	120.0	1.4	12.0	-5.0	1.0	19.0	6.7	-9.0
18699S	4.1	15.0	-4.0	1.30	-200.0	48.0	260.0	0.7	14.8	-5.0	1.0	40.0	9.9	-4.0
19051S	2.1	6.0	-4.0	1.10	-200.0	-2.0	130.0	1.2	6.6	-5.0	1.0	11.0	5.1	-6.0
19052S	2.7	8.0	5.0	0.84	-200.0	18.0	140.0	1.3	10.5	-7.0	-1.0	13.0	25.5	-6.0
19054S	3.6	11.0	-4.0	1.00	-200.0	34.0	200.0	0.9	12.5	-5.0	2.0	34.0	8.0	11.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
18634S	74.0	54.0	84.0	9.0	1.1	3.1	0.5
18635S	100.0	53.0	88.0	9.6	1.2	3.6	1.2
18638S	81.0	128.0	206.0	17.0	1.0	7.3	1.6
18644S	200.0	154.0	280.0	30.4	1.4	17.6	3.0
18646S	100.0	31.0	74.0	5.7	1.3	2.3	0.4
18647S	54.0	31.0	58.0	4.9	0.6	2.2	0.4
18650S	50.0	45.0	73.0	4.3	0.9	2.8	0.4
18652S	73.0	42.0	71.0	6.8	1.2	2.2	0.3
18653S	100.0	55.0	88.0	10.0	1.1	3.3	0.5
18660S	74.0	47.0	73.0	7.8	1.7	2.6	0.5
18662S	61.0	38.0	61.0	6.5	1.1	3.3	0.5
18663S	80.0	39.0	66.0	7.5	1.3	2.9	0.5
18669S	66.0	41.0	69.0	6.8	1.2	2.8	0.6
18672S	140.0	43.0	69.0	4.3	1.1	2.0	0.3
18676S	230.0	53.0	89.0	5.7	1.9	3.6	0.4
18678S	82.0	34.0	58.0	5.6	1.4	2.0	0.3
18682S	75.0	51.0	83.0	8.8	1.0	3.0	0.4
18684S	73.0	44.0	83.0	7.4	1.0	3.3	0.5
18692S	31.0	81.0	133.0	11.7	1.0	7.7	1.5
18695S	76.0	39.0	73.0	5.7	1.4	1.9	0.3
18697S	66.0	59.0	91.0	6.1	1.4	3.0	0.5
18699S	160.0	103.0	183.0	10.6	0.8	6.7	0.9
19051S	41.0	32.0	50.0	3.3	0.6	2.2	0.3
19052S	71.0	44.0	78.0	7.6	0.8	3.3	0.7
19054S	110.0	93.0	168.0	14.6	1.0	5.3	0.9

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19059S	65.452	146.329	B-5	7	7	9	0	-0.5	10.0	22.0	900.0	-1.8	17.0	100.0	5.0	23.0
19063S	65.478	145.859	B-4	8	9	34	0	-0.5	57.0	21.0	300.0	-1.5	15.0	50.0	8.0	41.0
19070S	65.406	146.435	B-5	7	6	25	0	-0.5	16.0	-6.0	500.0	-1.1	9.0	50.0	6.0	24.0
19076S	65.691	146.727	C-6	10	5	16	0	-0.5	7.0	-6.0	700.0	2.2	17.0	90.0	7.0	18.0
19087S	65.444	146.894	B-6	7	4	10	0	-0.5	11.0	-6.0	900.0	1.6	27.0	100.0	4.0	26.0
19089S	65.470	146.891	B-6	7	4	3	0	-1.2	6.0	-5.0	700.0	-0.8	11.0	70.0	3.0	26.0
19090S	65.651	146.981	C-6	10	4	31	0	-0.5	9.0	-6.0	1100.0	-1.1	19.0	100.0	7.0	26.0
19091S	65.643	146.875	C-6	10	4	34	0	-0.5	12.0	-10.0	1200.0	2.3	13.0	100.0	6.0	34.0
19097S	65.456	146.279	B-5	7	7	3	0	-0.5	11.0	-8.0	700.0	-1.6	13.0	80.0	4.0	26.0
19100S	65.466	145.889	B-4	7	9	4	0	-0.5	140.0	30.0	800.0	-1.5	20.0	90.0	10.0	94.0
19104S	65.590	146.703	C-6	9	5	21	0	-0.5	8.0	-8.0	800.0	-1.4	16.0	90.0	7.0	43.0
19105S	65.468	146.596	B-6	7	6	6	0	-0.5	16.0	-7.0	700.0	-1.8	11.0	60.0	4.0	17.0
19107S	65.597	146.950	C-6	9	4	20	0	-0.5	9.0	-7.0	500.0	-1.7	9.0	40.0	5.0	35.0
19108S	65.602	146.949	C-6	9	4	17	0	0.5	24.0	-9.0	700.0	-2.1	17.0	90.0	9.0	70.0
19117S	65.463	145.886	B-4	7	9	3	0	-0.5	98.0	28.0	600.0	-1.5	18.0	80.0	9.0	74.0
19122S	65.527	146.603	C-6	8	6	18	0	-0.5	18.0	8.0	700.0	-2.0	16.0	100.0	3.0	19.0
19123S	65.413	146.148	B-5	7	8	20	0	0.5	31.0	-8.0	600.0	1.9	12.0	70.0	3.0	21.0
19124S	65.517	146.296	C-5	8	7	15	0	-0.5	10.0	-6.0	400.0	-1.2	10.0	50.0	2.0	14.0
19127S	65.634	146.950	C-6	9	4	5	0	-0.5	13.0	-5.0	800.0	1.3	18.0	80.0	7.0	26.0
19134S	65.516	146.122	C-5	8	8	16	0	-0.5	8.0	-6.0	500.0	-1.2	9.0	50.0	3.0	16.0
19135S	65.414	146.046	B-5	7	8	23	0	0.5	130.0	-9.0	700.0	-1.5	15.0	70.0	8.0	51.0
19137S	65.626	146.494	C-5	9	6	9	0	-0.5	6.0	-6.0	500.0	-1.1	13.0	50.0	2.0	17.0
19139S	65.559	146.466	C-5	9	6	34	0	-0.5	46.0	-9.0	700.0	-2.1	14.0	70.0	10.0	14.0
19143S	65.556	146.294	C-5	8	7	3	0	-0.5	22.0	-7.0	700.0	-1.3	31.0	70.0	5.0	25.0
19145S	65.593	146.742	C-6	9	5	20	0	0.5	11.0	-10.0	700.0	-2.7	10.0	70.0	10.0	28.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19059S	3.6	6.0	-4.0	0.99	-300.0	18.0	110.0	0.7	15.0	-5.0	-2.0	15.0	4.0	-4.0
19063S	3.4	5.0	6.0	0.92	400.0	16.0	110.0	0.5	11.1	-7.0	-1.0	16.0	3.0	27.0
19070S	2.9	8.0	-4.0	0.77	-200.0	24.0	120.0	0.7	9.2	6.0	1.0	11.0	9.0	5.0
19076S	3.5	11.0	-4.0	1.20	200.0	38.0	50.0	1.2	13.8	-5.0	-1.0	13.0	3.9	4.0
19087S	4.5	9.0	-4.0	1.40	-200.0	14.0	80.0	0.9	17.0	-5.0	-1.0	10.0	3.3	4.0
19089S	2.7	8.0	4.0	1.10	-200.0	29.0	110.0	0.6	12.0	-5.0	-1.0	11.0	3.4	-9.0
19090S	4.1	10.0	-4.0	1.00	-200.0	40.0	160.0	1.0	16.1	-5.0	-1.0	16.0	5.1	-4.0
19091S	3.4	10.0	-4.0	1.00	-200.0	34.0	170.0	0.8	14.7	-5.0	-2.0	15.0	6.5	-4.0
19097S	3.8	14.0	-4.0	1.00	-200.0	20.0	100.0	2.4	12.5	-5.0	1.0	16.0	6.4	-4.0
19100S	4.4	6.0	-4.0	0.83	-200.0	16.0	140.0	1.3	15.8	-9.0	-2.0	11.0	3.5	25.0
19104S	3.3	9.0	-4.0	0.67	-200.0	34.0	200.0	1.3	13.9	-5.0	-1.0	13.0	5.0	-4.0
19105S	2.9	8.0	-4.0	1.30	-200.0	16.0	120.0	1.9	10.2	-8.0	-2.0	16.0	13.3	-4.0
19107S	3.1	6.0	-4.0	1.10	300.0	50.0	340.0	2.1	10.5	-5.0	-2.0	37.0	14.8	8.0
19108S	4.7	7.0	-4.0	0.94	-200.0	98.0	140.0	2.9	13.3	-6.0	2.0	26.0	13.7	10.0
19117S	3.7	7.0	-4.0	0.89	-200.0	16.0	110.0	1.0	15.0	9.0	-1.0	10.0	2.2	30.0
19122S	3.8	7.0	-4.0	1.10	-300.0	14.0	130.0	0.7	14.9	-5.0	-1.0	14.0	21.5	-7.0
19123S	3.0	9.0	-4.0	0.76	-200.0	40.0	190.0	5.1	11.2	-5.0	2.0	15.0	13.0	-4.0
19124S	2.6	10.0	-4.0	1.00	-200.0	10.0	70.0	1.5	8.6	6.0	-1.0	11.0	5.3	4.0
19127S	4.4	10.0	-4.0	0.98	-200.0	50.0	150.0	1.1	15.5	-5.0	-1.0	15.0	4.1	-4.0
19134S	2.5	10.0	-4.0	1.00	-200.0	12.0	110.0	1.0	8.8	-5.0	-1.0	14.0	6.0	-4.0
19135S	3.7	10.0	-4.0	0.62	-200.0	26.0	90.0	4.3	13.4	-8.0	-1.0	11.0	3.6	28.0
19137S	3.3	8.0	-4.0	0.65	-200.0	14.0	150.0	0.3	10.1	-5.0	-1.0	11.0	4.0	-4.0
19139S	3.3	10.0	-4.0	1.30	-300.0	28.0	120.0	1.4	10.8	-10.0	3.0	36.0	48.0	19.0
19143S	3.7	8.0	-4.0	0.74	-200.0	22.0	150.0	4.3	11.1	-5.0	2.0	15.0	5.5	-4.0
19145S	2.8	11.0	-4.0	1.20	-300.0	90.0	250.0	0.6	12.5	33.0	-2.0	62.0	82.6	5.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19059S	63.0	52.0	91.0	8.0	1.3	3.0	0.5
19063S	61.0	43.0	74.0	6.1	0.7	2.2	0.4
19070S	92.0	42.0	70.0	7.0	1.8	2.4	0.4
19076S	150.0	49.0	86.0	5.6	1.8	3.4	0.5
19087S	96.0	48.0	89.0	6.0	-0.2	3.2	0.4
19089S	120.0	48.0	73.0	4.6	1.6	2.5	0.3
19090S	120.0	56.0	100.0	6.3	2.0	3.3	0.5
19091S	130.0	51.0	81.0	8.8	1.9	2.5	0.5
19097S	75.0	49.0	89.0	8.2	1.2	2.9	0.5
19100S	77.0	40.0	69.0	7.6	1.2	3.7	0.5
19104S	110.0	49.0	85.0	9.1	1.4	3.6	0.5
19105S	71.0	48.0	80.0	7.6	1.8	3.0	0.7
19107S	240.0	78.0	138.0	13.6	1.3	7.4	1.1
19108S	250.0	71.0	119.0	14.5	2.5	6.8	1.2
19117S	66.0	38.0	65.0	7.0	1.7	2.8	0.5
19122S	76.0	48.0	79.0	8.4	1.2	3.1	0.7
19123S	140.0	41.0	73.0	8.9	1.6	4.4	0.8
19124S	53.0	37.0	60.0	6.0	1.0	2.3	0.5
19127S	150.0	55.0	97.0	6.6	2.3	3.5	0.5
19134S	64.0	39.0	66.0	7.0	1.0	2.8	0.5
19135S	100.0	44.0	87.0	8.7	2.0	3.0	0.4
19137S	77.0	39.0	68.0	6.5	1.1	2.5	0.4
19139S	83.0	79.0	138.0	12.3	1.2	4.6	1.1
19143S	100.0	45.0	78.0	7.5	1.4	2.6	0.4
19145S	630.0	118.0	202.0	23.6	-1.0	11.2	2.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19146S	65.466	146.597	B-6	7	6	6	0	-0.5	13.0	-7.0	400.0	-1.4	10.0	40.0	7.0	16.0
19147S	65.394	145.997	B-4	7	8	36	0	-0.5	45.0	9.0	500.0	-0.8	23.0	90.0	3.0	72.0
19149S	65.476	146.707	B-6	8	5	34	0	-0.5	11.0	-5.0	800.0	1.4	16.0	90.0	8.0	24.0
19154S	65.392	146.564	B-6	7	6	32	0	-0.5	20.0	-8.0	600.0	-1.4	11.0	40.0	9.0	20.0
19158S	65.491	146.218	B-5	8	7	25	0	-0.5	7.0	-6.0	600.0	-1.3	9.0	50.0	4.0	24.0
19162S	65.483	146.911	B-6	8	4	34	0	-0.5	3.0	-9.0	900.0	-2.0	16.0	90.0	4.0	15.0
19168S	65.427	145.868	B-4	7	9	15	0	-0.5	6.0	-6.0	600.0	1.2	29.0	120.0	3.0	62.0
19171S	65.433	146.218	B-5	7	7	13	0	-0.5	6.0	10.0	600.0	-1.1	9.0	50.0	2.0	14.0
19172S	65.628	146.375	C-5	9	7	7	-25	-0.5	14.0	-8.0	700.0	-1.6	15.0	90.0	4.0	35.0
19176S	65.482	146.574	B-6	8	6	32	0	-0.5	26.0	-10.0	700.0	-1.8	11.0	60.0	7.0	14.0
19179S	65.665	146.730	C-6	10	5	28	-2	-0.5	7.0	-10.0	500.0	-1.2	11.0	40.0	10.0	10.0
19182S	65.498	146.060	B-5	8	8	26	0	-0.5	42.0	-8.0	600.0	-1.3	13.0	50.0	3.0	34.0
19185S	65.405	146.626	B-6	7	5	25	0	-0.5	24.0	-9.0	700.0	-0.5	7.0	60.0	15.0	28.0
19191S	65.684	146.433	C-5	10	6	23	17	-0.5	9.0	-7.0	800.0	-1.7	10.0	50.0	5.0	22.0
19193S	65.608	146.533	C-6	9	6	17	0	-0.5	6.0	-8.0	400.0	-1.5	11.0	60.0	3.0	18.0
19194S	65.621	146.932	C-6	9	4	9	0	-1.2	6.0	8.0	600.0	-0.8	16.0	90.0	8.0	72.0
19200S	65.534	146.303	C-5	8	7	9	0	-0.5	7.0	-8.0	600.0	-1.8	11.0	80.0	2.0	24.0
19201S	65.643	146.440	C-5	10	6	35	0	-0.5	4.0	-9.0	900.0	-1.6	11.0	70.0	2.0	24.0
19214S	65.683	146.599	C-6	10	5	24	0	0.5	22.0	-5.0	900.0	-1.0	17.0	70.0	16.0	36.0
19215S	65.513	146.188	C-5	8	8	19	0	-0.5	6.0	-8.0	600.0	1.6	10.0	40.0	4.0	14.0
19216S	65.440	146.595	B-6	7	6	18	0	0.5	10.0	-7.0	300.0	-1.3	-5.0	20.0	16.0	8.0
19219S	65.524	146.568	C-6	8	6	17	0	-0.5	9.0	-12.0	900.0	-2.3	12.0	50.0	11.0	14.0
19226S	65.543	146.511	C-6	8	6	4	0	-0.5	8.0	11.0	600.0	-1.5	10.0	60.0	6.0	17.0
19227S	65.564	146.917	C-6	9	4	33	0	-0.5	10.0	-6.0	800.0	1.3	15.0	90.0	9.0	26.0
19230S	65.653	146.876	C-6	10	4	34	0	-0.5	12.0	-7.0	1300.0	-1.2	19.0	90.0	8.0	30.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19146S	2.7	6.0	-4.0	1.40	-200.0	10.0	240.0	0.6	7.7	-5.0	-1.0	15.0	8.1	5.0
19147S	4.9	7.0	-4.0	0.72	-200.0	8.0	120.0	12.0	17.6	-5.0	-1.0	8.7	2.2	-4.0
19149S	4.2	9.0	8.0	1.50	-200.0	12.0	100.0	0.9	15.7	-5.0	1.0	16.0	5.9	-4.0
19154S	2.9	4.0	-4.0	1.00	-200.0	14.0	270.0	1.0	9.1	-5.0	1.0	14.0	32.0	7.0
19158S	2.5	10.0	-4.0	1.10	-200.0	10.0	150.0	0.8	8.5	-5.0	2.0	15.0	11.3	4.0
19162S	3.2	7.0	-4.0	0.91	-300.0	20.0	140.0	0.6	13.6	-6.0	-2.0	15.0	4.2	-4.0
19168S	6.2	6.0	4.0	1.10	-200.0	10.0	60.0	1.8	20.7	-5.0	-1.0	7.7	2.4	-4.0
19171S	2.5	12.0	-4.0	1.00	-200.0	14.0	60.0	0.6	8.6	-5.0	1.0	12.0	3.5	-4.0
19172S	4.0	9.0	-4.0	1.30	-200.0	14.0	130.0	0.7	14.6	-5.0	2.0	17.0	9.9	7.0
19176S	2.8	9.0	10.0	1.50	-200.0	26.0	150.0	2.3	9.4	-5.0	-1.0	27.0	36.4	-5.0
19179S	3.0	16.0	-4.0	1.90	-300.0	46.0	340.0	0.3	10.9	-5.0	2.0	71.0	26.8	4.0
19182S	3.5	9.0	-4.0	0.50	-200.0	18.0	100.0	3.3	11.7	-5.0	-1.0	10.0	2.5	7.0
19185S	2.5	6.0	-4.0	1.50	-300.0	20.0	370.0	0.6	8.9	-6.0	3.0	19.0	124.0	16.0
19191S	3.5	6.0	-4.0	1.00	300.0	58.0	360.0	0.7	11.3	-5.0	2.0	35.0	9.1	4.0
19193S	3.7	10.0	-4.0	0.75	-200.0	16.0	130.0	0.3	11.5	10.0	-1.0	13.0	4.1	-4.0
19194S	3.5	8.0	6.0	0.96	200.0	120.0	90.0	1.1	15.2	-5.0	-1.0	14.0	4.2	-11.0
19200S	3.4	14.0	-4.0	0.86	-200.0	14.0	130.0	1.1	12.0	-6.0	-1.0	21.0	5.1	-4.0
19201S	2.7	11.0	-4.0	0.97	-200.0	20.0	60.0	0.4	12.1	-5.0	-1.0	11.0	3.2	-4.0
19214S	4.5	7.0	5.0	0.89	-200.0	130.0	410.0	1.2	13.3	-5.0	1.0	21.0	8.2	7.0
19215S	2.7	10.0	-4.0	1.30	-200.0	10.0	150.0	0.7	8.5	-5.0	2.0	16.0	8.0	-4.0
19216S	1.8	5.0	-4.0	2.00	-200.0	8.0	540.0	1.0	5.9	-5.0	3.0	22.0	11.9	14.0
19219S	3.5	12.0	-4.0	1.60	-300.0	22.0	210.0	0.8	10.7	-11.0	7.0	41.0	134.0	-7.0
19226S	2.3	12.0	-4.0	1.10	-200.0	16.0	90.0	0.5	10.8	-5.0	2.0	15.0	15.0	-4.0
19227S	3.5	7.0	-4.0	0.85	-200.0	48.0	170.0	1.0	14.5	-5.0	-1.0	15.0	3.4	-4.0
19230S	4.0	8.0	-4.0	1.10	-200.0	38.0	150.0	1.3	16.6	-5.0	-1.0	16.0	4.1	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19146S	70.0	36.0	65.0	6.1	0.6	3.0	0.5
19147S	67.0	35.0	64.0	4.4	1.7	2.5	0.3
19149S	76.0	59.0	102.0	6.3	1.6	4.1	0.6
19154S	84.0	34.0	56.0	6.7	-0.5	2.7	0.7
19158S	64.0	40.0	65.0	7.1	1.2	3.3	0.6
19162S	72.0	53.0	90.0	8.8	1.8	3.1	0.5
19168S	79.0	35.0	56.0	4.8	1.0	2.4	0.3
19171S	64.0	38.0	63.0	6.1	1.1	2.2	0.4
19172S	78.0	58.0	98.0	9.7	0.7	3.3	0.5
19176S	110.0	62.0	106.0	10.0	1.5	3.9	1.0
19179S	170.0	122.0	199.0	12.7	1.2	9.6	1.4
19182S	64.0	39.0	69.0	6.7	1.3	2.5	0.4
19185S	77.0	44.0	81.0	10.2	-0.8	4.3	-0.1
19191S	220.0	72.0	127.0	11.5	1.5	5.3	0.9
19193S	81.0	49.0	78.0	8.1	1.2	3.0	0.4
19196S	430.0	53.0	87.0	5.7	2.1	3.0	0.5
19200S	75.0	69.0	117.0	10.4	2.3	4.3	0.7
19201S	75.0	41.0	60.0	7.0	1.2	2.4	0.4
19214S	530.0	59.0	112.0	8.0	1.3	6.2	0.8
19215S	60.0	39.0	69.0	6.7	1.2	3.2	0.6
19216S	39.0	36.0	69.0	7.7	-0.5	5.1	0.8
19219S	83.0	92.0	142.0	15.2	1.0	5.8	2.0
19226S	70.0	48.0	84.0	7.6	1.4	2.9	0.6
19227S	150.0	53.0	90.0	6.3	1.5	3.1	0.4
19230S	95.0	56.0	101.0	6.4	1.8	3.6	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19239S	65.428	146.221	B-5	7	7	13	0	-0.5	9.0	-10.0	600.0	-1.9	15.0	80.0	3.0	22.0
19242S	65.435	146.397	B-5	7	7	18	0	-0.5	16.0	-11.0	700.0	-1.8	11.0	90.0	10.0	25.0
19243S	65.579	146.789	C-6	9	5	30	0	-0.5	17.0	-16.0	-100.0	-3.1	7.0	90.0	11.0	21.0
19250S	65.653	146.734	C-6	10	5	33	0	-0.5	5.0	-9.0	600.0	-2.3	6.0	50.0	5.0	11.0
19261S	65.421	146.755	B-6	7	5	20	0	-1.2	5.0	-6.0	400.0	-0.6	8.0	40.0	5.0	21.0
19270S	65.381	146.165	B-5	6	8	6	0	-0.5	53.0	20.0	400.0	-0.8	15.0	60.0	3.0	17.0
19272S	65.626	146.665	C-6	9	5	11	0	-0.5	10.0	7.0	800.0	-1.5	15.0	60.0	10.0	28.0
19281S	65.689	146.888	C-6	10	4	15	0	-1.2	13.0	-7.0	900.0	-0.7	10.0	50.0	3.0	77.0
19297S	65.460	146.409	B-5	7	6	1	0	-0.5	10.0	-9.0	500.0	-1.5	9.0	40.0	11.0	16.0
19300S	65.566	146.919	C-6	9	4	33	0	-0.5	7.0	-7.0	800.0	-1.2	24.0	100.0	8.0	25.0
19302S	65.496	145.826	B-4	8	9	26	0	-0.5	42.0	-7.0	600.0	-1.4	14.0	70.0	3.0	17.0
19303S	65.495	146.786	B-6	8	5	30	0	-0.5	12.0	-6.0	500.0	-1.1	12.0	70.0	6.0	14.0
19304S	65.667	146.580	C-6	10	6	30	0	-0.5	7.0	-8.0	500.0	-1.7	8.0	30.0	5.0	18.0
19313S	65.520	145.802	C-4	8	9	13	0	-0.5	11.0	-7.0	400.0	1.6	14.0	60.0	1.0	29.0
19318S	65.639	146.435	C-5	9	6	2	0	-0.5	6.0	-9.0	900.0	-1.8	15.0	80.0	3.0	26.0
19320S	65.529	146.162	C-5	8	8	8	0	-0.5	7.0	-9.0	800.0	-1.6	13.0	80.0	3.0	18.0
19324S	65.631	146.366	C-5	9	7	6	0	-0.5	4.0	-8.0	500.0	2.0	14.0	90.0	3.0	28.0
19327S	65.476	146.057	B-5	8	8	35	0	-0.5	41.0	-7.0	300.0	-1.1	11.0	50.0	3.0	35.0
19330S	65.469	145.863	B-4	7	9	3	0	0.5	94.0	10.0	500.0	1.0	13.0	50.0	18.0	53.0
19334S	65.525	146.669	C-6	8	5	14	0	-0.5	16.0	-6.0	700.0	1.4	13.0	70.0	4.0	16.0
19338S	65.535	146.217	C-5	8	7	12	0	-0.5	25.0	-10.0	900.0	-2.0	17.0	100.0	4.0	36.0
19343S	65.614	146.999	C-6	9	4	18	0	-0.5	6.0	-6.0	900.0	-1.0	13.0	80.0	12.0	45.0
19346S	65.537	146.566	C-6	8	6	8	0	-0.5	12.0	-8.0	500.0	-1.5	11.0	40.0	7.0	10.0
19347S	65.629	146.357	C-5	9	7	6	0	-0.5	7.0	-7.0	400.0	-1.3	14.0	70.0	1.0	23.0
19348S	65.528	146.643	C-6	8	5	12	0	-0.5	22.0	34.0	700.0	3.0	12.0	60.0	8.0	18.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19239S	3.7	11.0	-4.0	1.00	-300.0	16.0	130.0	0.9	13.7	-6.0	-2.0	14.0	5.2	-5.0
19242S	3.7	7.0	-4.0	1.10	-200.0	14.0	160.0	0.7	13.6	-5.0	3.0	13.0	12.3	11.0
19243S	2.5	9.0	-4.0	1.10	-300.0	58.0	90.0	1.3	12.1	-8.0	3.0	73.0	334.0	26.0
19250S	2.6	16.0	-4.0	1.90	-300.0	40.0	470.0	0.5	9.3	-6.0	-2.0	90.0	32.2	5.0
19261S	2.1	9.0	-4.0	1.10	-200.0	14.0	120.0	0.7	7.6	-5.0	1.0	15.0	7.5	10.0
19270S	3.2	7.0	-4.0	0.47	-200.0	30.0	100.0	13.0	11.2	-5.0	-1.0	11.0	2.9	4.0
19272S	3.5	10.0	-4.0	1.10	-200.0	74.0	340.0	1.0	12.3	-5.0	-1.0	37.0	48.6	7.0
19281S	3.5	9.0	7.0	0.94	-200.0	38.0	200.0	1.1	10.2	-5.0	1.0	28.0	5.7	8.0
19297S	2.9	4.0	-4.0	1.70	-200.0	12.0	380.0	0.9	9.2	-5.0	3.0	21.0	11.6	12.0
19300S	3.4	8.0	-4.0	1.00	-200.0	46.0	140.0	0.8	13.8	-5.0	-1.0	12.0	3.8	-4.0
19302S	3.6	6.0	-4.0	0.58	-200.0	10.0	70.0	0.6	11.5	-7.0	-1.0	9.7	2.5	8.0
19303S	3.4	13.0	-4.0	1.20	-200.0	16.0	190.0	0.9	11.9	-5.0	2.0	30.0	11.0	8.0
19304S	2.8	6.0	-4.0	1.30	-200.0	64.0	460.0	0.6	7.7	-5.0	1.0	65.0	14.0	-5.0
19313S	3.3	8.0	-4.0	0.59	-200.0	8.0	50.0	1.3	12.0	-5.0	-1.0	8.0	2.1	4.0
19318S	3.7	10.0	5.0	0.97	-200.0	20.0	-40.0	0.6	13.6	-6.0	2.0	13.0	3.6	-5.0
19320S	3.3	11.0	-4.0	1.00	-200.0	16.0	-40.0	0.6	11.9	-5.0	-1.0	13.0	2.5	-4.0
19324S	3.7	11.0	5.0	1.20	-200.0	10.0	60.0	0.9	13.6	-5.0	-1.0	11.0	2.3	-4.0
19327S	3.3	8.0	-4.0	0.41	-200.0	20.0	80.0	2.7	10.6	-5.0	-1.0	9.5	2.9	5.0
19330S	2.9	7.0	-4.0	0.89	200.0	22.0	160.0	0.8	10.5	170.0	-1.0	13.0	5.2	45.0
19334S	3.3	8.0	-4.0	0.89	-200.0	14.0	120.0	1.6	12.8	5.0	1.0	11.0	3.4	-4.0
19338S	4.5	14.0	-4.0	0.99	500.0	18.0	270.0	-0.3	15.4	13.0	-1.0	25.0	6.3	-5.0
19343S	3.5	6.0	4.0	0.62	-200.0	28.0	210.0	0.9	15.0	-5.0	-1.0	15.0	4.1	-4.0
19346S	2.8	6.0	-4.0	1.40	-200.0	10.0	250.0	0.5	8.4	-5.0	2.0	25.0	11.7	-5.0
19347S	3.2	9.0	-4.0	1.00	-200.0	10.0	40.0	0.7	11.6	-5.0	2.0	10.0	2.4	-4.0
19348S	3.3	10.0	84.0	1.20	-300.0	14.0	120.0	0.4	12.5	14.0	3.0	38.0	57.7	-7.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19239S	82.0	51.0	89.0	8.3	1.5	3.0	0.5
19242S	61.0	45.0	70.0	7.5	1.8	2.9	0.6
19243S	500.0	154.0	239.0	35.5	-1.1	14.8	1.8
19250S	170.0	135.0	271.0	22.6	1.0	12.3	2.0
19261S	120.0	45.0	63.0	4.1	1.2	3.0	0.4
19270S	100.0	37.0	65.0	4.5	1.2	2.9	0.4
19272S	480.0	101.0	172.0	11.6	1.2	6.4	1.3
19281S	250.0	72.0	113.0	6.6	1.5	3.3	0.5
19297S	64.0	42.0	80.0	7.7	-0.5	5.0	0.7
19300S	220.0	47.0	82.0	5.9	1.2	3.1	0.4
19302S	53.0	35.0	66.0	6.0	1.6	2.4	0.4
19303S	97.0	75.0	125.0	8.2	2.1	5.2	0.8
19304S	230.0	86.0	157.0	13.7	0.8	6.1	1.0
19313S	54.0	33.0	64.0	5.7	0.9	2.2	0.4
19318S	81.0	45.0	84.0	8.0	1.0	3.0	0.5
19320S	65.0	46.0	74.0	6.9	1.2	2.7	0.4
19324S	65.0	45.0	79.0	7.5	1.3	3.0	0.4
19327S	66.0	38.0	63.0	6.4	1.3	2.3	0.3
19330S	71.0	36.0	55.0	3.7	1.4	2.3	0.3
19334S	66.0	42.0	79.0	4.9	1.2	2.4	0.3
19338S	110.0	75.0	138.0	11.9	1.8	4.8	0.8
19343S	90.0	53.0	99.0	6.8	1.8	2.9	0.4
19346S	64.0	48.0	80.0	7.1	0.8	3.3	0.6
19347S	60.0	38.0	63.0	6.1	1.2	2.0	0.4
19348S	73.0	97.0	205.0	15.6	1.5	4.9	1.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19349S	65.477	146.258	B-5	8	7	35	0	-0.5	10.0	-7.0	500.0	-1.4	9.0	50.0	5.0	13.0
19351S	65.569	146.439	C-5	9	6	35	0	-0.5	31.0	-6.0	700.0	-1.3	8.0	50.0	14.0	8.5
19356S	65.436	146.696	B-6	7	5	15	0	-0.5	13.0	7.0	700.0	1.7	13.0	70.0	3.0	10.0
19362S	65.680	146.639	C-6	10	5	23	0	-0.5	15.0	-7.0	1000.0	-1.2	22.0	100.0	17.0	32.0
19364S	65.647	146.645	C-6	10	5	35	0	-0.5	8.0	-5.0	700.0	1.5	10.0	40.0	8.0	17.0
19366S	65.630	146.348	C-5	9	7	5	0	-0.5	4.0	-8.0	400.0	-1.5	14.0	90.0	2.0	29.0
19367S	65.602	146.540	C-6	9	6	17	0	-0.5	4.0	-5.0	700.0	-0.9	11.0	60.0	4.0	21.0
19373S	65.687	146.590	C-6	10	6	18	0	-0.5	29.0	-5.0	900.0	-1.0	20.0	80.0	19.0	33.0
19382S	65.487	146.732	B-6	8	5	28	0	-0.5	12.0	-6.0	600.0	-1.1	13.0	80.0	8.0	13.0
19386S	65.517	146.134	C-5	8	8	17	0	-0.5	9.0	-8.0	500.0	-1.3	10.0	60.0	3.0	17.0
19389S	65.386	146.091	B-5	7	8	34	0	-0.5	35.0	-5.0	800.0	-1.0	18.0	80.0	4.0	28.0
19393S	65.681	146.466	C-5	10	6	22	0	-0.5	9.0	-5.0	700.0	-1.0	9.0	40.0	6.0	20.0
19394S	65.486	146.507	B-6	8	6	28	0	-0.5	7.0	-8.0	600.0	-1.5	6.0	60.0	2.0	13.0
19396S	65.654	146.630	C-6	10	5	36	0	-0.5	12.0	-14.0	1000.0	-3.0	9.0	70.0	8.0	18.0
19399S	65.411	146.189	B-5	7	8	30	0	0.5	37.0	-9.0	600.0	-1.6	17.0	70.0	3.0	27.0
19417S	65.665	146.879	C-6	10	4	27	0	-0.5	11.0	-6.0	800.0	-1.2	12.0	70.0	7.0	22.0
19418S	65.610	146.684	C-6	9	5	15	0	-0.5	14.0	-7.0	700.0	-1.5	14.0	80.0	16.0	33.0
19419S	65.651	146.820	C-6	10	4	36	0	-0.5	14.0	-7.0	900.0	-1.5	17.0	90.0	9.0	37.0
19420S	65.438	146.117	B-5	7	8	16	0	-0.5	15.0	-11.0	700.0	-2.0	21.0	90.0	3.0	27.0
19427S	65.517	146.106	C-5	8	8	16	0	-0.5	7.0	-8.0	600.0	-1.6	12.0	60.0	2.0	15.0
19428S	65.484	145.650	B-4	8	10	34	0	-0.5	37.0	5.0	400.0	-0.8	12.0	60.0	2.0	18.0
19432S	65.533	146.639	C-6	8	5	12	0	-0.5	17.0	-12.0	800.0	-2.7	12.0	70.0	6.0	17.0
19436S	65.660	146.724	C-6	10	5	28	0	-0.5	8.0	-5.0	900.0	-1.4	19.0	80.0	7.0	18.0
19442S	65.536	146.283	C-5	8	7	10	0	-0.5	10.0	-7.0	500.0	-1.4	13.0	50.0	2.0	16.0
19450S	65.608	146.888	C-6	9	4	15	0	0.5	17.0	-11.0	500.0	-2.0	10.0	40.0	7.0	27.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19349S	2.6	14.0	-4.0	1.30	-200.0	10.0	120.0	1.0	8.4	-5.0	2.0	19.0	10.6	11.0
19351S	2.6	14.0	-4.0	2.00	-200.0	24.0	160.0	0.7	10.0	-5.0	5.0	36.0	28.1	33.0
19356S	3.0	10.0	-4.0	1.10	-200.0	12.0	130.0	1.4	11.0	-5.0	1.0	12.0	4.2	-4.0
19362S	4.3	8.0	4.0	1.10	-200.0	190.0	200.0	1.0	16.6	-5.0	-1.0	16.0	4.2	-4.0
19364S	3.2	7.0	-4.0	1.30	-200.0	54.0	410.0	0.6	9.9	-5.0	1.0	39.0	13.7	5.0
19366S	3.8	9.0	-4.0	1.10	-200.0	12.0	50.0	1.0	13.5	-5.0	3.0	9.8	4.6	-4.0
19367S	3.0	9.0	-4.0	0.69	200.0	16.0	120.0	0.4	11.7	-5.0	-1.0	13.0	3.8	-4.0
19373S	5.3	8.0	9.0	0.79	-200.0	170.0	560.0	2.0	15.2	-5.0	-1.0	26.0	8.7	11.0
19382S	3.5	11.0	-4.0	1.40	-200.0	16.0	90.0	1.0	12.6	-5.0	-1.0	20.0	7.7	-4.0
19386S	3.1	10.0	-4.0	1.10	-200.0	10.0	70.0	1.0	10.1	-5.0	-1.0	13.0	6.5	6.0
19389S	3.9	8.0	-4.0	0.73	-200.0	18.0	120.0	8.3	13.8	-5.0	-1.0	12.0	7.3	-4.0
19393S	3.1	8.0	-4.0	1.10	-200.0	52.0	320.0	0.6	9.6	-5.0	-1.0	34.0	9.1	-4.0
19394S	2.3	6.0	-4.0	1.20	-200.0	10.0	80.0	0.8	10.1	-5.0	-1.0	10.0	2.7	-5.0
19396S	3.4	14.0	-4.0	1.30	-300.0	82.0	170.0	1.1	14.1	-6.0	-2.0	64.0	51.0	-8.0
19399S	3.5	8.0	-4.0	0.62	-200.0	30.0	80.0	5.8	13.0	-5.0	-1.0	12.0	6.7	-4.0
19417S	3.7	9.0	-4.0	1.40	-200.0	40.0	280.0	1.1	12.9	-5.0	2.0	40.0	17.4	-4.0
19418S	4.3	13.0	-4.0	0.90	-200.0	84.0	220.0	1.3	14.9	-5.0	1.0	49.0	8.6	6.0
19419S	3.9	11.0	7.0	1.30	-200.0	100.0	180.0	1.2	15.2	-5.0	-1.0	34.0	14.8	5.0
19420S	4.1	10.0	7.0	1.00	-200.0	20.0	90.0	10.0	15.1	-6.0	-1.0	18.0	6.4	-5.0
19427S	3.1	13.0	-4.0	1.00	-200.0	10.0	90.0	1.0	10.9	-5.0	2.0	11.0	4.4	-4.0
19428S	3.2	7.0	-4.0	0.76	-200.0	8.0	70.0	17.0	10.7	-5.0	1.0	8.0	2.0	-4.0
19432S	3.6	13.0	-4.0	1.40	-300.0	14.0	200.0	1.0	13.2	-6.0	5.0	44.0	39.2	-7.0
19436S	3.5	13.0	-4.0	1.30	-200.0	60.0	150.0	0.6	13.0	-5.0	2.0	48.0	11.3	-4.0
19442S	3.0	10.0	-4.0	0.92	-200.0	12.0	70.0	1.1	8.8	-5.0	1.0	15.0	3.3	-4.0
19450S	2.9	16.0	-4.0	1.90	-300.0	150.0	420.0	0.6	10.9	-6.0	3.0	83.0	34.5	10.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19349S	58.0	43.0	74.0	7.7	1.4	4.1	0.8
19351S	73.0	79.0	128.0	7.3	1.9	6.2	1.1
19356S	61.0	41.0	64.0	4.3	1.6	2.7	0.4
19362S	530.0	58.0	100.0	6.2	1.7	3.3	0.5
19364S	210.0	83.0	142.0	8.4	0.8	4.4	0.7
19366S	68.0	41.0	74.0	6.6	1.6	2.6	0.4
19367S	77.0	48.0	83.0	5.4	1.2	3.1	0.4
19373S	620.0	70.0	135.0	8.3	1.4	6.9	0.9
19382S	70.0	64.0	107.0	6.6	1.6	3.4	0.6
19386S	64.0	42.0	69.0	6.7	1.8	2.7	0.5
19389S	88.0	50.0	77.0	5.8	1.4	2.9	0.5
19393S	200.0	74.0	123.0	7.6	0.8	4.8	0.7
19394S	46.0	41.0	67.0	5.9	1.7	2.0	0.3
19396S	250.0	191.0	293.0	39.6	1.6	15.4	2.7
19399S	120.0	44.0	73.0	7.9	1.1	2.8	0.4
19417S	160.0	87.0	160.0	10.5	1.4	8.0	1.1
19418S	170.0	130.0	232.0	15.7	1.9	8.7	1.2
19419S	220.0	98.0	171.0	12.6	-0.2	8.2	1.1
19420S	91.0	58.0	101.0	9.9	1.6	3.6	0.6
19427S	62.0	40.0	72.0	6.7	0.9	2.7	0.4
19428S	41.0	31.0	51.0	3.5	-0.6	1.9	0.3
19432S	73.0	114.0	188.0	16.4	-0.9	6.4	1.2
19436S	130.0	101.0	173.0	10.9	1.8	6.7	0.9
19442S	57.0	43.0	70.0	6.7	0.7	2.5	0.4
19450S	240.0	111.0	202.0	16.0	-1.2	20.0	2.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19452S	65.509	146.081	C-5	8	8	22	0	-0.5	7.0	-8.0	700.0	-1.2	14.0	60.0	2.0	20.0
19454S	65.559	146.299	C-5	9	7	33	0	-0.5	33.0	-9.0	700.0	-1.5	14.0	70.0	4.0	22.0
19455S	65.563	146.777	C-6	9	5	31	0	-0.5	8.0	-6.0	700.0	-1.2	15.0	80.0	6.0	17.0
19457S	65.684	146.433	C-5	10	6	23	-17	-0.5	11.0	-5.0	900.0	-1.0	12.0	40.0	8.0	21.0
19464S	65.401	146.342	B-5	7	7	29	0	-0.5	12.0	-7.0	500.0	-1.1	8.0	30.0	5.0	15.0
19483S	65.507	146.340	C-5	8	7	20	0	-0.5	12.0	-5.0	600.0	-0.8	11.0	40.0	2.0	13.0
19490S	65.477	145.714	B-4	8	10	33	0	-0.5	13.0	-8.0	700.0	-1.2	14.0	70.0	2.0	20.0
19498S	65.463	146.306	B-5	7	7	4	0	-0.5	5.0	-6.0	900.0	-1.1	14.0	80.0	3.0	23.0
19502S	65.624	146.788	C-6	9	5	7	0	-0.5	7.0	-11.0	400.0	-2.5	5.0	50.0	4.0	10.0
19504S	65.652	146.637	C-6	10	5	35	0	-0.5	6.0	-9.0	700.0	-1.9	9.0	60.0	6.0	22.0
19505S	65.509	146.060	C-5	8	8	23	0	-0.5	39.0	-7.0	400.0	-1.3	12.0	50.0	2.0	26.0
19510S	65.479	146.843	B-6	8	4	36	0	-0.5	10.0	-5.0	500.0	-0.9	12.0	60.0	5.0	19.0
19512S	65.429	146.068	B-5	7	8	15	0	-0.5	46.0	-7.0	400.0	-1.2	9.0	50.0	4.0	32.0
19518S	65.415	145.832	B-4	7	9	23	0	-0.5	-2.0	-14.0	400.0	-1.7	33.0	120.0	3.0	73.0
19519S	65.453	146.546	B-6	7	6	8	0	-0.5	27.0	-12.0	700.0	-2.0	11.0	70.0	15.0	14.0
19522S	65.447	146.752	B-6	7	5	8	0	-0.5	5.0	-6.0	600.0	1.8	18.0	100.0	11.0	16.0
19524S	65.452	145.951	B-4	7	9	8	0	-0.5	52.0	-5.0	300.0	-0.6	15.0	50.0	5.0	36.0
19526S	65.478	146.247	B-5	8	7	35	0	-0.5	12.0	-8.0	700.0	-1.2	15.0	50.0	6.0	16.0
19529S	65.538	146.230	C-5	8	7	12	0	-0.5	11.0	-9.0	900.0	-1.7	14.0	80.0	2.0	23.0
19530S	65.601	146.742	C-6	9	5	17	0	1.0	11.0	8.0	700.0	-1.3	8.0	50.0	7.0	30.0
19532S	65.446	146.845	B-6	7	4	12	-8	-0.5	9.0	-7.0	1000.0	-1.2	28.0	90.0	4.0	19.0
19534S	65.576	146.646	C-6	9	5	26	0	-0.5	6.0	-6.0	800.0	-1.0	12.0	70.0	6.0	22.0
19540S	65.582	146.566	C-6	9	6	30	0	-0.5	10.0	-5.0	800.0	2.5	13.0	90.0	4.0	27.0
19557S	65.464	145.646	B-4	7	10	2	0	-0.5	26.0	7.0	500.0	-0.8	12.0	60.0	2.0	20.0
19566S	65.682	146.454	C-5	10	6	23	0	-0.5	10.0	8.0	800.0	1.4	10.0	50.0	7.0	19.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19452S	3.4	10.0	-4.0	0.80	-200.0	12.0	140.0	0.6	11.3	-5.0	2.0	13.0	2.9	-4.0
19454S	3.2	10.0	-4.0	0.92	-200.0	28.0	130.0	2.5	10.5	-7.0	-1.0	15.0	9.3	9.0
19455S	3.5	9.0	-4.0	1.20	-200.0	28.0	280.0	0.8	12.8	-5.0	2.0	41.0	11.2	10.0
19457S	3.7	7.0	-4.0	1.00	-200.0	60.0	340.0	0.9	11.5	5.0	2.0	33.0	8.3	5.0
19464S	2.2	5.0	-4.0	0.82	-200.0	12.0	160.0	0.8	6.6	-5.0	-1.0	11.0	7.7	-4.0
19483S	3.0	5.0	-4.0	0.79	-200.0	10.0	100.0	1.8	9.0	-5.0	-1.0	10.0	2.5	-4.0
19490S	3.7	8.0	-4.0	0.71	-200.0	10.0	110.0	4.7	11.4	-5.0	-1.0	7.7	1.7	-4.0
19498S	3.5	7.0	-4.0	1.00	-200.0	12.0	90.0	1.0	13.7	-5.0	-1.0	15.0	4.7	-4.0
19502S	2.5	23.0	4.0	2.00	-200.0	38.0	410.0	0.4	9.9	-5.0	5.0	120.0	35.0	8.0
19504S	3.2	13.0	-4.0	1.10	200.0	64.0	220.0	0.7	11.6	-5.0	2.0	45.0	19.4	9.0
19505S	3.3	9.0	-4.0	0.48	-200.0	14.0	90.0	3.3	9.5	-5.0	-1.0	10.0	3.0	5.0
19510S	3.1	9.0	-4.0	1.00	-200.0	14.0	160.0	1.1	11.1	-5.0	1.0	18.0	7.4	4.0
19512S	3.1	10.0	-4.0	0.40	-200.0	28.0	60.0	2.9	10.5	-5.0	1.0	8.9	3.2	9.0
19518S	6.1	7.0	20.0	0.97	-300.0	10.0	80.0	1.3	29.1	-5.0	2.0	7.7	2.4	-9.0
19519S	3.3	8.0	-4.0	1.20	-200.0	18.0	250.0	0.8	10.8	-6.0	3.0	32.0	57.2	-8.0
19522S	3.9	10.0	-4.0	1.20	-200.0	12.0	90.0	1.3	14.4	-5.0	2.0	11.0	3.9	-4.0
19524S	3.3	6.0	-4.0	0.48	-200.0	10.0	80.0	1.5	10.5	-5.0	-1.0	7.0	2.3	13.0
19526S	3.2	8.0	-4.0	1.00	-200.0	10.0	220.0	0.8	9.7	-5.0	-1.0	15.0	7.6	-4.0
19529S	3.6	11.0	-4.0	1.00	-200.0	14.0	80.0	1.1	13.0	-6.0	-1.0	13.0	4.9	-5.0
19530S	2.4	6.0	8.0	0.74	-200.0	78.0	120.0	0.6	10.0	-7.0	-1.0	51.0	245.0	5.0
19532S	4.5	10.0	-4.0	1.40	-200.0	14.0	90.0	0.7	16.3	-5.0	-1.0	11.0	4.2	-4.0
19534S	3.3	6.0	-4.0	0.77	-200.0	18.0	110.0	0.7	13.3	-5.0	-1.0	9.8	3.1	-4.0
19540S	3.9	8.0	-6.0	0.73	-300.0	18.0	100.0	1.0	14.3	-5.0	2.0	13.0	5.1	-8.0
19557S	3.2	6.0	-4.0	0.82	-200.0	10.0	90.0	10.0	11.5	-5.0	-1.0	8.6	2.5	-4.0
19566S	3.4	9.0	-4.0	1.10	-200.0	56.0	310.0	0.9	11.2	-5.0	1.0	36.0	11.0	4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19452S	66.0	44.0	75.0	6.5	1.2	2.3	0.4
19454S	150.0	46.0	81.0	8.0	1.8	2.8	0.6
19455S	110.0	95.0	177.0	11.1	-0.2	8.1	1.1
19457S	220.0	78.0	131.0	8.1	-0.8	5.1	0.7
19464S	47.0	30.0	58.0	5.1	0.5	2.6	0.5
19483S	62.0	32.0	55.0	3.2	-0.6	1.6	0.3
19490S	52.0	29.0	48.0	4.6	1.2	1.6	0.3
19498S	73.0	54.0	91.0	5.6	1.9	3.0	0.4
19502S	160.0	157.0	293.0	30.0	1.3	16.9	2.8
19504S	210.0	112.0	189.0	17.6	0.8	7.0	1.3
19505S	53.0	35.0	74.0	5.9	1.2	2.2	0.4
19510S	100.0	50.0	78.0	5.6	1.4	3.6	0.5
19512S	52.0	35.0	60.0	5.9	0.9	2.8	0.4
19518S	92.0	40.0	77.0	8.6	1.7	3.1	0.4
19519S	88.0	62.0	109.0	13.6	1.0	6.8	1.6
19522S	88.0	49.0	82.0	5.4	2.1	3.0	0.4
19524S	65.0	24.0	41.0	2.8	1.0	2.0	0.2
19526S	70.0	40.0	72.0	6.4	1.1	2.8	0.5
19529S	71.0	45.0	73.0	7.5	1.3	3.0	0.6
19530S	800.0	87.0	152.0	15.4	1.6	14.8	1.8
19532S	92.0	49.0	91.0	5.7	1.6	3.3	0.4
19534S	80.0	40.0	64.0	4.9	2.0	2.8	0.4
19540S	85.0	54.0	92.0	9.4	2.8	3.6	0.6
19557S	48.0	33.0	52.0	3.7	0.9	2.0	0.3
19566S	200.0	78.0	129.0	8.6	0.9	5.6	0.8

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19567S	65.479	146.104	B-5	8	8	33	0	-0.5	7.0	-7.0	600.0	-1.2	18.0	60.0	2.0	16.0
19568S	65.417	146.555	B-6	7	6	20	0	-0.5	22.0	-9.0	300.0	-1.4	12.0	40.0	16.0	12.0
19569S	65.548	146.338	C-5	8	7	5	0	-0.5	44.0	-6.0	700.0	-0.9	11.0	60.0	6.0	14.0
19570S	65.463	146.063	B-5	7	8	3	0	-0.5	41.0	-5.0	400.0	-0.9	10.0	40.0	2.0	28.0
19574S	65.630	146.702	C-6	9	5	4	0	1.0	4.0	-8.0	400.0	2.2	-5.0	20.0	10.0	19.0
19575S	65.604	146.613	C-6	9	5	13	0	-0.5	14.0	-9.0	500.0	-1.2	13.0	60.0	3.0	36.0
19577S	65.624	146.670	C-6	9	5	10	0	-0.5	8.0	-6.0	500.0	-1.2	11.0	50.0	7.0	24.0
19579S	65.522	145.841	C-4	8	9	14	0	-0.5	7.0	-7.0	700.0	-0.7	14.0	60.0	2.0	18.0
19580S	65.631	146.943	C-6	9	4	4	0	-0.5	12.0	-6.0	800.0	-1.1	19.0	80.0	6.0	32.0
19581S	65.602	146.222	C-5	9	7	14	0	-0.5	8.0	-7.0	800.0	1.8	14.0	80.0	3.0	16.0
19585S	65.524	146.232	C-5	8	7	13	0	-0.5	9.0	-5.0	400.0	-1.0	11.0	40.0	2.0	13.0
19595S	65.645	146.683	C-6	10	5	34	0	-0.5	16.0	-14.0	900.0	-2.7	7.0	60.0	11.0	28.0
19597S	65.511	146.318	C-5	8	7	21	0	-0.5	9.0	-7.0	700.0	2.0	13.0	80.0	1.0	13.0
19608S	65.523	146.935	C-6	8	4	16	0	-0.5	6.0	-5.0	600.0	1.3	18.0	70.0	3.0	31.0
19622S	65.601	146.394	C-5	9	6	13	0	-0.5	64.0	-6.0	800.0	1.3	11.0	70.0	15.0	19.0
19623S	65.494	145.936	B-4	8	9	29	0	-0.5	66.0	-6.0	500.0	-0.5	15.0	50.0	4.0	28.0
19625S	65.601	146.607	C-6	9	5	13	0	-0.5	9.0	-5.0	500.0	-0.8	15.0	70.0	6.0	29.0
19627S	65.512	146.717	C-6	8	5	21	0	-0.5	12.0	-6.0	600.0	-1.1	14.0	80.0	5.0	13.0
19634S	65.417	146.473	B-5	7	6	22	0	-0.5	13.0	-5.0	400.0	1.6	5.0	40.0	19.0	12.0
19638S	65.429	146.779	B-6	7	5	17	0	-0.5	7.0	-5.0	800.0	-1.0	15.0	80.0	6.0	15.0
19640S	65.554	146.264	C-5	8	7	2	0	-0.5	10.0	10.0	600.0	1.1	12.0	70.0	2.0	15.0
19644S	65.494	146.059	B-5	8	8	26	0	-0.5	38.0	-6.0	400.0	-1.1	12.0	50.0	4.0	30.0
19645S	65.618	146.516	C-6	9	6	9	0	-0.5	5.0	-5.0	400.0	-0.7	10.0	50.0	2.0	15.0
19646S	65.597	146.741	C-6	9	5	20	0	1.0	11.0	-7.0	1100.0	-1.4	7.0	50.0	10.0	30.0
19648S	65.524	146.059	C-5	8	8	14	-26	-0.5	33.0	-5.0	400.0	-0.5	11.0	40.0	3.0	22.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19567S	3.0	9.0	-4.0	0.84	-200.0	14.0	70.0	0.7	9.6	-5.0	-1.0	11.0	4.4	-4.0
19568S	2.6	5.0	-4.0	1.80	-200.0	16.0	520.0	1.1	8.1	-5.0	3.0	21.0	28.3	10.0
19569S	3.1	9.0	-4.0	1.20	-200.0	40.0	100.0	3.3	11.1	7.0	-1.0	12.0	12.7	6.0
19570S	2.9	8.0	-4.0	0.36	-200.0	14.0	60.0	2.8	8.1	-5.0	1.0	8.5	2.2	4.0
19574S	2.1	12.0	12.0	2.00	-200.0	110.0	720.0	-0.2	5.8	-5.0	3.0	94.0	35.7	15.0
19575S	4.1	5.0	6.0	0.57	-200.0	24.0	140.0	1.1	12.1	-5.0	-1.0	12.0	3.4	-7.0
19577S	3.4	7.0	-4.0	1.10	-200.0	50.0	350.0	0.9	10.8	-5.0	-1.0	44.0	17.9	-4.0
19579S	2.9	9.0	-4.0	0.78	-200.0	10.0	90.0	1.1	10.5	-5.0	-1.0	9.3	4.0	-4.0
19580S	4.7	8.0	-4.0	0.92	-200.0	52.0	190.0	0.9	15.2	-5.0	-1.0	15.0	3.5	-4.0
19581S	3.2	11.0	-4.0	0.93	-200.0	18.0	70.0	2.3	11.2	-5.0	-1.0	13.0	3.5	-4.0
19585S	2.6	8.0	-4.0	0.93	-200.0	8.0	110.0	1.2	8.2	-5.0	2.0	11.0	4.5	-4.0
19595S	3.4	12.0	-4.0	1.50	400.0	140.0	360.0	0.4	11.0	-10.0	3.0	120.0	51.1	18.0
19597S	2.9	13.0	-4.0	1.20	-200.0	10.0	70.0	0.6	10.7	-5.0	1.0	11.0	4.2	-4.0
19608S	4.4	7.0	4.0	0.58	-200.0	18.0	170.0	0.9	13.2	-5.0	1.0	15.0	2.7	-4.0
19622S	2.7	9.0	12.0	0.97	-200.0	18.0	90.0	0.9	10.6	-6.0	-1.0	18.0	37.0	9.0
19623S	3.6	6.0	16.0	0.47	-200.0	8.0	130.0	0.8	11.3	-5.0	-1.0	8.9	2.3	43.0
19625S	3.7	9.0	-4.0	0.59	-200.0	20.0	150.0	1.0	12.8	-5.0	-1.0	13.0	4.1	-4.0
19627S	3.4	10.0	-4.0	1.40	-200.0	12.0	120.0	1.2	12.6	-5.0	1.0	20.0	6.7	-4.0
19634S	2.2	7.0	-4.0	2.10	-200.0	12.0	410.0	0.8	8.1	-6.0	2.0	19.0	19.0	6.0
19638S	3.5	12.0	4.0	1.30	-200.0	10.0	110.0	1.5	14.1	-5.0	-1.0	13.0	4.5	-7.0
19640S	3.3	11.0	-4.0	1.00	-200.0	12.0	90.0	2.3	11.1	-5.0	-1.0	13.0	4.1	-4.0
19644S	3.4	9.0	-4.0	0.46	-200.0	18.0	120.0	3.5	10.5	-5.0	1.0	11.0	3.5	6.0
19645S	2.9	12.0	-4.0	0.66	-200.0	10.0	100.0	0.4	9.3	-5.0	-1.0	12.0	3.9	-4.0
19646S	2.2	8.0	33.0	0.88	-200.0	92.0	230.0	0.6	8.9	-7.0	3.0	56.0	169.0	4.0
19648S	3.1	7.0	-4.0	0.49	-200.0	12.0	70.0	3.2	9.3	-5.0	-1.0	10.0	3.1	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19567S	83.0	36.0	76.0	6.0	1.4	2.1	0.3
19568S	67.0	36.0	66.0	8.6	0.7	5.2	1.0
19569S	82.0	43.0	77.0	4.6	1.9	2.6	0.3
19570S	49.0	30.0	52.0	5.4	1.4	2.1	0.3
19574S	330.0	101.0	194.0	12.8	-1.1	13.9	1.9
19575S	79.0	39.0	73.0	6.2	1.4	2.2	0.4
19577S	250.0	82.0	140.0	8.8	-0.7	5.6	0.9
19579S	59.0	38.0	63.0	6.4	1.0	2.3	0.3
19580S	180.0	53.0	91.0	6.2	1.9	3.6	0.4
19581S	77.0	45.0	76.0	7.3	0.7	3.3	0.5
19585S	54.0	35.0	53.0	5.4	1.2	2.2	0.3
19595S	350.0	139.0	246.0	33.3	-0.8	19.4	3.0
19597S	63.0	38.0	64.0	6.3	1.7	2.6	0.5
19608S	99.0	51.0	93.0	5.5	1.4	2.5	0.3
19622S	110.0	52.0	84.0	5.8	1.2	4.2	-0.1
19623S	50.0	30.0	57.0	4.9	1.2	1.7	0.3
19625S	76.0	52.0	91.0	6.1	1.9	3.0	0.4
19627S	63.0	64.0	113.0	6.6	1.7	3.5	0.6
19634S	48.0	39.0	67.0	5.4	1.4	5.2	0.8
19638S	65.0	50.0	91.0	5.5	1.6	3.1	0.5
19640S	48.0	47.0	73.0	7.6	1.0	3.3	0.6
19644S	62.0	40.0	73.0	6.9	0.9	2.7	0.4
19645S	62.0	47.0	75.0	5.0	1.1	3.1	0.4
19646S	980.0	109.0	179.0	15.7	-1.0	11.8	1.7
19648S	48.0	34.0	58.0	6.0	1.5	2.5	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19652S	65.451	146.445	B-5	7	6	11	0	-0.5	16.0	-5.0	100.0	-0.9	-5.0	-10.0	24.0	6.0
19655S	65.475	146.646	B-6	8	5	35	0	-0.5	23.0	-7.0	400.0	-0.8	8.0	30.0	18.0	20.0
19661S	65.490	146.224	B-5	8	7	25	-27	-0.5	10.0	-6.0	500.0	-1.1	10.0	50.0	5.0	13.0
19666S	65.415	146.646	B-6	7	5	23	0	-0.5	15.0	-10.0	600.0	-1.5	12.0	60.0	11.0	18.0
19667S	65.651	146.884	C-6	10	4	34	0	-0.5	12.0	-7.0	1400.0	-1.1	20.0	90.0	7.0	25.0
19668S	65.525	146.219	C-5	8	7	13	0	-0.5	10.0	-6.0	600.0	-1.2	12.0	50.0	3.0	14.0
19672S	65.512	146.321	C-5	8	7	21	29	-0.5	10.0	-6.0	500.0	-1.2	8.0	60.0	2.0	11.0
19674S	65.485	146.569	B-6	8	6	29	0	-0.5	25.0	6.0	500.0	-1.7	12.0	60.0	5.0	15.0
19675S	65.669	146.490	C-5	10	6	27	0	-0.5	4.0	-5.0	700.0	-0.9	10.0	60.0	4.0	14.0
19679S	65.522	146.945	C-6	8	4	16	0	-0.5	9.0	-9.0	600.0	-1.6	21.0	80.0	4.0	24.0
19681S	65.529	146.668	C-6	8	5	11	0	-0.5	35.0	6.0	500.0	-0.9	15.0	80.0	4.0	26.0
19685S	65.465	145.789	B-4	7	9	1	0	-0.5	49.0	-5.0	300.0	-0.6	15.0	50.0	4.0	31.0
19686S	65.592	146.530	C-6	9	6	20	0	-0.5	8.0	-6.0	800.0	-1.1	17.0	90.0	4.0	25.0
19688S	65.591	146.562	C-6	9	6	19	0	-0.5	7.0	5.0	800.0	-1.8	13.0	90.0	4.0	20.0
19694S	65.467	146.507	B-6	7	6	4	0	-0.5	27.0	-11.0	900.0	-1.6	10.0	60.0	10.0	19.0
19696S	65.425	146.548	B-6	7	6	20	0	1.0	14.0	-14.0	600.0	-1.9	7.0	70.0	15.0	15.0
19707S	65.578	146.506	C-6	9	6	28	0	-0.5	3.0	-7.0	700.0	-1.0	13.0	110.0	4.0	19.0
19711S	65.487	145.868	B-4	8	9	27	0	-0.5	37.0	-5.0	300.0	-0.7	13.0	40.0	3.0	20.0
19714S	65.645	146.443	C-5	10	6	35	0	-0.5	3.0	-7.0	600.0	-1.4	10.0	70.0	2.0	15.0
19719S	65.672	146.545	C-6	10	6	20	0	0.5	7.0	-9.0	500.0	-1.6	8.0	30.0	5.0	15.0
19720S	65.680	146.494	C-5	10	6	21	0	-0.5	8.0	-5.0	600.0	-1.0	8.0	40.0	8.0	16.0
19729S	65.490	146.392	B-5	8	7	30	14	-0.5	17.0	-9.0	400.0	-1.5	12.0	60.0	5.0	24.0
19732S	65.601	146.378	C-5	9	7	18	0	-0.5	29.0	-6.0	600.0	1.6	12.0	70.0	16.0	29.0
19733S	65.534	146.592	C-6	8	6	7	0	-0.5	10.0	7.0	600.0	-1.6	12.0	70.0	7.0	15.0
19737S	65.654	146.655	C-6	10	5	35	0	1.0	10.0	-16.0	900.0	-3.5	8.0	60.0	7.0	15.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19652S	1.3	6.0	-4.0	2.30	-200.0	8.0	650.0	0.4	4.1	-5.0	1.0	20.0	14.4	6.0
19655S	2.8	11.0	-4.0	2.20	-200.0	14.0	300.0	1.1	7.5	-5.0	4.0	39.0	36.4	-4.0
19661S	2.6	6.0	-4.0	1.10	200.0	8.0	200.0	0.7	7.7	-5.0	1.0	13.0	7.9	-4.0
19666S	3.3	6.0	-4.0	1.60	-200.0	14.0	300.0	1.0	10.8	-5.0	2.0	20.0	11.5	-8.0
19667S	4.0	8.0	-6.0	0.99	-200.0	30.0	140.0	1.1	16.2	-5.0	-1.0	16.0	3.9	-4.0
19668S	3.0	11.0	-4.0	1.10	-200.0	8.0	100.0	1.3	10.0	-5.0	2.0	14.0	5.0	-4.0
19672S	2.6	12.0	-4.0	1.10	-200.0	10.0	60.0	1.5	8.5	-5.0	2.0	12.0	5.6	-4.0
19674S	3.0	9.0	-4.0	1.40	-200.0	32.0	160.0	1.6	9.9	-5.0	2.0	26.0	21.9	-7.0
19675S	2.7	6.0	-4.0	0.87	-200.0	14.0	60.0	0.6	11.8	-5.0	-1.0	11.0	2.7	-4.0
19679S	3.5	7.0	-6.0	0.82	-200.0	18.0	100.0	1.4	12.8	-5.0	-1.0	10.0	3.0	-4.0
19681S	3.9	7.0	-4.0	0.74	-200.0	20.0	100.0	2.3	12.6	-5.0	1.0	9.4	3.1	-4.0
19685S	4.3	5.0	-4.0	0.63	-200.0	6.0	80.0	2.9	17.1	-5.0	-1.0	5.6	2.1	8.0
19686S	4.1	8.0	-4.0	1.10	-200.0	16.0	120.0	0.7	15.1	-5.0	-1.0	13.0	3.7	-4.0
19688S	3.9	9.0	-4.0	0.82	-200.0	20.0	140.0	0.9	14.9	-5.0	2.0	16.0	6.2	-9.0
19694S	3.3	5.0	-4.0	1.30	400.0	20.0	230.0	0.5	12.0	-5.0	1.0	18.0	43.8	-9.0
19696S	3.7	6.0	-4.0	1.60	-300.0	14.0	310.0	0.8	13.1	-5.0	4.0	21.0	41.4	19.0
19707S	3.6	17.0	-4.0	1.30	-200.0	12.0	100.0	0.6	14.6	-5.0	-1.0	16.0	4.8	4.0
19711S	2.9	7.0	-4.0	0.53	-200.0	8.0	40.0	0.5	8.8	-5.0	1.0	8.2	2.5	50.0
19714S	2.5	13.0	-4.0	0.95	-200.0	12.0	140.0	0.6	11.9	-5.0	-1.0	14.0	5.6	-4.0
19719S	2.7	6.0	-4.0	1.50	-200.0	58.0	520.0	0.4	8.0	-5.0	2.0	34.0	13.8	-7.0
19720S	2.8	8.0	-4.0	1.30	-200.0	54.0	350.0	0.6	9.0	-5.0	-1.0	37.0	12.8	4.0
19729S	3.4	8.0	-4.0	1.10	-200.0	12.0	140.0	0.8	11.2	-6.0	2.0	14.0	8.4	-7.0
19732S	2.9	7.0	5.0	0.85	-200.0	14.0	90.0	0.8	11.1	59.0	-1.0	11.0	6.5	31.0
19733S	3.3	9.0	-4.0	1.10	-200.0	14.0	110.0	1.3	11.8	-5.0	1.0	18.0	23.4	8.0
19737S	3.1	14.0	-4.0	1.10	-300.0	54.0	260.0	0.7	11.9	-5.0	4.0	110.0	74.4	16.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19652S	38.0	29.0	63.0	4.5	-0.7	5.1	0.9
19655S	58.0	79.0	119.0	7.4	0.8	5.3	0.8
19661S	51.0	30.0	53.0	5.4	0.6	2.4	0.4
19666S	80.0	49.0	89.0	8.3	1.2	3.8	0.7
19667S	96.0	56.0	104.0	6.4	1.8	3.4	0.4
19668S	63.0	42.0	70.0	6.7	0.9	2.8	0.4
19672S	48.0	36.0	73.0	6.0	1.0	2.8	0.5
19674S	95.0	63.0	98.0	9.3	1.2	3.6	0.7
19675S	60.0	44.0	74.0	4.9	1.6	2.3	0.3
19679S	74.0	45.0	69.0	5.6	2.6	2.6	0.4
19681S	86.0	37.0	63.0	4.3	1.4	2.3	0.3
19685S	51.0	21.0	64.0	2.6	1.0	2.3	0.3
19686S	56.0	54.0	97.0	6.0	2.2	3.3	0.4
19688S	76.0	64.0	107.0	10.3	1.7	3.4	0.6
19694S	84.0	39.0	73.0	7.8	1.3	3.6	1.0
19696S	44.0	44.0	105.0	10.0	2.0	4.8	1.0
19707S	50.0	68.0	113.0	7.2	2.1	3.9	0.6
19711S	50.0	32.0	61.0	3.6	0.7	2.2	0.3
19714S	61.0	58.0	92.0	9.6	2.0	3.6	0.6
19719S	210.0	63.0	115.0	10.6	-0.5	4.9	0.8
19720S	220.0	74.0	125.0	8.3	1.2	6.2	1.0
19729S	70.0	48.0	78.0	7.1	0.9	3.0	0.5
19732S	73.0	38.0	65.0	4.6	2.1	3.1	0.4
19733S	64.0	55.0	95.0	8.4	1.2	3.8	0.7
19737S	200.0	193.0	313.0	41.2	2.7	15.4	2.9

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19742S	65.591	146.430	C-5	9	6	23	0	-0.5	7.0	-8.0	500.0	2.0	14.0	90.0	2.0	18.0
19744S	65.552	146.277	C-5	8	7	3	0	-0.5	21.0	-7.0	700.0	-1.5	14.0	70.0	3.0	25.0
19746S	65.680	146.490	C-5	10	6	22	0	-0.5	6.0	-6.0	700.0	-1.0	15.0	90.0	2.0	21.0
19748S	65.519	146.060	C-5	8	8	14	0	-0.5	39.0	17.0	500.0	-0.5	13.0	60.0	2.0	27.0
19756S	65.420	146.776	B-6	7	5	20	0	-0.5	7.0	-6.0	600.0	-1.0	16.0	70.0	5.0	18.0
19759S	65.425	146.740	B-6	7	5	21	0	-0.5	9.0	-5.0	500.0	-0.9	11.0	50.0	5.0	9.0
19763S	65.521	146.966	C-6	8	4	17	0	-0.5	9.0	8.0	700.0	-1.1	19.0	80.0	6.0	39.0
19769S	65.661	146.440	C-5	10	6	26	0	-0.5	5.0	-7.0	800.0	-1.4	11.0	90.0	3.0	18.0
19776S	65.611	146.839	C-6	9	4	13	0	-0.5	13.0	8.0	600.0	-1.2	7.0	50.0	6.0	14.0
19778S	65.538	146.555	C-6	8	6	8	0	-0.5	13.0	-8.0	500.0	-1.3	12.0	50.0	6.0	11.0
19782S	65.393	146.442	B-5	7	6	35	0	-0.5	10.0	-5.0	400.0	-0.6	12.0	40.0	4.0	23.0
19786S	65.450	146.071	B-5	7	8	10	0	-0.5	43.0	-6.0	300.0	-0.8	9.0	30.0	2.0	23.0
19792S	65.691	146.550	C-6	10	6	17	0	-0.5	14.0	5.0	1600.0	1.3	20.0	80.0	10.0	40.0
19793S	65.392	146.654	B-6	7	5	35	0	-0.5	10.0	-6.0	800.0	-1.1	14.0	90.0	9.0	16.0
19797S	65.525	145.823	C-4	8	9	14	0	-0.5	9.0	-8.0	800.0	-1.5	13.0	80.0	2.0	19.0
19798S	65.486	146.378	B-5	8	7	30	0	-0.5	15.0	7.0	900.0	-1.0	16.0	70.0	5.0	24.0
19802S	65.577	146.903	C-6	9	4	27	0	2.0	36.0	-9.0	700.0	-1.6	19.0	80.0	22.0	51.0
19803S	65.535	146.576	C-6	8	6	8	0	-0.5	11.0	-7.0	400.0	-1.3	9.0	40.0	7.0	10.0
19805S	65.480	145.671	B-4	8	10	34	0	-0.5	8.0	-5.0	400.0	-0.6	6.0	40.0	2.0	7.0
19808S	65.572	146.420	C-5	9	6	25	0	-0.5	35.0	-7.0	600.0	-1.3	7.0	50.0	12.0	14.0
19809S	65.462	146.865	B-6	7	4	2	0	-0.5	6.0	6.0	500.0	-0.9	21.0	90.0	3.0	35.0
19812S	65.559	146.745	C-6	9	5	32	0	-0.5	7.0	-6.0	600.0	-1.1	11.0	60.0	6.0	17.0
19816S	65.675	146.963	C-6	10	4	20	0	-0.5	14.0	26.0	1400.0	-0.8	12.0	70.0	5.0	54.0
19818S	65.472	146.513	B-6	8	6	33	0	-0.5	28.0	-14.0	700.0	-2.0	16.0	100.0	12.0	20.0
19819S	65.627	146.487	C-5	9	6	10	0	-0.5	5.0	-8.0	700.0	1.8	11.0	70.0	4.0	15.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19742S	3.5	9.0	-4.0	1.40	-200.0	12.0	110.0	0.6	12.7	-5.0	-1.0	12.0	12.2	-4.0
19744S	3.6	11.0	-4.0	0.97	-200.0	20.0	190.0	3.4	12.3	-5.0	-1.0	16.0	9.1	-4.0
19746S	3.2	8.0	5.0	1.10	-200.0	16.0	-40.0	0.9	13.8	-5.0	1.0	12.0	3.5	-4.0
19748S	3.5	8.0	-4.0	0.50	-200.0	14.0	100.0	3.0	10.7	-5.0	2.0	11.0	3.5	5.0
19756S	3.2	8.0	-4.0	1.10	-200.0	14.0	70.0	0.9	12.1	-5.0	1.0	11.0	3.8	-4.0
19759S	2.5	10.0	-4.0	1.30	-200.0	8.0	150.0	1.3	8.3	-5.0	1.0	18.0	10.7	7.0
19763S	4.0	8.0	-4.0	0.63	-200.0	26.0	160.0	1.3	14.4	-5.0	1.0	17.0	4.5	5.0
19769S	2.5	8.0	-4.0	0.95	-200.0	18.0	70.0	0.6	12.8	-5.0	-1.0	10.0	3.5	-4.0
19776S	2.7	19.0	-4.0	1.90	-200.0	40.0	420.0	0.9	9.9	-5.0	2.0	80.0	23.1	15.0
19778S	3.1	7.0	4.0	1.10	-200.0	10.0	160.0	0.9	9.2	-5.0	3.0	20.0	9.2	-6.0
19782S	2.4	6.0	-4.0	0.66	-200.0	16.0	100.0	0.7	7.1	-5.0	-1.0	8.5	2.5	-4.0
19786S	2.7	7.0	-4.0	0.33	-200.0	14.0	40.0	2.9	7.7	-5.0	1.0	7.9	2.5	10.0
19792S	3.7	9.0	4.0	0.87	-200.0	300.0	210.0	1.8	14.1	-5.0	-1.0	14.0	3.6	-4.0
19793S	3.4	8.0	-4.0	1.10	-200.0	14.0	110.0	1.1	13.8	7.0	-1.0	11.0	3.4	-4.0
19797S	3.3	10.0	-4.0	1.10	-200.0	14.0	60.0	1.1	12.3	-5.0	-1.0	12.0	3.6	-4.0
19798S	3.7	7.0	-4.0	1.00	200.0	22.0	90.0	1.0	13.4	-5.0	-1.0	13.0	6.9	5.0
19802S	4.1	10.0	-4.0	1.20	-200.0	130.0	340.0	2.6	13.8	-5.0	2.0	45.0	26.1	13.0
19803S	2.6	5.0	-4.0	1.50	-200.0	10.0	250.0	0.6	7.4	-5.0	2.0	20.0	8.7	-5.0
19805S	2.1	7.0	-4.0	0.71	-200.0	6.0	50.0	3.7	7.7	-5.0	1.0	5.4	1.8	-4.0
19808S	2.4	8.0	4.0	1.50	-200.0	28.0	220.0	0.8	9.2	-6.0	4.0	24.0	47.2	23.0
19809S	4.0	6.0	-4.0	1.30	-200.0	8.0	60.0	0.9	16.7	-5.0	1.0	7.5	3.0	-4.0
19812S	2.7	7.0	-4.0	0.96	-200.0	32.0	130.0	0.8	10.2	-5.0	1.0	29.0	20.9	4.0
19816S	14.3	8.0	-4.0	0.53	-200.0	20.0	170.0	2.0	12.3	-5.0	1.0	14.0	4.5	-4.0
19818S	4.3	6.0	-4.0	1.20	-200.0	16.0	170.0	1.4	14.5	-5.0	-1.0	19.0	30.8	13.0
19819S	3.0	12.0	-4.0	0.86	200.0	12.0	100.0	0.7	11.5	-5.0	-1.0	14.0	5.3	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19742S	64.0	50.0	81.0	8.3	1.6	3.1	0.5
19744S	88.0	53.0	83.0	8.6	1.7	2.9	0.5
19746S	70.0	46.0	94.0	5.4	2.5	3.0	0.4
19748S	57.0	39.0	69.0	6.7	1.0	2.7	0.4
19756S	68.0	42.0	70.0	4.8	1.4	2.6	0.4
19759S	48.0	47.0	76.0	4.8	1.2	3.1	0.5
19763S	110.0	61.0	115.0	6.8	2.3	3.1	0.4
19769S	75.0	38.0	70.0	6.7	1.2	2.3	0.5
19776S	110.0	92.0	195.0	11.9	-0.7	12.4	1.7
19778S	60.0	50.0	92.0	7.1	0.8	2.9	0.5
19782S	50.0	32.0	50.0	3.4	1.3	1.9	0.3
19786S	46.0	28.0	56.0	5.0	0.4	2.0	0.3
19792S	510.0	48.0	91.0	5.7	1.4	2.9	0.4
19793S	78.0	45.0	89.0	5.1	1.8	2.6	0.4
19797S	69.0	46.0	76.0	7.6	1.4	2.4	0.4
19798S	83.0	47.0	87.0	5.0	-0.2	2.7	0.4
19802S	830.0	105.0	200.0	17.3	-1.0	14.8	2.1
19803S	46.0	41.0	67.0	6.0	-0.4	2.7	0.4
19805S	28.0	25.0	45.0	2.6	-0.2	1.7	0.2
19808S	80.0	60.0	107.0	7.0	1.1	5.5	1.3
19809S	54.0	33.0	55.0	4.2	2.0	2.5	0.4
19812S	240.0	68.0	114.0	8.7	1.0	6.5	0.9
19816S	120.0	49.0	75.0	5.1	1.2	2.2	0.3
19818S	97.0	48.0	87.0	9.2	1.6	4.4	0.7
19819S	70.0	49.0	94.0	8.8	1.2	3.3	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19824S	65.457	145.925	B-4	7	9	5	0	0.5	86.0	19.0	600.0	1.4	15.0	80.0	7.0	74.0
19827S	65.392	146.541	B-6	7	6	32	0	-0.5	16.0	-7.0	500.0	-1.2	7.0	40.0	3.0	10.0
19831S	65.680	146.842	C-6	10	4	23	0	-0.5	6.0	-6.0	1300.0	-1.1	16.0	100.0	10.0	20.0
19832S	65.564	146.309	C-5	9	7	33	0	-0.5	24.0	-7.0	800.0	-1.4	8.0	60.0	3.0	13.0
19833S	65.568	146.712	C-6	9	5	33	0	-0.5	7.0	-8.0	800.0	-1.4	12.0	60.0	4.0	23.0
19837S	65.442	146.585	B-6	7	6	7	0	-0.5	13.0	6.0	500.0	-1.5	12.0	60.0	13.0	18.0
19841S	65.529	146.823	C-6	8	4	12	0	-0.5	9.0	-7.0	900.0	1.3	14.0	80.0	4.0	15.0
19844S	65.409	146.436	B-5	7	6	25	0	-0.5	26.0	-9.0	800.0	-2.3	8.0	50.0	13.0	14.0
19860S	65.447	145.950	B-4	7	9	8	0	-0.5	62.0	-5.0	500.0	-0.8	16.0	60.0	8.0	63.0
19864S	65.542	146.716	C-6	8	5	9	0	-0.5	6.0	-6.0	500.0	-1.0	11.0	70.0	4.0	18.0
19867S	65.601	146.231	C-5	9	7	14	0	-0.5	8.0	-7.0	800.0	-1.3	13.0	70.0	3.0	21.0
19868S	65.516	146.148	C-5	8	8	17	0	-0.5	9.0	-7.0	600.0	-1.4	12.0	60.0	3.0	19.0
19871S	65.492	146.749	B-6	8	5	29	0	-0.5	10.0	-5.0	500.0	-1.0	17.0	70.0	5.0	14.0
19873S	65.480	146.529	B-6	8	6	33	0	-0.5	10.0	-8.0	500.0	-1.4	9.0	60.0	3.0	15.0
19878S	65.580	146.880	C-6	9	4	27	0	-0.5	9.0	21.0	1000.0	-3.0	8.0	100.0	2.0	11.0
19881S	65.576	146.331	C-5	9	7	29	0	-0.5	24.0	-6.0	700.0	-1.0	11.0	50.0	11.0	14.0
19884S	65.628	146.650	C-6	9	5	11	0	-0.5	10.0	-6.0	700.0	-1.0	14.0	90.0	9.0	36.0
19885S	65.411	145.914	B-4	7	9	28	0	-0.5	21.0	-9.0	500.0	-1.2	14.0	60.0	2.0	22.0
19891S	65.447	146.081	B-5	7	8	10	0	-0.5	11.0	-7.0	600.0	-1.1	13.0	50.0	3.0	21.0
19893S	65.627	146.831	C-6	9	4	12	0	-0.5	4.0	-11.0	500.0	-2.2	6.0	50.0	6.0	9.5
19902S	65.660	146.423	C-5	10	6	26	0	-0.5	5.0	-8.0	700.0	-1.6	13.0	90.0	3.0	20.0
19908S	65.606	146.860	C-6	9	4	14	0	1.0	21.0	-8.0	500.0	-1.7	8.0	70.0	6.0	31.0
19910S	65.450	146.535	B-6	7	6	9	0	-0.5	13.0	-9.0	400.0	-1.6	7.0	30.0	21.0	6.0
19911S	65.394	146.385	B-5	7	7	31	0	-0.5	24.0	-10.0	700.0	-1.7	14.0	80.0	10.0	24.0
19916S	65.640	146.383	C-5	9	7	6	0	-0.5	13.0	-9.0	600.0	-1.5	17.0	90.0	3.0	24.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19824S	3.7	9.0	-4.0	0.91	-200.0	14.0	80.0	0.7	13.8	-5.0	-1.0	8.8	3.1	25.0
19827S	2.5	8.0	-4.0	0.83	-200.0	10.0	110.0	1.2	8.4	-5.0	1.0	12.0	3.1	-5.0
19831S	3.7	9.0	-4.0	0.94	-200.0	16.0	130.0	0.6	15.1	-5.0	-1.0	14.0	4.1	-4.0
19832S	3.1	10.0	-4.0	0.76	-200.0	34.0	110.0	1.7	10.9	-5.0	2.0	10.0	4.2	5.0
19833S	3.2	10.0	-4.0	0.77	-200.0	24.0	190.0	0.7	11.2	-5.0	-1.0	19.0	8.4	-4.0
19837S	3.3	6.0	-4.0	1.50	-200.0	12.0	360.0	0.9	11.0	-6.0	4.0	20.0	16.5	-7.0
19841S	3.4	9.0	9.0	0.80	-200.0	16.0	140.0	0.7	13.2	-5.0	-1.0	13.0	2.8	-4.0
19844S	2.7	5.0	-4.0	1.70	-400.0	12.0	410.0	1.0	9.4	-11.0	4.0	17.0	78.7	9.0
19860S	3.4	7.0	-4.0	0.63	-200.0	12.0	90.0	1.3	11.8	-5.0	-1.0	8.9	3.9	81.0
19864S	2.6	8.0	-4.0	0.85	-200.0	22.0	130.0	0.5	10.0	-6.0	-1.0	25.0	9.9	9.0
19867S	3.1	10.0	-4.0	0.93	300.0	22.0	80.0	2.6	11.0	-5.0	2.0	12.0	4.4	-4.0
19868S	3.0	10.0	-4.0	1.00	300.0	10.0	120.0	1.2	10.7	-5.0	-1.0	14.0	7.9	-4.0
19871S	3.6	7.0	-4.0	1.20	-200.0	14.0	120.0	1.0	10.6	-5.0	1.0	16.0	5.1	-4.0
19873S	2.6	7.0	-4.0	1.20	-200.0	12.0	60.0	1.1	10.3	-6.0	1.0	11.0	4.4	8.0
19878S	3.0	20.0	170.0	1.50	-300.0	20.0	140.0	0.9	12.9	100.0	3.0	120.0	47.5	17.0
19881S	2.4	10.0	-4.0	1.50	-200.0	20.0	250.0	0.6	8.8	-5.0	4.0	20.0	29.3	11.0
19884S	3.6	9.0	-4.0	0.69	-200.0	30.0	140.0	1.3	13.5	-5.0	-1.0	14.0	3.3	5.0
19885S	3.6	7.0	-4.0	0.74	-200.0	10.0	70.0	6.9	13.1	-5.0	-1.0	9.8	2.7	-7.0
19891S	3.1	8.0	-4.0	0.74	-200.0	12.0	120.0	4.3	10.0	5.0	-1.0	11.0	3.4	-4.0
19893S	2.8	15.0	-4.0	2.10	-200.0	42.0	430.0	0.6	10.7	-5.0	4.0	100.0	47.8	12.0
19902S	3.0	11.0	-4.0	0.84	-200.0	18.0	100.0	0.6	12.7	-5.0	2.0	13.0	4.8	-5.0
19908S	3.2	21.0	-4.0	1.90	-200.0	90.0	280.0	1.1	12.5	11.0	4.0	130.0	52.9	18.0
19910S	2.4	8.0	-4.0	2.30	-200.0	10.0	590.0	1.2	7.7	-5.0	6.0	41.0	29.3	20.0
19911S	3.4	11.0	5.0	0.63	-200.0	18.0	140.0	2.2	12.4	-6.0	3.0	16.0	5.8	-5.0
19916S	4.4	10.0	-4.0	1.00	-200.0	10.0	150.0	0.7	15.4	-5.0	1.0	12.0	4.9	6.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19824S	67.0	36.0	64.0	6.7	1.5	2.6	0.4
19827S	35.0	45.0	70.0	6.5	1.7	2.9	0.4
19831S	110.0	51.0	101.0	5.5	1.3	3.0	0.4
19832S	75.0	41.0	61.0	6.4	1.5	2.4	0.3
19833S	140.0	54.0	92.0	9.5	0.9	3.4	0.6
19837S	66.0	46.0	81.0	8.7	0.9	4.7	0.9
19841S	83.0	49.0	94.0	5.9	2.0	2.7	0.4
19844S	61.0	38.0	62.0	8.9	2.0	3.9	-0.1
19860S	70.0	33.0	67.0	4.1	1.0	2.3	0.3
19864S	150.0	67.0	118.0	7.7	-0.7	4.8	0.7
19867S	69.0	41.0	61.0	6.8	1.5	2.4	0.4
19868S	67.0	44.0	65.0	7.2	1.4	2.8	0.5
19871S	70.0	48.0	85.0	5.0	1.2	2.6	0.4
19873S	52.0	45.0	71.0	6.7	1.0	2.4	0.4
19878S	84.0	234.0	477.0	46.1	-0.9	24.2	4.0
19881S	110.0	49.0	78.0	5.5	-0.7	4.0	0.8
19884S	110.0	50.0	86.0	6.0	2.0	3.0	0.5
19885S	49.0	34.0	58.0	5.5	0.9	2.5	0.3
19891S	62.0	39.0	60.0	6.3	1.2	2.3	0.3
19893S	190.0	146.0	271.0	27.9	0.9	15.4	2.5
19902S	78.0	48.0	77.0	8.1	1.7	2.8	0.5
19908S	340.0	136.0	289.0	22.7	1.5	25.0	3.6
19910S	42.0	65.0	130.0	14.4	0.6	8.6	1.5
19911S	69.0	55.0	99.0	9.1	1.8	3.6	0.5
19916S	66.0	47.0	83.0	7.5	1.3	2.5	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
19917S	65.658	146.872	C-6	10	4	26	0	-0.5	12.0	-6.0	800.0	-1.1	19.0	70.0	4.0	32.0
19924S	65.421	145.987	B-4	7	9	19	0	-0.5	87.0	7.0	500.0	-0.8	15.0	60.0	7.0	26.0
19926S	65.568	146.491	C-5	9	6	34	0	-0.5	19.0	-11.0	700.0	-1.6	16.0	100.0	7.0	25.0
19927S	65.627	146.468	C-5	9	6	10	0	-0.5	7.0	-10.0	600.0	2.4	14.0	80.0	3.0	22.0
19936S	65.479	146.581	B-6	8	6	31	0	-0.5	14.0	-5.0	600.0	-0.7	9.0	40.0	5.0	13.0
19938S	65.663	146.920	C-6	10	4	28	0	-0.5	6.0	5.0	1200.0	-1.3	16.0	100.0	8.0	18.0
19948S	65.545	146.501	C-6	8	6	3	0	-0.5	8.0	-11.0	600.0	-1.9	18.0	90.0	10.0	20.0
19951S	65.485	146.446	B-5	8	6	26	0	-0.5	27.0	-10.0	900.0	-1.5	15.0	90.0	6.0	32.0
19970S	65.484	146.635	B-6	8	5	36	0	-0.5	17.0	12.0	400.0	-0.5	9.0	50.0	16.0	12.0
19974S	65.455	146.427	B-5	7	6	1	0	-0.5	18.0	-5.0	200.0	-0.9	-5.0	10.0	22.0	7.0
19977S	65.398	146.361	B-5	7	7	29	0	-0.5	66.0	-11.0	900.0	-1.5	12.0	70.0	11.0	27.0
19979S	65.560	146.716	C-6	9	5	33	0	-0.5	9.0	-10.0	600.0	-1.9	14.0	60.0	5.0	25.0
19981S	65.465	146.289	B-5	7	7	3	0	-0.5	7.0	-10.0	700.0	-1.9	12.0	80.0	4.0	23.0
19982S	65.538	146.274	C-5	8	7	10	0	-0.5	12.0	12.0	800.0	-1.9	15.0	80.0	5.0	19.0
19984S	65.692	146.846	C-6	10	4	14	0	-0.5	10.0	-7.0	1400.0	-1.2	21.0	130.0	6.0	40.0
19986S	65.658	146.788	C-6	10	5	30	0	-0.5	8.0	-7.0	400.0	-1.3	18.0	80.0	9.0	21.0
19993S	65.489	146.690	B-6	8	5	27	0	-0.5	12.0	-9.0	900.0	-1.8	16.0	80.0	17.0	9.5
19995S	65.661	146.624	C-6	10	5	25	0	-0.5	9.0	-10.0	700.0	-1.9	8.0	50.0	8.0	20.0
19998S	65.489	146.093	B-5	8	8	27	0	-0.5	9.0	-9.0	1000.0	-1.6	22.0	70.0	2.0	17.0
21410S	65.610	146.862	C-6	9	4	14	0	-0.5	18.0	-8.0	600.0	-1.7	8.0	50.0	8.0	20.0
21411S	65.411	146.371	B-5	7	7	30	0	-0.5	22.0	-11.0	800.0	-1.7	18.0	70.0	6.0	17.0
21421S	65.483	146.897	B-6	8	4	34	0	-1.2	6.0	10.0	500.0	-0.7	9.0	50.0	3.0	20.0
21422S	65.513	146.060	C-5	8	8	14	0	-0.5	38.0	-5.0	400.0	-1.2	13.0	50.0	2.0	28.0
21428S	65.565	146.435	C-5	9	6	35	0	-0.5	33.0	-6.0	600.0	-1.0	12.0	60.0	7.0	13.0
21429S	65.669	146.567	C-6	10	6	30	0	-0.5	4.0	-9.0	500.0	-1.9	7.0	30.0	6.0	17.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
19917S	4.5	7.0	16.0	1.10	-200.0	36.0	210.0	0.8	13.7	-5.0	-1.0	18.0	3.6	-4.0
19924S	3.3	7.0	-4.0	0.62	-200.0	14.0	100.0	4.6	11.6	-5.0	-1.0	9.4	2.8	-4.0
19926S	4.6	9.0	-5.0	1.00	-200.0	14.0	170.0	1.1	16.6	-5.0	1.0	15.0	4.7	-9.0
19927S	3.8	12.0	-5.0	0.94	-200.0	16.0	150.0	0.3	13.6	-6.0	-1.0	17.0	4.6	-5.0
19936S	2.4	5.0	-4.0	1.10	-200.0	12.0	150.0	1.3	7.2	-5.0	-1.0	11.0	13.3	-4.0
19938S	3.7	12.0	-4.0	1.00	-200.0	18.0	170.0	0.6	16.2	28.0	-1.0	15.0	4.5	-4.0
19948S	4.0	14.0	-4.0	1.10	-300.0	16.0	160.0	1.1	14.7	-7.0	-1.0	14.0	6.5	-6.0
19951S	4.0	6.0	4.0	1.30	-200.0	14.0	140.0	1.0	15.2	-5.0	-1.0	15.0	9.5	15.0
19970S	2.3	7.0	-4.0	1.30	-200.0	20.0	130.0	0.9	9.0	-5.0	-1.0	32.0	276.0	-4.0
19974S	1.3	7.0	-4.0	1.90	-200.0	10.0	510.0	0.7	4.8	-5.0	4.0	26.0	37.0	15.0
19977S	3.9	5.0	-4.0	0.38	-200.0	18.0	180.0	5.3	13.9	-5.0	-1.0	17.0	4.0	10.0
19979S	3.9	12.0	-4.0	0.90	-200.0	32.0	230.0	0.6	12.8	-6.0	2.0	33.0	10.0	-5.0
19981S	3.3	11.0	-4.0	1.00	-200.0	18.0	130.0	1.3	13.5	-7.0	-1.0	15.0	7.1	-6.0
19982S	4.2	12.0	4.0	1.00	-200.0	12.0	140.0	0.9	15.2	-6.0	1.0	19.0	4.4	-6.0
19984S	4.3	8.0	4.0	0.90	-200.0	22.0	130.0	2.1	17.5	-5.0	2.0	15.0	3.9	7.0
19986S	4.4	8.0	-4.0	0.87	-200.0	50.0	200.0	0.8	15.3	-5.0	-1.0	18.0	4.8	-4.0
19993S	4.4	12.0	-4.0	1.80	-300.0	18.0	190.0	0.8	15.2	-5.0	3.0	30.0	25.4	-4.0
19995S	3.3	11.0	-4.0	1.10	200.0	64.0	320.0	0.7	11.1	-5.0	1.0	57.0	20.6	-7.0
19998S	4.0	9.0	-4.0	0.91	-200.0	10.0	160.0	0.5	11.4	-5.0	2.0	14.0	3.6	-5.0
21410S	3.1	27.0	14.0	2.30	-200.0	120.0	470.0	0.9	11.6	-6.0	4.0	140.0	44.9	25.0
21411S	4.0	9.0	4.0	1.10	-200.0	16.0	160.0	1.0	13.8	-5.0	-1.0	17.0	4.5	-9.0
21421S	2.1	9.0	-4.0	0.89	-200.0	19.0	70.0	0.7	9.3	-5.0	-1.0	9.4	3.0	-8.0
21422S	3.5	9.0	-4.0	0.48	-200.0	14.0	70.0	2.9	10.6	-5.0	-1.0	11.0	2.6	6.0
21428S	2.9	9.0	-4.0	1.40	-200.0	30.0	100.0	1.3	11.2	-5.0	-1.0	23.0	10.9	8.0
21429S	2.7	11.0	-4.0	1.50	-200.0	62.0	500.0	0.5	8.5	7.0	2.0	63.0	16.9	13.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
19917S	160.0	63.0	113.0	6.3	-0.7	3.5	0.4
19924S	73.0	37.0	57.0	4.1	1.4	2.3	0.3
19926S	66.0	57.0	103.0	9.1	1.4	3.3	0.5
19927S	65.0	65.0	111.0	10.8	1.3	3.9	0.6
19936S	57.0	32.0	57.0	3.2	0.8	1.7	0.4
19938S	100.0	56.0	97.0	6.3	2.7	3.5	0.5
19948S	86.0	54.0	89.0	8.6	2.4	3.0	0.6
19951S	78.0	48.0	81.0	8.2	1.2	2.9	0.6
19970S	53.0	84.0	105.0	7.8	2.6	5.4	-0.1
19974S	39.0	37.0	71.0	5.7	-0.7	6.3	1.1
19977S	73.0	57.0	103.0	8.9	2.4	3.4	0.5
19979S	170.0	78.0	138.0	13.2	1.2	5.6	0.9
19981S	68.0	49.0	85.0	7.8	1.1	3.0	0.4
19982S	56.0	63.0	109.0	9.8	1.9	3.4	0.6
19984S	120.0	64.0	106.0	6.3	1.4	2.8	0.4
19986S	140.0	63.0	109.0	6.9	2.6	3.7	0.5
19993S	71.0	76.0	125.0	8.0	1.5	5.6	0.9
19995S	240.0	120.0	206.0	18.9	1.9	8.4	1.3
19998S	78.0	40.0	71.0	6.1	1.4	2.1	0.3
21410S	340.0	145.0	332.0	22.0	-1.0	26.3	3.7
21411S	61.0	66.0	112.0	10.0	1.7	3.5	0.5
21421S	100.0	40.0	59.0	3.8	-0.2	2.2	0.3
21422S	63.0	39.0	67.0	6.7	0.9	2.7	0.5
21428S	74.0	56.0	97.0	5.9	1.9	3.8	0.7
21429S	230.0	114.0	203.0	17.8	1.1	8.1	1.1

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
21435S	65.650	146.429	C-5	10	6	35	0	-0.5	3.0	-8.0	700.0	-1.6	11.0	70.0	2.0	14.0
21440S	65.461	146.376	B-5	7	7	6	0	-0.5	17.0	-8.0	400.0	-1.4	8.0	30.0	11.0	12.0
21441S	65.679	146.887	C-6	10	4	22	0	-0.5	4.0	-5.0	700.0	-0.6	10.0	60.0	6.0	20.0
21446S	65.414	146.090	B-5	7	8	22	0	-0.5	60.0	-9.0	600.0	-1.4	13.0	90.0	2.0	33.0
21449S	65.462	145.955	B-4	7	9	5	0	-0.5	17.0	-5.0	400.0	-0.7	15.0	50.0	2.0	21.0
21463S	65.477	145.657	B-4	8	10	34	0	-0.5	8.0	-5.0	300.0	0.9	5.0	30.0	1.0	7.0
21467S	65.499	146.085	B-5	8	8	27	0	-0.5	5.0	-8.0	700.0	-1.6	11.0	60.0	2.0	14.0
21468S	65.609	146.832	C-6	9	4	13	0	-0.5	14.0	-10.0	600.0	-1.8	6.0	60.0	4.0	15.0
21473S	65.410	146.321	B-5	7	7	28	0	-0.5	25.0	-10.0	700.0	-1.6	12.0	90.0	7.0	17.0
21476S	65.556	146.707	C-6	8	5	3	0	-0.5	6.0	-5.0	600.0	-0.9	10.0	60.0	4.0	22.0
21478S	65.620	146.954	C-6	9	4	8	0	-0.5	13.0	-10.0	1000.0	-1.6	29.0	130.0	16.0	39.0
21479S	65.541	146.030	C-5	8	8	11	0	-0.5	22.0	10.0	400.0	-1.0	10.0	40.0	2.0	19.0
21483S	65.538	146.668	C-6	8	5	11	0	-0.5	52.0	-7.0	600.0	-1.1	22.0	90.0	5.0	29.0
21487S	65.668	146.745	C-6	10	5	29	0	-0.5	8.0	-5.0	1100.0	-1.3	19.0	90.0	6.0	20.0
21488S	65.519	146.287	C-5	8	7	15	0	-0.5	10.0	-8.0	600.0	-1.4	10.0	60.0	3.0	16.0
21492S	65.537	146.789	C-6	8	5	7	0	-0.5	9.0	-10.0	700.0	-1.7	14.0	90.0	4.0	21.0
21493S	65.559	146.702	C-6	9	5	33	0	-0.5	5.0	-7.0	700.0	1.5	13.0	60.0	5.0	24.0
21495S	65.599	146.560	C-6	9	6	20	0	-0.5	7.0	-10.0	600.0	-2.4	10.0	90.0	4.0	24.0
21498S	65.402	146.641	B-6	7	5	25	0	-0.5	17.0	-6.0	600.0	1.1	31.0	80.0	8.0	23.0
21502S	65.416	146.813	B-6	7	5	19	0	-0.5	10.0	-8.0	600.0	-1.3	9.0	60.0	7.0	12.0
21508S	65.486	145.882	B-4	8	9	27	0	-0.5	8.0	-5.0	600.0	0.7	13.0	50.0	4.0	16.0
21510S	65.524	146.081	C-5	8	8	15	0	-0.5	8.0	-7.0	500.0	-1.2	9.0	50.0	2.0	21.0
21525S	65.510	146.701	C-6	8	5	22	0	-0.5	12.0	-8.0	600.0	-1.5	14.0	70.0	12.0	12.0
21529S	65.515	145.641	C-4	8	10	14	0	-0.5	73.0	9.0	600.0	-0.8	17.0	50.0	3.0	24.0
21534S	65.473	145.899	B-4	8	9	33	0	-0.5	72.0	11.0	500.0	1.1	19.0	70.0	9.0	68.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Sr	Ta	Th	U	W
21435S	3.1	13.0	-4.0	1.00	-200.0	10.0	110.0	0.3	12.1	-5.0	-1.0	14.0	4.7	5.0
21440S	2.7	5.0	-4.0	1.70	-200.0	10.0	400.0	0.9	8.2	-5.0	3.0	20.0	18.8	-6.0
21441S	3.2	14.0	-4.0	1.30	-200.0	34.0	250.0	0.8	11.2	-5.0	1.0	44.0	19.2	-6.0
21446S	4.3	10.0	4.0	0.60	-200.0	42.0	110.0	6.0	15.8	-5.0	-1.0	11.0	4.1	-5.0
21449S	2.9	5.0	4.0	0.53	-200.0	12.0	80.0	1.4	9.6	-5.0	1.0	7.9	3.0	-4.0
21463S	1.8	6.0	-4.0	0.67	-200.0	4.0	70.0	3.2	6.0	-5.0	-1.0	4.2	1.4	-4.0
21467S	2.9	14.0	-4.0	1.20	-200.0	10.0	40.0	0.5	9.6	-5.0	2.0	13.0	4.0	-4.0
21468S	2.9	17.0	-4.0	1.90	-200.0	42.0	350.0	0.8	10.6	-5.0	3.0	89.0	25.1	20.0
21473S	3.5	8.0	-5.0	1.10	-200.0	15.0	150.0	1.0	14.0	-5.0	-1.0	14.0	3.5	-9.0
21476S	2.9	7.0	-4.0	0.59	-200.0	14.0	60.0	0.5	10.6	-5.0	-1.0	10.0	3.3	-4.0
21478S	5.3	9.0	10.0	1.00	-300.0	110.0	220.0	1.7	20.2	-6.0	-1.0	19.0	5.3	-4.0
21479S	2.8	8.0	-4.0	0.65	-200.0	14.0	80.0	2.3	7.8	-5.0	1.0	9.8	3.3	4.0
21483S	5.6	8.0	-4.0	1.00	-200.0	32.0	190.0	2.2	17.5	-5.0	1.0	13.0	4.4	-4.0
21487S	4.3	10.0	-4.0	1.10	-200.0	20.0	210.0	0.7	16.1	-5.0	1.0	16.0	4.2	-4.0
21488S	2.8	12.0	-4.0	1.10	-200.0	8.0	100.0	1.4	9.5	-5.0	2.0	13.0	4.5	-4.0
21492S	3.4	10.0	-4.0	0.84	-200.0	18.0	90.0	0.7	14.0	-8.0	-1.0	9.5	3.4	-6.0
21493S	3.1	6.0	-4.0	0.65	-200.0	16.0	130.0	0.8	11.3	-5.0	-1.0	10.0	3.2	-4.0
21495S	3.4	8.0	-4.0	0.78	-400.0	18.0	90.0	0.8	13.7	-14.0	-3.0	15.0	5.7	-4.0
21498S	3.2	8.0	-4.0	0.98	-200.0	18.0	110.0	1.5	11.6	-5.0	-1.0	11.0	3.2	-4.0
21502S	2.7	8.0	-4.0	1.30	-200.0	10.0	170.0	0.9	9.6	-5.0	2.0	15.0	6.7	-7.0
21508S	3.2	7.0	4.0	0.49	-200.0	10.0	150.0	0.5	10.5	-5.0	-1.0	9.9	3.1	-4.0
21510S	2.7	11.0	-4.0	1.00	-200.0	8.0	90.0	1.1	8.9	-5.0	-1.0	14.0	5.6	5.0
21525S	3.6	14.0	-4.0	1.50	-200.0	12.0	230.0	0.8	12.7	-5.0	2.0	34.0	20.4	10.0
21529S	3.5	7.0	-4.0	0.60	-200.0	26.0	90.0	8.3	11.6	-5.0	-1.0	12.0	2.8	-4.0
21534S	3.4	7.0	6.0	0.59	-200.0	20.0	140.0	0.8	13.2	-5.0	-1.0	9.9	4.8	25.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
21435S	62.0	56.0	96.0	8.7	1.5	3.5	0.5
21440S	61.0	38.0	73.0	8.0	-0.4	4.8	0.9
21441S	130.0	95.0	156.0	10.8	1.3	8.2	1.1
21446S	150.0	40.0	79.0	6.8	1.6	2.7	0.4
21449S	70.0	31.0	62.0	3.8	1.1	2.3	0.3
21463S	24.0	20.0	30.0	2.2	-0.2	1.4	0.2
21467S	58.0	41.0	68.0	6.3	1.3	2.7	0.5
21468S	100.0	95.0	242.0	19.1	-0.6	14.3	2.2
21473S	58.0	51.0	87.0	8.3	1.4	3.2	0.5
21476S	72.0	41.0	70.0	4.8	1.7	2.7	0.3
21478S	230.0	67.0	119.0	8.2	2.8	4.0	0.6
21479S	47.0	32.0	53.0	5.1	0.6	2.2	0.4
21483S	99.0	48.0	91.0	5.4	1.6	3.2	0.5
21487S	95.0	67.0	109.0	7.0	1.9	3.4	0.5
21488S	63.0	41.0	72.0	6.2	1.3	2.4	0.4
21492S	88.0	37.0	65.0	7.1	1.1	2.6	0.5
21493S	77.0	40.0	65.0	5.0	1.8	2.7	0.3
21495S	88.0	50.0	88.0	9.1	2.4	3.2	0.6
21498S	100.0	53.0	85.0	5.6	2.2	2.8	0.4
21502S	55.0	42.0	70.0	7.2	1.5	3.4	0.5
21508S	46.0	29.0	57.0	3.6	0.9	2.5	0.4
21510S	60.0	38.0	63.0	6.2	0.8	3.1	0.5
21525S	78.0	93.0	144.0	9.4	1.1	4.5	0.9
21529S	79.0	43.0	79.0	4.6	1.2	2.7	0.3
21534S	83.0	32.0	70.0	4.5	1.7	3.1	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
21538S	65.656	146.875	C-6	10	4	34	0	0.5	11.0	12.0	800.0	-1.7	13.0	50.0	8.0	18.0
21539S	65.642	146.654	C-6	9	5	2	0	-0.5	8.0	-6.0	600.0	-1.2	9.0	20.0	7.0	22.0
21541S	65.442	146.871	B-6	7	4	11	0	-0.5	4.0	-7.0	700.0	-1.2	17.0	90.0	4.0	18.0
21543S	65.454	145.753	B-4	7	10	7	0	-0.5	39.0	-5.0	400.0	-0.6	17.0	70.0	2.0	41.0
21544S	65.489	146.220	B-5	8	7	25	0	-0.5	4.0	-7.0	500.0	-1.4	12.0	60.0	2.0	19.0
21547S	65.481	146.535	B-6	8	6	33	0	-0.5	9.0	5.0	600.0	2.6	13.0	80.0	3.0	14.0
21548S	65.629	146.984	C-6	9	4	6	0	-0.5	6.0	-5.0	700.0	-0.8	11.0	60.0	5.0	36.0
21553S	65.430	145.865	B-4	7	9	15	0	-0.5	8.0	-7.0	600.0	1.4	23.0	90.0	3.0	53.0
21558S	65.527	145.718	C-4	8	10	17	0	-0.5	34.0	-5.0	300.0	-0.5	10.0	40.0	3.0	21.0
21561S	65.534	146.622	C-6	8	5	12	0	-0.5	13.0	-11.0	600.0	-1.7	18.0	100.0	2.0	22.0
21563S	65.510	146.117	C-5	8	8	21	0	-0.5	5.0	-8.0	700.0	-1.5	12.0	70.0	2.0	16.0
21564S	65.544	146.994	C-6	8	4	6	0	-0.5	9.0	-6.0	700.0	-0.9	18.0	80.0	12.0	35.0
21565S	65.625	146.945	C-6	9	4	8	0	0.5	11.0	-8.0	900.0	1.6	19.0	100.0	12.0	40.0
21567S	65.440	146.071	B-5	7	8	15	0	-0.5	42.0	-7.0	300.0	-1.0	10.0	50.0	3.0	35.0
21568S	65.474	146.266	B-5	8	7	35	0	-0.5	9.0	-8.0	500.0	-1.4	15.0	50.0	7.0	16.0
21570S	65.401	146.397	B-5	7	7	30	0	-0.5	15.0	-5.0	400.0	-0.6	8.0	30.0	6.0	15.0
21576S	65.460	145.748	B-4	7	10	5	0	-0.5	22.0	-9.0	300.0	-1.1	15.0	60.0	2.0	31.0
21584S	65.612	146.481	C-5	9	6	15	0	-0.5	5.0	16.0	700.0	-1.8	13.0	90.0	2.0	21.0
21586S	65.400	146.700	B-6	7	5	27	0	-0.5	11.0	-8.0	500.0	-1.3	8.0	50.0	12.0	14.0
21587S	65.430	146.602	B-6	7	6	18	0	-0.5	34.0	-16.0	900.0	-2.2	12.0	90.0	20.0	20.0
21588S	65.530	146.729	C-6	8	5	9	0	-0.5	9.0	-5.0	500.0	1.2	10.0	50.0	4.0	16.0
21593S	65.648	146.436	C-5	10	6	35	0	-0.5	4.0	-9.0	500.0	2.1	11.0	70.0	2.0	15.0
21594S	65.524	146.599	C-6	8	6	18	0	-0.5	14.0	-14.0	600.0	2.2	17.0	100.0	6.0	19.0
21595S	65.500	146.199	C-5	8	7	24	0	-0.5	9.0	-8.0	500.0	-1.4	9.0	50.0	4.0	16.0
21607S	65.524	146.734	C-6	8	5	16	0	-0.5	8.0	-5.0	500.0	1.1	11.0	60.0	6.0	15.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
21538S	3.3	15.0	-4.0	1.90	-200.0	54.0	400.0	0.7	12.6	-6.0	3.0	70.0	37.5	9.0
21539S	3.0	11.0	-4.0	1.60	-200.0	62.0	470.0	0.8	7.9	-5.0	2.0	56.0	20.3	-4.0
21541S	3.5	9.0	8.0	1.40	-200.0	10.0	60.0	1.0	14.2	-5.0	-1.0	11.0	3.3	-4.0
21543S	4.4	6.0	5.0	0.52	-200.0	6.0	50.0	8.2	15.3	-5.0	-1.0	6.3	1.7	-4.0
21544S	3.0	13.0	-4.0	1.10	-200.0	8.0	70.0	0.5	10.6	-5.0	2.0	14.0	4.6	-4.0
21547S	3.6	9.0	-4.0	1.30	-200.0	14.0	140.0	1.6	12.8	-5.0	-1.0	15.0	4.9	-8.0
21548S	3.0	6.0	6.0	0.75	-200.0	20.0	130.0	0.7	12.9	-5.0	-1.0	11.0	3.0	-4.0
21553S	4.9	5.0	-4.0	1.10	-200.0	6.0	-40.0	1.7	17.8	-5.0	-1.0	7.4	3.0	-4.0
21558S	2.7	8.0	-4.0	0.52	-200.0	10.0	70.0	1.9	8.6	-5.0	-1.0	7.2	1.7	-4.0
21561S	4.0	7.0	-5.0	1.30	300.0	20.0	120.0	1.0	15.9	-5.0	2.0	14.0	6.9	-9.0
21563S	3.1	12.0	-4.0	0.94	-200.0	10.0	110.0	0.8	11.1	-5.0	-1.0	12.0	4.4	-5.0
21564S	3.2	7.0	4.0	0.60	-200.0	30.0	180.0	1.2	13.0	-5.0	-1.0	14.0	3.7	-4.0
21565S	4.7	8.0	-4.0	0.87	-200.0	92.0	160.0	1.5	17.9	-5.0	-1.0	18.0	5.2	-4.0
21567S	3.1	8.0	-4.0	0.34	-200.0	20.0	100.0	2.8	10.7	-5.0	-1.0	8.4	2.0	8.0
21568S	3.1	7.0	-4.0	1.00	-200.0	8.0	230.0	0.7	9.9	-5.0	-1.0	16.0	10.2	-5.0
21570S	2.4	6.0	-4.0	0.75	-200.0	12.0	140.0	0.6	7.1	-5.0	-1.0	9.9	5.8	6.0
21576S	4.2	9.0	-4.0	0.79	-200.0	4.0	50.0	11.0	17.5	-5.0	-1.0	6.3	4.1	-6.0
21584S	3.8	13.0	-5.0	1.00	-200.0	12.0	60.0	0.6	13.7	-7.0	1.0	13.0	3.7	-6.0
21586S	2.5	7.0	-4.0	1.60	-200.0	14.0	230.0	1.0	8.8	-5.0	1.0	16.0	13.3	11.0
21587S	3.5	6.0	9.0	1.40	-300.0	18.0	240.0	1.3	13.1	6.0	2.0	21.0	117.0	-12.0
21588S	2.7	10.0	4.0	0.98	200.0	16.0	160.0	0.6	9.3	-5.0	-1.0	21.0	8.5	5.0
21593S	2.9	11.0	-5.0	0.87	-200.0	10.0	130.0	0.5	11.4	-7.0	2.0	12.0	4.4	-5.0
21594S	4.0	7.0	-4.0	1.10	-300.0	16.0	80.0	0.8	15.4	-8.0	1.0	14.0	26.2	-10.0
21595S	2.7	11.0	-4.0	1.20	-200.0	8.0	130.0	0.7	9.5	7.0	1.0	16.0	10.3	-5.0
21607S	2.7	10.0	-4.0	0.99	200.0	16.0	110.0	0.8	9.7	-5.0	1.0	23.0	10.8	4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
21538S	190.0	117.0	228.0	15.5	-1.1	13.6	1.9
21539S	290.0	79.0	151.0	9.2	-0.7	6.7	1.1
21541S	72.0	45.0	82.0	5.2	2.3	2.6	0.4
21543S	68.0	19.0	48.0	2.6	1.4	1.8	0.2
21544S	57.0	44.0	70.0	7.1	1.0	2.9	0.5
21547S	53.0	53.0	102.0	8.4	1.5	3.0	0.5
21548S	68.0	35.0	74.0	4.2	1.1	2.5	0.3
21553S	68.0	36.0	51.0	4.8	1.2	2.6	0.3
21558S	60.0	27.0	69.0	3.1	0.8	2.0	0.2
21561S	72.0	50.0	87.0	8.8	1.6	3.6	0.4
21563S	69.0	43.0	67.0	6.7	1.6	2.5	0.5
21564S	81.0	46.0	77.0	5.3	1.3	2.7	0.4
21565S	200.0	62.0	105.0	7.6	-0.2	3.4	0.5
21567S	64.0	33.0	64.0	5.6	1.1	2.3	0.3
21568S	77.0	41.0	69.0	6.8	1.1	3.4	0.5
21570S	50.0	29.0	55.0	3.1	0.8	2.2	0.3
21576S	54.0	26.0	42.0	4.8	1.3	2.5	0.4
21584S	69.0	60.0	97.0	10.1	1.0	3.5	0.6
21586S	70.0	40.0	70.0	7.0	0.9	3.1	0.6
21587S	78.0	52.0	87.0	13.1	1.9	5.1	0.9
21588S	99.0	53.0	92.0	6.0	0.9	4.3	0.6
21593S	64.0	46.0	75.0	7.7	0.9	3.0	0.5
21594S	74.0	56.0	81.0	9.3	1.8	3.4	0.8
21595S	66.0	44.0	75.0	7.7	1.3	3.6	0.6
21607S	100.0	62.0	101.0	6.8	1.3	4.1	0.7

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
21616S	65.523	145.834	C-4	8	9	14	0	-0.5	8.0	-9.0	600.0	-1.4	10.0	70.0	2.0	17.0
21619S	65.449	146.911	B-6	7	4	10	0	-0.5	5.0	-7.0	500.0	2.3	22.0	80.0	3.0	20.0
21622S	65.427	146.401	B-5	7	7	18	0	-0.5	19.0	-5.0	800.0	-1.6	23.0	110.0	12.0	41.0
21623S	65.527	146.411	C-5	8	6	13	0	-0.5	17.0	-10.0	700.0	-1.4	16.0	80.0	3.0	19.0
21627S	65.569	146.320	C-5	9	7	32	0	-0.5	22.0	-5.0	600.0	-0.8	9.0	50.0	7.0	15.0
21637S	65.434	146.783	B-6	7	5	18	0	-0.5	6.0	5.0	800.0	0.7	22.0	90.0	10.0	22.0
21640S	65.521	146.409	C-5	8	6	13	0	-0.5	16.0	-9.0	600.0	-1.6	13.0	70.0	2.0	27.0
21644S	65.620	146.382	C-5	9	7	7	0	-0.5	17.0	-9.0	500.0	-1.5	16.0	90.0	5.0	26.0
21657S	65.659	146.401	C-5	10	6	25	0	-0.5	8.0	-8.0	500.0	-1.2	16.0	80.0	3.0	25.0
21664S	65.484	146.725	B-6	8	5	28	0	-0.5	9.0	-8.0	800.0	-1.5	18.0	80.0	7.0	19.0
21671S	65.479	146.716	B-6	8	5	33	0	-0.5	9.0	-9.0	800.0	2.1	20.0	90.0	8.0	19.0
21680S	65.469	146.588	B-6	7	6	6	0	-0.5	13.0	-5.0	600.0	-0.6	9.0	30.0	3.0	12.0
21685S	65.380	146.170	B-5	6	8	6	0	-0.5	95.0	7.0	600.0	1.1	15.0	80.0	6.0	22.0
21686S	65.431	146.400	B-5	7	7	18	0	-0.5	24.0	-11.0	700.0	-1.7	21.0	90.0	10.0	31.0
21687S	65.568	146.921	C-6	9	4	33	0	1.0	10.0	-9.0	900.0	-1.5	17.0	100.0	14.0	30.0
21691S	65.668	146.526	C-6	10	6	28	0	-0.5	8.0	-5.0	700.0	-0.8	13.0	70.0	6.0	19.0
21693S	65.664	146.497	C-5	10	6	28	0	-0.5	5.0	-5.0	700.0	1.4	13.0	70.0	4.0	15.0
21697S	65.466	145.780	B-4	7	10	6	0	-0.5	64.0	-5.0	400.0	-0.5	15.0	50.0	3.0	25.0
21698S	65.459	146.063	B-5	7	8	3	0	-0.5	23.0	-8.0	600.0	-1.1	14.0	70.0	2.0	25.0
21704S	65.521	146.412	C-5	8	6	13	0	-0.5	19.0	-8.0	800.0	-1.2	12.0	80.0	3.0	25.0
21705S	65.478	146.720	B-6	8	5	33	0	-0.5	6.0	22.0	800.0	-1.5	22.0	90.0	9.0	25.0
21714S	65.556	146.011	C-5	8	8	1	0	-0.5	25.0	-7.0	400.0	-0.9	11.0	50.0	2.0	21.0
21717S	65.478	146.831	B-6	8	4	36	0	-0.5	10.0	-5.0	400.0	0.6	13.0	60.0	4.0	23.0
21718S	65.544	146.251	C-5	8	7	2	30	-0.5	20.0	-8.0	700.0	-1.3	15.0	60.0	3.0	21.0
21720S	65.571	146.710	C-6	9	5	28	0	-0.5	5.0	-5.0	600.0	1.3	12.0	70.0	6.0	21.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
21616S	2.9	10.0	-4.0	0.96	-200.0	8.0	80.0	1.2	11.6	-5.0	2.0	11.0	3.5	6.0
21619S	3.8	11.0	-4.0	1.30	-200.0	10.0	100.0	1.5	13.7	-5.0	-1.0	10.0	2.4	-4.0
21622S	4.6	7.0	10.0	1.20	-200.0	16.0	200.0	0.7	17.2	-5.0	-1.0	15.0	6.9	-10.0
21623S	3.8	10.0	-4.0	1.00	-200.0	10.0	150.0	3.5	12.1	-5.0	-1.0	15.0	4.8	-6.0
21627S	2.4	11.0	-4.0	1.00	-200.0	16.0	130.0	0.5	9.0	-5.0	-1.0	15.0	9.5	21.0
21637S	3.9	7.0	-4.0	0.98	-200.0	8.0	100.0	1.2	15.7	-5.0	1.0	11.0	3.6	-7.0
21640S	3.7	11.0	-4.0	0.86	-200.0	14.0	110.0	2.0	11.0	-6.0	-1.0	13.0	4.1	10.0
21644S	4.3	12.0	18.0	1.60	-200.0	10.0	130.0	0.5	14.6	-5.0	3.0	20.0	8.4	14.0
21657S	4.0	9.0	-4.0	1.00	-200.0	8.0	110.0	0.7	14.1	-5.0	1.0	13.0	3.8	-7.0
21664S	4.2	12.0	-4.0	1.50	-200.0	10.0	60.0	1.2	14.7	-5.0	1.0	22.0	5.4	-4.0
21671S	4.3	11.0	-5.0	1.70	-200.0	12.0	100.0	1.6	15.2	-5.0	1.0	15.0	5.6	-4.0
21680S	2.6	5.0	-4.0	1.10	-200.0	12.0	130.0	1.5	7.5	-5.0	1.0	11.0	5.7	-4.0
21685S	3.4	6.0	-4.0	0.68	-200.0	24.0	130.0	14.0	11.1	-5.0	-1.0	17.0	6.9	-4.0
21686S	4.5	8.0	-4.0	1.20	-200.0	14.0	210.0	1.2	15.2	-7.0	2.0	18.0	16.0	24.0
21687S	3.7	9.0	-5.0	0.76	-200.0	56.0	100.0	1.1	14.8	-5.0	-1.0	16.0	4.7	-4.0
21691S	3.0	7.0	-4.0	0.80	-200.0	18.0	90.0	0.7	12.0	-5.0	-1.0	9.9	3.6	-4.0
21693S	2.6	9.0	-4.0	0.77	-200.0	18.0	120.0	0.7	11.7	-5.0	-1.0	12.0	3.6	-4.0
21697S	3.1	5.0	-4.0	0.42	-200.0	8.0	100.0	12.0	9.9	-5.0	2.0	7.3	2.3	4.0
21698S	3.3	9.0	4.0	0.93	200.0	14.0	110.0	3.7	12.2	-5.0	-1.0	11.0	2.9	-6.0
21704S	3.8	8.0	5.0	0.86	-200.0	14.0	150.0	2.3	12.0	-5.0	-1.0	15.0	3.5	-6.0
21705S	4.7	9.0	-4.0	1.30	-300.0	14.0	60.0	1.2	17.7	-5.0	1.0	13.0	4.0	-4.0
21714S	2.8	8.0	-4.0	0.64	-200.0	8.0	100.0	2.1	8.9	-5.0	1.0	10.0	3.7	17.0
21717S	3.4	9.0	-4.0	0.98	-200.0	10.0	120.0	1.1	11.5	-5.0	1.0	17.0	5.8	-6.0
21718S	3.5	9.0	-4.0	0.89	-200.0	12.0	160.0	2.9	12.4	-5.0	-1.0	15.0	5.2	-7.0
21720S	2.7	7.0	-4.0	0.70	-200.0	16.0	100.0	0.7	10.7	-5.0	-1.0	10.0	3.0	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
21616S	66.0	43.0	77.0	6.9	1.5	2.4	0.3
21619S	80.0	44.0	73.0	5.1	2.0	3.2	0.4
21622S	74.0	54.0	107.0	9.6	2.3	3.4	0.5
21623S	62.0	52.0	96.0	7.9	1.6	2.6	0.3
21627S	79.0	44.0	74.0	4.8	1.2	3.6	0.5
21637S	96.0	47.0	77.0	5.7	1.8	2.9	0.4
21640S	79.0	49.0	80.0	7.5	2.3	2.8	0.4
21644S	66.0	64.0	112.0	10.6	1.7	3.4	0.7
21657S	65.0	46.0	74.0	7.8	0.6	2.9	0.5
21664S	91.0	76.0	121.0	7.8	2.0	3.6	0.4
21671S	92.0	64.0	102.0	7.0	2.8	3.5	0.5
21680S	65.0	31.0	56.0	3.1	0.5	1.8	0.3
21685S	89.0	46.0	82.0	6.6	1.2	4.0	0.7
21686S	89.0	54.0	105.0	9.2	1.8	4.0	0.6
21687S	270.0	53.0	93.0	6.4	1.8	2.8	0.4
21691S	73.0	41.0	65.0	4.8	2.1	2.3	0.3
21693S	66.0	47.0	75.0	5.4	1.7	2.6	0.5
21697S	87.0	24.0	45.0	2.8	0.9	1.7	0.2
21698S	64.0	38.0	66.0	6.7	1.2	2.5	0.4
21704S	80.0	49.0	82.0	8.1	1.5	2.3	0.4
21705S	98.0	54.0	105.0	6.3	2.7	3.0	0.4
21714S	56.0	36.0	63.0	5.8	1.2	2.2	0.4
21717S	83.0	47.0	78.0	5.2	1.1	3.4	0.5
21718S	71.0	49.0	86.0	7.8	1.6	2.5	0.4
21720S	91.0	39.0	72.0	5.1	1.7	2.7	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
21721S	65.518	146.574	C-6	8	6	17	0	-0.5	15.0	-18.0	1200.0	-3.0	13.0	60.0	11.0	11.0
21722S	65.451	146.547	B-6	7	6	8	0	-0.5	56.0	-14.0	700.0	-1.9	9.0	60.0	21.0	16.0
21724S	65.570	146.313	C-5	9	7	33	0	-0.5	40.0	-8.0	700.0	-1.1	18.0	70.0	3.0	20.0
21729S	65.424	145.978	B-4	7	9	19	0	-0.5	28.0	-9.0	500.0	-1.5	10.0	60.0	3.0	19.0
21731S	65.511	146.422	C-5	8	6	24	0	-0.5	12.0	9.0	700.0	-1.7	12.0	70.0	3.0	20.0
21733S	65.615	146.994	C-6	9	4	7	0	-0.5	6.0	-11.0	800.0	-1.9	15.0	90.0	9.0	38.0
21734S	65.563	146.461	C-5	9	6	34	0	-0.5	83.0	-9.0	800.0	3.4	11.0	70.0	11.0	14.0
21741S	65.651	146.973	C-6	10	4	32	0	-0.5	10.0	10.0	1000.0	-1.3	19.0	90.0	9.0	37.0
21743S	65.463	145.762	B-4	7	10	5	0	-0.5	25.0	-11.0	500.0	2.3	18.0	90.0	2.0	30.0
21747S	65.521	146.642	C-6	8	5	13	0	-0.5	17.0	-14.0	900.0	-2.3	11.0	70.0	8.0	15.0
21748S	65.501	146.355	C-5	8	7	20	0	-0.5	14.0	-9.0	500.0	-1.7	13.0	90.0	4.0	18.0
21749S	65.584	146.811	C-6	9	4	25	0	-0.5	14.0	-18.0	1100.0	3.8	7.0	70.0	4.0	17.0
21752S	65.463	146.128	B-5	7	8	4	0	-0.5	7.0	-8.0	700.0	-1.2	12.0	70.0	2.0	18.0
21763S	65.407	146.367	B-5	7	7	29	0	-0.5	19.0	-10.0	600.0	-1.6	13.0	70.0	6.0	19.0
21764S	65.682	146.960	C-6	10	4	20	0	-0.5	14.0	-5.0	1900.0	0.5	17.0	70.0	3.0	73.0
21770S	65.465	146.299	B-5	7	7	3	0	-0.5	14.0	-8.0	400.0	-1.8	15.0	40.0	8.0	18.0
21776S	65.488	145.855	B-4	8	9	27	0	-0.5	40.0	-7.0	300.0	-1.3	13.0	60.0	3.0	25.0
21781S	65.629	146.679	C-6	9	5	10	0	0.5	-2.0	-6.0	300.0	1.9	-5.0	10.0	8.0	24.0
21785S	65.522	146.408	C-5	8	6	13	0	-0.5	19.0	-8.0	600.0	-1.1	11.0	60.0	3.0	23.0
21789S	65.538	146.814	C-6	8	5	7	0	-0.5	7.0	-10.0	800.0	-1.3	11.0	90.0	4.0	18.0
21799S	65.669	146.688	C-6	10	5	27	5	-0.5	12.0	-7.0	800.0	-1.2	18.0	90.0	10.0	40.0
21802S	65.418	146.486	B-5	7	6	22	0	-0.5	9.0	-8.0	400.0	-1.8	5.0	40.0	16.0	10.0
21806S	65.400	146.352	B-5	7	7	29	0	-0.5	11.0	-6.0	300.0	-1.0	6.0	30.0	5.0	13.0
21819S	65.417	146.786	B-6	7	5	19	-1	-0.5	5.0	-5.0	400.0	-0.5	7.0	40.0	4.0	8.0
21834S	65.499	146.059	B-5	8	8	23	0	-0.5	48.0	-8.0	600.0	-1.1	13.0	60.0	4.0	30.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
21721S	3.0	10.0	-4.0	1.40	-300.0	18.0	80.0	0.7	12.2	-7.0	3.0	33.0	187.0	-14.0
21722S	3.7	4.0	28.0	0.89	-300.0	34.0	290.0	1.8	10.7	-5.0	2.0	24.0	104.0	-11.0
21724S	3.2	10.0	-4.0	0.66	-200.0	38.0	100.0	3.5	10.6	6.0	-1.0	14.0	3.5	-6.0
21729S	3.1	9.0	-4.0	0.56	-200.0	10.0	90.0	1.6	11.0	-5.0	2.0	7.4	2.5	66.0
21731S	3.4	11.0	-4.0	1.00	-200.0	12.0	140.0	2.4	11.9	-7.0	2.0	16.0	4.0	8.0
21733S	3.7	6.0	-5.0	0.63	-300.0	26.0	150.0	1.0	15.9	-7.0	-2.0	15.0	5.1	-4.0
21734S	3.3	13.0	-4.0	1.50	-200.0	24.0	120.0	1.4	10.9	-6.0	4.0	36.0	70.0	16.0
21741S	4.0	7.0	4.0	0.82	-200.0	40.0	130.0	1.3	15.2	-5.0	-1.0	15.0	3.1	-4.0
21743S	4.6	10.0	6.0	0.90	-200.0	6.0	50.0	12.0	19.6	-5.0	1.0	8.9	2.3	-9.0
21747S	2.9	14.0	-4.0	1.50	-200.0	16.0	130.0	0.4	11.7	-5.0	3.0	43.0	62.2	-10.0
21748S	3.7	9.0	-4.0	1.20	-200.0	10.0	100.0	1.3	12.1	-5.0	2.0	14.0	5.0	-4.0
21749S	3.0	12.0	-4.0	1.20	-300.0	46.0	200.0	1.0	12.3	5.0	-2.0	100.0	299.0	-14.0
21752S	3.3	8.0	-4.0	0.88	-200.0	10.0	110.0	1.1	10.8	-5.0	1.0	13.0	3.7	-6.0
21763S	3.4	8.0	-4.0	1.10	-200.0	16.0	150.0	1.5	12.1	-5.0	-1.0	16.0	5.8	15.0
21764S	3.8	4.0	11.0	0.39	-200.0	18.0	90.0	3.0	10.4	-5.0	-1.0	7.1	5.1	-5.0
21770S	2.9	8.0	-4.0	1.30	-200.0	14.0	220.0	0.6	9.3	-5.0	2.0	21.0	22.2	9.0
21776S	3.3	5.0	6.0	0.44	-200.0	10.0	60.0	0.5	10.4	-5.0	-1.0	9.1	2.4	7.0
21781S	2.1	11.0	4.0	2.10	-200.0	100.0	710.0	0.4	5.4	-5.0	2.0	79.0	35.4	7.0
21785S	3.4	9.0	-4.0	0.94	-200.0	14.0	110.0	3.4	10.7	-5.0	1.0	13.0	4.4	9.0
21789S	3.5	10.0	-4.0	0.95	-200.0	12.0	90.0	0.9	13.6	-5.0	-1.0	11.0	4.3	-8.0
21799S	4.0	8.0	6.0	0.89	-200.0	110.0	140.0	0.9	15.2	-5.0	-1.0	15.0	3.2	-4.0
21802S	1.9	6.0	-4.0	2.20	-200.0	14.0	420.0	0.4	8.0	11.0	5.0	24.0	18.8	7.0
21806S	2.2	6.0	-4.0	0.87	-200.0	10.0	120.0	0.8	6.1	-5.0	2.0	10.0	5.0	6.0
21819S	2.8	30.0	-4.0	1.10	-200.0	4.0	120.0	1.4	7.8	-5.0	3.0	39.0	13.2	10.0
21834S	3.9	9.0	-4.0	0.50	-200.0	14.0	70.0	3.7	12.4	-5.0	1.0	12.0	3.5	9.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
21721S	81.0	100.0	169.0	18.1	1.6	5.4	-0.1
21722S	96.0	44.0	80.0	10.0	1.2	4.0	1.6
21724S	160.0	47.0	75.0	8.2	1.5	2.9	0.4
21729S	53.0	32.0	54.0	5.5	0.8	2.3	0.4
21731S	59.0	51.0	85.0	8.0	1.4	3.2	0.7
21733S	85.0	51.0	78.0	8.9	1.6	2.7	0.4
21734S	87.0	83.0	144.0	13.1	1.2	5.3	0.7
21741S	150.0	51.0	103.0	6.2	1.5	2.8	0.5
21743S	67.0	35.0	67.0	6.8	1.1	2.9	0.5
21747S	66.0	104.0	174.0	16.8	1.0	6.1	1.5
21748S	66.0	46.0	83.0	7.5	0.7	2.8	0.5
21749S	580.0	170.0	294.0	40.5	1.1	18.9	5.0
21752S	75.0	40.0	69.0	6.8	0.8	2.4	0.4
21763S	66.0	61.0	105.0	9.2	1.7	3.5	0.6
21764S	97.0	34.0	49.0	3.4	1.3	2.0	0.3
21770S	78.0	45.0	84.0	8.6	1.2	4.4	0.9
21776S	61.0	32.0	62.0	5.8	1.2	2.3	0.4
21781S	490.0	81.0	165.0	11.1	-0.8	11.7	1.7
21785S	74.0	45.0	82.0	6.9	1.5	2.8	0.4
21789S	73.0	42.0	72.0	7.6	1.6	2.9	0.4
21799S	330.0	57.0	95.0	6.3	2.0	2.6	0.4
21802S	44.0	45.0	87.0	10.0	0.7	5.5	1.1
21806S	390.0	29.0	48.0	4.8	0.8	2.5	0.4
21819S	45.0	91.0	146.0	8.5	0.9	6.8	0.9
21834S	60.0	42.0	75.0	7.4	1.5	3.1	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
21836S	65.422	146.239	B-5	7	7	23	0	-0.5	5.0	-5.0	600.0	-1.2	13.0	60.0	2.0	19.0
21838S	65.556	146.887	C-6	8	4	3	0	-0.5	6.0	-9.0	900.0	-1.5	19.0	100.0	7.0	18.0
21839S	65.539	146.578	C-6	8	6	7	0	-0.5	4.0	-9.0	600.0	-1.3	16.0	70.0	2.0	15.0
21843S	65.481	146.449	B-5	8	6	35	0	-0.5	50.0	-10.0	800.0	-1.3	25.0	80.0	11.0	49.0
21850S	65.419	146.325	B-5	7	7	21	0	-0.5	11.0	-11.0	800.0	1.8	8.0	80.0	3.0	16.0
21858S	65.597	146.581	C-6	9	6	19	0	-0.5	5.0	-11.0	400.0	-2.1	14.0	90.0	3.0	25.0
21860S	65.394	146.742	B-6	7	5	33	0	-0.5	9.0	-12.0	900.0	-1.7	21.0	90.0	4.0	11.0
21866S	65.584	146.643	C-6	9	5	26	0	-0.5	5.0	-9.0	600.0	-1.7	14.0	80.0	3.0	39.0
21871S	65.498	146.960	B-6	8	4	29	0	-0.5	5.0	-10.0	1000.0	-2.0	12.0	90.0	4.0	18.0
21880S	65.488	146.959	B-6	8	4	29	0	-0.5	10.0	-10.0	800.0	-2.2	15.0	80.0	5.0	15.0
21881S	65.691	146.830	C-6	10	4	13	0	-0.5	-2.0	13.0	1000.0	1.0	17.0	110.0	8.0	29.0
21888S	65.655	146.812	C-6	10	4	36	0	0.5	14.0	15.0	700.0	-1.5	22.0	100.0	12.0	46.0
21889S	65.680	146.968	C-6	10	4	20	0	-0.5	5.0	-5.0	1800.0	0.9	14.0	90.0	3.0	38.0
21892S	65.429	146.728	B-6	7	5	16	0	-0.5	11.0	-5.0	600.0	-0.5	10.0	50.0	6.0	11.0
21901S	65.594	146.422	C-5	9	6	24	0	-0.5	23.0	-10.0	700.0	3.7	12.0	70.0	8.0	13.0
21903S	65.619	146.575	C-6	9	6	7	0	-0.5	13.0	-11.0	700.0	-1.5	15.0	80.0	6.0	31.0
21905S	65.467	146.061	B-5	7	8	3	0	-0.5	41.0	8.0	400.0	-0.9	11.0	40.0	2.0	32.0
21906S	65.519	145.851	C-4	8	9	14	0	-0.5	9.0	-7.0	500.0	-0.9	16.0	50.0	1.0	12.0
21908S	65.424	145.981	B-4	7	9	19	0	-0.5	52.0	-8.0	500.0	-1.3	13.0	60.0	6.0	45.0
21919S	65.478	146.055	B-5	8	8	35	0	0.5	9.0	-16.0	1100.0	2.7	7.0	30.0	-2.0	1.0
21920S	65.485	146.231	B-5	8	7	25	0	-0.5	13.0	-8.0	800.0	1.4	14.0	60.0	5.0	18.0
21921S	65.672	146.525	C-6	10	6	21	0	-0.5	11.0	-12.0	1000.0	-2.3	39.0	80.0	5.0	18.0
21930S	65.406	146.452	B-5	7	6	26	0	-0.5	18.0	-9.0	700.0	-1.4	11.0	70.0	10.0	25.0
21932S	65.535	146.583	C-6	8	6	7	0	-0.5	-2.0	11.0	500.0	-1.6	13.0	70.0	2.0	16.0
21933S	65.546	146.346	C-5	8	7	5	0	-0.5	16.0	-9.0	700.0	-2.0	7.0	70.0	3.0	13.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
21836S	3.1	10.0	-4.0	1.00	-200.0	10.0	130.0	1.0	11.0	-5.0	-1.0	13.0	4.7	-6.0
21838S	3.9	8.0	-4.0	1.10	-200.0	36.0	190.0	0.7	15.1	-5.0	-1.0	14.0	3.5	-6.0
21839S	4.1	6.0	-4.0	0.98	200.0	10.0	160.0	0.7	12.1	-5.0	2.0	11.0	2.3	-8.0
21843S	5.1	8.0	-4.0	1.00	-200.0	14.0	200.0	1.0	15.2	-5.0	1.0	22.0	20.2	16.0
21850S	3.5	6.0	-5.0	1.10	200.0	12.0	90.0	1.0	13.0	-5.0	3.0	14.0	4.8	-9.0
21858S	3.9	7.0	-5.0	0.76	-300.0	24.0	160.0	0.4	14.8	-7.0	-2.0	15.0	5.7	-4.0
21860S	4.0	8.0	-4.0	1.00	-200.0	14.0	70.0	0.9	14.8	-5.0	1.0	13.0	4.7	-10.0
21866S	3.7	7.0	-5.0	0.56	-200.0	24.0	150.0	0.7	13.4	-6.0	-1.0	15.0	3.1	-4.0
21871S	3.2	7.0	-5.0	0.78	-300.0	24.0	120.0	0.6	13.6	-6.0	-2.0	14.0	3.5	-4.0
21880S	3.4	7.0	-5.0	0.71	-300.0	22.0	130.0	0.7	13.2	-6.0	3.0	15.0	2.4	-4.0
21881S	3.8	8.0	-4.0	1.00	-200.0	18.0	140.0	1.1	15.7	-5.0	1.0	12.0	3.4	-8.0
21888S	3.9	7.0	11.0	1.00	-200.0	170.0	170.0	1.0	14.5	-5.0	-1.0	16.0	6.8	-4.0
21889S	3.5	6.0	6.0	0.72	-200.0	12.0	80.0	1.6	12.1	-5.0	1.0	7.5	3.8	-6.0
21892S	3.1	11.0	-4.0	1.20	-200.0	8.0	130.0	1.6	9.7	-5.0	1.0	16.0	12.0	-6.0
21901S	3.1	14.0	-4.0	1.60	-300.0	16.0	190.0	0.6	11.3	-10.0	4.0	30.0	24.6	31.0
21903S	4.4	8.0	-4.0	0.67	-200.0	30.0	160.0	1.5	15.4	-7.0	-1.0	18.0	3.1	-9.0
21905S	3.2	7.0	-4.0	0.39	200.0	16.0	90.0	2.9	9.5	-5.0	1.0	10.0	4.1	-5.0
21906S	3.9	7.0	-4.0	0.51	-200.0	4.0	90.0	12.0	10.4	-5.0	-1.0	7.9	2.3	-6.0
21908S	3.5	8.0	-4.0	0.47	-200.0	24.0	90.0	2.6	11.1	-7.0	-1.0	8.8	2.0	110.0
21919S	38.0	7.0	-4.0	0.09	-300.0	12.0	-60.0	1.7	16.5	15.0	-1.0	36.0	18.7	23.0
21920S	3.5	8.0	-4.0	0.93	-200.0	10.0	190.0	0.9	11.3	-5.0	1.0	15.0	12.0	12.0
21921S	4.2	7.0	-5.0	0.94	-300.0	24.0	90.0	1.0	14.0	-7.0	-2.0	16.0	4.0	-5.0
21930S	3.0	10.0	-4.0	0.88	-200.0	22.0	100.0	0.7	11.5	-6.0	-1.0	12.0	11.6	-7.0
21932S	3.7	8.0	-5.0	1.00	-200.0	12.0	100.0	0.7	12.0	-5.0	3.0	13.0	5.0	-9.0
21933S	2.9	8.0	-4.0	1.30	-200.0	18.0	100.0	7.5	11.5	-5.0	-2.0	14.0	3.4	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
21836S	76.0	42.0	70.0	7.1	1.4	2.5	0.4
21838S	140.0	52.0	87.0	6.0	1.7	2.9	0.4
21839S	63.0	41.0	85.0	6.4	1.3	2.4	0.4
21843S	140.0	64.0	111.0	9.9	1.0	3.7	0.8
21850S	44.0	48.0	77.0	7.2	1.4	2.7	0.4
21858S	80.0	53.0	92.0	9.0	1.3	3.5	0.6
21860S	70.0	47.0	83.0	7.8	2.2	3.2	0.6
21866S	110.0	44.0	71.0	7.5	1.2	2.9	0.5
21871S	87.0	51.0	82.0	8.5	1.6	2.8	0.4
21880S	83.0	53.0	86.0	8.6	1.7	2.5	0.4
21881S	84.0	47.0	77.0	5.3	1.9	2.4	0.4
21888S	190.0	57.0	116.0	8.5	2.2	3.8	0.6
21889S	100.0	33.0	51.0	3.4	1.0	2.1	0.3
21892S	54.0	48.0	76.0	4.9	0.9	3.3	0.5
21901S	73.0	73.0	126.0	11.3	1.6	6.1	1.2
21903S	120.0	58.0	104.0	9.9	1.4	4.0	0.6
21905S	60.0	35.0	63.0	6.0	0.7	2.3	0.4
21906S	47.0	30.0	52.0	4.9	1.4	1.9	0.3
21908S	79.0	31.0	55.0	5.4	-0.5	2.2	0.4
21919S	17.0	84.0	180.0	30.2	7.8	22.8	3.4
21920S	78.0	44.0	79.0	7.6	0.7	3.0	0.6
21921S	78.0	56.0	101.0	10.4	1.9	2.9	0.5
21930S	86.0	49.0	75.0	8.2	1.8	2.5	0.5
21932S	56.0	48.0	83.0	7.5	-0.2	2.6	0.5
21933S	80.0	48.0	76.0	7.6	1.6	2.8	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
21935S	65.451	146.364	B-5	7	7	8	0	-0.5	14.0	-8.0	600.0	-1.6	9.0	50.0	12.0	20.0
21938S	65.458	146.638	B-6	7	5	1	0	0.5	14.0	-5.0	500.0	0.8	10.0	40.0	6.0	11.0
21939S	65.523	146.864	C-6	8	4	14	0	-0.5	7.0	-8.0	700.0	2.3	17.0	80.0	6.0	17.0
21940S	65.551	146.270	C-5	8	7	3	0	-0.5	20.0	-8.0	600.0	-1.2	13.0	60.0	3.0	19.0
21941S	65.552	146.393	C-5	8	7	6	0	2.0	310.0	-14.0	1100.0	-1.8	14.0	100.0	11.0	47.0
21945S	65.521	146.089	C-5	8	8	15	0	-0.5	12.0	-7.0	500.0	-1.0	10.0	50.0	3.0	17.0
21954S	65.498	146.525	B-6	8	6	28	0	-0.5	17.0	-10.0	600.0	-1.6	10.0	50.0	6.0	11.0
21957S	65.688	146.827	C-6	10	4	13	0	-0.5	4.0	6.0	1000.0	-0.5	21.0	90.0	7.0	26.0
21964S	65.460	146.363	B-5	7	7	5	0	-0.5	14.0	-8.0	400.0	-1.3	8.0	30.0	13.0	13.0
21967S	65.446	146.674	B-6	7	5	11	0	-0.5	10.0	-5.0	500.0	-0.5	10.0	40.0	5.0	10.0
21972S	65.565	146.687	C-6	9	5	34	0	-0.5	7.0	-11.0	1000.0	2.6	13.0	90.0	4.0	24.0
21975S	65.600	146.786	B-6	7	5	30	-12	-0.5	8.0	-5.0	600.0	-1.3	9.0	50.0	10.0	11.0
21976S	65.656	146.736	C-6	10	5	32	0	-0.5	8.0	-11.0	600.0	-2.7	6.0	60.0	6.0	11.0
21977S	65.421	145.990	B-4	7	9	19	0	-0.5	53.0	-9.0	400.0	1.8	15.0	70.0	6.0	58.0
21979S	65.606	146.342	C-5	9	7	17	0	-0.5	19.0	-9.0	800.0	-1.4	16.0	80.0	5.0	24.0
21980S	65.515	146.305	C-5	8	7	16	0	-0.5	10.0	-7.0	600.0	-1.1	9.0	60.0	2.0	17.0
21987S	65.508	145.956	C-4	8	9	20	0	-0.5	8.0	-9.0	700.0	1.5	33.0	80.0	3.0	17.0
21988S	65.668	146.924	C-6	10	4	28	0	-0.5	7.0	-5.0	1000.0	1.0	15.0	70.0	8.0	20.0
21989S	65.435	145.893	B-4	7	9	16	0	-0.5	87.0	12.0	500.0	-0.9	16.0	50.0	5.0	37.0
21998S	65.612	146.882	C-6	9	4	15	0	0.5	11.0	-9.0	800.0	-1.9	7.0	60.0	7.0	15.0
21999S	65.462	145.891	B-4	7	9	4	0	-0.5	140.0	43.0	600.0	-1.6	21.0	100.0	10.0	110.0
22002S	65.573	146.938	C-6	9	4	28	0	0.5	11.0	12.0	900.0	-1.3	16.0	100.0	12.0	33.0
22007S	65.552	146.919	C-6	8	4	3	0	-0.5	5.0	7.0	900.0	-1.7	16.0	90.0	11.0	21.0
22012S	65.681	146.963	C-6	10	4	21	0	1.0	11.0	-5.0	1400.0	0.8	14.0	60.0	3.0	77.0
22014S	65.490	146.954	B-6	8	4	28	0	-0.5	5.0	-9.0	700.0	-1.9	10.0	70.0	4.0	14.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
21935S	2.9	7.0	-4.0	1.30	-200.0	14.0	270.0	0.7	9.9	-5.0	3.0	19.0	16.5	7.0
21938S	2.7	10.0	-4.0	1.30	-200.0	8.0	110.0	1.9	8.7	-5.0	1.0	16.0	13.6	-5.0
21939S	3.9	9.0	7.0	0.77	-200.0	18.0	130.0	0.9	14.4	-5.0	-1.0	16.0	3.9	-4.0
21940S	3.3	10.0	-4.0	0.93	-200.0	12.0	130.0	3.5	10.8	-5.0	2.0	14.0	5.9	11.0
21941S	4.4	7.0	-4.0	0.71	-300.0	190.0	220.0	2.5	14.9	-8.0	-2.0	19.0	7.4	-5.0
21945S	2.8	8.0	-4.0	0.86	-200.0	6.0	130.0	1.1	9.1	-5.0	-1.0	13.0	5.2	-5.0
21954S	3.1	12.0	-4.0	1.60	-200.0	16.0	190.0	1.7	9.5	-5.0	4.0	35.0	15.2	16.0
21957S	3.9	6.0	-4.0	0.72	-200.0	16.0	160.0	0.7	15.0	-5.0	-1.0	14.0	3.2	8.0
21964S	2.8	4.0	-4.0	1.80	-200.0	10.0	460.0	0.8	8.5	-5.0	2.0	20.0	20.8	10.0
21967S	2.7	7.0	-4.0	1.10	-200.0	8.0	140.0	1.2	8.5	-5.0	1.0	14.0	10.6	-5.0
21972S	3.3	6.0	-6.0	0.77	-300.0	22.0	110.0	0.9	14.0	-10.0	-2.0	14.0	4.6	-5.0
21975S	2.7	8.0	-4.0	1.50	-200.0	10.0	190.0	1.7	9.5	-5.0	2.0	16.0	9.4	-7.0
21976S	2.9	18.0	-4.0	1.90	-300.0	40.0	370.0	0.3	10.9	-11.0	4.0	100.0	34.1	6.0
21977S	3.7	7.0	-5.0	0.56	-200.0	14.0	80.0	2.3	12.3	-8.0	-1.0	9.3	2.6	42.0
21979S	3.2	9.0	-4.0	0.93	-200.0	10.0	120.0	0.6	11.9	-5.0	-1.0	13.0	3.9	-7.0
21980S	2.9	9.0	-4.0	1.00	-200.0	10.0	90.0	1.3	9.6	-5.0	1.0	13.0	4.3	-6.0
21987S	3.7	9.0	5.0	0.98	-200.0	12.0	60.0	1.2	11.0	-5.0	2.0	12.0	3.6	-7.0
21988S	3.1	9.0	-4.0	0.81	-200.0	6.0	130.0	0.6	13.5	-5.0	-1.0	13.0	2.5	-6.0
21989S	3.6	5.0	-4.0	0.47	-200.0	12.0	120.0	3.9	12.2	-5.0	-1.0	9.9	2.1	-4.0
21998S	2.9	16.0	-4.0	1.90	300.0	48.0	380.0	0.5	11.5	-6.0	2.0	93.0	53.7	9.0
21999S	4.1	5.0	-4.0	0.77	-200.0	16.0	120.0	1.6	15.1	-5.0	-1.0	11.0	3.7	8.0
22002S	3.5	9.0	-4.0	0.75	-200.0	78.0	220.0	1.0	14.2	-5.0	-1.0	15.0	5.2	-4.0
22007S	3.7	8.0	-4.0	0.89	-300.0	34.0	170.0	0.6	15.2	5.0	-1.0	14.0	4.5	-4.0
22012S	3.7	4.0	6.0	0.45	-200.0	20.0	90.0	2.4	10.4	-5.0	1.0	6.2	4.0	-6.0
22014S	3.2	7.0	-4.0	0.75	-200.0	20.0	60.0	0.5	12.3	-5.0	-2.0	13.0	4.5	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
21935S	110.0	38.0	70.0	7.5	0.8	3.9	0.7
21938S	50.0	45.0	72.0	4.6	0.8	3.4	0.5
21939S	98.0	59.0	118.0	7.1	-0.2	3.0	0.5
21940S	65.0	47.0	73.0	7.5	1.3	2.8	0.5
21941S	390.0	58.0	85.0	9.8	2.7	3.6	0.6
21945S	62.0	36.0	63.0	5.8	0.9	2.1	0.4
21954S	55.0	79.0	129.0	11.4	0.9	4.8	0.9
21957S	110.0	51.0	82.0	5.1	1.0	2.6	0.4
21964S	62.0	39.0	66.0	7.4	-0.4	4.8	0.8
21967S	58.0	40.0	68.0	3.9	0.8	2.6	0.4
21972S	79.0	45.0	79.0	7.6	-0.8	2.7	0.4
21975S	60.0	42.0	70.0	7.1	1.3	3.5	0.5
21976S	180.0	156.0	297.0	27.2	1.7	14.3	2.4
21977S	100.0	36.0	59.0	6.5	1.3	2.7	0.4
21979S	77.0	46.0	77.0	8.1	1.1	2.8	0.5
21980S	66.0	42.0	72.0	6.6	0.8	2.6	0.4
21987S	55.0	41.0	78.0	7.0	0.9	2.5	0.3
21988S	95.0	44.0	73.0	4.9	1.1	3.1	0.4
21989S	68.0	33.0	52.0	4.0	0.8	1.9	0.3
21998S	190.0	135.0	264.0	21.4	-1.1	22.3	3.1
21999S	76.0	40.0	84.0	7.5	2.1	3.0	0.5
22002S	210.0	57.0	91.0	6.1	-0.2	3.0	0.5
22007S	170.0	53.0	88.0	6.1	2.2	3.3	0.4
22012S	100.0	30.0	47.0	3.5	1.4	2.0	0.3
22014S	70.0	49.0	85.0	7.7	1.7	2.9	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22018S	65.533	146.573	C-6	8	6	8	0	-0.5	14.0	-14.0	1000.0	-2.4	10.0	60.0	9.0	10.0
22020S	65.429	146.631	B-6	7	5	13	0	-0.5	12.0	-9.0	600.0	-1.4	8.0	50.0	12.0	19.0
22030S	65.630	146.477	C-5	9	6	3	0	-0.5	6.0	-8.0	600.0	-1.2	11.0	60.0	2.0	20.0
22032S	65.628	146.691	C-6	9	5	10	0	1.0	7.0	-5.0	400.0	-0.9	-5.0	10.0	10.0	22.0
22046S	65.680	146.945	C-6	10	4	21	0	0.5	13.0	8.0	1200.0	0.6	8.0	70.0	5.0	77.0
22048S	65.637	146.808	C-6	9	4	1	0	-0.5	5.0	-6.0	800.0	1.4	12.0	70.0	3.0	16.0
22049S	65.651	146.562	C-6	10	6	31	0	-0.5	4.0	-11.0	700.0	-1.7	16.0	100.0	6.0	22.0
22053S	65.601	146.208	C-5	9	7	13	0	-0.5	8.0	-8.0	600.0	-1.2	11.0	60.0	3.0	19.0
22064S	65.620	146.674	C-6	9	5	10	0	-0.5	11.0	-6.0	700.0	-1.1	12.0	60.0	9.0	26.0
22066S	65.472	146.060	B-5	8	8	34	0	-0.5	45.0	-7.0	400.0	-0.9	11.0	50.0	2.0	29.0
22074S	65.400	146.793	B-6	7	5	30	0	-0.5	8.0	-9.0	800.0	-1.3	10.0	80.0	3.0	12.0
22075S	65.587	146.433	C-5	9	6	23	18	-0.5	17.0	-8.0	600.0	-1.8	10.0	70.0	7.0	18.0
22082S	65.474	145.778	B-4	8	10	31	0	-0.5	51.0	-8.0	400.0	-1.4	10.0	50.0	2.0	14.0
22085S	65.613	146.951	C-6	9	4	17	0	1.5	13.0	-7.0	800.0	-1.2	19.0	120.0	18.0	43.0
22086S	65.420	146.039	B-5	7	8	23	0	-0.5	120.0	23.0	400.0	-1.1	14.0	60.0	11.0	130.0
22096S	65.455	145.916	B-4	7	9	9	0	-0.5	83.0	22.0	700.0	-1.3	13.0	90.0	8.0	73.0
22098S	65.671	146.408	C-5	10	6	25	0	-0.5	6.0	-9.0	700.0	1.3	9.0	80.0	1.0	15.0
22100S	65.473	145.935	B-4	8	9	32	0	-0.5	41.0	-6.0	300.0	-0.6	17.0	60.0	6.0	36.0
22101S	65.384	146.665	B-6	7	5	35	0	0.5	17.0	-6.0	700.0	-0.9	21.0	70.0	12.0	16.0
22104S	65.617	146.867	C-6	9	4	11	0	0.5	10.0	-7.0	700.0	-1.4	7.0	70.0	6.0	14.0
22105S	65.518	146.363	C-5	8	7	17	0	-0.5	13.0	-8.0	900.0	-0.8	15.0	70.0	3.0	19.0
22106S	65.404	146.406	B-5	7	6	25	0	-0.5	12.0	-12.0	700.0	-2.5	13.0	90.0	6.0	26.0
22113S	65.589	146.746	C-6	9	5	20	0	-0.5	14.0	-14.0	1000.0	-3.0	8.0	60.0	9.0	34.0
22117S	65.568	146.649	C-6	9	5	35	0	-0.5	6.0	-11.0	800.0	-2.1	13.0	90.0	3.0	30.0
22119S	65.461	146.285	B-5	7	7	3	0	-0.5	6.0	-8.0	800.0	-0.9	10.0	70.0	6.0	20.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22018S	2.9	9.0	28.0	1.30	-300.0	16.0	150.0	0.6	10.6	-6.0	3.0	29.0	163.0	-11.0
22020S	2.6	9.0	-4.0	1.70	-200.0	10.0	310.0	0.8	8.9	-6.0	5.0	29.0	15.4	29.0
22030S	3.1	9.0	-4.0	0.75	-200.0	12.0	110.0	0.5	10.7	-5.0	-1.0	13.0	4.2	-6.0
22032S	2.4	11.0	5.0	2.30	-200.0	100.0	760.0	0.3	6.1	-5.0	3.0	84.0	38.4	6.0
22046S	2.6	5.0	7.0	0.57	-200.0	16.0	80.0	2.2	9.7	-5.0	-1.0	7.6	5.0	-5.0
22048S	3.1	9.0	5.0	1.50	-200.0	40.0	170.0	0.8	12.7	-5.0	1.0	44.0	12.5	-4.0
22049S	3.6	7.0	-4.0	0.93	300.0	26.0	140.0	0.9	15.1	7.0	1.0	16.0	4.0	-9.0
22053S	2.9	9.0	4.0	0.81	-200.0	16.0	120.0	1.8	10.2	-5.0	-1.0	12.0	2.9	-6.0
22064S	3.4	9.0	-4.0	0.97	-200.0	82.0	280.0	1.2	11.6	-5.0	1.0	35.0	30.3	5.0
22066S	3.2	7.0	-4.0	0.42	-200.0	16.0	80.0	6.4	9.8	-5.0	1.0	9.2	2.7	-6.0
22074S	2.9	10.0	-4.0	1.10	-200.0	10.0	120.0	0.9	11.6	-5.0	2.0	14.0	5.3	9.0
22075S	2.5	9.0	-4.0	1.30	400.0	16.0	130.0	0.5	10.8	-6.0	3.0	16.0	23.0	13.0
22082S	2.8	7.0	-4.0	0.63	-200.0	10.0	50.0	26.0	9.1	-5.0	-1.0	9.8	3.1	-4.0
22085S	4.8	7.0	-4.0	0.89	-200.0	250.0	190.0	1.8	19.5	-5.0	-1.0	19.0	5.5	-4.0
22086S	3.6	9.0	4.0	0.37	-200.0	16.0	110.0	3.9	11.3	-5.0	-1.0	10.0	3.2	60.0
22096S	3.5	9.0	-4.0	0.97	-200.0	10.0	110.0	1.4	14.0	-5.0	-1.0	10.0	4.3	21.0
22098S	2.8	8.0	-4.0	1.10	300.0	12.0	60.0	0.7	11.6	-5.0	1.0	10.0	3.0	-7.0
22100S	3.9	5.0	-4.0	0.54	-200.0	8.0	100.0	1.2	12.8	-5.0	-1.0	8.3	2.9	20.0
22101S	3.5	7.0	-4.0	0.98	-200.0	18.0	130.0	1.4	13.0	-5.0	-1.0	11.0	3.1	-4.0
22104S	3.0	15.0	-4.0	1.70	-200.0	52.0	210.0	0.8	12.6	-5.0	2.0	82.0	35.8	14.0
22105S	3.8	7.0	-4.0	1.30	-200.0	10.0	100.0	1.3	13.6	-5.0	-1.0	15.0	4.3	-6.0
22106S	3.4	8.0	-4.0	0.85	-300.0	26.0	130.0	1.0	13.6	-7.0	-2.0	18.0	5.0	-5.0
22113S	3.3	10.0	-4.0	1.00	400.0	76.0	150.0	0.6	12.3	-9.0	3.0	59.0	110.0	-5.0
22117S	3.3	7.0	-4.0	0.58	400.0	18.0	50.0	1.0	13.1	-7.0	-2.0	15.0	3.3	6.0
22119S	3.0	8.0	16.0	1.10	-200.0	12.0	120.0	1.1	12.9	-5.0	1.0	15.0	7.6	-6.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22018S	68.0	84.0	134.0	14.7	2.1	4.8	0.8
22020S	67.0	55.0	98.0	11.1	-0.4	6.1	1.1
22030S	75.0	48.0	86.0	7.9	1.9	2.7	0.4
22032S	470.0	81.0	167.0	11.4	-0.6	12.7	1.8
22046S	80.0	35.0	54.0	3.9	1.5	2.2	0.3
22048S	150.0	96.0	166.0	11.1	1.3	7.3	1.0
22049S	92.0	64.0	118.0	10.0	1.7	3.0	0.4
22053S	67.0	40.0	75.0	6.7	1.3	2.5	0.3
22064S	360.0	91.0	156.0	10.1	1.1	5.3	0.9
22066S	59.0	35.0	64.0	6.1	1.1	2.6	0.3
22074S	43.0	47.0	80.0	7.3	1.8	3.2	0.5
22075S	58.0	49.0	77.0	7.7	0.8	3.2	0.7
22082S	57.0	35.0	61.0	5.4	1.4	2.5	0.4
22085S	330.0	61.0	107.0	7.2	1.9	3.6	0.5
22086S	77.0	37.0	62.0	6.8	1.9	2.7	0.4
22096S	59.0	40.0	65.0	7.4	1.3	2.9	0.4
22098S	58.0	36.0	61.0	6.0	1.2	2.2	0.4
22100S	68.0	28.0	53.0	3.5	0.9	2.3	0.3
22101S	110.0	40.0	70.0	4.5	1.0	2.5	0.4
22104S	160.0	112.0	215.0	16.5	1.5	15.7	2.2
22105S	75.0	53.0	82.0	5.7	1.3	2.8	0.4
22106S	74.0	74.0	110.0	13.2	2.0	3.9	0.6
22113S	530.0	122.0	193.0	29.8	-1.0	12.2	2.9
22117S	73.0	49.0	79.0	8.9	1.4	2.8	0.5
22119S	60.0	48.0	78.0	5.4	1.8	2.9	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22122S	65.502	145.947	C-4	8	9	20	0	-0.5	38.0	-6.0	500.0	-0.6	16.0	60.0	5.0	27.0
22131S	65.460	146.295	B-5	7	7	3	0	-0.5	10.0	-6.0	700.0	-0.8	16.0	60.0	3.0	19.0
22132S	65.437	146.203	B-5	7	7	13	0	-0.5	12.0	10.0	800.0	1.7	14.0	90.0	4.0	19.0
22136S	65.515	145.659	C-4	8	10	15	0	-0.5	82.0	-9.0	500.0	-1.3	14.0	60.0	2.0	26.0
22138S	65.470	146.275	B-5	8	7	34	0	-0.5	12.0	-6.0	500.0	-0.7	16.0	50.0	8.0	15.0
22140S	65.443	146.475	B-5	7	6	10	0	-0.5	28.0	-14.0	900.0	-2.2	8.0	50.0	23.0	11.0
22142S	65.459	146.570	B-6	7	6	5	0	-0.5	17.0	-10.0	700.0	-1.7	11.0	60.0	9.0	19.0
22147S	65.658	146.992	C-6	10	4	31	0	-0.5	8.0	-5.0	900.0	-0.9	15.0	80.0	7.0	28.0
22152S	65.399	146.364	B-5	7	7	29	0	-0.5	16.0	-8.0	500.0	-1.0	8.0	40.0	7.0	14.0
22156S	65.562	146.305	C-5	9	7	33	0	-0.5	40.0	-6.0	700.0	-0.6	14.0	50.0	6.0	17.0
22158S	65.461	146.341	B-5	7	7	5	0	-0.5	17.0	-8.0	500.0	-1.0	10.0	40.0	14.0	15.0
22160S	65.526	146.537	C-6	8	6	16	0	-0.5	9.0	-9.0	600.0	-1.8	6.0	10.0	14.0	4.0
22166S	65.395	145.990	B-4	7	8	36	0	-0.5	30.0	10.0	400.0	0.9	20.0	70.0	3.0	53.0
22170S	65.529	146.483	C-5	8	6	10	0	-0.5	28.0	-8.0	700.0	-0.9	13.0	60.0	7.0	17.0
22172S	65.467	146.883	B-6	7	4	2	0	-0.5	-2.0	-6.0	600.0	-0.5	12.0	70.0	4.0	11.0
22175S	65.620	146.863	C-6	9	4	11	0	-0.5	7.0	-6.0	400.0	1.8	-5.0	10.0	7.0	10.0
22177S	65.583	146.706	C-6	9	5	28	0	-0.5	11.0	-8.0	600.0	-0.9	28.0	80.0	6.0	25.0
22178S	65.490	146.697	B-6	8	5	27	6	-0.5	15.0	-7.0	700.0	2.0	15.0	90.0	9.0	19.0
22179S	65.532	145.821	C-4	8	9	11	0	-0.5	9.0	-6.0	700.0	-0.8	12.0	60.0	4.0	17.0
22183S	65.599	146.782	C-6	9	5	19	0	-0.5	6.0	8.0	700.0	-2.3	7.0	60.0	7.0	18.0
22187S	65.667	146.404	C-5	10	6	25	0	-0.5	6.0	-6.0	500.0	-0.7	13.0	60.0	4.0	26.0
22188S	65.470	145.726	B-4	7	10	5	0	-0.5	14.0	-7.0	600.0	-0.8	14.0	80.0	4.0	27.0
22196S	65.628	146.853	C-6	9	4	11	0	-0.5	11.0	-11.0	600.0	-1.9	5.0	30.0	5.0	13.0
22202S	65.533	146.160	C-5	8	8	8	0	-0.5	12.0	-8.0	900.0	-0.9	19.0	80.0	5.0	20.0
22203S	65.661	146.877	C-6	10	4	27	0	-0.5	11.0	-6.0	700.0	-1.2	11.0	50.0	7.0	18.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22122S	4.0	6.0	-4.0	0.49	-200.0	6.0	140.0	1.2	12.5	-5.0	-1.0	9.3	2.6	11.0
22131S	3.9	7.0	-4.0	0.88	-200.0	10.0	100.0	1.2	11.3	-5.0	1.0	12.0	3.5	-5.0
22132S	3.7	9.0	-4.0	1.00	-200.0	12.0	130.0	1.5	13.8	-5.0	1.0	14.0	6.4	-6.0
22136S	3.6	8.0	-4.0	0.70	200.0	16.0	80.0	5.7	12.2	-5.0	-1.0	11.0	2.8	-4.0
22138S	3.3	5.0	-4.0	1.00	-200.0	6.0	280.0	0.6	10.1	-5.0	2.0	16.0	8.9	-5.0
22140S	2.3	5.0	-4.0	1.90	-200.0	20.0	470.0	1.1	9.4	-5.0	6.0	28.0	107.0	15.0
22142S	3.9	11.0	-4.0	1.30	-200.0	14.0	190.0	1.3	12.1	-5.0	3.0	27.0	26.8	-9.0
22147S	3.6	9.0	-4.0	0.88	-200.0	36.0	180.0	0.9	14.0	-5.0	-1.0	14.0	4.3	-4.0
22152S	2.6	7.0	-4.0	1.00	-200.0	12.0	170.0	0.9	7.6	-5.0	1.0	13.0	8.6	-6.0
22156S	3.3	6.0	-4.0	0.81	-200.0	28.0	180.0	5.8	10.8	-5.0	1.0	13.0	5.2	12.0
22158S	2.9	4.0	14.0	1.60	-200.0	14.0	420.0	1.0	8.8	-5.0	4.0	17.0	15.3	15.0
22160S	1.9	13.0	-4.0	2.20	-200.0	24.0	330.0	0.3	6.4	-8.0	9.0	56.0	64.8	12.0
22166S	4.4	6.0	-4.0	0.63	-200.0	12.0	120.0	17.0	13.7	-5.0	2.0	7.7	2.2	-4.0
22170S	3.1	9.0	19.0	0.98	-200.0	16.0	140.0	2.2	11.1	-5.0	1.0	16.0	11.2	-6.0
22172S	3.0	10.0	-4.0	1.00	-200.0	12.0	100.0	0.6	12.3	-5.0	1.0	13.0	2.6	-7.0
22175S	2.3	12.0	-4.0	2.30	-200.0	42.0	580.0	0.5	8.3	-5.0	2.0	75.0	33.7	6.0
22177S	3.6	8.0	-4.0	0.87	-200.0	22.0	190.0	1.1	13.7	-5.0	1.0	13.0	4.3	9.0
22178S	3.3	16.0	-4.0	1.20	-200.0	14.0	150.0	1.0	13.1	-5.0	2.0	47.0	12.1	-4.0
22179S	3.3	8.0	8.0	1.20	-200.0	12.0	110.0	1.3	10.1	-5.0	1.0	14.0	3.9	-5.0
22183S	3.0	17.0	69.0	1.90	-200.0	120.0	460.0	1.0	11.7	41.0	5.0	120.0	74.2	20.0
22187S	3.4	7.0	-4.0	1.10	-200.0	10.0	130.0	0.7	12.0	-5.0	-1.0	12.0	6.4	-5.0
22188S	3.9	6.0	5.0	1.00	-200.0	8.0	110.0	6.9	14.6	-5.0	-1.0	9.6	2.7	-6.0
22196S	2.3	28.0	-4.0	2.00	-200.0	42.0	440.0	0.4	9.0	5.0	3.0	130.0	52.1	27.0
22202S	3.5	8.0	-4.0	0.99	-200.0	14.0	110.0	1.2	13.3	-5.0	1.0	13.0	3.1	-6.0
22203S	3.0	15.0	-4.0	1.50	-200.0	48.0	290.0	0.9	11.2	-5.0	1.0	61.0	26.7	10.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22122S	60.0	32.0	56.0	3.6	1.0	2.1	0.3
22131S	77.0	42.0	67.0	4.4	0.8	2.0	0.3
22132S	79.0	53.0	82.0	6.0	1.3	3.0	0.4
22136S	53.0	43.0	66.0	6.7	1.5	2.5	0.3
22138S	75.0	41.0	68.0	4.7	1.4	3.0	0.5
22140S	53.0	50.0	90.0	13.3	0.9	6.6	2.1
22142S	65.0	64.0	108.0	11.5	1.4	5.4	1.0
22147S	140.0	50.0	83.0	5.6	2.1	3.3	0.4
22152S	41.0	37.0	60.0	6.0	1.2	2.8	0.5
22156S	99.0	43.0	67.0	4.4	1.1	2.3	0.3
22158S	74.0	35.0	70.0	6.5	0.6	3.9	0.7
22160S	52.0	98.0	163.0	14.0	1.1	7.5	1.4
22166S	80.0	33.0	54.0	3.8	1.1	2.0	0.2
22170S	70.0	49.0	77.0	5.2	1.8	3.2	0.5
22172S	58.0	50.0	83.0	5.6	1.4	2.8	0.4
22175S	190.0	104.0	195.0	13.6	-0.7	13.5	1.9
22177S	79.0	51.0	81.0	6.0	-0.2	3.0	0.4
22178S	84.0	113.0	183.0	10.9	-0.8	6.9	0.9
22179S	61.0	44.0	74.0	4.8	1.2	2.2	0.3
22183S	250.0	186.0	393.0	30.1	1.0	14.3	2.6
22187S	66.0	45.0	75.0	5.1	1.5	2.8	0.4
22188S	66.0	36.0	63.0	4.5	1.4	2.1	0.3
22196S	150.0	186.0	341.0	34.2	0.7	22.5	3.7
22202S	80.0	53.0	90.0	5.7	1.8	2.8	0.4
22203S	180.0	109.0	197.0	13.5	1.2	11.6	1.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22208S	65.521	146.955	C-6	8	4	17	0	-0.5	9.0	-6.0	700.0	-0.9	14.0	90.0	6.0	33.0
22213S	65.404	146.654	B-6	7	5	26	0	-0.5	18.0	-8.0	500.0	-1.7	8.0	60.0	21.0	18.0
22215S	65.393	146.430	B-5	7	6	36	0	-0.5	13.0	-6.0	500.0	-1.4	10.0	50.0	4.0	22.0
22216S	65.613	146.885	C-6	9	4	15	0	0.5	12.0	8.0	900.0	-1.1	13.0	70.0	9.0	33.0
22219S	65.659	146.623	C-6	10	5	25	0	-0.5	11.0	-10.0	700.0	-1.8	9.0	70.0	6.0	13.0
22224S	65.494	146.370	B-5	8	7	29	0	-0.5	12.0	-8.0	600.0	2.6	14.0	60.0	4.0	19.0
22227S	65.517	146.158	C-5	8	8	17	0	-0.5	12.0	-7.0	700.0	-0.8	13.0	60.0	4.0	23.0
22231S	65.532	146.815	C-6	8	4	12	0	-0.5	8.0	-5.0	500.0	-0.7	16.0	60.0	5.0	16.0
22234S	65.653	146.642	C-6	10	5	35	0	-0.5	10.0	20.0	1000.0	3.7	8.0	90.0	6.0	17.0
22235S	65.425	146.068	B-5	7	8	22	0	-0.5	63.0	10.0	400.0	-0.6	12.0	50.0	2.0	27.0
22236S	65.559	146.826	C-6	9	4	36	0	-0.5	7.0	-7.0	700.0	1.6	19.0	80.0	7.0	18.0
22242S	65.431	146.608	B-6	7	6	18	0	-0.5	21.0	-10.0	500.0	-1.6	10.0	40.0	19.0	36.0
22243S	65.622	146.903	C-6	9	4	10	0	-0.5	19.0	-6.0	800.0	-0.5	18.0	80.0	10.0	42.0
22247S	65.571	146.328	C-5	9	7	29	0	-0.5	74.0	-6.0	700.0	-0.9	23.0	70.0	10.0	36.0
22248S	65.560	146.800	C-6	9	5	31	0	-0.5	7.0	14.0	600.0	-1.1	14.0	60.0	6.0	20.0
22250S	65.686	146.634	C-6	10	5	23	0	-0.5	14.0	-5.0	700.0	1.5	16.0	70.0	10.0	37.0
22253S	65.606	146.989	C-6	9	4	18	0	0.5	13.0	-6.0	700.0	-1.1	16.0	80.0	12.0	48.0
22255S	65.402	146.332	B-5	7	7	28	0	-0.5	13.0	-7.0	400.0	-1.0	9.0	40.0	4.0	13.0
22257S	65.694	146.887	C-6	10	4	15	0	-0.5	11.0	-5.0	1000.0	-0.6	15.0	80.0	5.0	27.0
22261S	65.409	146.561	B-6	7	6	29	0	-0.5	27.0	15.0	800.0	-1.8	13.0	80.0	14.0	23.0
22264S	65.486	146.723	B-6	8	5	28	7	-0.5	15.0	-6.0	600.0	1.2	16.0	70.0	11.0	18.0
22266S	65.670	146.917	C-6	10	4	28	0	-0.5	5.0	-5.0	1200.0	-0.5	18.0	80.0	8.0	18.0
22270S	65.675	146.535	C-6	10	6	20	0	-0.5	6.0	-5.0	700.0	-2.1	8.0	60.0	5.0	15.0
22272S	65.472	146.820	B-6	8	4	36	0	-0.5	9.0	9.0	500.0	1.1	14.0	80.0	3.0	15.0
22273S	65.391	146.558	B-6	7	6	32	0	-0.5	13.0	-9.0	500.0	-1.5	10.0	60.0	5.0	15.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22208S	3.6	6.0	-4.0	0.98	-200.0	20.0	80.0	1.2	15.2	-5.0	-1.0	10.0	3.4	-4.0
22213S	2.5	6.0	-4.0	1.30	-200.0	18.0	240.0	1.2	9.9	-8.0	-1.0	17.0	29.1	10.0
22215S	2.7	8.0	-4.0	0.66	-200.0	18.0	90.0	1.1	8.0	-5.0	-1.0	12.0	2.9	-4.0
22216S	3.5	5.0	-4.0	1.20	-200.0	52.0	160.0	1.1	13.2	-5.0	-1.0	30.0	31.2	4.0
22219S	3.3	9.0	-4.0	1.30	-200.0	60.0	160.0	0.5	13.6	6.0	-1.0	38.0	10.5	-9.0
22224S	3.1	6.0	-4.0	1.10	200.0	10.0	110.0	0.7	10.6	-7.0	-1.0	14.0	4.8	-4.0
22227S	3.1	8.0	-4.0	1.10	-200.0	12.0	100.0	1.1	11.1	-5.0	1.0	14.0	7.2	6.0
22231S	3.7	6.0	4.0	0.56	-200.0	12.0	100.0	0.6	11.3	-5.0	-1.0	11.0	3.3	-4.0
22234S	2.9	13.0	-4.0	1.00	-300.0	40.0	160.0	0.8	12.3	-8.0	3.0	100.0	86.2	-14.0
22235S	3.1	7.0	-4.0	0.43	-200.0	38.0	90.0	5.9	9.4	-5.0	1.0	9.3	2.3	8.0
22236S	3.4	6.0	-4.0	1.00	-200.0	36.0	150.0	0.9	12.4	-5.0	-1.0	20.0	26.1	5.0
22242S	2.9	6.0	-4.0	1.60	-200.0	12.0	410.0	0.9	8.9	-5.0	2.0	20.0	48.6	13.0
22243S	4.6	7.0	-4.0	0.53	-200.0	48.0	190.0	2.2	16.0	-5.0	1.0	17.0	4.0	-7.0
22247S	3.7	8.0	-4.0	0.74	-200.0	38.0	160.0	1.0	11.9	5.0	-1.0	14.0	4.8	6.0
22248S	2.8	5.0	-4.0	0.74	-200.0	34.0	90.0	0.9	10.7	-5.0	-1.0	13.0	19.9	-4.0
22250S	4.0	8.0	-4.0	0.84	-200.0	90.0	180.0	1.3	13.4	-5.0	1.0	15.0	4.9	-4.0
22253S	3.7	7.0	-4.0	0.89	-200.0	82.0	210.0	1.9	12.5	-5.0	-1.0	27.0	15.1	12.0
22255S	2.4	7.0	-4.0	0.93	-200.0	12.0	150.0	0.5	7.8	-5.0	1.0	11.0	7.4	11.0
22257S	4.0	11.0	-4.0	1.20	-200.0	24.0	290.0	1.5	13.1	-5.0	2.0	44.0	11.2	11.0
22261S	4.1	7.0	-4.0	1.30	-200.0	22.0	280.0	1.3	13.5	-5.0	-1.0	21.0	43.5	18.0
22264S	3.5	9.0	-4.0	1.50	-200.0	24.0	160.0	1.0	11.7	-5.0	-1.0	21.0	12.4	-4.0
22266S	3.6	8.0	-4.0	0.74	-200.0	8.0	140.0	0.8	14.3	-5.0	-1.0	14.0	4.1	-7.0
22270S	3.1	18.0	-4.0	1.30	-200.0	64.0	300.0	0.8	10.9	-5.0	3.0	85.0	25.5	10.0
22272S	3.7	9.0	-4.0	1.20	-200.0	-2.0	50.0	0.9	14.1	-5.0	1.0	9.7	3.4	-7.0
22273S	2.7	8.0	-4.0	0.75	-200.0	14.0	120.0	1.3	9.7	-5.0	-1.0	12.0	3.8	-11.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22208S	78.0	36.0	66.0	4.5	1.5	2.6	0.3
22213S	130.0	43.0	72.0	8.2	1.6	3.5	0.8
22215S	51.0	38.0	64.0	6.1	0.8	2.5	0.3
22216S	280.0	61.0	117.0	9.5	1.4	6.5	1.2
22219S	130.0	87.0	150.0	15.3	1.9	6.5	1.0
22224S	65.0	44.0	79.0	6.7	0.8	2.3	0.4
22227S	74.0	44.0	68.0	4.9	1.5	2.6	0.5
22231S	73.0	43.0	88.0	4.6	1.5	2.3	0.3
22234S	240.0	186.0	301.0	47.2	1.9	17.9	3.5
22235S	110.0	34.0	57.0	4.1	1.5	2.2	0.3
22236S	150.0	59.0	103.0	8.9	2.6	5.2	0.9
22242S	73.0	47.0	76.0	9.4	0.8	5.1	1.2
22243S	190.0	57.0	96.0	5.6	1.3	3.0	0.4
22247S	95.0	44.0	82.0	4.9	1.5	2.7	0.4
22248S	160.0	42.0	76.0	5.8	-0.8	4.1	0.7
22250S	390.0	55.0	94.0	6.1	1.4	3.3	0.5
22253S	250.0	76.0	139.0	9.4	2.3	6.1	0.9
22255S	41.0	35.0	58.0	5.6	0.9	2.3	0.4
22257S	120.0	99.0	163.0	9.7	0.9	6.6	0.8
22261S	68.0	53.0	94.0	10.8	0.9	4.8	1.1
22264S	84.0	58.0	102.0	6.2	1.5	3.8	0.6
22266S	96.0	49.0	96.0	5.5	1.7	2.8	0.4
22270S	210.0	164.0	291.0	27.4	0.7	13.0	2.0
22272S	54.0	45.0	71.0	5.2	1.9	2.8	0.4
22273S	45.0	41.0	74.0	6.7	1.1	2.6	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22274S	65.578	146.342	C-5	9	7	29	0	-0.5	22.0	-5.0	600.0	1.3	6.0	30.0	11.0	10.0
22281S	65.444	146.022	B-5	7	8	12	0	-0.5	27.0	-6.0	500.0	-0.7	15.0	60.0	2.0	26.0
22282S	65.539	146.668	C-6	8	5	11	0	-0.5	12.0	-12.0	800.0	2.1	17.0	110.0	3.0	17.0
22288S	65.516	146.061	C-5	8	8	15	0	-0.5	44.0	-6.0	500.0	-0.6	14.0	50.0	4.0	29.0
22291S	65.626	146.796	C-6	9	5	7	0	-0.5	6.0	-11.0	700.0	-2.1	5.0	50.0	5.0	9.0
22298S	65.681	146.952	C-6	10	4	20	0	1.0	13.0	-5.0	1600.0	-0.5	13.0	70.0	3.0	66.0
22303S	65.601	146.400	C-5	9	6	13	0	-0.5	12.0	-6.0	600.0	1.4	13.0	70.0	6.0	15.0
22309S	65.562	146.888	C-6	9	4	34	0	1.0	16.0	-6.0	600.0	-1.2	24.0	60.0	15.0	43.0
22310S	65.490	146.398	B-5	8	7	30	0	-0.5	27.0	-14.0	700.0	-1.7	15.0	70.0	6.0	27.0
22314S	65.397	146.724	B-6	7	5	33	0	-0.5	11.0	-6.0	400.0	-0.7	8.0	40.0	13.0	12.0
22328S	65.469	145.940	B-4	7	9	5	0	-0.5	36.0	-5.0	400.0	-0.5	12.0	50.0	5.0	29.0
22331S	65.575	146.359	C-5	9	7	30	0	-0.5	30.0	-5.0	500.0	1.7	9.0	40.0	10.0	14.0
22332S	65.549	146.464	C-5	8	6	2	0	1.0	72.0	-7.0	800.0	-0.8	17.0	80.0	8.0	37.0
22334S	65.518	146.114	C-5	8	8	16	-24	-0.5	12.0	12.0	500.0	-0.7	10.0	50.0	4.0	14.0
22340S	65.514	146.627	C-6	8	5	13	0	-0.5	12.0	-6.0	400.0	-0.9	6.0	10.0	17.0	5.0
22358S	65.512	146.623	C-6	8	5	24	0	-0.5	20.0	-8.0	400.0	-1.2	8.0	30.0	13.0	9.5
22368S	65.587	146.704	C-6	9	5	21	0	-0.5	6.0	-8.0	700.0	-0.9	11.0	90.0	5.0	22.0
22370S	65.646	146.674	C-6	10	5	34	0	0.5	8.0	-6.0	500.0	-1.1	5.0	20.0	9.0	14.0
22372S	65.497	146.360	B-5	8	7	29	0	-0.5	10.0	-5.0	600.0	-0.8	14.0	60.0	-1.0	14.0
22377S	65.536	146.631	C-6	8	5	12	0	-0.5	8.0	-5.0	400.0	-0.7	10.0	40.0	3.0	14.0
22386S	65.538	146.483	C-5	8	6	10	0	-0.5	25.0	-7.0	700.0	-0.7	14.0	70.0	4.0	24.0
22392S	65.534	146.720	C-6	8	5	9	0	-0.5	11.0	-5.0	600.0	-0.8	12.0	50.0	4.0	16.0
22395S	65.584	146.801	C-6	9	5	30	0	-0.5	10.0	8.0	900.0	-0.9	10.0	80.0	4.0	10.0
22399S	65.537	146.715	C-6	8	5	9	19	-0.5	10.0	-5.0	600.0	-0.8	13.0	50.0	5.0	26.0
22408S	65.601	146.411	C-5	9	6	13	0	-0.5	24.0	-6.0	500.0	-1.1	11.0	60.0	8.0	14.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22274S	1.9	12.0	-4.0	1.90	-200.0	20.0	320.0	0.5	6.8	-5.0	4.0	24.0	24.8	20.0
22281S	3.5	7.0	-4.0	0.79	-200.0	20.0	80.0	3.8	12.5	-5.0	-1.0	8.2	3.1	-5.0
22282S	4.2	7.0	-4.0	1.20	-200.0	16.0	110.0	1.5	16.5	-5.0	1.0	13.0	4.5	-11.0
22288S	3.6	9.0	-4.0	0.52	-200.0	16.0	110.0	3.5	11.5	-5.0	-1.0	11.0	3.0	-5.0
22291S	2.5	20.0	-4.0	1.90	-200.0	34.0	320.0	0.6	11.4	-5.0	4.0	100.0	32.6	-9.0
22298S	3.2	5.0	7.0	0.51	-200.0	20.0	60.0	2.5	9.9	-5.0	-1.0	6.6	5.2	-5.0
22303S	3.2	8.0	4.0	1.30	300.0	12.0	70.0	0.9	12.1	-5.0	1.0	11.0	7.5	-4.0
22309S	3.3	8.0	-4.0	1.30	-200.0	82.0	370.0	0.9	11.4	8.0	4.0	30.0	24.3	27.0
22310S	4.5	9.0	-4.0	1.30	-200.0	14.0	80.0	1.1	14.3	-5.0	1.0	19.0	10.4	21.0
22314S	2.3	8.0	-4.0	1.50	-200.0	10.0	240.0	1.3	7.7	-5.0	1.0	15.0	10.9	13.0
22328S	3.2	6.0	-4.0	0.54	-200.0	8.0	60.0	1.4	9.9	-5.0	-1.0	7.6	2.4	17.0
22331S	2.5	13.0	-4.0	1.90	-200.0	26.0	280.0	0.5	8.7	-5.0	7.0	25.0	14.3	33.0
22332S	3.9	7.0	4.0	1.00	-200.0	130.0	130.0	5.0	13.8	-5.0	-1.0	14.0	5.7	-4.0
22334S	2.8	9.0	-4.0	1.10	-200.0	8.0	120.0	1.1	9.1	-5.0	1.0	13.0	5.4	-4.0
22340S	2.2	9.0	-4.0	2.60	-200.0	10.0	350.0	0.4	6.0	-5.0	4.0	39.0	30.2	-4.0
22358S	2.2	12.0	-4.0	2.10	-200.0	16.0	210.0	0.8	7.7	-5.0	3.0	43.0	145.0	6.0
22368S	3.3	8.0	8.0	0.89	-200.0	18.0	130.0	1.1	14.1	-5.0	1.0	15.0	3.4	-6.0
22370S	2.5	13.0	-4.0	1.80	-200.0	94.0	510.0	0.4	5.8	-5.0	3.0	88.0	28.3	11.0
22372S	3.2	11.0	-4.0	0.95	-200.0	12.0	150.0	2.7	10.7	-5.0	1.0	12.0	3.7	4.0
22377S	2.6	12.0	-4.0	1.20	-200.0	12.0	100.0	0.9	8.6	-5.0	1.0	16.0	8.8	-4.0
22386S	3.5	10.0	-4.0	1.00	-200.0	18.0	110.0	3.9	12.0	-5.0	-1.0	14.0	7.5	-6.0
22392S	3.1	10.0	-4.0	1.00	-200.0	14.0	140.0	1.1	10.4	-5.0	-1.0	21.0	8.9	-4.0
22395S	3.3	8.0	7.0	1.40	-200.0	18.0	140.0	0.8	13.0	-5.0	1.0	35.0	36.9	-6.0
22399S	3.4	9.0	-4.0	0.85	-200.0	32.0	240.0	0.9	10.7	-5.0	-1.0	28.0	8.3	16.0
22408S	2.9	16.0	-4.0	1.70	-200.0	16.0	210.0	0.9	11.0	-5.0	4.0	28.0	15.9	30.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22274S	63.0	52.0	82.0	5.2	1.1	4.5	0.8
22281S	78.0	34.0	60.0	4.1	0.9	2.5	0.3
22282S	52.0	53.0	91.0	8.4	2.4	3.0	0.4
22288S	70.0	43.0	73.0	4.8	1.4	3.0	0.4
22291S	120.0	143.0	256.0	28.5	1.1	16.0	2.5
22298S	82.0	30.0	48.0	3.2	0.9	2.1	0.3
22303S	54.0	44.0	73.0	4.8	0.8	2.5	0.5
22309S	690.0	78.0	149.0	13.4	1.3	15.7	2.0
22310S	77.0	62.0	98.0	10.2	1.7	3.8	0.6
22314S	60.0	37.0	70.0	4.3	0.8	3.0	0.5
22328S	58.0	26.0	44.0	3.1	1.1	1.9	0.3
22331S	78.0	49.0	88.0	5.3	1.1	5.6	0.9
22332S	190.0	47.0	79.0	5.2	1.2	2.9	0.4
22334S	57.0	39.0	66.0	4.4	1.1	3.1	0.3
22340S	49.0	75.0	109.0	7.0	0.7	5.0	0.8
22358S	55.0	102.0	141.0	9.0	1.2	6.0	0.7
22368S	73.0	55.0	92.0	6.4	2.1	2.8	0.4
22370S	240.0	122.0	204.0	15.3	-0.5	14.7	1.8
22372S	54.0	44.0	74.0	4.6	1.0	2.7	0.4
22377S	44.0	49.0	78.0	4.8	1.3	3.6	0.5
22386S	260.0	48.0	76.0	5.2	1.3	2.7	0.4
22392S	89.0	57.0	93.0	6.1	1.0	3.7	0.6
22395S	84.0	58.0	103.0	8.1	-0.2	7.4	1.1
22399S	140.0	69.0	116.0	7.4	0.9	4.6	0.7
22408S	58.0	73.0	115.0	7.2	1.2	4.8	0.8

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22409S	65.557	146.566	C-6	8	6	5	0	-0.5	7.0	-6.0	500.0	-0.7	15.0	80.0	2.0	18.0
22418S	65.556	146.468	C-5	8	6	2	0	-0.5	34.0	-6.0	600.0	-1.0	17.0	50.0	12.0	12.0
22419S	65.426	146.616	B-6	7	5	24	0	-0.5	24.0	-10.0	500.0	1.6	9.0	50.0	19.0	19.0
22422S	65.663	146.609	C-6	10	5	25	0	-0.5	6.0	-7.0	700.0	-1.0	9.0	50.0	10.0	18.0
22424S	65.490	146.392	B-5	8	7	30	-14	-0.5	11.0	-5.0	500.0	-0.6	10.0	50.0	4.0	20.0
22429S	65.437	146.699	B-6	7	5	15	0	-0.5	11.0	-6.0	600.0	-1.0	11.0	50.0	5.0	16.0
22439S	65.552	146.724	C-6	8	5	4	0	-0.5	6.0	-7.0	700.0	-1.3	12.0	60.0	6.0	17.0
22440S	65.583	146.518	C-6	9	6	28	0	-0.5	7.0	-5.0	700.0	-0.9	13.0	80.0	4.0	17.0
22450S	65.534	146.957	C-6	8	4	8	0	-0.5	7.0	-7.0	700.0	-1.1	15.0	100.0	9.0	22.0
22454S	65.685	146.799	C-6	10	5	19	0	-0.5	5.0	-5.0	1200.0	-0.5	23.0	90.0	7.0	19.0
22458S	65.554	146.287	C-5	8	7	3	0	-0.5	17.0	12.0	600.0	-0.6	11.0	50.0	4.0	17.0
22461S	65.488	145.902	B-4	8	9	28	0	-0.5	31.0	-5.0	300.0	-0.6	14.0	40.0	5.0	25.0
22462S	65.492	146.429	B-5	8	6	25	0	-0.5	13.0	-7.0	600.0	-0.9	12.0	60.0	3.0	20.0
22463S	65.629	146.660	C-6	9	5	11	0	-0.5	10.0	-5.0	800.0	-0.9	13.0	70.0	11.0	31.0
22465S	65.601	146.959	C-6	9	4	17	0	1.0	19.0	-8.0	600.0	2.3	17.0	80.0	12.0	86.0
22471S	65.610	146.904	C-6	9	4	15	0	0.5	13.0	-6.0	1000.0	-0.8	15.0	90.0	13.0	36.0
22473S	65.535	146.617	C-6	8	5	12	0	-0.5	13.0	-8.0	600.0	-0.9	16.0	80.0	4.0	31.0
22474S	65.515	146.731	C-6	8	5	16	0	-0.5	17.0	-5.0	600.0	-0.9	15.0	90.0	6.0	16.0
22477S	65.521	145.849	C-4	8	9	14	-23	-0.5	6.0	-5.0	600.0	-0.6	10.0	50.0	2.0	14.0
22480S	65.532	145.717	C-4	8	10	9	0	-0.5	38.0	5.0	400.0	0.9	14.0	40.0	3.0	25.0
22482S	65.629	146.472	C-5	9	6	3	0	-0.5	6.0	-6.0	700.0	-0.8	13.0	60.0	3.0	24.0
22495S	65.471	146.871	B-6	8	4	35	0	-0.5	10.0	-5.0	500.0	-0.8	12.0	60.0	4.0	21.0
22496S	65.515	146.748	C-6	8	5	16	0	-0.5	14.0	-5.0	500.0	-0.5	13.0	60.0	5.0	19.0
22497S	65.464	145.731	B-4	7	10	5	0	-0.5	27.0	-7.0	300.0	1.3	21.0	80.0	2.0	55.0
22509S	65.485	146.213	B-5	8	7	25	0	-0.5	8.0	-5.0	800.0	-0.5	16.0	60.0	2.0	23.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22409S	3.6	6.0	-4.0	1.10	-200.0	10.0	90.0	1.0	10.7	-5.0	-1.0	9.1	2.1	-5.0
22418S	3.7	7.0	-4.0	2.30	-200.0	26.0	250.0	1.1	10.1	-5.0	2.0	29.0	19.6	5.0
22419S	2.7	6.0	-4.0	1.20	-200.0	18.0	250.0	1.3	9.8	-5.0	2.0	14.0	41.7	13.0
22422S	2.9	13.0	4.0	1.20	-200.0	88.0	280.0	0.7	10.7	-5.0	1.0	54.0	27.6	8.0
22424S	2.9	8.0	-4.0	1.10	-200.0	12.0	100.0	0.7	9.5	-5.0	1.0	11.0	8.8	8.0
22429S	2.8	7.0	-4.0	1.10	-200.0	18.0	130.0	1.5	10.1	-5.0	-1.0	14.0	16.9	-4.0
22439S	3.0	15.0	-4.0	1.00	-200.0	30.0	190.0	0.7	11.3	29.0	2.0	56.0	19.4	22.0
22440S	3.6	8.0	4.0	0.83	-200.0	20.0	130.0	0.6	13.4	-5.0	1.0	12.0	2.7	-4.0
22450S	3.5	8.0	-4.0	0.90	-200.0	28.0	180.0	1.1	15.0	6.0	1.0	14.0	4.4	-4.0
22454S	4.6	9.0	-4.0	0.74	-200.0	10.0	170.0	0.6	16.6	11.0	1.0	17.0	3.2	-7.0
22458S	2.7	10.0	-4.0	0.95	-200.0	18.0	100.0	2.9	8.9	-5.0	1.0	12.0	5.3	-4.0
22461S	3.0	7.0	-4.0	0.62	-200.0	10.0	90.0	0.6	9.4	-5.0	-1.0	9.7	3.3	33.0
22462S	3.2	8.0	-4.0	1.00	-200.0	16.0	110.0	0.9	11.2	26.0	1.0	11.0	4.1	-6.0
22463S	3.8	9.0	-4.0	0.66	-200.0	30.0	150.0	1.3	13.8	-5.0	1.0	14.0	3.7	-4.0
22465S	3.9	5.0	-4.0	0.73	-200.0	120.0	100.0	2.4	11.9	-5.0	-1.0	17.0	18.7	-4.0
22471S	4.0	6.0	22.0	1.20	-200.0	50.0	170.0	1.2	14.5	-5.0	1.0	24.0	42.8	-4.0
22473S	3.5	7.0	14.0	0.94	-200.0	16.0	150.0	1.1	13.7	-5.0	-1.0	11.0	5.4	-6.0
22474S	3.4	9.0	5.0	1.20	-200.0	16.0	130.0	1.4	13.1	-5.0	-1.0	17.0	6.8	-4.0
22477S	2.5	9.0	-4.0	0.91	-200.0	8.0	70.0	0.9	9.1	-5.0	-1.0	8.2	3.2	-4.0
22480S	3.0	9.0	-4.0	0.58	-200.0	14.0	70.0	1.7	9.8	-5.0	-1.0	7.8	2.2	-4.0
22482S	2.9	10.0	-4.0	1.00	-200.0	14.0	110.0	0.3	11.4	9.0	1.0	13.0	3.9	-5.0
22495S	3.1	8.0	-4.0	0.97	-200.0	16.0	130.0	1.0	11.3	-5.0	-1.0	17.0	7.3	-4.0
22496S	3.4	7.0	-4.0	0.81	-200.0	10.0	190.0	1.1	10.3	-5.0	1.0	15.0	7.3	-5.0
22497S	5.6	6.0	-4.0	0.93	300.0	4.0	70.0	6.7	22.3	-5.0	-1.0	5.9	3.1	-7.0
22509S	3.4	6.0	-4.0	0.84	-200.0	10.0	100.0	0.9	10.6	-5.0	-1.0	11.0	4.1	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22409S	56.0	34.0	57.0	3.6	0.9	2.0	0.2
22418S	76.0	64.0	112.0	6.5	1.2	4.8	0.8
22419S	55.0	36.0	62.0	5.0	0.8	3.4	0.8
22422S	240.0	101.0	169.0	11.8	1.3	8.5	1.2
22424S	56.0	43.0	61.0	3.7	1.3	2.3	0.4
22429S	74.0	45.0	74.0	4.7	1.4	3.0	0.5
22439S	190.0	125.0	223.0	14.3	1.5	8.3	1.3
22440S	81.0	44.0	86.0	5.1	0.7	2.6	0.3
22450S	82.0	54.0	91.0	6.0	1.2	2.7	0.4
22454S	120.0	59.0	100.0	6.0	1.5	3.5	0.4
22458S	61.0	39.0	59.0	4.1	0.2	2.5	0.4
22461S	62.0	34.0	61.0	3.8	1.2	2.0	0.3
22462S	65.0	44.0	66.0	4.5	1.4	2.5	0.3
22463S	120.0	58.0	94.0	6.9	2.0	3.4	0.5
22465S	250.0	83.0	93.0	13.9	2.1	8.7	1.2
22471S	340.0	58.0	106.0	10.2	1.7	7.8	1.3
22473S	100.0	46.0	75.0	5.4	1.4	2.7	0.4
22474S	69.0	55.0	95.0	6.0	1.3	3.4	0.5
22477S	47.0	33.0	57.0	3.7	0.9	2.2	0.3
22480S	67.0	32.0	56.0	4.0	1.3	2.5	0.3
22482S	63.0	51.0	84.0	5.9	2.1	4.0	0.4
22495S	99.0	49.0	83.0	5.9	1.3	3.5	0.5
22496S	100.0	42.0	69.0	4.4	0.8	3.2	0.4
22497S	76.0	24.0	47.0	3.6	1.2	2.5	0.4
22509S	84.0	39.0	64.0	4.5	1.3	2.2	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22511S	65.587	146.653	C-6	9	5	23	0	-0.5	6.0	-7.0	700.0	-1.1	15.0	70.0	8.0	34.0
22513S	65.662	146.879	C-6	10	4	27	0	-0.5	6.0	10.0	1000.0	-0.8	14.0	80.0	4.0	25.0
22514S	65.392	146.026	B-5	7	8	35	0	-0.5	40.0	-6.0	500.0	1.1	20.0	80.0	2.0	40.0
22517S	65.633	146.858	C-6	9	4	2	0	-0.5	9.0	-6.0	400.0	-1.2	-5.0	30.0	6.0	13.0
22519S	65.691	146.587	C-6	10	6	18	0	-0.5	21.0	-5.0	1500.0	1.2	19.0	70.0	10.0	33.0
22520S	65.612	146.543	C-6	9	6	17	0	-0.5	5.0	9.0	700.0	-0.9	13.0	70.0	7.0	20.0
22525S	65.480	146.237	B-5	8	7	35	0	-0.5	9.0	-5.0	400.0	-0.6	10.0	40.0	5.0	14.0
22536S	65.577	146.503	C-6	9	6	28	0	-0.5	11.0	-5.0	600.0	-0.9	17.0	80.0	5.0	22.0
22538S	65.529	146.750	C-6	8	5	8	0	-0.5	8.0	-5.0	700.0	-0.8	14.0	80.0	4.0	20.0
22540S	65.532	146.727	C-6	8	5	9	0	-0.5	13.0	-5.0	500.0	-0.7	13.0	50.0	4.0	22.0
22541S	65.486	146.936	B-6	8	4	28	0	-0.5	11.0	-6.0	700.0	-1.0	16.0	80.0	5.0	15.0
22543S	65.601	146.740	C-6	9	5	17	0	-0.5	11.0	-6.0	600.0	-1.2	8.0	40.0	10.0	21.0
22549S	65.551	146.266	C-5	8	7	2	0	-0.5	9.0	-5.0	700.0	-0.8	12.0	60.0	3.0	20.0
22550S	65.465	145.947	B-4	7	9	5	0	-0.5	54.0	-5.0	400.0	-0.6	15.0	50.0	5.0	31.0
22557S	65.488	146.438	B-5	8	6	26	0	-0.5	38.0	6.0	600.0	-0.7	19.0	70.0	12.0	44.0
22558S	65.511	146.321	C-5	8	7	21	-29	-0.5	10.0	-5.0	500.0	-0.8	10.0	50.0	3.0	17.0
22563S	65.541	146.490	C-5	8	6	10	0	-0.5	18.0	11.0	500.0	-0.7	9.0	60.0	4.0	12.0
22567S	65.473	145.651	B-4	8	10	34	0	-0.5	20.0	-5.0	300.0	-0.5	10.0	40.0	-1.0	16.0
22570S	65.442	146.578	B-6	7	6	7	0	-0.5	11.0	-5.0	500.0	0.9	6.0	50.0	17.0	6.0
22571S	65.604	146.610	C-6	9	5	13	0	-0.5	7.0	5.0	400.0	-0.9	10.0	60.0	7.0	30.0
22576S	65.566	146.260	C-5	9	7	34	0	-0.5	12.0	-6.0	600.0	-0.7	16.0	50.0	5.0	27.0
22584S	65.590	146.953	C-6	9	4	20	0	1.0	13.0	-8.0	800.0	1.2	21.0	80.0	18.0	61.0
22585S	65.479	146.534	B-6	8	6	33	0	-0.5	12.0	-7.0	700.0	-0.9	10.0	60.0	4.0	20.0
22586S	65.679	146.904	C-6	10	4	22	0	-0.5	7.0	-5.0	900.0	0.9	17.0	90.0	6.0	22.0
22591S	65.548	146.025	C-5	8	8	1	0	-0.5	17.0	-5.0	400.0	-0.5	11.0	40.0	3.0	22.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22511S	3.6	6.0	-4.0	0.59	-200.0	26.0	150.0	0.8	13.3	-5.0	-1.0	12.0	4.2	4.0
22513S	3.3	9.0	-4.0	1.10	200.0	22.0	110.0	1.0	12.6	-5.0	-1.0	12.0	4.0	-4.0
22514S	4.3	7.0	6.0	0.78	-200.0	12.0	100.0	16.0	15.2	-5.0	-1.0	8.2	3.2	-4.0
22517S	2.4	17.0	-4.0	2.30	-200.0	36.0	500.0	0.6	8.0	-5.0	4.0	96.0	37.2	12.0
22519S	4.6	7.0	10.0	0.64	-200.0	120.0	380.0	4.4	14.8	-5.0	-1.0	20.0	5.5	5.0
22520S	3.4	9.0	5.0	0.81	-200.0	24.0	110.0	0.8	14.0	10.0	-1.0	13.0	3.2	-4.0
22525S	2.2	6.0	-4.0	1.20	-200.0	10.0	160.0	0.8	7.5	-5.0	1.0	11.0	7.2	6.0
22536S	4.0	8.0	6.0	0.98	-200.0	14.0	110.0	1.0	13.2	7.0	-1.0	10.0	3.8	4.0
22538S	3.3	8.0	-4.0	0.94	-200.0	14.0	90.0	0.8	12.5	-5.0	-1.0	9.3	2.2	-4.0
22540S	3.5	6.0	9.0	0.99	-200.0	18.0	160.0	0.9	9.9	-5.0	-1.0	13.0	5.4	-4.0
22541S	3.2	8.0	-4.0	0.92	-200.0	18.0	120.0	0.8	13.0	-5.0	-1.0	12.0	3.2	-4.0
22543S	3.1	9.0	12.0	1.50	-200.0	110.0	420.0	0.8	10.3	-5.0	1.0	51.0	31.7	5.0
22549S	3.2	8.0	-4.0	0.97	-200.0	12.0	100.0	2.0	10.9	-5.0	-1.0	13.0	4.3	-4.0
22550S	3.9	7.0	6.0	0.52	-200.0	8.0	80.0	1.4	10.9	-5.0	-1.0	7.7	2.3	20.0
22557S	3.9	9.0	-4.0	0.98	-200.0	12.0	140.0	1.2	11.9	-5.0	-1.0	16.0	12.0	-5.0
22558S	2.8	10.0	-4.0	1.20	-200.0	10.0	100.0	1.4	9.0	-5.0	1.0	12.0	5.1	5.0
22563S	2.7	12.0	-4.0	1.00	-200.0	12.0	110.0	1.5	9.1	-5.0	1.0	17.0	12.2	-5.0
22567S	2.9	7.0	-4.0	0.67	-200.0	8.0	60.0	9.4	11.1	-5.0	-1.0	6.8	1.6	-4.0
22570S	2.4	10.0	-4.0	2.00	-200.0	8.0	360.0	0.8	9.1	-5.0	3.0	34.0	17.9	7.0
22571S	2.7	4.0	-4.0	0.36	-200.0	20.0	130.0	1.3	9.9	-5.0	-1.0	8.8	4.0	-7.0
22576S	3.3	7.0	-4.0	0.69	-200.0	26.0	130.0	4.6	10.7	-5.0	-1.0	12.0	3.9	-5.0
22584S	3.8	5.0	4.0	0.70	-200.0	100.0	160.0	1.4	14.0	-5.0	-1.0	14.0	3.4	-4.0
22585S	2.8	9.0	-4.0	1.10	-200.0	16.0	130.0	2.2	10.8	-5.0	1.0	12.0	4.9	-6.0
22586S	3.4	9.0	-4.0	0.82	-200.0	12.0	120.0	0.8	13.7	-5.0	1.0	14.0	3.0	-7.0
22591S	2.6	6.0	-4.0	0.68	-200.0	6.0	90.0	1.3	8.0	-5.0	-1.0	8.6	2.2	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22511S	89.0	51.0	88.0	6.8	2.1	3.5	0.4
22513S	100.0	52.0	101.0	5.9	1.2	3.4	0.4
22514S	72.0	36.0	65.0	4.7	1.3	2.3	0.3
22517S	170.0	150.0	255.0	17.6	-0.8	14.1	2.0
22519S	510.0	59.0	104.0	6.3	1.5	4.1	0.6
22520S	99.0	53.0	108.0	6.1	1.7	3.6	0.4
22525S	65.0	32.0	53.0	3.7	0.8	2.7	0.3
22536S	77.0	46.0	79.0	4.8	1.4	2.5	0.3
22538S	69.0	37.0	65.0	4.5	1.3	2.5	0.4
22540S	89.0	35.0	71.0	3.9	1.2	2.4	0.3
22541S	71.0	48.0	81.0	5.4	1.3	2.6	0.4
22543S	590.0	120.0	198.0	14.1	1.3	9.1	1.3
22549S	64.0	44.0	77.0	4.8	1.2	2.7	0.4
22550S	66.0	28.0	52.0	3.4	1.1	2.2	0.3
22557S	100.0	50.0	81.0	5.5	1.4	3.0	0.5
22558S	68.0	39.0	64.0	4.2	1.3	2.9	0.4
22563S	54.0	52.0	79.0	5.2	1.3	3.1	0.5
22567S	37.0	25.0	43.0	2.8	0.9	2.2	0.3
22570S	39.0	59.0	103.0	8.6	1.0	8.3	1.2
22571S	66.0	32.0	56.0	3.9	1.3	1.7	0.2
22576S	95.0	41.0	70.0	5.0	-0.2	2.5	0.4
22584S	240.0	55.0	103.0	6.4	1.8	2.6	0.3
22585S	59.0	46.0	68.0	4.8	1.3	2.3	0.3
22586S	85.0	50.0	79.0	5.2	1.6	2.7	0.4
22591S	61.0	28.0	49.0	3.1	1.0	1.9	0.2

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22592S	65.460	146.324	B-5	7	7	4	0	-0.5	10.0	-5.0	600.0	-0.8	15.0	70.0	5.0	18.0
22595S	65.598	146.772	C-6	9	5	19	0	0.5	4.0	6.0	800.0	-1.3	7.0	40.0	8.0	27.0
22605S	65.520	146.365	C-5	8	7	17	0	-0.5	15.0	-5.0	600.0	0.9	12.0	50.0	2.0	11.0
22610S	65.476	146.201	B-5	8	7	36	0	-0.5	10.0	-6.0	700.0	-0.8	20.0	80.0	3.0	20.0
22615S	65.694	146.929	C-6	10	4	16	0	-0.5	9.0	-5.0	1000.0	1.1	18.0	70.0	4.0	30.0
22618S	65.560	146.956	C-6	9	4	32	0	-0.5	10.0	6.0	800.0	-1.0	26.0	90.0	11.0	41.0
22628S	65.663	146.596	C-6	10	5	25	0	1.0	13.0	-7.0	800.0	-1.1	9.0	30.0	11.0	27.0
22635S	65.623	146.640	C-6	9	5	11	0	-0.5	10.0	-5.0	800.0	1.0	14.0	80.0	13.0	33.0
22643S	65.598	146.600	C-6	9	5	24	0	-0.5	6.0	-7.0	600.0	-1.0	13.0	80.0	6.0	28.0
22645S	65.616	146.680	C-6	9	5	10	0	-0.5	10.0	-6.0	800.0	-1.2	14.0	60.0	10.0	32.0
22647S	65.600	146.548	C-6	9	6	17	0	-0.5	7.0	-6.0	700.0	-0.8	13.0	70.0	4.0	23.0
22651S	65.402	146.416	B-5	7	6	25	0	-0.5	19.0	-5.0	500.0	-0.5	8.0	40.0	13.0	16.0
22657S	65.537	146.715	C-6	8	5	9	-19	-0.5	9.0	-5.0	500.0	-0.7	11.0	50.0	5.0	27.0
22658S	65.675	146.911	C-6	10	4	21	0	-0.5	11.0	5.0	1100.0	0.7	38.0	80.0	9.0	25.0
22663S	65.533	146.758	C-6	8	5	8	0	-0.5	7.0	-5.0	600.0	-0.7	13.0	60.0	3.0	19.0
22669S	65.511	146.758	C-6	8	5	20	0	-0.5	16.0	5.0	500.0	-0.5	14.0	60.0	6.0	21.0
22674S	65.462	146.586	B-6	7	6	6	0	-0.5	14.0	-6.0	600.0	0.9	10.0	50.0	6.0	18.0
22676S	65.602	146.256	C-5	9	7	15	0	-0.5	17.0	-6.0	800.0	-0.8	14.0	80.0	5.0	25.0
22679S	65.440	146.197	B-5	7	7	13	0	-0.5	16.0	-6.0	800.0	-0.9	15.0	70.0	2.0	27.0
22681S	65.634	146.370	C-5	9	7	6	0	-0.5	11.0	-5.0	600.0	-0.7	19.0	90.0	4.0	41.0
22689S	65.514	146.045	C-5	8	8	14	0	-0.5	7.0	5.0	600.0	0.9	8.0	60.0	2.0	12.0
22692S	65.522	145.812	C-4	8	9	13	0	-0.5	9.0	-5.0	500.0	-0.5	13.0	60.0	2.0	20.0
22785S	65.418	146.035	B-5	7	8	23	0	-0.5	120.0	46.0	400.0	0.7	16.0	60.0	14.0	160.0
22788S	65.460	146.397	B-5	7	7	6	0	-0.5	10.0	8.0	400.0	-0.6	8.0	40.0	13.0	16.0
22789S	65.657	146.631	C-6	10	5	35	0	-0.5	10.0	-6.0	600.0	-0.9	8.0	50.0	8.0	22.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22592S	3.0	7.0	5.0	1.20	-200.0	12.0	40.0	1.0	12.5	-5.0	-1.0	9.7	4.5	-4.0
22595S	2.3	17.0	33.0	1.10	-200.0	120.0	240.0	1.2	9.6	5.0	1.0	97.0	88.0	12.0
22605S	3.0	7.0	-4.0	1.60	-200.0	10.0	120.0	1.2	10.3	-5.0	-1.0	12.0	4.2	-4.0
22610S	3.7	10.0	-4.0	1.10	200.0	12.0	120.0	1.2	13.0	-5.0	1.0	13.0	5.2	-4.0
22615S	4.5	7.0	-4.0	0.94	-200.0	4.0	120.0	2.8	16.8	-5.0	1.0	12.0	3.7	-7.0
22618S	4.1	7.0	-4.0	0.71	-200.0	56.0	170.0	1.0	15.3	-5.0	-1.0	16.0	3.7	-4.0
22628S	3.6	9.0	-4.0	1.20	-200.0	410.0	420.0	1.0	10.3	-5.0	1.0	54.0	19.5	8.0
22635S	6.0	8.0	-4.0	0.65	-200.0	36.0	200.0	1.3	16.0	-5.0	2.0	17.0	5.3	-4.0
22643S	3.2	11.0	-4.0	0.63	300.0	20.0	130.0	1.1	12.8	-5.0	-1.0	14.0	4.0	-4.0
22645S	3.8	10.0	16.0	1.00	-200.0	110.0	320.0	1.3	13.2	-5.0	-1.0	38.0	22.4	5.0
22647S	3.6	8.0	-4.0	0.69	-200.0	18.0	110.0	0.8	12.4	-5.0	-1.0	12.0	3.5	-4.0
22651S	2.5	7.0	-4.0	1.40	-200.0	12.0	280.0	0.8	8.5	-5.0	1.0	16.0	27.1	12.0
22657S	3.3	7.0	-4.0	0.73	-200.0	36.0	210.0	0.8	10.5	-5.0	1.0	24.0	7.9	9.0
22658S	4.3	8.0	-4.0	0.87	-200.0	12.0	160.0	1.0	16.0	-5.0	1.0	15.0	3.9	-8.0
22663S	2.9	6.0	-4.0	0.81	-200.0	16.0	80.0	0.7	10.6	-5.0	-1.0	8.5	2.4	-4.0
22669S	3.8	6.0	-4.0	0.77	200.0	10.0	200.0	1.0	11.5	-5.0	1.0	16.0	6.6	7.0
22674S	3.1	8.0	-4.0	1.10	-200.0	14.0	100.0	1.2	9.3	-5.0	1.0	13.0	16.3	6.0
22676S	3.6	8.0	-4.0	1.10	200.0	24.0	110.0	2.8	13.6	-5.0	1.0	14.0	4.0	-4.0
22679S	3.6	8.0	-4.0	0.98	-200.0	12.0	130.0	1.3	12.9	-5.0	1.0	15.0	4.3	-4.0
22681S	4.1	8.0	-4.0	1.30	-200.0	10.0	140.0	0.7	14.6	-5.0	1.0	14.0	5.2	5.0
22689S	2.5	8.0	-4.0	1.20	-200.0	10.0	50.0	1.0	10.3	-5.0	-1.0	9.8	3.4	-4.0
22692S	3.2	7.0	-4.0	0.66	-200.0	8.0	80.0	1.3	11.2	-5.0	1.0	8.2	2.8	-4.0
22785S	3.7	8.0	-4.0	0.50	-200.0	14.0	110.0	3.9	11.3	5.0	-1.0	10.0	3.5	82.0
22788S	2.6	6.0	-4.0	1.80	-200.0	14.0	350.0	0.9	8.4	-5.0	2.0	19.0	12.0	10.0
22789S	3.0	12.0	-4.0	1.00	-200.0	60.0	250.0	0.9	10.2	-5.0	-1.0	36.0	16.8	9.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22592S	66.0	36.0	66.0	4.3	1.3	2.4	0.3
22595S	610.0	140.0	245.0	16.8	1.0	13.5	2.2
22605S	61.0	42.0	68.0	4.4	1.2	2.2	0.3
22610S	76.0	50.0	89.0	5.9	1.2	3.0	0.4
22615S	95.0	52.0	86.0	5.1	1.8	2.4	0.3
22618S	250.0	57.0	96.0	6.5	1.7	2.8	0.5
22628S	890.0	103.0	179.0	13.3	0.6	11.0	1.4
22635S	95.0	58.0	101.0	7.0	1.7	3.4	0.4
22643S	76.0	53.0	88.0	6.3	1.1	3.1	0.4
22645S	290.0	99.0	168.0	11.3	1.2	5.6	1.1
22647S	90.0	46.0	82.0	5.3	1.3	2.8	0.4
22651S	65.0	39.0	65.0	4.9	0.7	3.2	0.7
22657S	160.0	63.0	108.0	6.6	1.2	3.9	0.6
22658S	73.0	49.0	79.0	5.3	1.8	2.9	0.4
22663S	70.0	32.0	53.0	3.7	0.8	2.1	0.3
22669S	100.0	41.0	72.0	4.5	-0.2	2.7	0.4
22674S	87.0	42.0	64.0	4.6	-0.2	3.0	0.6
22676S	110.0	50.0	86.0	6.0	2.0	3.1	0.5
22679S	110.0	71.0	102.0	8.3	2.6	3.4	0.5
22681S	72.0	49.0	80.0	5.8	1.5	3.1	0.5
22689S	53.0	36.0	61.0	4.0	1.2	2.3	0.3
22692S	56.0	32.0	55.0	4.0	1.0	2.1	0.3
22785S	83.0	39.0	67.0	4.9	1.3	2.7	0.4
22788S	52.0	37.0	74.0	4.7	0.7	4.1	0.6
22789S	230.0	89.0	142.0	9.7	1.6	6.2	1.0

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22793S	65.541	146.711	C-6	8	5	10	0	-0.5	4.0	6.0	600.0	-0.7	9.0	50.0	2.0	12.0
22794S	65.463	145.770	B-4	7	10	6	0	-0.5	58.0	9.0	400.0	-0.5	16.0	50.0	3.0	33.0
22796S	65.631	146.949	C-6	9	4	5	0	-0.5	8.0	-6.0	800.0	1.1	17.0	90.0	9.0	36.0
22799S	65.623	146.380	C-5	9	7	7	0	-0.5	15.0	-5.0	600.0	-0.7	16.0	80.0	6.0	29.0
22800S	65.451	146.532	B-6	7	6	9	0	-0.5	21.0	11.0	600.0	1.1	10.0	30.0	21.0	9.5
22802S	65.558	146.266	C-5	9	7	34	0	-0.5	10.0	-5.0	600.0	-0.6	15.0	60.0	3.0	21.0
22805S	65.634	146.660	C-6	9	5	2	0	-0.5	9.0	-6.0	600.0	-1.0	10.0	50.0	12.0	33.0
22807S	65.408	146.487	B-5	7	6	27	0	-0.5	27.0	-5.0	900.0	-0.7	15.0	70.0	18.0	33.0
22808S	65.511	146.711	C-6	8	5	22	0	-0.5	9.0	-5.0	600.0	1.1	12.0	50.0	8.0	14.0
22809S	65.520	146.103	C-5	8	8	16	0	-0.5	9.0	-5.0	500.0	-0.5	9.0	40.0	3.0	15.0
22810S	65.691	146.632	C-6	10	5	14	0	-0.5	14.0	-5.0	700.0	-0.9	17.0	70.0	11.0	30.0
22813S	65.509	146.194	C-5	8	8	19	0	-0.5	9.0	-5.0	600.0	-0.7	10.0	50.0	6.0	17.0
22819S	65.478	146.795	B-6	8	5	31	0	-0.5	8.0	11.0	700.0	0.9	17.0	80.0	4.0	26.0
22831S	65.672	146.882	C-6	10	4	22	0	-0.5	3.0	-5.0	700.0	-0.6	10.0	60.0	5.0	22.0
22833S	65.465	145.783	B-4	7	10	6	0	-0.5	33.0	-5.0	200.0	1.1	12.0	50.0	2.0	29.0
22834S	65.642	146.449	C-5	9	6	2	0	-0.5	6.0	-5.0	600.0	-0.6	9.0	70.0	3.0	16.0
22835S	65.535	146.225	C-5	8	7	12	0	-0.5	13.0	-5.0	500.0	-0.6	12.0	50.0	2.0	19.0
22849S	65.446	146.845	B-6	7	4	12	8	-0.5	8.0	-7.0	800.0	-1.0	30.0	90.0	2.0	18.0
22851S	65.539	146.473	C-5	8	6	10	0	-0.5	27.0	-6.0	700.0	1.1	15.0	80.0	4.0	29.0
22855S	65.678	146.506	C-6	10	6	21	0	-0.5	5.0	-5.0	400.0	-0.8	7.0	30.0	6.0	16.0
22865S	65.406	146.800	B-6	7	5	30	0	-0.5	8.0	-5.0	400.0	-0.7	9.0	60.0	7.0	13.0
22870S	65.533	146.779	C-6	8	5	8	0	-0.5	4.0	-6.0	500.0	-0.7	11.0	60.0	3.0	20.0
22884S	65.417	146.797	B-6	7	5	19	0	-0.5	6.0	-5.0	400.0	-0.5	9.0	40.0	5.0	8.0
22887S	65.515	146.375	C-5	8	7	18	0	-0.5	11.0	-5.0	400.0	-0.5	9.0	40.0	1.0	16.0
22899S	65.574	146.774	C-6	9	5	30	0	-0.5	9.0	-9.0	800.0	2.2	9.0	70.0	8.0	18.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22793S	2.1	6.0	-4.0	0.72	-200.0	10.0	80.0	0.7	8.7	-5.0	-1.0	8.4	2.6	-4.0
22794S	3.9	5.0	-4.0	0.58	-200.0	16.0	70.0	12.0	12.6	-5.0	-1.0	7.1	2.0	7.0
22796S	4.1	9.0	-4.0	0.89	-200.0	48.0	160.0	0.9	15.5	-5.0	1.0	15.0	5.5	-4.0
22799S	3.9	10.0	-4.0	1.50	-200.0	16.0	140.0	0.8	14.0	-5.0	1.0	17.0	7.5	6.0
22800S	2.4	7.0	-4.0	1.80	-200.0	12.0	400.0	1.2	8.1	-5.0	2.0	24.0	24.8	-5.0
22802S	3.1	9.0	-4.0	0.82	-200.0	16.0	130.0	3.3	10.4	-5.0	1.0	12.0	3.3	-4.0
22805S	3.2	11.0	6.0	1.20	-200.0	90.0	410.0	0.8	10.4	-5.0	1.0	53.0	39.1	8.0
22807S	3.8	8.0	-4.0	0.93	-200.0	44.0	170.0	1.6	13.6	-5.0	-1.0	16.0	6.1	5.0
22808S	2.9	7.0	-4.0	1.30	-200.0	14.0	180.0	0.6	8.8	-5.0	1.0	21.0	10.6	7.0
22809S	2.6	14.0	-4.0	1.10	-200.0	8.0	110.0	1.3	8.4	9.0	1.0	14.0	6.3	8.0
22810S	4.1	9.0	5.0	0.84	-200.0	80.0	220.0	1.0	13.7	9.0	-1.0	16.0	4.7	-4.0
22813S	2.8	8.0	6.0	1.30	-200.0	10.0	160.0	0.8	9.5	-5.0	-1.0	15.0	10.0	-4.0
22819S	4.1	7.0	7.0	1.10	-200.0	8.0	80.0	1.2	16.8	-5.0	-1.0	10.0	3.2	-8.0
22831S	2.9	12.0	21.0	1.20	-200.0	22.0	220.0	0.8	11.1	19.0	1.0	40.0	13.7	-6.0
22833S	3.5	5.0	-4.0	0.53	-200.0	8.0	70.0	2.6	12.8	-5.0	-1.0	5.6	1.5	9.0
22834S	2.7	8.0	-4.0	0.97	-200.0	12.0	110.0	0.6	11.5	-5.0	1.0	10.0	3.8	-4.0
22835S	3.0	9.0	-4.0	1.00	-200.0	10.0	100.0	1.4	9.8	-5.0	1.0	12.0	5.1	-4.0
22849S	4.8	9.0	6.0	1.30	-200.0	14.0	80.0	1.0	16.2	-5.0	-1.0	11.0	3.5	-4.0
22851S	3.7	8.0	-4.0	0.91	-200.0	26.0	130.0	5.0	12.7	-5.0	1.0	15.0	5.1	-4.0
22855S	2.2	10.0	-4.0	1.10	-200.0	60.0	270.0	0.5	7.9	-5.0	1.0	39.0	13.7	4.0
22865S	2.3	9.0	-4.0	1.10	-200.0	10.0	130.0	0.9	9.5	-5.0	1.0	12.0	5.1	-5.0
22870S	2.5	5.0	-4.0	0.67	-200.0	18.0	100.0	0.6	10.0	-5.0	1.0	8.1	2.8	-4.0
22884S	2.4	9.0	-4.0	1.00	-200.0	6.0	100.0	1.2	8.3	-5.0	1.0	13.0	5.7	6.0
22887S	2.5	5.0	-4.0	0.61	-200.0	10.0	110.0	1.5	7.9	-5.0	-1.0	8.8	2.2	-4.0
22899S	2.7	12.0	-4.0	1.30	-200.0	46.0	230.0	1.1	10.7	-5.0	1.0	70.0	65.7	13.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22793S	51.0	34.0	65.0	3.8	0.7	2.2	0.3
22794S	64.0	21.0	40.0	2.6	0.9	1.8	0.2
22796S	140.0	53.0	82.0	6.3	1.9	3.7	0.5
22799S	70.0	61.0	95.0	6.9	2.3	3.8	0.6
22800S	53.0	45.0	79.0	6.2	-0.2	5.2	0.9
22802S	73.0	45.0	78.0	5.3	1.4	2.9	0.4
22805S	360.0	84.0	162.0	10.8	1.1	10.0	1.5
22807S	140.0	58.0	96.0	6.7	1.5	3.0	0.5
22808S	73.0	55.0	89.0	5.7	1.5	2.8	0.5
22809S	58.0	39.0	66.0	4.5	1.1	3.4	0.5
22810S	380.0	60.0	106.0	6.6	1.3	3.7	0.5
22813S	69.0	43.0	71.0	5.2	0.9	3.4	0.6
22819S	83.0	47.0	81.0	5.6	2.0	2.8	0.4
22831S	100.0	84.0	147.0	9.3	1.4	7.0	0.9
22833S	52.0	18.0	38.0	2.3	0.8	1.9	0.2
22834S	62.0	43.0	74.0	5.4	1.3	2.5	0.4
22835S	65.0	40.0	67.0	4.7	1.2	2.8	0.4
22849S	94.0	49.0	96.0	6.0	1.5	3.1	0.4
22851S	99.0	51.0	88.0	6.4	2.2	2.9	0.4
22855S	220.0	79.0	141.0	8.7	1.3	6.3	0.9
22865S	55.0	39.0	58.0	4.2	-0.2	2.5	0.4
22870S	73.0	32.0	53.0	3.7	1.3	2.0	0.3
22884S	44.0	41.0	66.0	4.3	1.1	3.0	0.4
22887S	59.0	27.0	47.0	2.7	0.8	1.3	0.2
22899S	300.0	129.0	222.0	16.4	1.1	12.6	2.0

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22902S	65.482	146.565	B-6	8	6	32	0	-0.5	11.0	-6.0	700.0	-0.7	10.0	50.0	3.0	15.0
22903S	65.485	146.924	B-6	8	4	28	0	-0.5	5.0	-5.0	700.0	-0.8	14.0	70.0	3.0	13.0
22905S	65.539	146.713	C-6	8	5	10	0	-0.5	14.0	-5.0	500.0	-0.6	12.0	50.0	4.0	19.0
22912S	65.504	146.124	C-5	8	8	21	0	-0.5	10.0	-5.0	800.0	-0.5	15.0	70.0	3.0	22.0
22913S	65.647	146.564	C-6	10	6	31	0	-0.5	5.0	5.0	700.0	-0.8	15.0	70.0	6.0	21.0
22919S	65.453	145.840	B-4	7	9	11	0	-0.5	40.0	10.0	400.0	-0.6	10.0	60.0	3.0	21.0
22921S	65.632	146.469	C-5	9	6	3	0	-0.5	5.0	-5.0	500.0	-0.6	12.0	50.0	4.0	17.0
22922S	65.415	146.545	B-6	7	6	20	0	-0.5	27.0	-9.0	800.0	-1.0	25.0	80.0	22.0	76.0
22924S	65.630	146.812	C-6	9	4	1	0	-0.5	6.0	12.0	600.0	2.1	-5.0	40.0	5.0	8.5
22927S	65.655	146.986	C-6	10	4	31	0	-0.5	11.0	-7.0	1300.0	2.0	20.0	110.0	10.0	31.0
22928S	65.448	146.454	B-5	7	6	11	0	-0.5	44.0	-10.0	700.0	-1.2	6.0	30.0	20.0	12.0
22934S	65.441	146.112	B-5	7	8	9	0	-0.5	15.0	6.0	600.0	-0.7	12.0	60.0	3.0	18.0
22936S	65.400	146.388	B-5	7	7	30	0	-0.5	13.0	-5.0	400.0	-0.5	8.0	30.0	5.0	17.0
22939S	65.511	145.663	C-4	8	10	22	0	-0.5	61.0	-5.0	300.0	-0.5	11.0	50.0	3.0	21.0
22951S	65.501	146.507	C-6	8	6	22	0	-0.5	15.0	-5.0	400.0	-0.7	13.0	50.0	2.0	17.0
22952S	65.541	146.264	C-5	8	7	11	0	-0.5	10.0	-5.0	600.0	-0.6	13.0	60.0	3.0	18.0
22953S	65.465	146.297	B-5	7	7	3	0	-0.5	8.0	-5.0	700.0	-0.6	12.0	60.0	2.0	19.0
22954S	65.621	146.860	C-6	9	4	11	0	-0.5	8.0	-10.0	400.0	-2.0	5.0	30.0	6.0	12.0
22956S	65.566	146.843	C-6	9	4	35	0	-0.5	10.0	12.0	900.0	-1.4	9.0	50.0	7.0	17.0
22961S	65.659	146.632	C-6	10	5	26	0	-0.5	8.0	12.0	800.0	-1.1	7.0	60.0	12.0	12.0
22965S	65.461	145.951	B-4	7	9	5	0	-0.5	32.0	-5.0	300.0	0.5	10.0	40.0	4.0	30.0
22966S	65.453	146.552	B-6	7	6	8	0	-0.5	11.0	-8.0	800.0	-1.0	6.0	70.0	19.0	9.5
22969S	65.427	146.760	B-6	7	5	17	0	-0.5	4.0	-5.0	500.0	0.6	15.0	70.0	8.0	16.0
22971S	65.465	146.870	B-6	7	4	2	0	-0.5	8.0	5.0	400.0	-0.6	19.0	80.0	3.0	43.0
22974S	65.611	146.530	C-6	9	6	17	0	-0.5	4.0	-5.0	500.0	-0.7	11.0	60.0	4.0	19.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Sn	Ta	Th	U	W
22902S	2.6	8.0	4.0	1.30	-200.0	12.0	100.0	2.3	9.0	-5.0	-1.0	11.0	4.1	-5.0
22903S	2.8	8.0	-4.0	0.83	-200.0	18.0	110.0	0.8	11.5	-5.0	-1.0	11.0	2.2	-4.0
22905S	3.0	8.0	-4.0	1.20	-200.0	12.0	130.0	1.2	9.2	-5.0	1.0	14.0	7.6	-4.0
22912S	3.5	8.0	-4.0	1.00	-200.0	12.0	110.0	0.9	12.6	-5.0	1.0	12.0	5.7	4.0
22913S	3.1	7.0	-4.0	0.79	-200.0	22.0	140.0	1.1	12.7	-5.0	1.0	12.0	2.7	-6.0
22919S	3.0	10.0	-4.0	0.56	-200.0	10.0	60.0	1.5	9.6	60.0	-1.0	7.1	2.2	59.0
22921S	3.2	6.0	-4.0	0.73	-200.0	10.0	120.0	0.7	10.5	-5.0	1.0	12.0	3.8	-4.0
22922S	5.0	6.0	10.0	0.82	-200.0	920.0	150.0	2.1	15.7	-5.0	1.0	14.0	10.5	-7.0
22924S	2.0	28.0	-4.0	1.90	-200.0	30.0	330.0	0.5	8.6	-5.0	2.0	100.0	32.9	7.0
22927S	4.5	8.0	-4.0	1.10	-200.0	34.0	190.0	1.2	17.5	-5.0	-1.0	17.0	5.1	-4.0
22928S	1.7	4.0	-4.0	1.30	-200.0	18.0	390.0	0.5	6.8	-5.0	2.0	22.0	114.0	11.0
22934S	3.3	7.0	-4.0	0.97	-200.0	12.0	110.0	11.0	11.0	-5.0	1.0	13.0	4.3	-4.0
22936S	2.4	7.0	-4.0	0.70	-200.0	12.0	150.0	0.7	6.7	-5.0	1.0	11.0	6.1	8.0
22939S	2.8	7.0	-4.0	0.67	-200.0	14.0	80.0	3.5	9.3	-5.0	1.0	8.2	2.4	-4.0
22951S	2.8	11.0	-4.0	0.79	-200.0	14.0	90.0	2.4	8.2	-5.0	1.0	14.0	6.7	-5.0
22952S	3.0	14.0	-4.0	1.00	-200.0	10.0	120.0	1.1	10.2	-5.0	1.0	15.0	4.7	-4.0
22953S	3.3	6.0	-4.0	0.79	-200.0	10.0	120.0	1.0	10.1	-5.0	-1.0	11.0	4.0	-4.0
22954S	2.6	22.0	-4.0	2.00	-200.0	38.0	480.0	0.5	8.3	-5.0	3.0	110.0	45.1	24.0
22956S	2.3	8.0	-4.0	1.10	200.0	34.0	170.0	0.9	9.9	-5.0	1.0	53.0	153.0	15.0
22961S	2.8	12.0	-4.0	1.30	-200.0	120.0	240.0	0.9	11.6	-5.0	1.0	67.0	29.9	-6.0
22965S	2.6	4.0	-4.0	0.39	-200.0	8.0	60.0	1.0	7.6	-5.0	-1.0	5.2	1.5	10.0
22966S	2.9	7.0	-4.0	1.30	-200.0	20.0	270.0	1.2	11.7	-5.0	2.0	21.0	44.7	-7.0
22969S	3.3	8.0	-4.0	0.95	-200.0	6.0	100.0	1.3	12.4	-5.0	1.0	10.0	3.1	-6.0
22971S	4.3	6.0	4.0	1.00	-200.0	10.0	80.0	0.8	15.5	-5.0	-1.0	8.8	2.2	-4.0
22974S	2.9	7.0	7.0	0.66	-200.0	22.0	120.0	0.5	11.2	-5.0	-1.0	11.0	2.6	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22902S	56.0	40.0	63.0	4.1	1.5	2.5	0.3
22903S	63.0	41.0	67.0	4.6	1.3	2.2	0.4
22905S	64.0	40.0	66.0	4.5	1.0	2.6	0.4
22912S	91.0	45.0	82.0	5.6	1.6	2.8	0.4
22913S	99.0	47.0	79.0	5.5	2.0	2.8	0.4
22919S	50.0	28.0	55.0	3.3	1.0	2.1	0.3
22921S	76.0	49.0	85.0	5.6	1.5	2.7	0.4
22922S	150.0	52.0	90.0	6.3	2.2	3.0	0.5
22924S	130.0	138.0	233.0	17.2	0.6	16.2	2.1
22927S	120.0	57.0	96.0	6.6	2.3	3.4	0.5
22928S	63.0	43.0	66.0	5.5	-0.6	4.9	0.6
22934S	72.0	46.0	70.0	5.2	1.2	2.7	0.4
22936S	56.0	30.0	56.0	4.0	0.9	2.2	0.4
22939S	58.0	34.0	55.0	3.4	1.3	1.8	0.2
22951S	49.0	45.0	76.0	4.6	1.5	2.9	0.4
22952S	62.0	50.0	90.0	5.7	1.1	4.0	0.6
22953S	75.0	38.0	62.0	4.2	1.4	1.9	0.3
22954S	160.0	145.0	266.0	16.4	-1.1	13.8	2.4
22956S	220.0	126.0	200.0	17.9	-0.2	14.2	2.7
22961S	230.0	111.0	174.0	14.1	0.7	8.9	1.5
22965S	64.0	20.0	37.0	2.3	0.8	1.5	0.2
22966S	47.0	46.0	71.0	5.6	0.7	5.6	0.9
22969S	76.0	41.0	65.0	4.7	1.1	2.5	0.3
22971S	75.0	30.0	54.0	3.7	1.0	2.2	0.3
22974S	97.0	40.0	75.0	4.7	1.5	2.5	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
22980S	65.569	146.845	C-6	9	4	35	0	0.5	11.0	-12.0	700.0	-1.9	9.0	70.0	8.0	18.0
22985S	65.647	146.904	C-6	10	4	34	0	-0.5	16.0	-7.0	1400.0	-1.1	17.0	100.0	8.0	20.0
22988S	65.504	146.059	C-5	8	8	23	0	-0.5	43.0	-5.0	500.0	-0.5	12.0	50.0	4.0	31.0
22994S	65.509	146.433	C-5	8	6	24	0	-0.5	8.0	-5.0	400.0	-0.5	10.0	50.0	2.0	17.0
22996S	65.671	146.967	C-6	10	4	29	0	-0.5	11.0	-5.0	1700.0	-0.5	18.0	80.0	8.0	34.0
23004S	65.463	146.889	B-6	7	4	3	0	-0.5	11.0	-5.0	600.0	-0.5	12.0	60.0	4.0	20.0
23008S	65.509	146.347	C-5	8	7	20	0	-0.5	11.0	-5.0	500.0	-0.5	8.0	50.0	2.0	15.0
23011S	65.544	146.230	C-5	8	7	1	0	-0.5	11.0	-6.0	600.0	1.0	13.0	60.0	3.0	22.0
23015S	65.656	146.815	C-6	10	4	36	0	1.0	20.0	-9.0	800.0	-1.3	21.0	100.0	12.0	48.0
23017S	65.532	146.605	C-6	8	6	7	0	-0.5	14.0	7.0	500.0	-0.9	12.0	60.0	4.0	23.0
23019S	65.516	146.401	C-5	8	7	18	0	-0.5	10.0	-5.0	500.0	-0.5	9.0	40.0	2.0	14.0
23021S	65.504	146.198	C-5	8	7	24	0	-0.5	8.0	-5.0	500.0	-0.8	10.0	50.0	7.0	17.0
23028S	65.448	146.467	B-5	7	6	11	0	-0.5	18.0	6.0	300.0	-0.8	-5.0	30.0	17.0	7.5
23029S	65.578	146.860	C-6	9	4	26	0	-0.5	8.0	-9.0	800.0	-1.4	5.0	50.0	3.0	14.0
23038S	65.530	146.413	C-5	8	6	12	0	-0.5	24.0	-5.0	700.0	-0.8	14.0	70.0	4.0	30.0
23047S	65.593	146.767	C-6	9	5	20	0	0.5	15.0	11.0	500.0	-1.1	5.0	40.0	8.0	34.0
23048S	65.605	146.751	C-6	9	5	17	0	-0.5	10.0	-5.0	400.0	-0.9	7.0	20.0	8.0	21.0
23049S	65.559	146.427	C-5	9	6	35	0	-0.5	20.0	6.0	600.0	-0.8	8.0	70.0	6.0	12.0
23404S	65.523	146.921	C-6	8	4	16	0	-0.5	9.0	6.0	800.0	1.4	18.0	80.0	6.0	25.0
23405S	65.610	146.403	C-5	9	6	13	0	-0.5	18.0	5.0	500.0	-0.7	15.0	80.0	5.0	22.0
23408S	65.498	145.941	B-4	8	9	29	0	-0.5	33.0	-5.0	400.0	-0.5	14.0	40.0	5.0	30.0
23410S	65.675	146.726	C-6	10	5	21	0	-0.5	7.0	6.0	1000.0	-1.0	16.0	80.0	8.0	29.0
23418S	65.404	146.653	B-6	7	5	26	0	-0.5	19.0	-5.0	300.0	-0.6	7.0	30.0	16.0	17.0
23420S	65.669	146.561	C-6	10	6	29	0	-0.5	8.0	-6.0	700.0	-0.7	15.0	60.0	5.0	23.0
23421S	65.461	145.949	B-4	7	9	5	0	-0.5	77.0	6.0	600.0	1.0	15.0	70.0	8.0	81.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
22980S	2.5	12.0	-4.0	1.20	200.0	32.0	190.0	1.0	10.4	-5.0	2.0	99.0	220.0	27.0
22985S	4.3	9.0	-4.0	1.00	-200.0	30.0	160.0	1.3	17.9	-5.0	-1.0	18.0	4.3	-4.0
22988S	3.3	8.0	-4.0	0.49	-200.0	20.0	90.0	3.6	10.0	-5.0	-1.0	9.4	3.2	4.0
22994S	2.6	7.0	-4.0	0.81	-200.0	12.0	90.0	1.8	8.3	-5.0	1.0	10.0	3.0	-4.0
22996S	4.7	8.0	11.0	0.53	-200.0	16.0	200.0	1.3	15.8	-5.0	-1.0	19.0	3.6	-7.0
23004S	3.3	10.0	6.0	0.98	-200.0	10.0	140.0	1.1	11.6	-5.0	1.0	19.0	9.0	-6.0
23008S	2.6	6.0	-4.0	0.72	-200.0	12.0	100.0	1.4	8.3	-5.0	-1.0	8.9	2.2	-4.0
23011S	3.5	8.0	5.0	0.92	-200.0	10.0	130.0	0.8	11.0	-5.0	1.0	14.0	3.2	-4.0
23015S	4.6	7.0	6.0	1.00	-200.0	170.0	170.0	1.3	16.4	-5.0	-1.0	19.0	9.4	-4.0
23017S	2.8	6.0	-4.0	0.81	-200.0	16.0	70.0	0.6	10.5	-5.0	-1.0	9.3	16.7	-7.0
23019S	2.6	7.0	-4.0	0.70	-200.0	10.0	100.0	1.6	7.9	-5.0	-1.0	9.6	2.8	-4.0
23021S	2.7	9.0	-4.0	1.30	-200.0	8.0	150.0	0.7	9.3	-5.0	2.0	16.0	9.0	6.0
23028S	1.7	6.0	-4.0	1.70	-200.0	16.0	360.0	0.9	6.3	-5.0	3.0	25.0	40.7	6.0
23029S	2.0	12.0	-4.0	1.10	200.0	28.0	130.0	0.5	8.5	-5.0	-1.0	77.0	85.3	-7.0
23038S	3.8	7.0	-4.0	1.00	-200.0	18.0	140.0	5.4	12.1	-5.0	-1.0	15.0	3.6	-4.0
23047S	2.1	12.0	-4.0	0.96	-200.0	100.0	250.0	0.6	7.5	-5.0	1.0	77.0	53.4	16.0
23048S	2.1	8.0	-4.0	1.30	-200.0	210.0	510.0	0.8	6.9	-5.0	2.0	62.0	64.0	-4.0
23049S	2.7	8.0	-4.0	1.10	-200.0	18.0	90.0	1.0	10.3	-5.0	1.0	14.0	7.8	-4.0
23404S	4.3	7.0	-4.0	0.70	-200.0	26.0	190.0	1.4	14.2	-5.0	-1.0	15.0	3.8	4.0
23405S	3.6	6.0	-4.0	1.10	-200.0	12.0	130.0	0.7	10.9	-5.0	-1.0	12.0	5.7	-4.0
23408S	3.1	6.0	5.0	0.53	-200.0	8.0	110.0	1.3	9.7	-5.0	-1.0	7.9	2.4	55.0
23410S	3.5	10.0	-4.0	1.10	-200.0	18.0	130.0	0.7	15.1	-5.0	-1.0	14.0	3.9	-4.0
23418S	2.1	7.0	-4.0	1.40	-200.0	14.0	270.0	1.1	7.1	-5.0	-1.0	13.0	19.3	13.0
23420S	3.1	5.0	-4.0	0.66	-200.0	110.0	170.0	0.7	10.4	-5.0	-1.0	14.0	3.3	-5.0
23421S	3.6	5.0	7.0	0.74	-200.0	14.0	120.0	0.7	12.7	-5.0	-1.0	7.7	2.6	14.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
22980S	240.0	219.0	367.0	28.0	1.1	19.2	3.8
22985S	88.0	63.0	112.0	7.2	2.2	3.7	0.5
22988S	67.0	36.0	58.0	4.2	1.6	2.4	0.3
22994S	54.0	34.0	56.0	3.4	1.4	2.2	0.3
22996S	160.0	63.0	104.0	6.0	2.0	3.1	0.4
23004S	91.0	55.0	91.0	6.0	1.2	4.0	0.6
23008S	75.0	31.0	49.0	3.0	0.7	1.5	0.2
23011S	67.0	46.0	78.0	5.1	1.9	2.7	0.3
23015S	200.0	68.0	116.0	10.6	2.1	5.4	0.7
23017S	83.0	36.0	56.0	4.3	1.2	2.3	0.4
23019S	54.0	32.0	57.0	3.1	1.1	1.7	0.2
23021S	71.0	42.0	69.0	5.1	1.1	3.5	0.5
23028S	47.0	39.0	69.0	5.9	0.7	5.8	1.1
23029S	130.0	156.0	266.0	20.8	-0.7	14.5	2.4
23038S	94.0	49.0	73.0	5.1	2.0	2.5	0.3
23047S	750.0	101.0	164.0	11.8	0.8	10.0	1.5
23048S	700.0	73.0	133.0	10.1	0.8	9.6	1.7
23049S	62.0	38.0	61.0	4.0	1.3	2.5	0.4
23404S	97.0	53.0	92.0	1.4	-0.2	2.8	0.4
23405S	69.0	40.0	66.0	4.3	0.8	2.2	0.3
23408S	64.0	29.0	54.0	3.2	0.6	1.9	0.3
23410S	94.0	54.0	93.0	6.4	2.2	3.5	0.4
23418S	89.0	32.0	51.0	3.8	-0.2	3.0	0.5
23420S	270.0	46.0	79.0	5.0	1.3	2.3	0.4
23421S	75.0	33.0	55.0	4.0	1.2	2.2	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ce(%)	Co	Cr	Cs	Cu
23425S	65.423	146.748	B-6	7	5	20	0	-0.5	10.0	-6.0	600.0	-0.5	12.0	70.0	4.0	10.0
23426S	65.483	146.810	B-6	8	5	31	0	-0.5	5.0	-5.0	500.0	0.7	12.0	60.0	2.0	14.0
23430S	65.470	145.648	B-4	7	10	3	0	-0.5	19.0	-5.0	500.0	-0.6	9.0	50.0	2.0	22.0
23433S	65.668	146.752	C-6	10	5	29	0	-0.5	6.0	-6.0	900.0	-1.0	16.0	90.0	8.0	27.0
23436S	65.523	146.482	C-5	8	6	15	0	-0.5	16.0	-6.0	600.0	-0.8	12.0	60.0	3.0	22.0
23443S	65.506	145.727	C-4	8	10	20	0	-0.5	56.0	-5.0	100.0	-0.6	11.0	50.0	4.0	22.0
23450S	65.469	146.644	B-6	7	5	1	0	-0.5	20.0	-6.0	600.0	-0.9	10.0	30.0	16.0	13.0
23452S	65.488	145.927	B-4	8	9	29	0	-0.5	27.0	-5.0	400.0	-0.5	11.0	40.0	4.0	23.0
23455S	65.452	146.451	B-5	7	6	11	0	-0.5	31.0	11.0	200.0	-1.0	6.0	40.0	26.0	17.0
23458S	65.616	146.524	C-6	9	6	9	0	-0.5	4.0	-5.0	400.0	-0.6	10.0	40.0	2.0	15.0
23469S	65.402	146.359	B-5	7	7	29	0	-0.5	14.0	-6.0	400.0	-0.7	10.0	40.0	6.0	16.0
23473S	65.515	146.054	C-5	8	8	14	0	-0.5	2.0	-5.0	500.0	-0.7	7.0	60.0	1.0	5.0
23476S	65.692	146.803	C-6	10	5	18	0	-0.5	10.0	-6.0	1400.0	-0.6	23.0	100.0	7.0	27.0
23477S	65.646	146.669	C-6	10	5	34	0	1.0	14.0	-8.0	600.0	1.5	8.0	40.0	9.0	22.0
23479S	65.447	146.831	B-6	7	4	12	0	-0.5	7.0	-7.0	800.0	-1.1	21.0	80.0	4.0	22.0
23483S	65.534	146.037	C-5	8	8	11	-21	-0.5	32.0	-5.0	300.0	-0.5	9.0	30.0	3.0	23.0
23497S	65.599	146.370	C-5	9	7	19	0	-0.5	17.0	-5.0	600.0	-0.7	9.0	60.0	13.0	29.0
23505S	65.691	146.888	C-6	10	4	15	0	-1.2	-4.0	14.0	1000.0	-1.3	13.0	90.0	6.0	62.0
23506S	65.505	146.350	C-5	8	7	20	0	-0.5	11.0	-5.0	500.0	1.1	11.0	50.0	3.0	21.0
23507S	65.658	146.801	C-6	10	5	30	0	-0.5	17.0	-8.0	800.0	-1.4	19.0	100.0	9.0	42.0
23508S	65.454	146.918	B-6	7	4	10	9	-0.5	10.0	-6.0	600.0	-1.0	19.0	80.0	3.0	28.0
23521S	65.669	146.688	C-6	10	5	27	-5	-0.5	11.0	7.0	900.0	-1.0	19.0	90.0	11.0	36.0
23522S	65.677	146.707	C-6	10	5	21	0	-0.5	8.0	-7.0	800.0	-1.2	15.0	80.0	8.0	25.0
23523S	65.423	146.332	B-5	7	7	21	0	-0.5	19.0	-7.0	600.0	1.1	14.0	70.0	6.0	19.0
23525S	65.474	146.783	B-6	8	5	31	0	-0.5	9.0	-5.0	500.0	-0.5	13.0	50.0	2.0	14.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
23425S	3.1	8.0	-4.0	0.89	-200.0	4.0	100.0	1.0	11.8	-5.0	1.0	11.0	3.3	-7.0
23426S	3.0	8.0	4.0	1.00	-200.0	6.0	80.0	0.9	11.8	-5.0	1.0	11.0	4.0	-6.0
23430S	2.5	7.0	-4.0	0.72	-200.0	10.0	70.0	8.7	9.5	-5.0	-1.0	7.7	2.1	-4.0
23433S	3.8	10.0	-4.0	1.20	-200.0	20.0	140.0	0.8	16.0	-5.0	-1.0	15.0	4.6	5.0
23436S	3.3	11.0	-4.0	0.95	-200.0	16.0	120.0	2.3	10.9	-5.0	1.0	16.0	4.9	-4.0
23443S	2.6	6.0	-4.0	0.48	200.0	14.0	60.0	2.1	8.6	-5.0	-1.0	7.6	2.8	-4.0
23450S	2.6	12.0	-4.0	1.70	-200.0	20.0	240.0	0.6	8.3	-5.0	3.0	50.0	64.1	-4.0
23452S	2.6	8.0	-4.0	0.51	-200.0	10.0	90.0	0.4	8.0	-5.0	-1.0	8.4	2.5	140.0
23455S	2.3	5.0	-4.0	1.30	-200.0	28.0	330.0	1.1	9.0	-5.0	2.0	18.0	149.0	-7.0
23458S	2.8	9.0	-4.0	0.60	-200.0	10.0	90.0	0.4	8.8	-5.0	1.0	10.0	3.1	-4.0
23469S	2.1	6.0	-4.0	0.77	-200.0	16.0	120.0	0.9	7.7	-5.0	-1.0	9.9	3.5	-5.0
23473S	2.0	13.0	-4.0	1.30	-200.0	6.0	70.0	0.6	8.4	-5.0	-1.0	9.7	3.0	-4.0
23476S	5.3	7.0	4.0	0.63	-200.0	12.0	220.0	1.1	17.8	-5.0	1.0	19.0	4.3	-8.0
23477S	2.8	13.0	-4.0	1.00	-200.0	150.0	260.0	0.7	8.5	-5.0	-1.0	82.0	55.7	15.0
23479S	5.6	9.0	-4.0	1.80	-200.0	10.0	50.0	0.5	20.3	-5.0	-1.0	9.8	2.9	-4.0
23483S	2.5	10.0	-4.0	0.53	-200.0	10.0	60.0	2.8	6.9	-5.0	1.0	9.1	2.6	7.0
23497S	2.5	6.0	4.0	0.74	-200.0	12.0	80.0	0.6	9.8	-5.0	-1.0	8.6	3.5	12.0
23505S	3.2	28.0	-4.0	1.10	-200.0	72.0	180.0	1.2	13.4	-5.0	2.0	92.0	26.3	41.0
23506S	2.8	6.0	-4.0	0.90	-200.0	12.0	100.0	1.1	9.4	-5.0	-1.0	11.0	4.7	-4.0
23507S	4.0	8.0	-4.0	1.10	-200.0	110.0	120.0	0.9	14.2	-5.0	1.0	26.0	10.6	-4.0
23508S	4.1	8.0	5.0	1.10	-200.0	16.0	80.0	1.5	14.9	-5.0	1.0	11.0	2.9	4.0
23521S	4.4	10.0	-4.0	0.99	-200.0	110.0	220.0	1.0	16.6	-5.0	-1.0	16.0	3.8	-4.0
23522S	3.8	13.0	-4.0	1.20	-200.0	54.0	220.0	1.0	15.0	-5.0	2.0	34.0	10.1	4.0
23523S	3.2	5.0	-4.0	0.71	-200.0	18.0	100.0	1.1	11.2	-5.0	-1.0	10.0	2.3	-7.0
23525S	3.3	10.0	-4.0	1.00	-200.0	4.0	70.0	1.5	11.0	-5.0	1.0	9.7	1.8	-6.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
23425S	54.0	39.0	63.0	4.0	1.6	2.8	0.4
23426S	57.0	41.0	67.0	4.5	1.1	2.7	0.4
23430S	54.0	29.0	47.0	3.2	0.8	1.8	0.2
23433S	96.0	62.0	102.0	6.8	1.4	3.6	0.5
23436S	70.0	56.0	89.0	5.8	1.4	3.1	0.4
23443S	66.0	32.0	50.0	3.6	0.6	2.1	0.3
23450S	81.0	95.0	150.0	8.9	0.7	6.0	0.1
23452S	59.0	34.0	65.0	3.5	0.9	2.0	0.3
23455S	78.0	41.0	56.0	4.5	1.0	5.1	0.6
23458S	72.0	40.0	69.0	4.4	1.0	2.4	0.3
23469S	58.0	37.0	55.0	3.8	1.5	2.3	0.3
23473S	40.0	35.0	53.0	3.6	1.2	2.5	0.4
23476S	130.0	66.0	110.0	6.1	1.7	2.9	0.5
23477S	350.0	120.0	198.0	17.3	1.0	13.4	2.0
23479S	79.0	44.0	80.0	5.3	2.1	3.5	0.5
23483S	50.0	30.0	50.0	3.4	1.6	2.7	0.3
23497S	64.0	32.0	51.0	3.7	-0.2	2.1	0.3
23505S	310.0	206.0	311.0	19.1	1.6	11.7	1.5
23506S	71.0	37.0	63.0	3.9	-0.2	2.3	0.3
23507S	180.0	69.0	115.0	9.9	1.5	5.2	0.7
23508S	85.0	46.0	83.0	5.4	1.4	2.8	0.4
23521S	350.0	66.0	113.0	7.0	2.1	3.5	0.4
23522S	180.0	89.0	152.0	10.1	2.1	5.9	0.8
23523S	70.0	37.0	63.0	4.3	1.0	2.1	0.3
23525S	59.0	40.0	62.0	4.3	1.0	2.4	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
23528S	65.452	146.655	B-6	7	5	11	0	-0.5	15.0	-5.0	600.0	-0.5	11.0	50.0	6.0	13.0
23538S	65.539	146.843	C-6	8	4	12	0	-0.5	16.0	-7.0	700.0	-0.5	13.0	90.0	10.0	33.0
23541S	65.529	146.960	C-6	8	4	9	0	-0.5	8.0	-7.0	1000.0	1.2	18.0	100.0	8.0	26.0
23542S	65.616	146.486	C-5	9	6	10	0	-0.5	11.0	-6.0	900.0	-0.9	19.0	80.0	4.0	22.0
23544S	65.618	146.262	B-5	7	7	23	0	-0.5	7.0	-5.0	500.0	-0.7	10.0	50.0	2.0	17.0
23546S	65.441	146.483	B-5	7	6	15	0	-0.5	51.0	-9.0	500.0	-1.1	5.0	30.0	17.0	15.0
23549S	65.423	145.884	B-4	7	9	22	0	-0.5	29.0	-5.0	500.0	-0.7	11.0	70.0	2.0	16.0
23550S	65.517	145.638	C-4	8	10	14	0	-0.5	67.0	10.0	400.0	-0.6	15.0	50.0	3.0	34.0
23551S	65.552	146.951	C-6	8	4	4	0	-0.5	8.0	-7.0	900.0	-1.2	18.0	100.0	13.0	17.0
23553S	65.550	146.318	C-5	8	7	4	0	-0.5	22.0	-5.0	500.0	-0.6	8.0	40.0	3.0	13.0
23555S	65.446	146.380	B-5	7	7	7	0	-0.5	17.0	-6.0	500.0	0.8	9.0	40.0	11.0	23.0
23558S	65.415	146.446	B-5	7	6	23	0	-0.5	17.0	-5.0	500.0	-0.7	6.0	40.0	15.0	14.0
23559S	65.600	146.538	C-6	9	6	17	0	-0.5	6.0	-5.0	500.0	1.0	12.0	50.0	3.0	20.0
23567S	65.458	146.323	B-5	7	7	4	0	-0.5	18.0	6.0	500.0	-0.7	11.0	50.0	6.0	19.0
23569S	65.473	146.058	B-5	8	8	35	0	-0.5	52.0	-6.0	600.0	-0.8	12.0	50.0	4.0	20.0
23571S	65.486	145.860	B-4	8	9	27	0	-0.5	34.0	-5.0	400.0	-0.6	14.0	40.0	5.0	36.0
23575S	65.456	146.558	B-6	7	6	5	0	-0.5	13.0	-6.0	400.0	0.9	8.0	50.0	8.0	20.0
23580S	65.400	146.361	B-5	7	7	29	0	-0.5	13.0	-5.0	300.0	-0.5	7.0	20.0	5.0	15.0
23584S	65.479	146.644	B-6	8	5	35	0	-0.5	11.0	-12.0	1300.0	-2.4	5.0	50.0	20.0	9.0
23588S	65.609	146.995	C-6	9	4	18	0	-0.5	11.0	-5.0	800.0	-0.9	22.0	110.0	7.0	45.0
23595S	65.443	146.325	B-5	7	7	9	0	-0.5	13.0	-6.0	800.0	1.4	16.0	80.0	7.0	17.0
23600S	65.619	146.642	C-6	9	5	11	0	-0.5	9.0	-6.0	700.0	-0.9	16.0	90.0	15.0	38.0
23601S	65.494	146.561	B-6	8	6	29	0	-0.5	17.0	-8.0	400.0	1.2	9.0	30.0	12.0	10.0
23602S	65.481	146.900	B-6	8	4	34	0	-0.5	5.0	-5.0	600.0	-1.0	11.0	70.0	3.0	11.0
23609S	65.454	146.918	B-6	7	4	10	-9	-0.5	6.0	-5.0	600.0	1.1	17.0	80.0	3.0	22.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
23528S	3.0	8.0	4.0	1.30	-200.0	10.0	150.0	1.6	9.7	-5.0	1.0	15.0	14.9	-6.0
23538S	3.7	8.0	-4.0	0.69	-200.0	24.0	150.0	1.6	14.8	-5.0	-1.0	12.0	3.5	-4.0
23541S	4.0	7.0	-4.0	0.79	-200.0	34.0	150.0	1.0	16.7	-5.0	-1.0	16.0	4.5	5.0
23542S	3.9	8.0	-4.0	1.00	-200.0	18.0	130.0	1.0	14.3	-5.0	1.0	12.0	3.2	5.0
23544S	2.8	10.0	-4.0	1.10	-200.0	10.0	80.0	0.7	8.9	-5.0	-1.0	12.0	4.3	-4.0
23546S	1.9	8.0	-4.0	1.10	-200.0	18.0	260.0	1.0	7.4	-5.0	2.0	35.0	81.1	13.0
23549S	3.3	11.0	-4.0	0.84	-200.0	10.0	60.0	12.0	12.0	-5.0	-1.0	9.9	3.6	-4.0
23550S	3.4	6.0	-4.0	0.45	-200.0	14.0	90.0	1.8	10.5	-5.0	-1.0	6.7	1.3	-4.0
23551S	4.4	8.0	-4.0	1.10	-200.0	34.0	150.0	0.9	16.2	-5.0	-1.0	13.0	3.7	-4.0
23553S	2.0	7.0	-4.0	1.10	-200.0	24.0	70.0	2.7	6.8	-5.0	-1.0	9.1	4.1	-4.0
23555S	2.5	6.0	-4.0	1.10	-200.0	16.0	230.0	0.9	8.3	-5.0	2.0	15.0	15.1	-5.0
23558S	2.0	5.0	-4.0	1.50	-200.0	16.0	300.0	0.6	8.0	-5.0	2.0	15.0	44.5	6.0
23559S	3.1	7.0	6.0	0.67	-200.0	16.0	90.0	0.6	9.8	-5.0	1.0	11.0	2.8	4.0
23567S	2.8	6.0	-4.0	0.87	-200.0	16.0	90.0	0.8	9.6	-5.0	-1.0	11.0	2.6	-4.0
23569S	18.8	6.0	-4.0	0.68	-200.0	12.0	80.0	2.7	9.2	-5.0	-1.0	7.7	11.9	-4.0
23571S	2.8	8.0	-4.0	0.72	-200.0	14.0	100.0	0.6	9.1	-5.0	-1.0	11.0	4.7	170.0
23575S	2.4	6.0	-4.0	0.84	-200.0	14.0	160.0	1.0	8.1	-5.0	1.0	14.0	20.3	8.0
23580S	1.8	5.0	-4.0	0.72	-200.0	10.0	110.0	0.7	5.4	-5.0	1.0	8.4	6.5	-4.0
23584S	2.3	13.0	5.0	1.70	-400.0	18.0	190.0	0.9	9.6	-8.0	-2.0	50.0	192.0	-4.0
23588S	4.4	7.0	4.0	0.74	-200.0	40.0	170.0	1.6	15.1	-5.0	-1.0	19.0	5.7	4.0
23595S	3.7	9.0	-4.0	0.92	-200.0	14.0	200.0	0.7	13.8	-5.0	-1.0	14.0	4.3	-4.0
23600S	4.2	8.0	-4.0	0.57	-200.0	22.0	160.0	1.4	15.4	-5.0	-1.0	14.0	4.5	-4.0
23601S	2.4	10.0	-4.0	1.70	-200.0	22.0	170.0	0.6	6.9	-5.0	4.0	36.0	147.0	11.0
23602S	2.8	9.0	-4.0	1.00	-200.0	14.0	100.0	0.9	11.7	-5.0	-1.0	13.0	3.4	-4.0
23609S	3.6	7.0	-4.0	1.20	-200.0	12.0	100.0	1.4	13.1	-5.0	-1.0	9.8	3.0	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
23528S	69.0	44.0	72.0	4.6	1.2	2.6	0.4
23538S	97.0	45.0	87.0	5.6	2.2	3.2	0.5
23541S	87.0	59.0	102.0	6.6	1.7	3.3	0.4
23542S	78.0	43.0	76.0	5.0	1.9	3.1	0.4
23544S	72.0	38.0	62.0	3.9	-0.2	2.6	0.3
23546S	62.0	61.0	100.0	8.9	1.1	7.0	1.4
23549S	49.0	36.0	64.0	4.1	1.9	2.7	0.4
23550S	87.0	30.0	49.0	3.7	0.9	2.0	0.3
23551S	140.0	52.0	86.0	6.1	1.5	3.2	0.4
23553S	71.0	30.0	50.0	3.2	-0.2	1.8	0.2
23555S	110.0	34.0	53.0	4.5	-0.2	3.1	0.5
23558S	62.0	32.0	57.0	4.2	0.8	3.9	-0.1
23559S	75.0	42.0	70.0	4.6	1.9	2.4	0.3
23567S	77.0	38.0	65.0	4.1	1.0	2.2	0.3
23569S	65.0	49.0	70.0	4.6	1.1	3.0	0.4
23571S	73.0	39.0	67.0	3.9	1.1	2.0	0.3
23575S	66.0	38.0	55.0	4.5	1.1	3.1	0.5
23580S	45.0	25.0	42.0	2.6	0.5	1.8	0.3
23584S	70.0	112.0	154.0	9.6	-1.9	6.6	0.9
23588S	160.0	61.0	116.0	6.4	1.4	3.4	0.5
23595S	81.0	49.0	83.0	5.0	1.2	2.9	0.4
23600S	88.0	55.0	91.0	6.1	1.4	3.3	0.4
23601S	83.0	81.0	118.0	7.1	0.8	5.6	0.6
23602S	60.0	51.0	85.0	5.6	1.7	2.6	0.3
23609S	74.0	42.0	70.0	4.8	1.5	2.6	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
23611S	65.534	146.788	C-6	8	5	7	0	-0.5	5.0	-6.0	800.0	-1.1	13.0	70.0	4.0	17.0
23614S	65.579	146.303	C-5	9	7	28	0	-0.5	15.0	-5.0	500.0	-0.7	11.0	50.0	5.0	27.0
23615S	65.550	146.504	C-6	8	6	3	0	-0.5	7.0	6.0	500.0	-0.9	15.0	80.0	6.0	20.0
23621S	65.450	146.748	B-6	7	5	9	0	-0.5	6.0	-5.0	600.0	0.9	16.0	80.0	9.0	18.0
23624S	65.439	146.788	B-6	7	5	18	0	-0.5	6.0	-5.0	600.0	0.7	20.0	90.0	8.0	17.0
23629S	65.660	146.638	C-6	10	5	26	0	-0.5	4.0	9.0	700.0	-1.0	7.0	50.0	11.0	12.0
23631S	65.544	146.575	C-6	8	6	5	0	-0.5	6.0	-5.0	400.0	-0.6	9.0	50.0	3.0	17.0
23632S	65.581	146.621	C-6	9	5	25	0	-0.5	8.0	-6.0	800.0	-1.1	13.0	90.0	3.0	32.0
23636S	65.424	145.879	B-4	7	9	22	0	-0.5	7.0	-5.0	400.0	-0.7	17.0	70.0	2.0	29.0
23637S	65.462	146.912	B-6	7	4	3	0	-0.5	9.0	10.0	500.0	0.9	12.0	50.0	3.0	23.0
23641S	65.467	145.731	B-4	7	10	5	0	-0.5	23.0	-5.0	500.0	-0.7	12.0	50.0	3.0	19.0
23647S	65.491	146.428	B-5	8	6	25	0	-0.5	29.0	-6.0	500.0	-0.7	14.0	50.0	8.0	37.0
23651S	65.516	145.729	C-4	8	10	17	0	-0.5	14.0	-5.0	400.0	-0.9	19.0	80.0	3.0	36.0
23652S	65.448	146.026	B-5	7	8	11	0	-0.5	17.0	5.0	500.0	-0.6	12.0	50.0	2.0	21.0
23654S	65.602	146.969	C-6	9	4	17	0	-0.5	15.0	6.0	700.0	-1.0	18.0	80.0	9.0	47.0
23655S	65.669	146.417	C-5	10	6	25	0	-0.5	5.0	-5.0	600.0	-0.7	9.0	60.0	2.0	9.0
23658S	65.531	146.922	C-6	8	4	9	0	-0.5	13.0	6.0	800.0	-0.9	14.0	80.0	7.0	32.0
23659S	65.524	146.643	C-6	8	5	13	0	-0.5	9.0	-7.0	600.0	1.0	11.0	60.0	4.0	18.0
23660S	65.427	146.729	B-6	7	5	21	0	-0.5	10.0	9.0	700.0	-0.5	11.0	70.0	3.0	8.0
23661S	65.659	146.926	C-6	10	4	28	0	-0.5	8.0	8.0	600.0	0.8	16.0	80.0	4.0	17.0
23662S	65.523	145.968	C-4	8	9	18	0	-0.5	27.0	6.0	300.0	-0.5	14.0	50.0	4.0	27.0
23664S	65.522	146.898	C-6	8	4	15	0	-0.5	5.0	9.0	800.0	-0.9	12.0	90.0	4.0	13.0
23665S	65.442	146.392	B-5	7	7	7	0	0.5	27.0	-8.0	600.0	-0.9	10.0	60.0	13.0	24.0
23667S	65.436	145.961	B-4	7	9	18	0	-0.5	46.0	10.0	400.0	1.3	11.0	50.0	6.0	35.0
23668S	65.428	146.228	B-5	7	7	13	0	-0.5	8.0	-5.0	600.0	-0.7	12.0	60.0	3.0	18.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
23611S	3.0	6.0	-4.0	0.80	-200.0	16.0	120.0	0.5	12.4	-5.0	-1.0	11.0	2.2	-4.0
23614S	3.1	7.0	-4.0	0.58	-200.0	22.0	110.0	2.2	9.8	-5.0	1.0	12.0	3.7	-4.0
23615S	3.4	9.0	-4.0	1.00	-200.0	10.0	150.0	1.0	12.7	-5.0	-1.0	10.0	4.2	-4.0
23621S	3.7	8.0	-4.0	1.10	-200.0	10.0	90.0	1.5	13.5	-5.0	-1.0	10.0	3.4	-8.0
23624S	4.3	9.0	4.0	1.20	-200.0	4.0	90.0	0.8	15.3	-5.0	1.0	10.0	3.2	-7.0
23629S	2.5	11.0	-4.0	1.20	-200.0	120.0	190.0	0.9	10.3	-5.0	1.0	51.0	23.3	-6.0
23631S	2.7	5.0	-4.0	0.64	-200.0	12.0	100.0	0.5	8.3	-5.0	-1.0	8.3	2.5	-5.0
23632S	3.7	6.0	-4.0	0.75	-200.0	22.0	80.0	0.9	13.0	-5.0	1.0	10.0	4.5	-4.0
23636S	3.5	8.0	-4.0	0.84	-200.0	6.0	80.0	2.4	13.1	-5.0	-1.0	7.3	2.2	-4.0
23637S	3.0	8.0	-4.0	1.00	-200.0	14.0	120.0	1.0	10.1	-5.0	1.0	17.0	5.5	5.0
23641S	3.5	6.0	-4.0	0.73	-200.0	8.0	70.0	8.1	12.5	-5.0	-1.0	8.1	2.1	-4.0
23647S	3.4	6.0	-4.0	0.87	-200.0	10.0	140.0	0.8	10.1	-5.0	-1.0	13.0	9.4	6.0
23651S	3.9	8.0	-4.0	0.75	-200.0	12.0	120.0	1.2	14.9	-5.0	-1.0	8.7	2.1	-4.0
23652S	2.9	7.0	-4.0	0.58	-200.0	14.0	60.0	2.3	9.3	-5.0	-1.0	7.6	2.2	-4.0
23654S	4.0	6.0	4.0	0.95	-200.0	70.0	320.0	2.2	12.8	5.0	1.0	30.0	12.2	-4.0
23655S	2.4	9.0	-4.0	1.10	-200.0	10.0	70.0	0.5	10.3	-5.0	1.0	9.6	2.4	-4.0
23658S	4.0	7.0	-4.0	0.45	-200.0	24.0	210.0	2.0	14.9	-5.0	-1.0	18.0	4.5	-4.0
23659S	2.8	8.0	-4.0	1.10	200.0	14.0	90.0	0.4	10.6	-5.0	-1.0	17.0	15.6	-6.0
23660S	2.9	8.0	-4.0	1.00	-200.0	8.0	80.0	3.5	11.4	-5.0	1.0	9.7	3.2	-7.0
23661S	3.9	10.0	-4.0	1.30	-200.0	8.0	80.0	1.7	13.8	-5.0	-1.0	10.0	3.9	-7.0
23662S	2.9	5.0	-4.0	0.58	-200.0	8.0	110.0	1.2	9.1	-5.0	-1.0	8.3	2.2	10.0
23664S	3.5	9.0	4.0	0.85	-200.0	16.0	110.0	0.9	13.0	5.0	-1.0	13.0	3.1	-4.0
23665S	2.8	7.0	-4.0	1.20	-200.0	16.0	240.0	0.7	10.2	-5.0	2.0	17.0	31.6	19.0
23667S	3.0	7.0	8.0	0.64	-200.0	18.0	120.0	1.7	10.2	-5.0	-1.0	12.0	7.8	14.0
23668S	3.1	8.0	-4.0	1.00	-200.0	10.0	120.0	1.2	10.0	-5.0	-1.0	11.0	3.5	-4.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
23611S	80.0	40.0	72.0	4.8	-0.2	2.4	0.4
23614S	95.0	48.0	69.0	5.6	1.4	2.8	0.4
23615S	85.0	46.0	81.0	5.0	-0.2	2.3	0.3
23621S	64.0	47.0	87.0	5.1	1.5	3.1	0.4
23624S	75.0	45.0	73.0	4.9	1.3	2.9	0.4
23629S	210.0	87.0	138.0	12.1	0.8	9.5	1.3
23631S	74.0	28.0	46.0	3.0	0.8	1.9	0.2
23632S	96.0	39.0	75.0	4.8	1.5	2.8	0.4
23636S	47.0	28.0	50.0	3.3	0.9	2.0	0.3
23637S	90.0	47.0	85.0	5.2	-0.2	3.4	0.4
23641S	57.0	30.0	50.0	3.4	1.9	2.1	0.3
23647S	90.0	42.0	70.0	4.3	0.9	2.5	0.4
23651S	62.0	36.0	62.0	4.8	1.7	2.8	0.4
23652S	65.0	33.0	53.0	3.8	1.0	2.2	0.3
23654S	280.0	74.0	143.0	8.5	1.5	5.8	0.9
23655S	59.0	41.0	67.0	4.6	0.9	2.5	0.3
23658S	96.0	65.0	113.0	7.2	2.5	3.0	0.4
23659S	61.0	51.0	73.0	5.2	1.5	2.7	0.5
23660S	42.0	36.0	58.0	3.9	1.2	2.3	0.3
23661S	62.0	43.0	74.0	4.8	1.4	3.2	0.4
23662S	78.0	28.0	47.0	3.2	0.8	1.8	0.2
23664S	68.0	54.0	88.0	6.0	1.2	2.7	0.4
23665S	92.0	44.0	68.0	5.6	0.8	3.9	0.6
23667S	74.0	39.0	62.0	4.1	1.1	2.3	0.4
23668S	72.0	39.0	60.0	4.2	1.6	2.3	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
23669S	65.445	146.857	B-6	7	4	11	0	-0.5	7.0	-6.0	800.0	-1.0	16.0	100.0	2.0	21.0
23672S	65.450	146.755	B-6	7	5	8	0	-0.5	6.0	-5.0	600.0	-0.5	9.0	60.0	3.0	9.0
23673S	65.531	146.833	C-6	8	4	12	0	-0.5	8.0	-7.0	900.0	-1.0	16.0	100.0	6.0	20.0
23674S	65.434	146.607	B-6	7	6	18	0	-0.5	11.0	13.0	300.0	0.6	6.0	20.0	17.0	29.0
23681S	65.537	145.821	C-4	8	9	11	0	-0.5	6.0	-5.0	400.0	-0.6	7.0	30.0	2.0	11.0
23684S	65.475	146.891	B-6	8	4	34	0	-0.5	7.0	6.0	1500.0	-0.5	20.0	120.0	8.0	35.0
23692S	65.424	146.635	B-6	7	5	24	0	-0.5	14.0	-6.0	300.0	-0.6	9.0	40.0	15.0	23.0
23703S	65.553	146.571	C-6	8	6	5	0	-0.5	5.0	-6.0	400.0	-0.6	12.0	50.0	3.0	22.0
23704S	65.513	146.109	C-5	8	8	21	0	-0.5	7.0	-5.0	600.0	-0.7	11.0	60.0	2.0	12.0
23706S	65.615	146.555	C-6	9	6	8	0	-0.5	5.0	-5.0	600.0	-0.9	10.0	70.0	6.0	17.0
23707S	65.416	146.083	B-5	7	8	22	0	-0.5	39.0	-5.0	400.0	-0.5	9.0	50.0	2.0	21.0
23712S	65.670	146.711	C-6	10	5	28	0	-0.5	12.0	-6.0	900.0	-1.1	16.0	90.0	10.0	29.0
23717S	65.561	146.997	C-6	9	4	31	0	-0.5	6.0	-5.0	700.0	-0.9	18.0	80.0	6.0	37.0
23719S	65.395	146.727	B-6	7	5	33	0	-0.5	10.0	-8.0	600.0	-0.8	20.0	60.0	13.0	16.0
23724S	65.513	146.413	C-5	8	6	13	0	-0.5	12.0	-5.0	600.0	-0.8	13.0	60.0	2.0	18.0
23725S	65.475	146.519	B-6	8	6	33	0	-0.5	9.0	-7.0	600.0	1.2	12.0	50.0	6.0	13.0
23732S	65.506	146.622	C-6	8	5	24	0	-0.5	6.0	-6.0	400.0	-0.9	7.0	30.0	10.0	11.0
23734S	65.583	146.625	C-6	9	5	25	0	-0.5	6.0	-6.0	700.0	-1.0	15.0	80.0	4.0	29.0
23738S	65.455	146.552	B-6	7	6	8	0	-0.5	13.0	-6.0	200.0	1.3	7.0	20.0	15.0	8.5
23748S	65.479	146.205	B-5	8	7	36	0	-0.5	9.0	-6.0	700.0	-0.8	13.0	60.0	2.0	21.0
24114S	65.566	146.891	C-6	9	4	34	0	1.5	19.0	-8.0	1000.0	-1.3	31.0	90.0	20.0	45.0
24117S	65.541	146.765	C-6	8	5	8	0	-0.5	9.0	-6.0	700.0	-0.8	13.0	80.0	4.0	21.0
24120S	65.446	145.955	B-4	7	9	8	0	-0.5	55.0	-5.0	300.0	-0.6	13.0	50.0	5.0	31.0
24123S	65.626	146.719	C-6	9	5	9	0	-0.5	4.0	-5.0	300.0	-1.1	-5.0	20.0	7.0	11.0
24126S	65.556	146.468	C-5	8	6	2	0	-0.5	55.0	-6.0	800.0	-1.1	15.0	60.0	10.0	16.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
23669S	4.2	9.0	4.0	1.60	-200.0	10.0	100.0	0.9	15.9	-5.0	-1.0	9.6	2.5	-4.0
23672S	2.6	8.0	-4.0	0.90	-200.0	10.0	80.0	0.9	10.5	-5.0	-1.0	11.0	3.2	-6.0
23673S	4.0	9.0	-4.0	0.78	-200.0	18.0	160.0	1.0	15.8	-5.0	1.0	12.0	4.4	-4.0
23674S	1.9	3.0	-4.0	1.50	-200.0	8.0	400.0	1.5	5.2	-5.0	1.0	13.0	7.4	6.0
23681S	2.0	8.0	-4.0	1.40	-200.0	8.0	50.0	2.0	6.4	-5.0	-1.0	9.4	2.4	-4.0
23684S	4.8	8.0	-4.0	0.72	-200.0	14.0	180.0	0.8	17.9	-5.0	1.0	17.0	3.9	-8.0
23692S	2.2	5.0	-4.0	1.30	-200.0	14.0	250.0	1.0	7.2	-5.0	-1.0	14.0	14.3	11.0
23703S	3.2	4.0	-4.0	0.61	-200.0	14.0	110.0	0.8	9.2	-5.0	-1.0	8.9	1.8	-5.0
23704S	2.4	10.0	4.0	1.00	-200.0	8.0	70.0	0.9	9.3	-5.0	-1.0	10.0	3.3	-4.0
23706S	3.2	11.0	-4.0	0.72	-200.0	20.0	120.0	0.7	12.6	-5.0	1.0	13.0	3.4	-4.0
23707S	2.6	5.0	4.0	0.57	-200.0	26.0	70.0	6.3	8.8	-5.0	-1.0	6.8	1.5	-4.0
23712S	4.4	11.0	-4.0	1.00	-200.0	72.0	190.0	1.0	16.3	-5.0	-1.0	25.0	7.5	-4.0
23717S	3.4	5.0	-4.0	1.20	-200.0	88.0	60.0	0.7	12.8	-5.0	-1.0	9.7	3.0	-4.0
23719S	3.2	6.0	-4.0	0.77	-200.0	16.0	120.0	0.9	11.3	-5.0	1.0	12.0	3.0	-7.0
23724S	3.5	9.0	-4.0	0.82	-200.0	12.0	100.0	2.2	10.5	-5.0	-1.0	12.0	2.8	-4.0
23725S	2.9	7.0	-4.0	1.20	-200.0	16.0	110.0	0.8	9.7	-5.0	1.0	13.0	9.7	-7.0
23732S	2.1	9.0	-4.0	1.70	-200.0	12.0	200.0	0.5	6.8	-5.0	3.0	33.0	11.0	5.0
23734S	3.5	8.0	-4.0	0.80	-200.0	18.0	110.0	0.9	13.6	-5.0	1.0	12.0	3.4	-4.0
23738S	1.6	4.0	-4.0	1.40	-200.0	10.0	380.0	0.8	4.7	-5.0	1.0	18.0	17.3	15.0
23748S	3.2	8.0	-4.0	0.96	-200.0	10.0	70.0	0.9	10.9	-5.0	-1.0	11.0	5.2	-4.0
24114S	3.8	8.0	-4.0	1.30	400.0	100.0	340.0	1.6	14.2	-6.0	5.0	30.0	34.4	25.0
24117S	3.2	6.0	-4.0	0.79	-200.0	16.0	140.0	0.7	12.9	-5.0	1.0	10.0	2.7	-4.0
24120S	3.1	6.0	-4.0	0.42	-200.0	10.0	100.0	1.8	9.4	-5.0	-1.0	6.7	2.1	17.0
24123S	2.0	11.0	-4.0	1.90	-200.0	30.0	590.0	0.2	5.1	-5.0	2.0	78.0	34.0	6.0
24126S	3.6	8.0	-4.0	1.50	400.0	40.0	160.0	1.9	11.5	-5.0	2.0	24.0	33.9	5.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
23669S	66.0	43.0	78.0	5.0	1.6	2.4	0.4
23672S	51.0	45.0	78.0	4.8	1.4	2.7	0.3
23673S	72.0	47.0	83.0	5.6	2.2	3.2	0.5
23674S	70.0	27.0	45.0	3.3	0.6	3.1	0.4
23681S	48.0	34.0	52.0	3.5	-0.2	1.8	0.3
23684S	120.0	59.0	98.0	6.1	1.5	3.2	0.4
23692S	78.0	32.0	53.0	4.0	0.8	3.0	0.4
23703S	87.0	30.0	55.0	3.2	0.8	1.9	0.2
23704S	56.0	35.0	61.0	3.9	0.8	2.5	0.3
23706S	93.0	53.0	84.0	6.2	2.0	3.3	0.5
23707S	69.0	25.0	50.0	3.0	1.0	1.7	0.2
23712S	230.0	83.0	134.0	9.2	1.9	5.1	0.7
23717S	220.0	42.0	69.0	5.1	-0.2	2.8	0.3
23719S	96.0	39.0	66.0	4.6	1.2	2.6	0.3
23724S	66.0	41.0	72.0	4.2	1.5	2.3	0.3
23725S	57.0	38.0	62.0	4.5	0.7	2.6	0.4
23732S	50.0	63.0	103.0	6.1	0.6	3.8	0.6
23734S	120.0	43.0	74.0	5.6	2.0	3.4	0.5
23738S	43.0	32.0	56.0	4.5	-0.3	4.6	0.7
23748S	76.0	42.0	64.0	4.9	1.5	2.4	0.4
24114S	590.0	91.0	166.0	17.6	2.9	18.7	2.5
24117S	94.0	37.0	59.0	5.0	1.5	2.9	0.4
24120S	65.0	24.0	45.0	2.6	1.0	1.9	0.2
24123S	120.0	100.0	188.0	12.0	-0.6	10.1	1.4
24126S	110.0	60.0	97.0	6.3	1.1	4.6	1.0

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24133S	65.661	146.432	C-5	10	6	26	0	-0.5	5.0	-6.0	700.0	-0.8	13.0	80.0	3.0	20.0
24134S	65.397	146.734	B-6	7	5	33	0	-0.5	11.0	-6.0	400.0	0.9	8.0	30.0	13.0	14.0
24142S	65.399	146.714	B-6	7	5	28	0	-0.5	7.0	-5.0	300.0	-0.6	7.0	30.0	11.0	12.0
24151S	65.487	146.625	B-6	8	5	25	0	-0.5	21.0	-9.0	400.0	-1.6	12.0	80.0	16.0	9.5
24166S	65.616	146.874	C-6	9	4	11	0	-0.5	8.0	-5.0	500.0	1.1	-5.0	40.0	4.0	16.0
24171S	65.594	146.952	C-6	9	4	20	0	1.0	18.0	-7.0	900.0	-1.2	21.0	80.0	28.0	73.0
24174S	65.430	146.721	B-6	7	5	16	0	-0.5	11.0	-5.0	500.0	-0.8	12.0	60.0	3.0	11.0
24180S	65.624	146.858	C-6	9	4	11	0	-0.5	6.0	-5.0	300.0	-1.0	-5.0	20.0	7.0	9.5
24181S	65.536	146.159	C-5	8	8	8	0	-0.5	23.0	-8.0	800.0	-1.0	22.0	80.0	5.0	20.0
24183S	65.533	146.806	C-6	8	5	7	0	-0.5	5.0	-5.0	600.0	-1.0	13.0	60.0	2.0	16.0
24186S	65.469	146.598	B-6	7	6	6	0	-0.5	6.0	-7.0	500.0	-1.4	9.0	90.0	3.0	12.0
24199S	65.381	146.098	B-5	6	8	4	0	-0.5	76.0	11.0	600.0	-1.1	15.0	80.0	6.0	18.0
24201S	65.526	146.743	C-6	8	5	16	0	-0.5	7.0	-5.0	600.0	-0.9	16.0	70.0	3.0	22.0
24202S	65.399	146.630	B-6	7	5	25	0	-0.5	18.0	-7.0	700.0	2.0	59.0	80.0	10.0	28.0
24208S	65.660	146.529	C-6	10	6	29	0	-0.5	8.0	-7.0	700.0	1.4	15.0	80.0	9.0	27.0
24210S	65.447	146.531	B-6	7	6	9	0	-0.5	19.0	-8.0	400.0	2.1	6.0	30.0	20.0	7.5
24212S	65.623	146.500	C-6	9	6	9	-16	-0.5	7.0	-5.0	600.0	1.0	13.0	50.0	4.0	18.0
24221S	65.533	146.922	C-6	8	4	9	0	-0.5	9.0	-7.0	600.0	-0.9	12.0	80.0	10.0	27.0
24231S	65.568	146.265	C-5	9	7	34	0	-0.5	15.0	-7.0	700.0	-0.9	14.0	70.0	7.0	29.0
24232S	65.560	146.809	C-6	9	4	36	0	-0.5	7.0	-6.0	900.0	1.6	12.0	60.0	5.0	15.0
24243S	65.489	146.564	B-6	8	6	29	0	-0.5	25.0	5.0	500.0	-0.7	9.0	40.0	6.0	15.0
24245S	65.529	146.055	C-5	8	8	11	0	-0.5	61.0	-5.0	500.0	-0.7	13.0	60.0	3.0	28.0
24247S	65.446	146.466	B-5	7	6	11	0	-0.5	25.0	-9.0	500.0	-1.1	7.0	30.0	20.0	12.0
24248S	65.453	146.358	B-5	7	7	8	0	-0.5	16.0	-5.0	500.0	-0.8	8.0	40.0	15.0	20.0
24250S	65.527	146.541	C-6	8	6	16	0	-0.5	8.0	-11.0	600.0	-2.4	5.0	10.0	11.0	4.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24133S	2.8	7.0	-4.0	0.89	-200.0	16.0	80.0	0.7	12.0	-5.0	1.0	10.0	3.2	-4.0
24134S	2.1	6.0	-4.0	1.10	-200.0	12.0	190.0	0.9	7.1	-5.0	-1.0	11.0	8.9	7.0
24142S	1.9	8.0	4.0	1.30	-200.0	10.0	170.0	1.1	6.4	-5.0	1.0	14.0	9.9	-5.0
24151S	3.0	10.0	17.0	1.30	-300.0	20.0	-60.0	0.4	11.5	-10.0	2.0	34.0	396.0	6.0
24166S	1.8	12.0	-4.0	1.20	-200.0	46.0	220.0	0.7	7.2	-5.0	2.0	59.0	35.6	6.0
24171S	4.1	4.0	-4.0	0.61	-200.0	120.0	220.0	2.0	15.4	-5.0	-1.0	15.0	7.0	-4.0
24174S	2.7	15.0	-5.0	1.00	-200.0	14.0	90.0	1.7	10.1	-5.0	1.0	9.8	3.8	-6.0
24180S	2.0	13.0	-4.0	2.20	-200.0	28.0	570.0	0.4	6.5	15.0	2.0	78.0	26.3	13.0
24181S	3.8	8.0	-4.0	1.00	-200.0	16.0	100.0	1.0	14.0	-5.0	-1.0	12.0	2.9	-4.0
24183S	2.9	7.0	6.0	0.71	200.0	16.0	110.0	0.7	11.5	-5.0	-1.0	10.0	3.3	-4.0
24186S	2.4	16.0	-4.0	1.10	-200.0	8.0	60.0	0.7	11.0	-6.0	-1.0	14.0	4.3	-4.0
24199S	3.5	8.0	-4.0	0.76	-200.0	18.0	100.0	11.0	12.9	-5.0	-1.0	11.0	5.3	-4.0
24201S	3.2	7.0	-4.0	0.83	-200.0	18.0	100.0	0.8	11.7	-5.0	-1.0	9.0	2.9	-4.0
24202S	3.3	7.0	-4.0	0.97	-200.0	16.0	150.0	1.5	12.7	-5.0	-1.0	11.0	3.7	-4.0
24208S	3.1	6.0	-4.0	0.77	-200.0	22.0	70.0	1.0	13.4	-5.0	1.0	10.0	4.4	-4.0
24210S	2.2	9.0	-4.0	1.40	-200.0	12.0	320.0	1.4	6.5	-5.0	2.0	41.0	48.1	-7.0
24212S	3.8	6.0	10.0	0.63	-200.0	14.0	120.0	0.4	11.0	-5.0	-1.0	9.8	2.5	-4.0
24221S	3.2	10.0	5.0	1.10	-200.0	16.0	110.0	1.1	13.3	-5.0	-1.0	14.0	4.7	-4.0
24231S	3.7	7.0	-4.0	0.79	-200.0	24.0	120.0	4.7	12.1	-5.0	1.0	14.0	3.9	5.0
24232S	2.7	8.0	-4.0	1.00	-200.0	32.0	190.0	0.7	10.3	-5.0	-1.0	32.0	15.7	8.0
24243S	2.3	9.0	13.0	1.20	-200.0	30.0	130.0	2.0	7.5	-5.0	1.0	21.0	27.8	-5.0
24245S	3.6	8.0	6.0	0.60	-200.0	16.0	110.0	3.6	10.7	-5.0	-1.0	11.0	3.0	5.0
24247S	1.8	6.0	-4.0	1.40	-200.0	18.0	360.0	0.9	7.2	-5.0	1.0	27.0	86.1	20.0
24248S	2.7	7.0	-4.0	1.30	-200.0	12.0	260.0	0.9	8.9	-5.0	3.0	16.0	14.1	9.0
24250S	2.3	15.0	-4.0	2.30	300.0	22.0	310.0	0.4	8.4	-5.0	6.0	91.0	47.6	14.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24133S	75.0	38.0	66.0	4.6	0.7	2.7	0.3
24134S	68.0	31.0	51.0	3.5	1.1	2.2	0.4
24142S	65.0	34.0	56.0	4.2	-0.2	2.9	0.4
24151S	78.0	83.0	133.0	6.4	1.6	5.7	-0.1
24166S	230.0	93.0	171.0	13.8	-0.5	14.8	2.1
24171S	320.0	64.0	89.0	7.4	2.1	2.8	0.5
24174S	45.0	35.0	57.0	3.9	1.3	2.4	0.3
24180S	130.0	106.0	201.0	12.8	-0.6	11.9	1.6
24181S	79.0	47.0	78.0	5.1	1.7	2.5	0.3
24183S	78.0	39.0	77.0	4.5	1.0	2.3	0.3
24186S	38.0	63.0	91.0	6.0	1.5	3.9	0.6
24199S	72.0	58.0	79.0	6.6	1.9	2.6	0.4
24201S	81.0	37.0	75.0	4.3	1.7	2.5	0.4
24202S	150.0	81.0	105.0	8.7	2.6	3.8	0.4
24208S	74.0	40.0	69.0	4.9	1.4	2.8	0.3
24210S	50.0	68.0	118.0	9.8	-0.5	8.5	1.3
24212S	82.0	37.0	65.0	4.0	1.6	2.2	0.3
24221S	65.0	57.0	105.0	7.3	1.8	4.0	0.6
24231S	100.0	48.0	76.0	5.5	1.2	3.1	0.4
24232S	150.0	76.0	135.0	9.3	1.0	6.5	0.9
24243S	120.0	51.0	83.0	5.1	0.7	3.1	0.6
24245S	67.0	40.0	81.0	4.6	1.8	2.7	0.4
24247S	70.0	47.0	78.0	6.8	-0.5	6.2	1.4
24248S	120.0	37.0	61.0	4.7	-0.6	3.9	0.6
24250S	75.0	141.0	247.0	18.1	-0.7	6.5	1.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24255S	65.659	145.822	B-4	7	9	2	0	-0.5	52.0	-5.0	500.0	0.8	16.0	60.0	5.0	28.0
24261S	65.530	146.485	C-5	8	6	10	0	-0.5	36.0	-6.0	600.0	-1.0	8.0	50.0	16.0	7.0
24263S	65.534	146.769	C-6	8	5	8	0	-0.5	10.0	-5.0	700.0	1.0	15.0	70.0	3.0	22.0
24264S	65.491	146.421	B-5	8	6	25	0	-0.5	22.0	-10.0	600.0	-1.4	11.0	60.0	7.0	29.0
24265S	65.604	146.417	C-5	9	6	13	0	-0.5	4.0	14.0	500.0	-0.9	18.0	90.0	4.0	46.0
24268S	65.621	146.505	C-6	9	6	9	0	-0.5	5.0	-5.0	400.0	-0.7	11.0	50.0	3.0	17.0
24272S	65.520	146.744	C-6	8	5	16	0	-0.5	14.0	-5.0	500.0	-0.8	12.0	60.0	5.0	22.0
24277S	65.507	146.768	C-6	8	5	20	0	-0.5	18.0	-8.0	500.0	-1.5	15.0	60.0	5.0	24.0
24280S	65.651	146.984	C-6	10	4	31	0	-0.5	9.0	-10.0	1400.0	-1.8	21.0	90.0	8.0	29.0
24284S	65.536	146.613	C-6	8	5	12	0	-0.5	10.0	-6.0	600.0	-0.5	13.0	60.0	6.0	17.0
24285S	65.637	146.953	C-6	9	4	5	0	-0.5	18.0	-9.0	900.0	-1.6	14.0	90.0	6.0	31.0
24286S	65.540	146.679	C-6	8	5	10	0	-0.5	14.0	8.0	600.0	-1.4	16.0	70.0	4.0	20.0
24287S	65.601	146.191	C-5	9	7	13	-22	-0.5	7.0	-5.0	500.0	-0.7	17.0	50.0	3.0	21.0
24288S	65.519	145.660	C-4	8	10	15	0	-0.5	70.0	8.0	300.0	-0.7	13.0	50.0	2.0	28.0
24289S	65.557	146.884	C-6	9	4	34	0	1.0	17.0	-10.0	700.0	-2.1	25.0	70.0	12.0	46.0
24290S	65.493	146.555	B-6	8	6	29	0	-0.5	24.0	-10.0	600.0	-1.6	9.0	50.0	6.0	16.0
24292S	65.629	146.803	C-6	9	5	6	0	-0.5	-2.0	-9.0	500.0	-1.8	5.0	60.0	4.0	10.0
24297S	65.394	145.995	B-4	7	8	36	0	-0.5	53.0	-9.0	400.0	-1.5	21.0	100.0	2.0	52.0
24316S	65.554	146.911	C-6	8	4	3	0	-0.5	5.0	-10.0	700.0	-1.8	14.0	110.0	6.0	20.0
24320S	65.630	146.936	C-6	9	4	4	0	-0.5	10.0	-9.0	900.0	-1.7	16.0	90.0	5.0	27.0
24326S	65.533	146.798	C-6	8	5	7	0	-0.5	8.0	-5.0	600.0	-0.8	13.0	80.0	3.0	21.0
24327S	65.686	146.963	C-6	10	4	20	0	-0.5	13.0	-9.0	1400.0	-1.8	31.0	90.0	3.0	70.0
24328S	65.573	146.445	C-5	9	6	26	0	-0.5	40.0	-6.0	500.0	1.4	7.0	40.0	11.0	9.5
24333S	65.544	146.252	C-5	8	7	2	-30	-0.5	19.0	6.0	700.0	1.1	15.0	70.0	3.0	23.0
24334S	65.620	146.584	C-6	9	6	7	0	-0.5	5.0	14.0	800.0	-1.6	13.0	80.0	4.0	22.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24255S	3.4	9.0	-4.0	0.63	-200.0	12.0	90.0	3.1	12.3	-5.0	-1.0	7.9	5.4	47.0
24261S	2.6	12.0	-4.0	1.90	-200.0	24.0	320.0	0.7	10.2	-5.0	4.0	33.0	23.8	7.0
24263S	3.3	7.0	9.0	0.81	-200.0	18.0	100.0	0.9	11.5	-5.0	-1.0	10.0	2.7	-4.0
24264S	3.4	9.0	-4.0	1.00	300.0	12.0	130.0	0.8	10.6	-5.0	2.0	15.0	8.2	10.0
24265S	4.1	4.0	-4.0	0.80	-200.0	16.0	100.0	0.4	15.4	-6.0	-1.0	12.0	4.9	-4.0
24268S	3.4	7.0	-4.0	0.66	-200.0	14.0	120.0	0.5	10.2	-5.0	2.0	10.0	2.6	-4.0
24272S	3.5	9.0	-4.0	0.82	-200.0	20.0	180.0	1.0	10.8	-5.0	-1.0	23.0	9.3	-4.0
24277S	3.9	6.0	-4.0	0.91	-200.0	16.0	200.0	0.9	11.3	8.0	-1.0	15.0	6.2	-4.0
24280S	4.8	7.0	-4.0	1.00	-200.0	34.0	130.0	0.8	17.5	-5.0	-2.0	14.0	4.2	-5.0
24284S	3.5	13.0	-4.0	1.30	-200.0	10.0	110.0	0.8	11.2	11.0	2.0	24.0	20.6	10.0
24285S	4.1	6.0	-4.0	0.85	-200.0	50.0	150.0	0.9	15.0	-5.0	3.0	13.0	4.4	-4.0
24286S	3.8	5.0	-4.0	1.20	-200.0	12.0	170.0	1.2	12.2	-5.0	2.0	13.0	7.0	5.0
24287S	3.3	8.0	-4.0	0.82	-200.0	14.0	110.0	1.6	9.6	-5.0	1.0	13.0	3.4	-4.0
24288S	3.2	7.0	-4.0	0.60	-200.0	16.0	90.0	5.1	10.7	-5.0	-1.0	9.6	1.8	-4.0
24289S	3.4	5.0	-4.0	1.20	-300.0	94.0	320.0	1.3	11.9	-9.0	4.0	24.0	26.2	18.0
24290S	2.8	10.0	-4.0	1.30	-200.0	34.0	120.0	2.5	9.1	-5.0	2.0	31.0	14.9	-7.0
24292S	2.2	15.0	-4.0	1.70	-200.0	34.0	370.0	0.5	8.9	-5.0	4.0	83.0	26.9	14.0
24297S	4.7	7.0	-4.0	0.69	-200.0	10.0	110.0	16.0	17.6	-5.0	2.0	9.8	2.7	-4.0
24316S	3.5	6.0	-4.0	0.95	-200.0	28.0	140.0	0.8	16.6	-5.0	-1.0	15.0	4.2	-5.0
24320S	3.9	8.0	-4.0	1.00	-200.0	48.0	130.0	1.0	15.1	-5.0	2.0	13.0	5.6	-5.0
24326S	3.1	13.0	-4.0	0.68	200.0	16.0	60.0	0.8	11.7	-5.0	1.0	13.0	3.9	-4.0
24327S	5.8	6.0	12.0	0.75	-200.0	24.0	60.0	2.1	12.5	-5.0	-1.0	10.0	4.6	-4.0
24328S	2.5	13.0	-4.0	1.70	-200.0	28.0	210.0	1.0	9.0	-5.0	5.0	29.0	29.4	19.0
24333S	3.5	6.0	4.0	0.93	-200.0	14.0	150.0	2.4	11.7	-5.0	-1.0	13.0	5.1	-4.0
24334S	3.3	9.0	4.0	0.68	-200.0	18.0	120.0	1.1	13.3	-5.0	-1.0	14.0	4.2	-8.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24255S	67.0	28.0	56.0	3.6	1.0	2.3	0.3
24261S	62.0	70.0	112.0	6.8	1.0	4.9	0.8
24263S	77.0	37.0	73.0	4.2	1.3	2.4	0.3
24264S	84.0	47.0	73.0	7.3	1.5	3.0	0.6
24265S	90.0	46.0	79.0	5.0	1.8	2.2	0.3
24268S	75.0	41.0	76.0	4.5	0.8	2.6	0.3
24272S	120.0	54.0	85.0	5.8	0.6	3.5	0.6
24277S	100.0	43.0	71.0	6.9	1.3	3.0	0.4
24280S	140.0	58.0	101.0	9.2	1.3	3.6	0.6
24284S	72.0	65.0	111.0	6.7	1.1	4.2	0.7
24285S	150.0	51.0	86.0	8.8	1.1	3.2	0.6
24286S	67.0	41.0	75.0	6.4	1.0	2.5	0.4
24287S	68.0	41.0	66.0	4.5	1.0	2.5	0.4
24288S	59.0	33.0	57.0	3.5	0.7	2.2	0.2
24289S	680.0	76.0	139.0	20.0	1.1	14.8	2.4
24290S	120.0	70.0	112.0	10.2	1.2	5.1	0.8
24292S	160.0	112.0	194.0	22.2	0.6	12.9	1.9
24297S	90.0	40.0	70.0	7.3	1.8	2.5	0.5
24316S	100.0	50.0	87.0	8.1	1.3	3.0	0.4
24320S	140.0	50.0	88.0	8.8	1.1	4.1	0.5
24326S	57.0	58.0	101.0	6.7	1.6	3.2	0.4
24327S	270.0	41.0	72.0	6.9	1.6	3.0	0.5
24328S	66.0	66.0	98.0	6.3	1.1	4.5	0.9
24333S	74.0	44.0	82.0	4.7	1.0	2.3	0.4
24334S	80.0	50.0	85.0	8.5	1.3	3.1	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24338S	65.598	146.570	C-6	9	6	19	0	-0.5	7.0	-5.0	700.0	-0.8	14.0	70.0	4.0	33.0
24339S	65.541	146.521	C-6	8	6	9	0	-0.5	15.0	-5.0	500.0	-1.3	13.0	50.0	4.0	10.0
24342S	65.576	146.985	C-6	9	4	30	0	-0.5	8.0	-6.0	800.0	1.1	16.0	80.0	12.0	37.0
24351S	65.547	146.718	C-6	8	5	4	0	-0.5	8.0	-6.0	500.0	-0.9	12.0	50.0	5.0	22.0
24352S	65.490	146.697	B-6	8	5	27	-6	-0.5	12.0	-9.0	700.0	-1.0	15.0	100.0	7.0	16.0
24356S	65.485	146.396	B-5	8	7	30	0	-0.5	12.0	-5.0	500.0	-0.7	11.0	60.0	4.0	23.0
24363S	65.519	146.166	C-5	8	8	18	0	-0.5	8.0	-7.0	800.0	1.3	14.0	80.0	4.0	21.0
24368S	65.520	146.363	C-5	8	7	17	0	-0.5	13.0	-6.0	800.0	-0.8	15.0	70.0	3.0	21.0
24371S	65.493	145.835	B-4	8	9	26	0	-0.5	47.0	10.0	400.0	-0.6	13.0	50.0	4.0	25.0
24375S	65.477	145.933	B-4	8	9	32	0	-0.5	32.0	-5.0	400.0	-0.5	15.0	40.0	5.0	30.0
24378S	65.601	146.944	C-6	9	4	16	0	0.5	23.0	-5.0	600.0	-0.9	16.0	70.0	11.0	71.0
24379S	65.635	146.621	C-6	9	5	1	0	-0.5	8.0	-10.0	600.0	-1.6	10.0	80.0	5.0	22.0
24381S	65.390	146.026	B-5	7	8	35	0	-0.5	32.0	-9.0	600.0	-1.6	17.0	100.0	2.0	36.0
24385S	65.632	146.338	C-5	9	7	5	0	-0.5	5.0	-5.0	500.0	-0.7	16.0	80.0	3.0	27.0
24386S	65.602	146.243	C-5	9	7	14	0	-0.5	12.0	-5.0	500.0	1.0	12.0	60.0	3.0	18.0
24389S	65.660	146.397	C-5	10	6	25	0	-0.5	7.0	-6.0	600.0	-0.8	12.0	70.0	4.0	27.0
24393S	65.621	146.628	C-6	9	5	12	0	-0.5	10.0	-10.0	800.0	-1.7	14.0	110.0	5.0	31.0
24406S	65.669	146.731	C-6	10	5	28	0	-0.5	5.0	-10.0	900.0	-2.0	14.0	110.0	6.0	26.0
24413S	65.443	146.882	B-6	7	4	11	0	-0.5	11.0	-9.0	700.0	1.9	21.0	100.0	2.0	26.0
24418S	65.463	146.638	B-6	7	5	1	0	-0.5	5.0	-5.0	200.0	-0.8	5.0	10.0	8.0	15.0
24422S	65.513	146.723	C-6	8	5	16	0	-0.5	14.0	-9.0	700.0	-1.9	14.0	100.0	5.0	17.0
24424S	65.579	146.870	C-6	9	4	26	0	-0.5	11.0	-11.0	900.0	-2.2	6.0	70.0	2.0	15.0
24426S	65.444	146.443	B-5	7	6	11	0	-0.5	12.0	11.0	400.0	-1.5	-5.0	20.0	15.0	7.0
24429S	65.617	146.565	C-6	9	6	7	0	-0.5	6.0	-5.0	600.0	-0.9	11.0	70.0	6.0	26.0
24433S	65.586	146.863	C-6	9	4	23	0	-0.5	5.0	-14.0	700.0	-3.1	7.0	60.0	3.0	13.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24338S	3.7	8.0	6.0	0.58	-200.0	24.0	130.0	0.7	13.0	-5.0	1.0	13.0	4.5	-4.0
24339S	2.9	5.0	-4.0	0.95	-200.0	12.0	140.0	1.2	9.3	-5.0	1.0	14.0	7.9	-6.0
24342S	3.5	7.0	-4.0	0.74	-200.0	74.0	170.0	0.7	13.7	-5.0	-1.0	12.0	3.6	-4.0
24351S	3.1	8.0	-4.0	0.94	-200.0	28.0	250.0	0.8	10.4	-5.0	1.0	31.0	9.9	4.0
24352S	3.4	18.0	-4.0	1.30	-200.0	14.0	170.0	0.8	14.0	-7.0	-2.0	55.0	12.2	9.0
24356S	3.1	6.0	-4.0	1.10	-200.0	14.0	110.0	1.0	9.8	-5.0	-1.0	11.0	3.3	-4.0
24363S	3.4	6.0	-4.0	1.00	-200.0	14.0	140.0	0.8	13.1	-5.0	-1.0	11.0	3.1	4.0
24368S	3.3	8.0	4.0	0.97	-200.0	14.0	130.0	1.0	12.3	-5.0	-1.0	14.0	4.0	-4.0
24371S	3.3	7.0	5.0	0.49	-200.0	12.0	80.0	0.6	9.9	-5.0	1.0	7.6	1.9	-4.0
24375S	3.3	4.0	5.0	0.48	-200.0	6.0	80.0	1.2	10.1	-5.0	-1.0	6.1	2.0	10.0
24378S	4.2	8.0	-4.0	0.87	-200.0	100.0	180.0	2.7	11.1	17.0	1.0	22.0	10.8	10.0
24379S	3.2	10.0	-4.0	0.91	-200.0	28.0	200.0	0.9	12.4	-5.0	-1.0	29.0	6.5	-7.0
24381S	4.7	8.0	-4.0	0.80	-200.0	12.0	110.0	14.0	18.5	-5.0	-1.0	11.0	3.2	-5.0
24385S	3.8	8.0	-4.0	1.10	-200.0	8.0	80.0	0.7	12.6	-5.0	-1.0	10.0	2.7	4.0
24386S	3.0	11.0	-4.0	0.92	-200.0	22.0	100.0	2.6	10.4	-5.0	1.0	12.0	3.7	-4.0
24389S	3.3	7.0	7.0	1.10	-200.0	12.0	70.0	0.8	12.5	-5.0	1.0	12.0	4.0	10.0
24393S	4.1	9.0	-4.0	0.75	-200.0	24.0	170.0	1.6	16.7	-6.0	1.0	15.0	4.3	-5.0
24406S	3.5	9.0	-5.0	1.00	-300.0	26.0	160.0	0.7	15.4	-6.0	-2.0	19.0	3.9	-5.0
24413S	3.8	7.0	6.0	1.30	-200.0	14.0	90.0	1.0	15.7	-5.0	-1.0	10.0	2.5	-5.0
24418S	1.3	5.0	-4.0	0.78	-200.0	20.0	90.0	-0.2	3.5	-5.0	-1.0	19.0	22.6	-4.0
24422S	3.8	8.0	-4.0	1.40	-200.0	16.0	130.0	1.2	14.6	-5.0	-1.0	19.0	8.1	-4.0
24424S	2.4	9.0	-4.0	1.00	-200.0	22.0	90.0	0.8	10.6	-5.0	2.0	50.0	119.0	13.0
24426S	1.9	7.0	-4.0	2.30	-200.0	14.0	430.0	0.8	7.7	-5.0	7.0	41.0	25.1	-6.0
24429S	3.1	8.0	-4.0	0.66	-200.0	28.0	110.0	1.0	12.6	-5.0	-1.0	13.0	3.7	-4.0
24433S	2.5	14.0	85.0	1.40	-300.0	50.0	170.0	0.6	10.6	-34.0	4.0	130.0	45.6	14.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24338S	100.0	48.0	86.0	5.3	1.1	3.1	0.5
24339S	60.0	39.0	61.0	6.4	1.3	2.1	0.4
24342S	160.0	50.0	80.0	5.7	1.9	2.5	0.3
24351S	190.0	75.0	128.0	9.0	1.5	6.0	0.8
24352S	78.0	130.0	221.0	18.8	1.5	7.1	1.1
24356S	71.0	40.0	65.0	4.1	1.2	2.2	0.3
24363S	77.0	46.0	79.0	4.9	1.3	2.4	0.3
24368S	76.0	49.0	85.0	5.4	1.3	2.8	0.4
24371S	60.0	30.0	53.0	3.5	0.7	2.0	0.2
24375S	63.0	22.0	44.0	2.7	0.9	2.0	0.2
24378S	260.0	64.0	111.0	8.5	-0.2	5.9	0.8
24379S	110.0	86.0	162.0	13.4	1.7	5.4	0.8
24381S	60.0	37.0	64.0	6.5	1.0	2.8	0.5
24385S	68.0	42.0	68.0	4.7	1.4	2.7	0.3
24386S	85.0	43.0	73.0	4.8	1.7	2.6	0.4
24389S	66.0	45.0	81.0	5.2	1.2	2.7	0.4
24393S	86.0	56.0	100.0	9.7	2.1	3.7	0.6
24406S	110.0	64.0	108.0	10.6	3.5	3.9	0.6
24413S	96.0	46.0	81.0	7.9	0.8	2.7	0.5
24418S	90.0	41.0	58.0	3.5	-0.6	2.1	-0.1
24422S	70.0	58.0	100.0	9.6	2.1	3.5	0.7
24424S	120.0	100.0	175.0	24.2	0.8	12.1	2.6
24426S	55.0	63.0	120.0	14.5	-0.5	9.0	1.4
24429S	100.0	49.0	82.0	5.9	1.4	3.1	0.5
24433S	160.0	241.0	512.0	47.0	-0.2	20.3	3.1

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24436S	65.455	146.645	B-6	7	5	11	0	-0.5	15.0	-8.0	600.0	-1.7	10.0	50.0	4.0	11.0
24438S	65.675	146.490	C-5	10	6	22	0	-0.5	5.0	-5.0	800.0	-0.9	13.0	80.0	4.0	12.0
24444S	65.617	146.954	C-6	9	4	8	0	-0.5	13.0	-11.0	1000.0	-1.9	20.0	120.0	8.0	47.0
24447S	65.481	146.553	B-6	8	6	32	0	-0.5	8.0	6.0	600.0	-1.2	10.0	60.0	2.0	16.0
24449S	65.647	146.566	C-6	10	6	31	0	-0.5	11.0	-10.0	700.0	-1.4	14.0	80.0	6.0	28.0
24451S	65.599	146.242	C-5	9	7	23	0	-0.5	6.0	-7.0	800.0	-0.8	14.0	70.0	7.0	21.0
24453S	65.587	146.752	C-6	9	5	20	0	-0.5	8.0	-11.0	600.0	-2.1	7.0	60.0	8.0	22.0
24456S	65.576	146.850	C-6	9	4	26	0	-0.5	7.0	-15.0	1600.0	3.1	5.0	60.0	2.0	16.0
24460S	65.656	146.790	C-6	10	5	31	0	-0.5	18.0	-12.0	900.0	-2.3	17.0	110.0	8.0	42.0
24462S	65.533	146.415	C-5	8	6	12	0	-0.5	30.0	-6.0	600.0	-0.7	15.0	70.0	4.0	28.0
24465S	65.470	146.192	B-5	8	8	31	0	-0.5	8.0	-6.0	800.0	-0.8	13.0	80.0	3.0	20.0
24467S	65.405	146.425	B-5	7	6	25	0	-0.5	15.0	-5.0	400.0	-0.8	8.0	40.0	13.0	15.0
24468S	65.547	146.259	C-5	8	7	2	0	-0.5	22.0	-6.0	700.0	-0.8	16.0	70.0	4.0	20.0
24472S	65.420	146.074	B-5	7	8	22	0	-0.5	69.0	-5.0	200.0	-0.5	11.0	40.0	3.0	23.0
24474S	65.539	146.765	C-6	8	5	8	0	-0.5	6.0	-6.0	600.0	-0.8	12.0	80.0	4.0	23.0
24479S	65.483	146.378	B-5	8	7	31	0	-0.5	10.0	-6.0	700.0	-1.0	15.0	60.0	5.0	21.0
24482S	65.554	146.732	C-6	8	5	4	0	-0.5	10.0	-5.0	600.0	-0.9	14.0	50.0	6.0	20.0
24486S	65.614	146.867	C-6	9	4	14	0	-0.5	12.0	17.0	1000.0	-1.3	7.0	70.0	5.0	17.0
24488S	65.441	145.960	B-4	7	9	18	0	-0.5	56.0	7.0	300.0	-0.6	13.0	40.0	5.0	33.0
24490S	65.421	146.636	B-6	7	5	24	0	-0.5	14.0	-11.0	500.0	-1.5	10.0	40.0	13.0	20.0
24491S	65.501	146.128	C-5	8	8	21	0	-0.5	4.0	-5.0	500.0	1.1	9.0	60.0	2.0	16.0
24492S	65.572	146.497	C-5	9	6	28	0	-0.5	8.0	-9.0	500.0	2.0	12.0	80.0	3.0	21.0
24498S	65.565	146.630	C-6	9	5	36	0	-0.5	10.0	-5.0	600.0	-0.8	12.0	70.0	6.0	37.0
24500S	65.520	146.278	C-5	8	7	15	0	-0.5	10.0	-5.0	500.0	-0.7	10.0	50.0	2.0	14.0
24504S	65.642	146.629	C-6	9	5	1	0	-0.5	7.0	-5.0	600.0	-1.8	10.0	60.0	5.0	22.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24436S	3.3	16.0	-4.0	1.40	-200.0	14.0	140.0	2.9	9.9	-5.0	3.0	29.0	16.1	13.0
24438S	2.8	8.0	-4.0	0.83	-200.0	14.0	100.0	0.7	11.7	-5.0	-1.0	12.0	3.5	-4.0
24444S	5.2	6.0	6.0	0.82	-300.0	110.0	150.0	1.3	18.8	-5.0	-1.0	19.0	4.5	-5.0
24447S	2.8	6.0	-4.0	1.20	-200.0	14.0	110.0	2.1	9.3	-5.0	-1.0	12.0	4.8	-6.0
24449S	4.2	5.0	10.0	0.57	-200.0	32.0	130.0	0.9	14.4	-5.0	-1.0	15.0	4.5	-8.0
24451S	3.4	9.0	-4.0	1.10	-200.0	16.0	110.0	1.9	12.9	-5.0	1.0	13.0	3.1	-4.0
24453S	2.4	8.0	-4.0	1.10	-200.0	82.0	280.0	1.0	10.6	-5.0	-1.0	55.0	46.3	15.0
24456S	2.1	10.0	-4.0	0.85	-300.0	28.0	90.0	-0.4	9.4	7.0	-2.0	73.0	328.0	15.0
24460S	4.3	7.0	-4.0	1.10	-300.0	96.0	130.0	0.9	15.4	-6.0	-2.0	29.0	14.0	-6.0
24462S	3.5	10.0	-4.0	1.00	-200.0	22.0	110.0	6.2	12.1	-5.0	-1.0	15.0	4.3	-4.0
24465S	3.1	10.0	-4.0	1.10	-200.0	12.0	140.0	0.9	12.0	-5.0	1.0	12.0	4.7	-4.0
24467S	2.0	5.0	-4.0	1.30	-200.0	16.0	240.0	0.6	7.5	-5.0	1.0	12.0	27.0	5.0
24468S	3.7	6.0	-4.0	0.94	-200.0	14.0	190.0	3.1	12.9	-5.0	1.0	14.0	6.0	-4.0
24472S	2.8	6.0	-4.0	0.44	-200.0	34.0	60.0	6.5	8.6	-5.0	1.0	8.1	1.9	5.0
24474S	3.3	7.0	-4.0	0.77	-200.0	18.0	70.0	0.7	13.0	-5.0	1.0	10.0	3.8	-4.0
24479S	3.3	9.0	-4.0	1.00	-200.0	14.0	150.0	0.8	11.1	-5.0	1.0	13.0	5.3	-4.0
24482S	3.3	7.0	-4.0	1.10	-200.0	36.0	250.0	0.6	10.3	-5.0	1.0	31.0	10.3	-4.0
24486S	3.0	14.0	-4.0	1.50	-300.0	62.0	280.0	0.8	12.1	29.0	2.0	110.0	94.8	10.0
24488S	3.0	4.0	-4.0	0.40	-200.0	10.0	50.0	1.8	9.3	-5.0	-1.0	7.0	2.4	8.0
24490S	2.7	7.0	-4.0	1.40	-200.0	14.0	340.0	0.9	9.5	-5.0	2.0	21.0	21.3	34.0
24491S	2.9	10.0	-4.0	1.00	-200.0	10.0	90.0	0.8	11.0	-5.0	1.0	11.0	3.6	-4.0
24492S	3.3	8.0	4.0	1.00	-200.0	14.0	120.0	1.0	13.4	-5.0	-1.0	11.0	4.7	-8.0
24498S	3.6	7.0	-4.0	0.56	-200.0	22.0	110.0	1.0	13.1	-5.0	-1.0	12.0	3.3	-4.0
24500S	2.5	10.0	-4.0	1.00	-200.0	8.0	80.0	1.4	8.4	-5.0	1.0	11.0	4.3	-4.0
24504S	3.4	9.0	-4.0	0.88	-200.0	42.0	160.0	0.9	12.0	-5.0	-1.0	32.0	7.3	10.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24436S	67.0	70.0	126.0	10.6	1.0	5.0	0.8
24438S	65.0	49.0	91.0	5.3	1.0	2.8	0.3
24444S	220.0	65.0	110.0	10.3	1.2	3.3	0.5
24447S	59.0	40.0	67.0	6.1	0.8	2.2	0.4
24449S	130.0	62.0	110.0	9.1	1.4	2.7	0.4
24451S	86.0	48.0	75.0	5.4	2.0	3.0	0.4
24453S	770.0	107.0	181.0	21.3	1.1	10.0	1.8
24456S	120.0	161.0	262.0	40.5	1.0	17.6	-0.1
24460S	210.0	76.0	114.0	16.7	2.0	5.9	0.9
24462S	82.0	51.0	81.0	5.5	2.1	3.2	0.4
24465S	72.0	47.0	81.0	5.4	1.8	2.6	0.4
24467S	60.0	34.0	56.0	4.0	0.7	2.8	-0.1
24468S	79.0	49.0	81.0	5.1	1.3	2.3	0.3
24472S	130.0	31.0	49.0	3.7	1.0	2.0	0.2
24474S	110.0	37.0	59.0	5.0	-0.5	3.0	0.4
24479S	75.0	46.0	74.0	5.0	1.7	2.9	0.4
24482S	240.0	70.0	128.0	8.3	-0.7	5.8	0.8
24486S	230.0	145.0	288.0	35.2	-0.6	21.1	4.1
24488S	70.0	24.0	69.0	2.7	0.5	1.6	0.2
24490S	86.0	48.0	83.0	9.5	1.0	4.4	0.8
24491S	65.0	43.0	71.0	4.6	1.1	2.8	0.4
24492S	64.0	47.0	79.0	7.1	1.7	2.9	0.5
24498S	83.0	45.0	73.0	5.3	1.8	3.0	0.3
24500S	61.0	36.0	58.0	3.7	0.9	2.4	0.3
24504S	130.0	93.0	147.0	14.0	1.3	5.3	0.8

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24509S	65.431	146.219	B-5	7	7	13	0	-0.5	9.0	-6.0	700.0	-0.7	12.0	70.0	2.0	20.0
24517S	65.614	146.848	C-6	9	4	14	0	-0.5	11.0	-8.0	500.0	-1.9	8.0	30.0	5.0	12.0
24518S	65.661	146.560	C-6	10	6	29	0	-0.5	6.0	15.0	700.0	-1.5	11.0	90.0	6.0	15.0
24523S	65.654	146.419	C-5	10	6	36	0	-0.5	6.0	-5.0	600.0	1.5	10.0	60.0	3.0	19.0
24526S	65.594	146.704	C-6	9	5	21	0	-0.5	8.0	-7.0	700.0	-0.8	13.0	70.0	10.0	33.0
24538S	65.483	146.402	B-5	8	7	31	0	-0.5	11.0	1200.0	600.0	-0.7	11.0	60.0	3.0	22.0
24539S	65.554	146.717	C-6	8	5	4	0	-0.5	7.0	-6.0	700.0	-0.8	12.0	60.0	6.0	22.0
24541S	65.433	146.716	B-6	7	5	16	10	-0.5	13.0	-8.0	700.0	-1.6	11.0	60.0	5.0	12.0
24546S	65.469	146.878	B-6	7	4	2	0	-0.5	9.0	-5.0	500.0	-0.8	10.0	60.0	5.0	23.0
24547S	65.451	145.748	B-4	7	10	8	0	-0.5	36.0	-5.0	300.0	-0.6	14.0	60.0	3.0	36.0
24552S	65.597	146.386	C-5	9	7	19	0	-0.5	62.0	-5.0	500.0	-0.5	9.0	60.0	14.0	21.0
24555S	65.488	146.059	B-5	8	8	26	0	-0.5	45.0	-5.0	500.0	-0.6	14.0	70.0	5.0	34.0
24562S	65.390	145.991	B-4	7	8	36	0	-0.5	32.0	7.0	400.0	1.6	19.0	90.0	3.0	53.0
24568S	65.569	146.762	C-6	9	5	32	0	-0.5	10.0	13.0	700.0	-2.1	10.0	70.0	8.0	22.0
24569S	65.466	146.611	B-6	7	5	1	0	-0.5	18.0	5.0	700.0	-1.3	12.0	60.0	4.0	11.0
24570S	65.587	146.432	C-5	9	6	23	-18	-0.5	18.0	-5.0	400.0	1.5	10.0	50.0	7.0	14.0
24573S	65.595	146.534	C-6	9	6	20	0	-0.5	7.0	-5.0	700.0	-1.0	15.0	80.0	3.0	26.0
24582S	65.487	145.877	B-4	8	9	27	0	-0.5	31.0	-5.0	300.0	-0.6	10.0	40.0	2.0	20.0
24583S	65.548	146.351	C-5	8	7	5	0	-0.5	29.0	-5.0	500.0	-0.7	8.0	40.0	3.0	9.0
24588S	65.517	146.180	C-5	8	8	18	0	-0.5	10.0	-5.0	600.0	-0.6	11.0	50.0	6.0	19.0
24592S	65.594	146.558	C-6	9	6	20	0	-0.5	3.0	-5.0	600.0	-0.8	8.0	60.0	2.0	18.0
24595S	65.485	146.812	B-6	8	5	30	0	-0.5	9.0	-8.0	500.0	2.5	10.0	60.0	2.0	18.0
24603S	65.476	146.861	B-6	8	4	35	0	-0.5	8.0	-10.0	500.0	-1.4	13.0	70.0	4.0	26.0
24613S	65.610	146.679	C-6	9	5	15	0	-0.5	-3.0	10.0	800.0	-2.1	12.0	70.0	4.0	29.0
24615S	65.660	146.595	C-6	10	6	30	0	-0.5	13.0	-10.0	1000.0	-1.9	7.0	40.0	9.0	15.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24509S	3.4	7.0	-4.0	0.91	-200.0	12.0	100.0	1.0	10.8	-5.0	-1.0	12.0	3.4	-4.0
24517S	2.5	15.0	-4.0	2.00	-200.0	40.0	410.0	0.5	8.4	-6.0	3.0	86.0	30.7	13.0
24518S	3.3	7.0	-6.0	0.69	-200.0	98.0	160.0	0.4	14.0	-6.0	2.0	15.0	3.9	-8.0
24523S	2.8	6.0	-4.0	0.93	-200.0	14.0	80.0	0.8	11.2	-5.0	-1.0	9.6	3.6	-4.0
24526S	3.4	8.0	7.0	0.62	-200.0	26.0	160.0	1.3	13.4	-5.0	1.0	13.0	3.2	-4.0
24538S	3.1	7.0	-4.0	1.20	-200.0	16.0	110.0	1.0	10.0	-5.0	-1.0	11.0	3.8	-4.0
24539S	3.1	9.0	-4.0	0.93	-200.0	22.0	160.0	0.9	11.6	-5.0	1.0	25.0	9.9	6.0
24541S	3.1	9.0	-4.0	1.20	-200.0	14.0	130.0	1.3	10.0	-5.0	2.0	20.0	13.0	6.0
24546S	2.8	8.0	-4.0	0.93	-200.0	18.0	80.0	0.9	10.0	-5.0	-1.0	14.0	6.7	-4.0
24547S	3.4	4.0	-4.0	0.58	-200.0	6.0	60.0	7.9	11.9	-5.0	-1.0	5.3	1.6	4.0
24552S	2.6	14.0	-4.0	0.89	-200.0	22.0	120.0	1.0	9.4	-5.0	1.0	21.0	14.6	30.0
24555S	3.9	8.0	-4.0	0.48	-200.0	18.0	120.0	3.8	12.7	-5.0	-1.0	11.0	2.8	7.0
24562S	4.0	6.0	-4.0	0.61	-200.0	10.0	70.0	14.0	12.9	-6.0	1.0	9.4	2.9	-7.0
24568S	2.9	7.0	67.0	1.10	-200.0	62.0	220.0	0.9	12.0	-8.0	-1.0	44.0	51.3	-9.0
24569S	3.2	6.0	-4.0	1.20	-200.0	12.0	140.0	1.7	9.7	-5.0	-1.0	15.0	8.0	-7.0
24570S	2.4	7.0	-4.0	1.30	-200.0	14.0	120.0	0.6	9.1	-5.0	2.0	15.0	18.7	9.0
24573S	3.1	7.0	4.0	0.90	-200.0	18.0	120.0	0.8	12.5	-5.0	1.0	11.0	3.9	-4.0
24582S	2.6	5.0	-4.0	0.44	-200.0	8.0	60.0	0.3	7.3	38.0	1.0	6.8	2.6	24.0
24583S	2.1	8.0	-4.0	1.10	-200.0	30.0	80.0	3.1	7.3	-5.0	-1.0	8.2	8.4	-4.0
24588S	3.0	8.0	4.0	1.20	-200.0	10.0	170.0	0.9	10.1	-5.0	1.0	15.0	10.8	5.0
24592S	2.7	7.0	-4.0	0.68	-200.0	18.0	80.0	0.3	10.1	-5.0	1.0	12.0	2.7	-4.0
24595S	2.8	10.0	-4.0	0.83	-200.0	14.0	110.0	0.7	10.3	-5.0	2.0	24.0	9.7	-7.0
24603S	3.6	6.0	8.0	0.91	-200.0	16.0	150.0	0.5	12.8	-5.0	2.0	16.0	5.8	-8.0
24613S	3.1	7.0	9.0	0.57	-300.0	26.0	100.0	1.0	13.3	-5.0	2.0	14.0	4.2	-10.0
24615S	3.4	7.0	-4.0	1.30	-200.0	400.0	400.0	0.9	10.2	-5.0	2.0	61.0	18.8	-8.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24338S	100.0	48.0	86.0	5.3	1.1	3.1	0.5
24339S	60.0	39.0	61.0	6.4	1.3	2.1	0.4
24342S	160.0	50.0	80.0	5.7	1.9	2.5	0.3
24351S	190.0	75.0	128.0	9.0	1.5	6.0	0.8
24352S	78.0	130.0	221.0	18.8	1.5	7.1	1.1
24356S	71.0	40.0	65.0	4.1	1.2	2.2	0.3
24363S	77.0	46.0	79.0	4.9	1.3	2.4	0.3
24368S	76.0	49.0	85.0	5.4	1.3	2.8	0.4
24371S	60.0	30.0	53.0	3.5	0.7	2.0	0.2
24375S	63.0	22.0	44.0	2.7	0.9	2.0	0.2
24378S	260.0	64.0	111.0	8.5	-0.2	5.9	0.8
24379S	110.0	86.0	162.0	13.4	1.7	5.4	0.8
24381S	60.0	37.0	64.0	6.5	1.0	2.8	0.5
24385S	68.0	42.0	68.0	4.7	1.4	2.7	0.3
24386S	85.0	43.0	73.0	4.8	1.7	2.6	0.4
24389S	66.0	45.0	81.0	5.2	1.2	2.7	0.4
24393S	86.0	56.0	100.0	9.7	2.1	3.7	0.6
24406S	110.0	64.0	108.0	10.6	3.5	3.9	0.6
24413S	96.0	46.0	81.0	7.9	0.8	2.7	0.5
24418S	90.0	41.0	58.0	3.5	-0.6	2.1	-0.1
24422S	70.0	58.0	100.0	9.6	2.1	3.5	0.7
24424S	120.0	100.0	175.0	24.2	0.8	12.1	2.6
24426S	55.0	63.0	120.0	14.5	-0.5	9.0	1.4
24429S	100.0	49.0	82.0	5.9	1.4	3.1	0.5
24433S	160.0	241.0	512.0	47.0	-0.2	20.3	3.1

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24436S	65.455	146.645	B-6	7	5	11	0	-0.5	15.0	-8.0	600.0	-1.7	10.0	50.0	4.0	11.0
24438S	65.675	146.490	C-5	10	6	22	0	-0.5	5.0	-5.0	800.0	-0.9	13.0	80.0	4.0	12.0
24444S	65.617	146.954	C-6	9	4	8	0	-0.5	13.0	-11.0	1000.0	-1.9	20.0	120.0	8.0	47.0
24447S	65.481	146.553	B-6	8	6	32	0	-0.5	8.0	6.0	600.0	-1.2	10.0	60.0	2.0	16.0
24449S	65.647	146.566	C-6	10	6	31	0	-0.5	11.0	-10.0	700.0	-1.4	14.0	80.0	6.0	28.0
24451S	65.599	146.242	C-5	9	7	23	0	-0.5	6.0	-7.0	800.0	-0.8	14.0	70.0	7.0	21.0
24453S	65.587	146.752	C-6	9	5	20	0	-0.5	8.0	-11.0	600.0	-2.1	7.0	60.0	8.0	22.0
24456S	65.576	146.850	C-6	9	4	26	0	-0.5	7.0	-15.0	1600.0	3.1	5.0	60.0	2.0	16.0
24460S	65.656	146.790	C-6	10	5	31	0	-0.5	18.0	-12.0	900.0	-2.3	17.0	110.0	8.0	42.0
24462S	65.533	146.415	C-5	8	6	12	0	-0.5	30.0	-6.0	600.0	-0.7	15.0	70.0	4.0	28.0
24465S	65.470	146.192	B-5	8	8	31	0	-0.5	8.0	-6.0	800.0	-0.8	13.0	80.0	3.0	20.0
24467S	65.405	146.425	B-5	7	6	25	0	-0.5	15.0	-5.0	400.0	-0.8	8.0	40.0	13.0	15.0
24468S	65.547	146.259	C-5	8	7	2	0	-0.5	22.0	-6.0	700.0	-0.8	16.0	70.0	4.0	20.0
24472S	65.420	146.074	B-5	7	8	22	0	-0.5	69.0	-5.0	200.0	-0.5	11.0	40.0	3.0	23.0
24474S	65.539	146.765	C-6	8	5	8	0	-0.5	6.0	-6.0	600.0	-0.8	12.0	80.0	4.0	23.0
24479S	65.483	146.378	B-5	8	7	31	0	-0.5	10.0	-6.0	700.0	-1.0	15.0	60.0	5.0	21.0
24482S	65.554	146.732	C-6	8	5	4	0	-0.5	10.0	-5.0	600.0	-0.9	14.0	50.0	6.0	20.0
24486S	65.614	146.867	C-6	9	4	14	0	-0.5	12.0	17.0	1000.0	-1.3	7.0	70.0	5.0	17.0
24488S	65.441	145.960	B-4	7	9	18	0	-0.5	56.0	7.0	300.0	-0.6	13.0	40.0	5.0	33.0
24490S	65.421	146.636	B-6	7	5	24	0	-0.5	14.0	-11.0	500.0	-1.5	10.0	40.0	13.0	20.0
24491S	65.501	146.128	C-5	8	8	21	0	-0.5	4.0	-5.0	500.0	1.1	9.0	60.0	2.0	16.0
24492S	65.572	146.497	C-5	9	6	28	0	-0.5	8.0	-9.0	500.0	2.0	12.0	80.0	3.0	21.0
24498S	65.565	146.630	C-6	9	5	36	0	-0.5	10.0	-5.0	600.0	-0.8	12.0	70.0	6.0	37.0
24500S	65.520	146.278	C-5	8	7	15	0	-0.5	10.0	-5.0	500.0	-0.7	10.0	50.0	2.0	14.0
24504S	65.642	146.629	C-6	9	5	1	0	-0.5	7.0	-5.0	600.0	-1.8	10.0	60.0	5.0	22.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24436S	3.3	16.0	-4.0	1.40	-200.0	14.0	140.0	2.9	9.9	-5.0	3.0	29.0	16.1	13.0
24438S	2.8	8.0	-4.0	0.83	-200.0	14.0	100.0	0.7	11.7	-5.0	-1.0	12.0	3.5	-4.0
24444S	5.2	6.0	6.0	0.82	-300.0	110.0	150.0	1.3	18.8	-5.0	-1.0	19.0	4.5	-5.0
24447S	2.8	6.0	-4.0	1.20	-200.0	14.0	110.0	2.1	9.3	-5.0	-1.0	12.0	4.8	-6.0
24449S	4.2	5.0	10.0	0.57	-200.0	32.0	130.0	0.9	14.4	-5.0	-1.0	15.0	4.5	-8.0
24451S	3.4	9.0	-4.0	1.10	-200.0	16.0	110.0	1.9	12.9	-5.0	1.0	13.0	3.1	-4.0
24453S	2.4	8.0	-4.0	1.10	-200.0	82.0	280.0	1.0	10.6	-5.0	-1.0	55.0	46.3	15.0
24456S	2.1	10.0	-4.0	0.85	-300.0	28.0	90.0	-0.4	9.4	7.0	-2.0	73.0	328.0	15.0
24460S	4.3	7.0	-4.0	1.10	-300.0	96.0	130.0	0.9	15.4	-6.0	-2.0	29.0	14.0	-6.0
24462S	3.5	10.0	-4.0	1.00	-200.0	22.0	110.0	6.2	12.1	-5.0	-1.0	15.0	4.3	-4.0
24465S	3.1	10.0	-4.0	1.10	-200.0	12.0	140.0	0.9	12.0	-5.0	1.0	12.0	4.7	-4.0
24467S	2.0	5.0	-4.0	1.30	-200.0	16.0	240.0	0.6	7.5	-5.0	1.0	12.0	27.0	5.0
24468S	3.7	6.0	-4.0	0.94	-200.0	14.0	190.0	3.1	12.9	-5.0	1.0	14.0	6.0	-4.0
24472S	2.8	6.0	-4.0	0.44	-200.0	34.0	60.0	6.5	8.6	-5.0	1.0	8.1	1.9	5.0
24474S	3.3	7.0	-4.0	0.77	-200.0	18.0	70.0	0.7	13.0	-5.0	1.0	10.0	3.8	-4.0
24479S	3.3	9.0	-4.0	1.00	-200.0	14.0	150.0	0.8	11.1	-5.0	1.0	13.0	5.3	-4.0
24482S	3.3	7.0	-4.0	1.10	-200.0	36.0	250.0	0.6	10.3	-5.0	1.0	31.0	10.3	-4.0
24486S	3.0	14.0	-4.0	1.50	-300.0	62.0	280.0	0.8	12.1	29.0	2.0	110.0	96.8	10.0
24488S	3.0	4.0	-4.0	0.40	-200.0	10.0	50.0	1.8	9.3	-5.0	-1.0	7.0	2.4	8.0
24490S	2.7	7.0	-4.0	1.40	-200.0	14.0	340.0	0.9	9.5	-5.0	2.0	21.0	21.3	34.0
24491S	2.9	10.0	-4.0	1.00	-200.0	10.0	90.0	0.8	11.0	-5.0	1.0	11.0	3.6	-4.0
24492S	3.3	8.0	4.0	1.00	-200.0	14.0	120.0	1.0	13.4	-5.0	-1.0	11.0	4.7	-8.0
24498S	3.6	7.0	-4.0	0.56	-200.0	22.0	110.0	1.0	13.1	-5.0	-1.0	12.0	3.3	-4.0
24500S	2.5	10.0	-4.0	1.00	-200.0	8.0	80.0	1.4	8.4	-5.0	1.0	11.0	4.3	-4.0
24504S	3.4	9.0	-4.0	0.88	-200.0	42.0	160.0	0.9	12.0	-5.0	-1.0	32.0	7.3	10.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24436S	67.0	70.0	126.0	10.6	1.0	5.0	0.8
24438S	65.0	49.0	91.0	5.3	1.0	2.8	0.3
24444S	220.0	65.0	110.0	10.3	1.2	3.3	0.5
24447S	59.0	40.0	67.0	6.1	0.8	2.2	0.4
24449S	130.0	62.0	110.0	9.1	1.4	2.7	0.4
24451S	86.0	48.0	75.0	5.4	2.0	3.0	0.4
24453S	770.0	107.0	181.0	21.3	1.1	10.0	1.8
24456S	120.0	161.0	262.0	40.5	1.0	17.6	-0.1
24460S	210.0	76.0	114.0	16.7	2.0	5.9	0.9
24462S	82.0	51.0	81.0	5.5	2.1	3.2	0.4
24465S	72.0	47.0	81.0	5.4	1.8	2.6	0.4
24467S	60.0	34.0	56.0	4.0	0.7	2.8	-0.1
24468S	79.0	49.0	81.0	5.1	1.3	2.3	0.3
24472S	130.0	31.0	49.0	3.7	1.0	2.0	0.2
24474S	110.0	37.0	59.0	5.0	-0.5	3.0	0.4
24479S	75.0	46.0	74.0	5.0	1.7	2.9	0.4
24482S	240.0	70.0	128.0	8.3	-0.7	5.8	0.8
24486S	230.0	145.0	288.0	35.2	-0.6	21.1	4.1
24488S	70.0	24.0	69.0	2.7	0.5	1.6	0.2
24490S	86.0	48.0	83.0	9.5	1.0	4.4	0.8
24491S	65.0	43.0	71.0	4.6	1.1	2.8	0.4
24492S	64.0	47.0	79.0	7.1	1.7	2.9	0.5
24498S	83.0	45.0	73.0	5.3	1.8	3.0	0.3
24500S	61.0	36.0	58.0	3.7	0.9	2.4	0.3
24504S	130.0	93.0	147.0	14.0	1.3	5.3	0.8

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24509S	65.431	146.219	B-5	7	7	13	0	-0.5	9.0	-6.0	700.0	-0.7	12.0	70.0	2.0	20.0
24517S	65.614	146.848	C-6	9	4	14	0	-0.5	11.0	-8.0	500.0	-1.9	8.0	30.0	5.0	12.0
24518S	65.661	146.560	C-6	10	6	29	0	-0.5	6.0	15.0	700.0	-1.5	11.0	90.0	6.0	15.0
24523S	65.654	146.419	C-5	10	6	36	0	-0.5	6.0	-5.0	600.0	1.5	10.0	60.0	3.0	19.0
24526S	65.594	146.704	C-6	9	5	21	0	-0.5	8.0	-7.0	700.0	-0.8	13.0	70.0	10.0	33.0
24538S	65.483	146.402	B-5	8	7	31	0	-0.5	11.0	1200.0	600.0	-0.7	11.0	60.0	3.0	22.0
24539S	65.554	146.717	C-6	8	5	4	0	-0.5	7.0	-6.0	700.0	-0.8	12.0	60.0	6.0	22.0
24541S	65.433	146.716	B-6	7	5	16	10	-0.5	13.0	-8.0	700.0	-1.6	11.0	60.0	5.0	12.0
24546S	65.469	146.878	B-6	7	4	2	0	-0.5	9.0	-5.0	500.0	-0.8	10.0	60.0	5.0	23.0
24547S	65.451	145.748	B-4	7	10	8	0	-0.5	36.0	-5.0	300.0	-0.6	14.0	60.0	3.0	36.0
24552S	65.597	146.386	C-5	9	7	19	0	-0.5	62.0	-5.0	500.0	-0.5	9.0	60.0	14.0	21.0
24555S	65.488	146.059	B-5	8	8	26	0	-0.5	45.0	-5.0	500.0	-0.6	14.0	70.0	5.0	34.0
24562S	65.390	145.991	B-4	7	8	36	0	-0.5	32.0	7.0	400.0	1.6	19.0	90.0	3.0	53.0
24568S	65.569	146.762	C-6	9	5	32	0	-0.5	10.0	13.0	700.0	-2.1	10.0	70.0	8.0	22.0
24569S	65.466	146.611	B-6	7	5	1	0	-0.5	18.0	5.0	700.0	-1.3	12.0	60.0	4.0	11.0
24570S	65.587	146.432	C-5	9	6	23	-18	-0.5	18.0	-5.0	400.0	1.5	10.0	50.0	7.0	14.0
24573S	65.595	146.534	C-6	9	6	20	0	-0.5	7.0	-5.0	700.0	-1.0	15.0	80.0	3.0	26.0
24582S	65.487	145.877	B-4	8	9	27	0	-0.5	31.0	-5.0	300.0	-0.6	10.0	40.0	2.0	20.0
24583S	65.548	146.351	C-5	8	7	5	0	-0.5	29.0	-5.0	500.0	-0.7	8.0	40.0	3.0	9.0
24588S	65.517	146.180	C-5	8	8	18	0	-0.5	10.0	-5.0	600.0	-0.6	11.0	50.0	6.0	19.0
24592S	65.594	146.558	C-6	9	6	20	0	-0.5	3.0	-5.0	600.0	-0.8	8.0	60.0	2.0	18.0
24595S	65.485	146.812	B-6	8	5	30	0	-0.5	9.0	-8.0	500.0	2.5	10.0	60.0	2.0	18.0
24603S	65.476	146.861	B-6	8	4	35	0	-0.5	8.0	-10.0	500.0	-1.4	13.0	70.0	4.0	26.0
24613S	65.610	146.679	C-6	9	5	15	0	-0.5	-3.0	10.0	800.0	-2.1	12.0	70.0	4.0	29.0
24615S	65.660	146.595	C-6	10	6	30	0	-0.5	13.0	-10.0	1000.0	-1.9	7.0	40.0	9.0	15.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24509S	3.4	7.0	-4.0	0.91	-200.0	12.0	100.0	1.0	10.8	-5.0	-1.0	12.0	3.4	-4.0
24517S	2.5	15.0	-4.0	2.00	-200.0	40.0	410.0	0.5	8.4	-6.0	3.0	86.0	30.7	13.0
24518S	3.3	7.0	-6.0	0.69	-200.0	98.0	160.0	0.4	14.0	-6.0	2.0	15.0	3.9	-8.0
24523S	2.8	6.0	-4.0	0.93	-200.0	14.0	80.0	0.8	11.2	-5.0	-1.0	9.6	3.6	-4.0
24526S	3.4	8.0	7.0	0.62	-200.0	26.0	160.0	1.3	13.4	-5.0	1.0	13.0	3.2	-4.0
24538S	3.1	7.0	-4.0	1.20	-200.0	16.0	110.0	1.0	10.0	-5.0	-1.0	11.0	3.8	-4.0
24539S	3.1	9.0	-4.0	0.93	-200.0	22.0	160.0	0.9	11.6	-5.0	1.0	25.0	9.9	6.0
24541S	3.1	9.0	-4.0	1.20	-200.0	14.0	130.0	1.3	10.0	-5.0	2.0	20.0	13.0	6.0
24546S	2.8	8.0	-4.0	0.93	-200.0	18.0	80.0	0.9	10.0	-5.0	-1.0	14.0	6.7	-4.0
24547S	3.4	6.0	-4.0	0.58	-200.0	6.0	60.0	7.9	11.9	-5.0	-1.0	5.3	1.6	4.0
24552S	2.6	14.0	-4.0	0.89	-200.0	22.0	120.0	1.0	9.4	-5.0	1.0	21.0	14.6	30.0
24555S	3.9	8.0	-4.0	0.48	-200.0	18.0	120.0	3.8	12.7	-5.0	-1.0	11.0	2.8	7.0
24562S	4.0	6.0	-4.0	0.61	-200.0	10.0	70.0	14.0	12.9	-6.0	1.0	9.4	2.9	-7.0
24568S	2.9	7.0	67.0	1.10	-200.0	62.0	220.0	0.9	12.0	-8.0	-1.0	44.0	51.3	-9.0
24569S	3.2	6.0	-4.0	1.20	-200.0	12.0	140.0	1.7	9.7	-5.0	-1.0	15.0	8.0	-7.0
24570S	2.4	7.0	-4.0	1.30	-200.0	14.0	120.0	0.6	9.1	-5.0	2.0	15.0	18.7	9.0
24573S	3.1	7.0	4.0	0.90	-200.0	18.0	120.0	0.8	12.5	-5.0	1.0	11.0	3.9	-4.0
24582S	2.6	5.0	-4.0	0.44	-200.0	8.0	60.0	0.3	7.3	38.0	1.0	6.8	2.6	24.0
24583S	2.1	8.0	-4.0	1.10	-200.0	30.0	80.0	3.1	7.3	-5.0	-1.0	8.2	8.4	-4.0
24588S	3.0	8.0	4.0	1.20	-200.0	10.0	170.0	0.9	10.1	-5.0	1.0	15.0	10.8	5.0
24592S	2.7	7.0	-4.0	0.68	-200.0	18.0	80.0	0.3	10.1	-5.0	1.0	12.0	2.7	-4.0
24595S	2.8	10.0	-4.0	0.83	-200.0	14.0	110.0	0.7	10.3	-5.0	2.0	24.0	9.7	-7.0
24603S	3.6	6.0	8.0	0.91	-200.0	16.0	150.0	0.5	12.8	-5.0	2.0	16.0	5.8	-8.0
24613S	3.1	7.0	9.0	0.57	-300.0	26.0	100.0	1.0	13.3	-5.0	2.0	14.0	4.2	-10.0
24615S	3.4	7.0	-4.0	1.30	-200.0	400.0	400.0	0.9	10.2	-5.0	2.0	61.0	18.8	-8.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24509S	82.0	43.0	71.0	4.9	1.4	2.5	0.3
24517S	150.0	93.0	201.0	18.4	-0.6	12.5	2.1
24518S	180.0	61.0	99.0	9.2	1.3	2.6	0.4
24523S	64.0	39.0	64.0	4.6	1.5	2.3	0.3
24526S	93.0	47.0	89.0	5.8	1.5	3.1	0.4
24538S	66.0	40.0	62.0	4.2	0.9	2.2	0.3
24539S	140.0	67.0	109.0	8.4	1.3	5.1	0.7
24541S	72.0	53.0	86.0	8.4	1.8	3.3	0.6
24546S	99.0	43.0	62.0	4.8	1.2	2.8	0.5
24547S	58.0	19.0	40.0	2.4	1.2	1.6	0.2
24552S	61.0	49.0	79.0	5.1	1.1	3.9	0.6
24555S	71.0	43.0	80.0	5.2	1.5	2.7	0.4
24562S	80.0	34.0	64.0	6.0	0.8	2.0	0.2
24568S	80.0	80.0	156.0	17.8	1.2	8.3	1.7
24569S	800.0	43.0	88.0	6.8	0.9	2.3	0.5
24570S	53.0	42.0	73.0	4.4	-0.2	3.0	0.6
24573S	69.0	46.0	83.0	5.2	1.9	2.7	0.4
24582S	50.0	26.0	47.0	2.8	0.9	1.9	0.2
24583S	67.0	31.0	47.0	3.0	1.3	1.8	0.3
24588S	70.0	44.0	72.0	5.4	0.6	3.1	0.5
24592S	76.0	47.0	83.0	5.3	1.4	2.6	0.3
24595S	65.0	64.0	108.0	10.4	1.1	4.2	0.7
24603S	97.0	45.0	80.0	7.6	1.5	3.0	0.5
24613S	98.0	57.0	112.0	10.0	1.8	3.6	0.5
24615S	390.0	102.0	193.0	19.9	1.1	11.0	1.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24619S	65.403	146.797	B-6	7	5	30	0	-0.5	6.0	-5.0	400.0	-0.7	7.0	40.0	5.0	9.5
24622S	65.475	146.825	B-6	8	4	36	0	-0.5	7.0	-11.0	600.0	-1.6	13.0	90.0	3.0	18.0
24627S	65.667	146.703	C-6	10	5	28	0	-0.5	11.0	-11.0	600.0	-1.7	13.0	80.0	6.0	31.0
24632S	65.461	145.811	B-4	7	9	1	0	-0.5	35.0	82.0	300.0	0.8	12.0	40.0	3.0	25.0
24635S	65.406	146.477	B-5	7	6	27	0	-0.5	23.0	-6.0	600.0	-0.8	13.0	60.0	13.0	48.0
24637S	65.603	146.410	C-5	9	6	13	0	-0.5	20.0	-5.0	500.0	-0.9	9.0	60.0	7.0	12.0
24638S	65.664	146.400	C-5	10	6	25	0	-0.5	7.0	-5.0	600.0	0.7	12.0	60.0	3.0	21.0
24639S	65.561	146.789	C-6	9	5	31	0	-0.5	8.0	-6.0	600.0	-1.0	13.0	60.0	6.0	18.0
24643S	65.407	146.443	B-5	7	6	26	0	-0.5	14.0	-5.0	500.0	-0.7	9.0	50.0	7.0	23.0
24648S	65.668	146.438	C-5	10	6	26	0	-0.5	7.0	-6.0	800.0	1.3	9.0	90.0	3.0	12.0
24657S	65.677	146.716	C-6	10	5	21	0	-0.5	10.0	-10.0	700.0	-1.6	12.0	70.0	6.0	22.0
24663S	65.468	146.284	B-5	7	7	3	0	-0.5	15.0	-5.0	600.0	-0.6	14.0	50.0	8.0	17.0
24674S	65.445	146.073	B-5	7	8	10	0	-0.5	50.0	-5.0	300.0	-0.5	9.0	40.0	3.0	31.0
24678S	65.677	146.910	C-6	10	4	21	0	-0.5	5.0	-11.0	1300.0	-1.5	16.0	100.0	5.0	35.0
24683S	65.413	146.810	B-6	7	5	19	0	-0.5	9.0	-8.0	400.0	-1.1	8.0	50.0	6.0	12.0
24685S	65.507	146.975	C-6	8	4	20	0	-0.5	6.0	-6.0	600.0	-1.0	13.0	70.0	4.0	26.0
24694S	65.557	146.895	C-6	9	4	34	0	-0.5	6.0	-10.0	900.0	-1.5	11.0	80.0	4.0	19.0
24697S	65.656	146.594	C-6	10	6	31	0	0.5	13.0	-12.0	1000.0	-2.1	12.0	60.0	8.0	16.0
24703S	65.605	146.992	C-6	9	4	18	0	-0.5	6.0	-5.0	700.0	-0.8	25.0	80.0	8.0	41.0
24713S	65.587	146.826	C-6	9	4	24	0	-0.5	8.0	-15.0	800.0	-2.9	5.0	60.0	4.0	17.0
24716S	65.574	146.900	C-6	9	4	27	0	1.0	27.0	-14.0	700.0	3.1	20.0	80.0	14.0	54.0
24719S	65.664	146.599	C-6	10	5	25	-11	-0.5	7.0	-9.0	400.0	-1.7	6.0	30.0	5.0	16.0
24726S	65.528	145.821	C-4	8	9	11	0	-0.5	4.0	-5.0	700.0	1.0	12.0	60.0	3.0	20.0
24727S	65.520	145.725	C-4	8	10	17	0	-0.5	31.0	-5.0	400.0	1.1	11.0	50.0	2.0	25.0
24730S	65.695	146.834	C-6	10	4	13	0	-0.5	6.0	-10.0	1200.0	-1.6	15.0	120.0	5.0	33.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24619S	1.8	8.0	-4.0	0.95	-200.0	10.0	110.0	0.5	6.8	-5.0	1.0	10.0	4.0	5.0
24622S	3.7	8.0	-4.0	1.10	-200.0	10.0	60.0	0.7	14.2	-5.0	-1.0	10.0	2.9	-9.0
24627S	3.5	10.0	12.0	1.10	-200.0	80.0	130.0	1.2	14.4	-5.0	2.0	32.0	10.0	-9.0
24632S	2.9	7.0	5.0	0.50	-200.0	8.0	50.0	1.7	10.1	-5.0	-1.0	5.6	2.9	34.0
24635S	3.0	6.0	-4.0	0.76	-200.0	36.0	120.0	0.9	10.5	-5.0	-1.0	12.0	5.3	4.0
24637S	2.5	11.0	-4.0	1.50	-200.0	14.0	120.0	0.7	9.3	8.0	3.0	20.0	11.8	24.0
24638S	3.1	7.0	-4.0	1.00	-200.0	10.0	110.0	0.6	10.9	-5.0	1.0	12.0	4.8	-4.0
24639S	2.6	6.0	-4.0	0.91	-200.0	32.0	180.0	0.9	10.5	5.0	-1.0	21.0	16.6	-4.0
24643S	2.4	7.0	-4.0	0.72	-200.0	24.0	90.0	0.7	8.5	-5.0	-1.0	9.6	5.4	4.0
24648S	2.7	8.0	-4.0	1.10	-200.0	10.0	100.0	0.7	12.4	-5.0	-1.0	10.0	4.4	-4.0
24657S	3.2	8.0	-4.0	1.00	-200.0	50.0	130.0	0.7	12.7	-5.0	1.0	24.0	6.4	-8.0
24663S	3.0	7.0	-4.0	1.20	-200.0	10.0	190.0	1.1	9.5	-5.0	1.0	17.0	13.0	7.0
24674S	2.8	7.0	-4.0	0.33	-200.0	26.0	60.0	2.8	8.1	-5.0	-1.0	8.3	2.2	17.0
24678S	3.7	7.0	-5.0	0.70	-200.0	22.0	170.0	1.0	14.0	-5.0	-1.0	14.0	4.9	-9.0
24683S	2.3	6.0	-4.0	1.10	200.0	10.0	120.0	0.9	8.3	-5.0	3.0	12.0	5.6	7.0
24685S	2.9	6.0	-4.0	0.56	-200.0	30.0	130.0	0.8	11.5	-5.0	1.0	12.0	3.7	-4.0
24694S	3.0	4.0	-4.0	1.00	-200.0	26.0	60.0	0.5	13.8	-5.0	-1.0	11.0	3.3	-8.0
24697S	3.7	9.0	-4.0	1.20	-200.0	440.0	360.0	0.3	11.8	-5.0	3.0	55.0	13.7	-9.0
24703S	3.2	8.0	4.0	0.58	-200.0	26.0	120.0	0.9	12.6	-5.0	1.0	14.0	2.9	-4.0
24713S	2.7	15.0	-4.0	1.30	-300.0	46.0	270.0	0.8	11.5	-11.0	2.0	110.0	174.0	-11.0
24716S	4.0	6.0	-4.0	1.00	-200.0	170.0	240.0	1.3	13.6	-5.0	3.0	28.0	22.4	-10.0
24719S	2.3	7.0	-4.0	1.20	-200.0	62.0	360.0	0.6	6.8	-5.0	2.0	45.0	13.7	-7.0
24726S	3.2	8.0	-4.0	1.10	-200.0	10.0	100.0	1.2	10.6	-5.0	-1.0	13.0	6.3	-4.0
24727S	2.7	8.0	-4.0	0.55	-200.0	12.0	40.0	1.5	9.1	-5.0	-1.0	6.7	1.7	-4.0
24730S	3.4	6.0	-5.0	0.61	-200.0	24.0	130.0	1.0	14.4	-5.0	2.0	13.0	4.1	-9.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24619S	45.0	28.0	50.0	3.1	-0.5	2.4	0.3
24622S	70.0	45.0	80.0	7.5	1.1	2.2	0.4
24627S	220.0	85.0	148.0	14.5	1.0	6.2	0.9
24632S	59.0	23.0	42.0	2.8	1.1	1.9	0.3
24635S	120.0	44.0	77.0	4.8	1.3	2.6	0.4
24637S	61.0	56.0	86.0	5.5	-0.6	4.0	0.6
24638S	69.0	43.0	70.0	5.0	1.3	2.7	0.4
24639S	150.0	56.0	97.0	7.2	1.4	5.3	0.8
24643S	87.0	38.0	60.0	4.0	1.2	2.3	0.3
24648S	55.0	42.0	68.0	4.9	1.2	2.4	0.3
24657S	160.0	68.0	120.0	10.4	1.0	4.1	0.7
24663S	75.0	43.0	70.0	5.2	0.9	3.6	0.5
24674S	57.0	29.0	49.0	3.6	0.7	2.2	0.3
24678S	110.0	55.0	89.0	8.2	2.0	3.3	0.5
24683S	60.0	35.0	61.0	5.8	1.4	2.4	0.4
24685S	80.0	42.0	77.0	5.0	1.2	2.1	0.3
24694S	110.0	41.0	69.0	6.5	1.2	2.5	0.3
24697S	340.0	117.0	216.0	20.4	1.4	8.9	1.3
24703S	92.0	44.0	80.0	4.9	1.6	2.3	0.3
24713S	420.0	181.0	323.0	39.8	-0.9	19.2	4.1
24716S	650.0	74.0	151.0	21.1	1.5	16.5	2.4
24719S	240.0	75.0	138.0	13.8	-0.5	6.1	0.9
24726S	67.0	46.0	76.0	5.1	1.3	2.1	0.3
24727S	66.0	30.0	50.0	3.4	1.2	2.2	0.3
24730S	110.0	53.0	87.0	7.7	1.2	2.6	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu
24736S	65.625	146.643	C-6	9	5	11	0	-0.5	6.0	-9.0	500.0	1.1	10.0	70.0	7.0	30.0
24746S	65.533	146.484	C-5	8	6	10	0	-0.5	29.0	-5.0	700.0	-0.7	11.0	40.0	6.0	16.0

Station	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W
24736S	3.1	7.0	6.0	0.58	-200.0	30.0	110.0	1.0	12.2	-5.0	1.0	13.0	3.5	-15.0
24746S	2.9	13.0	-4.0	1.00	-200.0	14.0	100.0	1.7	9.3	-5.0	1.0	18.0	15.6	6.0

Station	Zn	La	Ce	Sm	Eu	Yb	Lu
24736S	100.0	45.0	76.0	8.0	1.5	3.1	0.6
24746S	66.0	53.0	88.0	5.7	1.4	3.9	0.6

APPENDIX C

HEAVY MINERAL CONCENTRATE ANALYSES FOR THE LIME PEAK - MT PRINDLE AREA EAST CENTRAL ALASKA

compiled by T.B. Weglarz

APPENDIX C

HEAVY MINERAL CONCENTRATE ANALYSES FOR THE LIME PEAK - MT PRINDLE AREA EAST CENTRAL ALASKA

This appendix contains analytical data sets on 440 heavy mineral concentrate samples developed for the Lime Peak - Mt Prindle Area mineral assessment conducted by the Alaska Division of Geological and Geophysical Surveys, 1986-87. Data for a single sample are arranged in 2-page sets. Page one of each set includes the following identification information for each sample: Station numbers that correspond to sample locations shown on Plate 5-1; Latitude (Lat.); Longitude (Long.); Circle Quadrangle 15-minute map designations (Quad.); Township (T.); Range (R.); and Section (Sec.). Duplicate samples can be recognized from matching positive/negative number pairs in the column "Dup. Code." For example: 2 and -2 indicate that the two samples bearing those Dup. Codes were collected at the same sample site and treated in the identical manner for all subsequent sample handling and analysis procedures. A zero in the "Dup. Code" column indicates a single heavy mineral concentrate sample was collected at that site. The total weight of the -NBS 35-mesh sample is recorded in the "Sample Weight" column. The weight of the -NBS 35-mesh non-magnetic heavy mineral fraction is recorded in the "Heavy Min. Weight" column. The station number is repeated on each of the pages required to display the entire set of analyses for each sample. All analyses are reported in parts per million (ppm) unless otherwise indicated in the column heading. Negative numbers in the analytical data columns indicate that the element in question was not detected at a concentration equal to the absolute value of the negative value reported. Samples having insufficient heavy minerals to analyze for specific elements are noted by "NS" (not sufficient sample) entered in the pertinent elemental data column.

Heavy minerals material analyzed consisted of the non-magnetic fraction of greater than 3.3 S.G. minerals separated from an initial sample of -NBS 35-mesh (0.5 mm) clastic material collected from active stream channels in the Lime Peak - Mt Prindle area.

An attempt was made to analyze all non-magnetic heavy mineral concentrate samples for 17 elements. Instrumental neutron activation analytical methods were used to determine concentration levels of As, Au, Ba, Co, Cr, Fe, Mo, Sb, Sc, Ta, Th, U, W,and La. A hot LeFort aqua regia digestion followed by atomic absorbtion analysis of the resulting solution was used to quantify concentrations of Cu and Ag. Sn concentrations were determined by X-ray fluorescence analysis of pressed powder pellets if there was sufficient sample. If there were insufficient non-magnetic heavy minerals to form the required pressed powder pellet, the powdered analytical fraction was scanned with an X-ray fluorescence spectrometer to make a qualitative estimate of the Sn content. Those under-weight fractions having a high Sn content were subsequently fused into a lithium tetraborate glass disk and quantitatively determined by X-ray fluorescence spectroscopy. Those under-weight fractions having a low Sn concentration were quantified directly by optical emission spectroscopy. Analytical work was conducted by Nuclear Activation Services, Ltd., Hamilton, Ontario, Canada under State contract CC-10-7-0006.

Appendix C Elemental analyses of -NBS 35 mesh nonmagnetic heavy-mineral (S.G.>3.3) concentrates derived from samples collected in the Lime Peak - Mt. Prindle area of the Circle Quadrangle, Alaska. Analyses are reported in parts per million (ppm) unless stated otherwise. Analytical data has been normalized by multiplying the initial analyses by the quotient (Heavy Minineral Weight/Total Sample Weight). Negative numbers indicate that the element was not detected at a concentration level equal to the absolute value of the negative number reported. NS = not sufficient sample for analysis.

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
15589P	65.623	146.312	C-5	9	7	9	0	300.100	1.340	NS	0.848	0.281	-5.805	0.447	-2.233
15593P	65.631	146.331	C-5	9	7	5	0	319.400	0.858	NS	0.537	-0.156	8.865	-0.269	-1.343
15753P	65.465	145.782	B-4	7	10	6	0	326.300	4.080	NS	0.988	18.756	6.252	-1.250	-6.252
15811P	65.578	146.860	C-6	9	4	26	0	269.700	1.150	0.011	-0.469	-1.535	110.864	0.136	2.430
15817P	65.543	146.253	C-5	8	7	2	10	257.100	4.520	NS	1.143	-0.246	22.855	-1.758	-8.790
15820P	65.524	146.080	C-5	8	8	15	0	324.100	2.160	NS	0.933	0.127	4.665	-0.666	-3.332
15892P	65.406	146.462	B-5	7	6	26	0	223.300	30.900	NS	2.076	0.830	-41.514	-13.838	-69.189
15903P	65.464	145.731	B-4	7	10	5	0	293.700	155.000	NS	4.750	-2.639	-158.325	-52.775	-263.875
15916P	65.452	146.655	B-6	7	5	11	0	218.300	0.997	NS	0.379	-0.023	5.481	-0.457	-2.284
15922P	65.543	146.253	C-5	8	7	2	-10	279.500	5.080	NS	0.981	-0.254	27.263	-1.818	-9.088
15934P	65.381	146.165	B-5	6	8	6	0	316.000	1.450	0.023	1.698	3.350	6.883	-0.459	-2.294
15942P	65.490	146.224	B-5	8	7	25	0	328.800	3.420	NS	0.270	-0.250	9.361	-1.040	-5.201
15964P	65.572	146.765	C-6	9	5	32	0	264.700	1.030	0.014	-0.428	-1.440	50.586	0.078	2.529
15969P	65.535	146.295	C-5	8	7	10	0	293.100	2.010	NS	0.960	-0.144	5.486	-0.686	-3.429
15974P	65.584	146.801	C-6	9	5	30	0	241.600	0.965	0.014	0.559	-1.478	119.826	-0.084	2.397
16000P	65.451	146.444	B-5	7	6	11	0	232.700	2.230	NS	1.054	-0.134	-2.875	-0.958	-4.792
16710P	65.399	146.714	B-6	7	5	28	0	395.300	5.540	-0.007	0.743	0.126	-1.401	0.252	0.561
16711P	65.657	146.631	C-6	10	5	35	0	397.400	0.783	0.008	0.453	-0.532	-4.926	0.106	0.690
16720P	65.487	145.878	B-4	8	9	27	0	368.400	3.660	NS	9.935	6.458	25.831	-0.993	-7.948
16741P	65.477	145.656	B-4	8	10	34	0	265.800	6.280	NS	0.165	-0.189	11.813	-2.363	-11.813

Appendix C (continued)

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
15589P	NS	0.080	-0.022	0.714	0.402	1.474	0.179	0.670	0.317	0.375	12.502
15593P	NS	0.051	-0.040	0.994	0.322	0.403	0.054	0.349	0.158	0.161	7.334
15753P	NS	0.225	-0.063	0.063	0.750	18.756	0.625	0.375	0.175	3.376	1.751
15811P	0.239	0.019	-0.017	0.090	0.107	14.498	1.748	31.980	4.818	19.188	65.666
15817P	NS	0.281	-0.088	0.211	1.231	0.070	0.879	1.934	0.352	0.193	8.087
15820P	NS	0.093	-0.033	0.140	0.467	1.066	0.333	0.666	0.220	0.347	1.266
15892P	NS	1.799	-0.692	0.761	16.605	1.107	-1.384	-1.384	0.277	15.222	2.768
15903P	NS	7.916	-2.639	1.583	73.885	1.055	-5.277	-5.277	-1.055	-2.111	5.277
15916P	NS	0.096	-0.023	0.260	0.411	0.329	0.457	1.233	0.306	0.324	3.517
15922P	NS	0.254	-0.091	0.200	1.454	0.073	0.909	2.181	0.382	0.236	9.269
15934P	NS	0.069	-0.023	2.524	0.459	3.441	0.092	0.321	0.101	0.505	0.872
15942P	NS	0.146	-0.073	0.177	1.040	0.042	0.520	1.872	0.312	0.135	17.474
15964P	0.210	0.005	-0.016	-0.058	0.060	140.083	0.662	35.410	5.214	28.017	55.644
15969P	NS	0.062	-0.034	0.049	0.343	41.832	0.343	0.617	0.350	2.606	1.920
15974P	0.152	0.014	-0.016	0.072	0.107	99.855	1.238	27.560	5.592	20.370	44.735
16000P	NS	-0.048	-0.048	0.010	0.096	124.581	0.862	0.575	0.268	5.558	0.862
16710P	0.631	0.115	-0.056	0.252	0.212	135.942	0.210	0.631	0.249	3.784	1.163
16711P	0.571	0.030	-0.008	0.069	0.084	5.714	0.162	10.640	1.525	2.364	22.856
16720P	NS	0.079	-0.050	0.028	0.397	2.186	0.298	1.987	0.238	198.697	16.790
16741P	NS	0.331	-0.118	0.139	3.071	-0.047	-0.236	-0.236	0.047	-0.095	0.709

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
16746P	65.647	146.904	C-6	10	4	34	0	194.100	0.179	0.000	0.184	-0.046	17.522	0.092	-0.646
16747P	65.466	146.289	B-5	7	7	3	0	435.900	1.430	NS	0.328	-0.095	4.265	-0.328	-1.640
16772P	65.519	146.166	C-5	8	8	18	0	393.800	3.680	NS	0.187	-0.131	11.214	-0.934	-4.672
16783P	65.393	145.995	B-4	7	8	36	0	321.700	73.600	-0.114	7.779	-1.144	-68.635	-22.878	-114.392
16794P	65.629	146.680	C-6	9	5	10	0	332.100	0.693	0.010	0.501	-0.334	18.363	-0.209	-5.634
16807P	65.511	146.758	C-6	8	5	20	0	359.700	0.913	NS	0.609	-0.013	7.361	-0.254	-1.269
16811P	65.474	146.783	B-6	8	5	31	0	288.400	0.579	NS	0.181	-0.038	3.413	-0.201	-1.004
16816P	65.458	146.323	B-5	7	7	4	0	325.200	3.110	NS	0.459	4.304	-4.782	-0.956	-4.782
16825P	65.647	146.872	C-6	10	4	35	0	249.900	1.150	NS	0.874	-0.920	87.435	-0.460	-14.266
16828P	65.466	146.611	B-6	7	5	1	0	229.000	2.220	NS	0.562	-0.116	8.725	-0.969	-4.847
16832P	65.665	146.879	C-6	10	4	27	0	221.100	2.050	0.014	2.689	22.252	176.165	-0.927	-25.034
16844P	65.634	146.996	C-6	9	4	6	0	405.100	0.109	NS	0.067	-0.008	2.045	-0.027	0.215
16871P	65.517	146.133	C-5	8	8	17	0	499.900	2.250	NS	0.495	-0.135	-1.350	-0.450	-2.250
16881P	65.440	146.595	B-6	7	6	18	0	286.400	4.120	-0.007	0.043	-0.201	2.877	-0.072	0.288
16884P	65.392	146.564	B-6	7	6	32	0	249.800	2.870	0.006	0.517	-0.517	-9.191	0.287	0.689
16898P	65.461	145.951	B-4	7	9	5	0	312.100	3.850	NS	2.344	-0.284	7.401	-1.234	-6.168
16911P	65.672	146.719	C-6	10	5	21	0	189.300	0.101	0.002	0.123	-0.064	5.869	-0.053	-0.960
16913P	65.511	145.842	C-4	8	9	23	0	329.900	1.940	NS	0.359	0.235	-3.528	-0.588	-2.940
16922P	65.425	146.067	B-5	7	8	22	0	359.900	28.200	NS	4.231	-0.784	-23.507	-7.836	-39.178
16931P	65.467	145.731	B-4	7	10	5	0	318.900	18.500	NS	0.812	0.638	23.205	-5.801	-29.006
16934P	65.675	146.910	C-6	10	4	21	0	249.500	0.171	NS	0.130	-0.042	26.044	0.069	1.508
16943P	65.570	146.895	C-6	9	4	34	1	286.800	4.160	0.058	1.741	-0.580	-4.351	-1.450	-7.252
16950P	65.536	146.486	C-5	8	6	10	0	367.900	2.780	NS	1.285	6.650	12.090	-0.756	-3.778
16951P	65.472	146.820	B-6	8	4	36	0	238.300	0.830	NS	0.261	-0.038	3.135	-0.348	-1.742
16976P	65.633	146.858	C-6	9	4	2	0	263.200	1.510	NS	1.664	-0.574	24.096	-0.574	-5.737

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
16746P	NS	0.029	-0.005	0.101	0.166	0.092	0.028	0.323	0.145	0.101	0.830
16747P	NS	0.033	-0.016	0.052	0.230	4.265	0.262	0.853	0.367	2.231	2.526
16772P	NS	0.103	-0.047	0.069	0.934	0.093	1.028	0.841	0.196	0.159	0.934
16783P	NS	3.889	-1.144	3.889	32.030	-0.458	-2.288	-2.288	-0.458	3.203	4.576
16794P	NS	-0.048	-0.010	0.011	0.104	85.556	0.501	16.276	2.337	6.260	34.431
16807P	NS	0.066	-0.013	0.071	0.102	1.091	0.406	2.107	0.340	1.015	5.990
16811P	NS	0.062	-0.010	0.058	0.100	0.024	0.060	1.124	0.273	0.078	3.232
16816P	NS	0.067	-0.067	0.083	0.669	4.782	0.478	0.765	0.191	1.052	1.530
16825P	NS	-0.023	-0.023	0.042	0.184	34.054	1.427	43.717	7.593	23.009	99.860
16828P	NS	0.107	-0.048	0.145	0.679	1.551	0.872	1.842	0.485	1.066	4.169
16832P	NS	-0.213	-0.046	0.121	0.649	509.950	3.338	64.903	9.365	46.359	167.820
16844P	NS	0.008	-0.001	0.013	0.019	0.040	0.013	0.062	0.030	0.016	0.315
16871P	NS	0.108	-0.023	0.158	0.540	76.515	0.675	0.720	0.284	1.080	1.890
16881P	0.086	0.032	-0.058	0.010	0.117	96.383	0.345	2.014	0.456	5.754	2.762
16884P	0.666	0.213	-0.046	0.053	0.262	20.681	0.322	0.460	0.446	2.298	1.206
16898P	NS	0.210	-0.062	0.259	1.110	2.344	0.247	0.740	0.136	20.971	4.194
16911P	NS	-0.012	-0.003	0.011	0.048	0.053	0.053	1.761	0.327	0.091	5.335
16913P	NS	0.088	-0.029	0.200	0.647	0.035	0.294	0.294	0.147	1.059	1.941
16922P	NS	1.332	-0.392	2.742	10.970	10.186	-0.784	0.784	0.235	2.664	3.134
16931P	NS	1.334	-0.290	1.102	11.602	-0.116	-0.580	0.580	0.174	0.580	1.740
16934P	NS	-0.003	-0.003	0.019	0.034	0.137	-0.014	0.103	0.030	0.039	3.050
16943P	NS	0.102	-0.073	0.189	0.290	478.661	4.351	4.787	0.885	30.460	11.459
16950P	NS	0.106	-0.038	0.219	0.756	5.138	2.418	2.267	0.831	2.645	3.400
16951P	NS	0.073	-0.017	0.038	0.244	0.181	0.070	0.557	0.139	0.066	2.438
16976P	NS	-0.057	-0.029	0.195	0.402	53.355	0.803	19.506	4.745	9.179	65.403

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
17019P	65.521	146.409	C-5	8	6	13	0	296.700	1.880	NS	2.154	0.241	-5.069	-0.634	-3.168
17036P	65.709	146.842	C-6	10	4	11	0	329.400	1.450	NS	0.484	0.079	42.699	-0.440	3.962
17042P	65.601	146.395	C-5	9	6	13	0	234.400	0.122	NS	0.307	-0.036	2.342	0.052	-0.312
17053P	65.585	146.648	C-6	9	5	26	0	162.500	0.012	NS	0.004	-0.018	0.886	-0.007	-0.133
17109P	65.522	146.408	C-5	8	6	13	0	223.900	5.040	NS	1.598	0.495	-6.753	-2.251	-11.255
17111P	65.489	146.220	B-5	8	7	25	0	420.100	0.621	NS	0.105	6.209	2.956	-0.148	-0.739
17148P	65.544	146.994	C-6	8	4	6	0	282.200	0.033	NS	0.018	-0.010	-0.292	0.012	0.140
17155P	65.460	146.323	B-5	7	7	4	0	169.400	3.930	NS	1.230	9.280	-6.960	-2.320	-11.600
17156P	65.621	146.860	C-6	9	4	11	0	232.700	0.689	0.001	0.503	-0.444	-22.799	-0.296	-7.994
17177P	65.604	146.610	C-6	9	5	13	0	369.200	0.179	NS	0.160	-0.015	1.261	0.048	-0.242
17188P	65.535	146.583	C-6	8	6	7	0	242.100	0.553	0.001	0.251	-0.320	-2.969	0.274	0.959
17189P	65.554	146.296	C-5	8	7	3	0	256.500	5.390	NS	4.413	0.567	18.912	-2.101	-10.507
17238P	65.653	146.642	C-6	10	5	35	0	243.100	0.428	0.015	-0.511	-1.761	59.860	0.099	1.109
17239P	65.611	146.530	C-6	9	6	17	0	248.200	0.046	NS	0.009	0.019	-0.259	0.019	0.167
17251P	65.421	146.755	B-6	7	5	20	0	345.400	2.890	NS	0.276	0.142	5.020	-0.837	-4.184
17284P	65.470	145.894	B-4	8	9	33	0	317.500	3.170	NS	5.491	1.697	-8.986	-0.998	-4.992
17289P	65.619	146.575	C-6	9	6	7	0	310.300	0.032	NS	0.026	-0.010	0.722	0.031	-0.093
17290P	65.525	146.059	C-5	8	8	14	11	417.800	1.860	NS	3.294	333.892	-8.013	-0.445	-2.226
17302P	65.488	146.388	B-5	8	7	30	0	359.200	0.864	NS	0.190	-0.026	2.165	-0.241	-1.203
17350P	65.481	146.237	B-5	8	7	35	0	331.300	2.240	NS	0.433	0.115	-2.028	-0.676	-3.381
17367P	65.667	146.703	C-6	10	5	28	0	257.000	0.192	0.000	0.172	0.448	-10.459	-0.224	-3.287
17370P	65.439	146.392	B-5	7	7	18	0	281.600	2.230	0.008	0.293	-0.111	5.543	0.135	0.634
17451P	65.657	146.819	C-6	10	4	36	0	265.900	0.249	0.000	0.150	-0.047	4.401	-0.094	-0.656
17468P	65.473	146.199	B-5	8	7	36	0	175.700	0.416	NS	0.426	0.260	1.184	-0.237	-1.184
17485P	65.486	145.882	B-4	8	9	27	0	369.700	2.170	NS	0.247	-0.059	-1.761	-0.587	-2.935

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
17019P	NS	0.082	-0.032	0.355	0.634	0.076	0.444	0.697	0.291	0.887	2.281
17036P	NS	0.092	-0.022	0.145	0.264	-0.009	0.044	0.352	0.057	-0.018	5.370
17042P	NS	0.012	-0.003	0.007	0.042	0.104	0.375	0.453	0.301	2.446	1.353
17053P	NS	0.003	-0.005	0.001	0.010	0.004	-0.004	0.066	0.018	0.000	1.137
17109P	NS	0.315	-0.113	1.531	1.801	0.630	1.801	1.576	0.405	0.675	2.476
17111P	NS	0.027	-0.007	0.015	0.148	0.021	0.030	0.163	0.077	0.035	0.606
17148P	NS	0.004	-0.001	0.002	0.029	0.004	0.007	0.081	0.025	0.054	0.436
17155P	NS	-0.116	-0.116	0.049	0.464	626.387	1.624	1.160	0.789	12.064	1.624
17156P	NS	-0.041	-0.015	0.012	0.148	82.905	1.362	24.872	5.270	8.587	39.084
17177P	NS	0.016	-0.002	0.032	0.024	0.194	0.010	0.131	0.040	0.068	1.435
17188P	0.343	0.051	-0.009	0.043	0.109	0.064	0.158	0.434	0.226	-0.228	1.377
17189P	NS	0.399	-0.105	1.618	0.841	231.150	1.051	0.841	0.672	10.087	1.891
17238P	0.141	0.007	-0.007	-0.044	0.067	0.176	0.704	49.297	5.071	1.761	70.072
17239P	NS	0.004	-0.001	0.002	0.015	0.003	0.013	0.048	0.020	0.010	0.352
17251P	NS	0.126	-0.042	0.109	0.502	7.279	1.088	2.426	0.661	1.590	6.192
17284P	NS	0.190	0.050	0.089	0.399	0.300	0.200	0.200	0.110	61.902	0.998
17289P	NS	0.003	-0.003	0.004	0.005	0.026	0.004	0.052	0.011	0.006	0.605
17290P	NS	0.111	-0.062	0.490	0.356	4.897	0.178	0.312	0.151	6.233	2.449
17302P	NS	0.055	-0.012	0.029	0.216	0.649	0.096	0.216	0.075	0.265	0.698
17350P	NS	0.034	-0.034	0.028	0.270	209.599	0.406	0.609	0.358	2.840	0.947
17367P	NS	0.048	-0.004	0.010	0.097	0.037	0.127	4.258	0.755	0.239	16.436
17370P	1.267	0.108	0.032	0.078	0.256	340.518	0.562	0.483	0.201	4.831	1.227
17451P	NS	0.017	-0.005	0.017	0.056	0.094	-0.019	1.030	0.186	0.131	3.371
17468P	NS	0.047	-0.012	0.026	0.189	0.014	0.142	0.189	0.123	0.085	0.758
17485P	NS	0.153	-0.029	0.021	0.411	0.059	0.176	0.235	0.100	0.434	1.233

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
17497P	65.517	146.295	C-5	8	7	15	0	400.700	1.820	NS	1.090	0.395	3.634	-0.454	-2.271
17514P	65.537	146.635	C-6	8	5	12	0	350.200	0.635	0.005	0.399	-0.743	-7.978	0.107	1.015
17535P	65.539	146.530	C-6	8	6	9	0	277.700	5.620	0.020	1.376	-0.587	18.214	0.486	1.821
17536P	65.442	146.393	B-5	7	7	7	0	368.200	4.370	0.018	0.949	-0.166	4.747	0.083	0.356
17561P	65.673	146.525	C-6	10	6	21	0	223.400	0.167	NS	0.049	-0.120	14.203	-0.075	-1.196
17598P	65.524	145.965	C-4	8	9	18	0	371.500	1.190	NS	0.833	0.086	2.883	-0.320	-1.602
17602P	65.500	146.059	B-5	8	8	23	0	670.500	4.420	NS	1.450	7.251	-1.978	-0.659	-3.296
17612P	65.663	146.621	C-6	10	5	25	-14	300.400	0.260	0.004	-0.156	-0.563	4.241	0.020	0.320
17632P	65.408	146.435	B-5	7	6	25	0	264.500	4.970	NS	0.864	1.428	7.516	-1.879	-9.395
17633P	65.513	146.364	C-5	8	7	17	0	318.000	2.390	NS	0.977	0.451	5.261	-0.752	-3.758
17635P	65.568	146.921	C-6	9	4	33	0	51.400	0.028	-0.007	0.289	-0.054	-0.163	0.109	1.634
17655P	65.683	146.719	C-6	10	5	21	0	570.000	0.120	0.000	0.017	-0.015	1.326	0.021	0.253
17662P	65.575	146.331	C-5	9	7	29	0	354.200	0.496	NS	0.868	-0.196	-5.321	-0.140	-1.540
17665P	65.462	146.128	B-5	7	8	4	0	217.100	0.373	NS	0.143	-0.034	2.234	-0.172	-0.859
17678P	65.596	146.589	C-6	9	6	19	0	210.100	0.002	NS	0.002	-0.004	-0.143	0.005	0.049
17702P	65.653	146.876	C-6	10	4	34	0	254.800	0.099	0.000	0.058	0.031	77.708	0.039	0.466
17736P	65.614	146.865	C-6	9	4	14	0	296.200	0.726	0.004	0.735	-0.417	-18.873	0.245	-5.392
17737P	65.542	146.030	C-5	8	8	11	0	312.300	2.390	NS	1.531	-0.122	5.357	-0.765	-3.826
17741P	65.599	146.242	C-5	9	7	23	0	373.400	3.080	NS	0.190	-0.132	8.249	-0.825	-4.124
17744P	65.488	145.855	B-4	8	9	27	0	425.000	2.760	NS	9.092	5.845	9.092	-0.649	3.247
17747P	65.605	146.992	C-6	9	4	18	0	325.300	0.605	NS	0.112	0.020	1.488	-0.186	1.488
17751P	65.512	146.320	C-5	8	7	21	0	444.200	6.950	NS	0.845	0.203	7.823	-1.565	-7.823
17753P	65.663	146.621	C-6	10	5	25	14	324.600	0.180	0.003	-0.111	0.211	7.209	0.030	0.133
17756P	65.556	146.010	C-5	8	8	1	0	306.600	5.030	NS	1.411	41.014	21.327	-1.641	-8.203
17782P	65.602	146.243	C-5	9	7	14	0	357.600	1.930	NS	1.403	-0.167	5.937	-0.540	-2.699

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
17497P	NS	0.086	-0.023	0.186	0.409	2.544	0.318	0.363	0.232	0.818	1.136
17514P	1.723	0.047	-0.007	-0.025	0.116	0.065	0.780	6.890	1.418	1.995	18.495
17535P	1.052	0.295	-0.081	0.385	-0.243	7.083	3.036	4.655	1.890	15.381	10.544
17536P	0.202	0.051	-0.047	0.009	0.182	178.028	0.392	0.522	0.318	14.242	0.878
17561P	NS	-0.013	-0.004	0.004	0.052	1.271	0.052	2.317	0.281	0.478	13.381
17598P	NS	0.099	-0.016	0.176	0.192	-0.006	0.128	0.256	0.163	0.218	1.538
17602P	NS	0.152	-0.033	0.580	0.527	4.812	0.396	0.396	0.132	2.769	1.187
17612P	0.020	0.011	-0.003	0.018	0.047	0.182	0.095	7.011	0.831	0.632	6.647
17632P	NS	-0.094	-0.094	0.319	0.376	187.902	0.940	1.315	0.451	5.449	2.443
17633P	NS	0.128	-0.038	0.331	0.601	0.120	0.451	0.601	0.180	0.293	1.428
17635P	NS	-0.025	-0.003	0.022	0.071	0.054	-0.011	0.654	0.059	0.032	1.918
17655P	NS	0.008	-0.001	0.002	0.029	0.021	-0.006	0.086	0.023	0.012	0.613
17662P	NS	0.034	-0.007	0.028	0.098	0.210	2.661	0.560	1.708	7.282	1.008
17665P	NS	0.038	-0.009	0.041	0.155	0.034	0.120	0.155	0.134	0.084	0.550
17678P	NS	0.001	-0.001	0.000	0.003	0.000	-0.001	0.004	0.001	0.000	0.023
17702P	NS	0.013	-0.002	0.006	0.027	0.039	0.019	0.078	0.033	0.014	0.427
17736P	NS	-0.034	-0.012	0.013	0.172	107.846	0.441	8.579	1.880	18.628	12.672
17737P	NS	0.145	-0.038	0.321	0.612	10.714	0.459	0.689	0.283	1.607	1.990
17741P	NS	0.107	-0.041	0.140	0.825	7.341	0.825	0.660	0.148	0.115	1.072
17744P	NS	0.143	-0.032	0.034	0.455	3.832	0.195	0.260	0.104	34.419	1.883
17747P	NS	0.033	-0.009	0.012	0.112	0.019	0.056	0.130	0.045	0.017	0.242
17751P	NS	0.188	-0.078	0.391	1.252	4.068	1.252	0.939	0.407	0.657	1.408
17753P	0.028	0.008	-0.002	0.012	0.027	0.089	0.072	4.880	0.435	0.549	3.893
17756P	NS	0.246	-0.082	0.427	1.148	180.463	1.148	1.312	0.476	7.711	3.117
17782P	NS	0.097	-0.038	0.971	0.486	91.751	0.270	0.432	0.200	2.483	3.508

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
17796P	65.606	146.989	C-6	9	4	18	0	278.000	0.844	NS	1.336	0.209	17.305	-0.304	-2.125
17800P	65.600	146.538	C-6	9	6	17	0	292.400	1.370	NS	0.276	0.070	3.280	-0.469	-2.343
17806P	65.402	146.642	B-6	7	5	25	0	324.300	8.540	NS	0.474	0.421	7.900	-2.633	-13.167
17810P	65.444	146.690	B-6	7	5	10	0	341.400	1.060	NS	0.078	-0.065	5.278	-0.310	-1.552
17822P	65.542	146.024	C-5	8	8	1	0	268.000	1.620	NS	2.478	-0.339	-9.672	-0.604	-3.022
17829P	65.584	146.643	C-6	9	5	26	0	260.000	0.106	NS	0.041	-0.014	1.223	-0.041	-0.204
17852P	65.491	146.428	B-5	8	6	25	0	354.300	3.440	0.005	1.845	0.175	-1.942	0.243	0.680
17868P	65.680	146.494	C-5	10	6	21	5	239.400	0.256	NS	0.128	-0.005	11.763	-0.107	-1.497
17880P	65.560	146.843	C-6	9	4	35	0	316.200	1.310	0.004	-0.174	-0.539	-8.700	0.062	0.497
17892P	65.602	146.393	C-5	9	6	13	0	277.200	1.140	NS	5.346	-0.234	-6.991	-0.411	-2.468
17905P	65.613	146.885	C-6	9	4	15	0	122.100	0.193	0.003	0.427	-0.427	22.129	-0.158	-1.581
17913P	65.539	146.713	C-6	8	5	10	0	250.500	1.460	NS	1.865	0.262	-1.749	-0.583	-2.914
17917P	65.457	146.063	B-5	7	8	3	0	404.400	3.000	NS	9.644	17.804	5.935	-0.742	-3.709
17929P	65.437	146.203	B-5	7	7	13	0	264.900	0.930	NS	2.212	0.193	3.862	-0.351	-1.755
17950P	65.677	146.716	C-6	10	5	21	0	761.700	0.173	0.000	0.022	0.111	-3.861	0.091	-1.249
17969P	65.569	146.319	C-5	9	7	32	0	339.100	0.893	NS	1.527	-0.198	7.637	-0.263	-1.317
17976P	65.662	146.879	C-6	10	4	27	0	274.300	0.023	-0.001	0.023	-0.011	1.425	0.017	0.344
17979P	65.448	146.468	B-5	7	6	11	0	298.300	4.300	-0.007	1.326	-0.259	8.649	-0.072	0.288
17995P	65.668	146.924	C-6	10	4	28	0	292.900	0.028	NS	0.006	-0.009	20.075	0.010	-0.105
18036P	65.533	146.573	C-6	8	6	8	0	217.200	0.290	0.001	0.427	-0.507	8.812	0.044	0.401
18038P	65.515	145.727	C-4	8	10	17	0	273.000	9.770	NS	12.526	229.040	-10.736	-3.579	-17.894
18042P	65.588	146.758	C-6	9	5	20	0	210.300	0.245	0.016	0.746	-3.146	24.465	0.056	0.711
18064P	65.484	146.921	B-6	8	4	33	0	281.200	0.037	NS	0.021	0.050	2.500	-0.013	-0.184
18076P	65.626	146.665	C-6	9	5	11	0	214.400	0.113	0.001	0.132	-0.232	-11.595	-0.211	-3.742
18077P	65.614	146.999	C-6	9	4	18	0	308.200	0.153	NS	0.129	0.025	1.787	0.050	0.397

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
17796P	NS	0.106	-0.015	0.255	0.061	127.511	-0.030	2.975	0.519	4.250	10.808
17800P	NS	0.127	0.037	0.047	0.375	0.562	0.141	0.515	0.244	0.169	2.296
17806P	NS	0.421	-0.132	0.290	1.580	11.323	1.317	0.527	0.316	1.554	3.160
17810P	NS	0.037	-0.016	0.043	0.279	1.087	0.186	0.621	0.230	0.342	2.236
17822P	NS	0.218	-0.030	0.187	0.725	0.375	0.121	0.725	0.181	29.619	8.281
17829P	NS	0.008	-0.002	0.010	0.029	0.204	0.024	0.171	0.075	0.029	0.787
17852P	0.573	0.230	0.039	0.047	0.277	6.699	0.233	0.495	0.382	3.010	1.175
17868P	NS	-0.015	-0.005	0.006	0.043	29.942	0.299	5.988	0.927	2.246	17.216
17880P	0.153	0.014	-0.360	0.023	0.100	136.717	1.077	2.527	0.655	6.629	6.297
17892P	NS	0.103	-0.021	0.090	0.206	0.387	0.206	0.165	0.115	23.442	1.275
17905P	NS	0.043	-0.008	0.043	-0.016	0.158	0.142	6.481	1.253	4.110	21.023
17913P	NS	0.169	-0.029	0.175	0.583	3.788	2.564	2.739	1.084	3.147	15.970
17917P	NS	0.193	-0.037	0.727	0.297	4.303	0.148	0.148	0.096	5.193	0.816
17929P	NS	0.102	-0.032	0.098	0.246	0.028	0.176	0.281	0.116	0.105	1.475
17950P	NS	-0.012	-0.001	-0.001	0.041	0.023	-0.041	2.271	0.304	0.186	7.495
17969P	NS	0.055	-0.105	0.037	0.211	2.186	1.448	0.632	1.390	25.018	3.476
17976P	NS	0.004	0.000	0.002	0.018	0.008	0.008	0.051	0.015	0.006	0.461
17979P	0.094	0.012	-0.058	0.017	0.156	158.565	1.124	2.162	0.928	20.181	2.941
17995P	NS	0.000	0.000	0.005	0.007	0.016	0.004	0.055	0.019	0.163	0.402
18036P	0.113	0.034	-0.005	0.025	0.109	0.043	2.003	3.872	1.682	2.537	12.818
18038P	NS	0.537	-0.179	0.233	4.652	0.787	0.358	0.358	0.107	3.221	1.432
18042P	0.396	0.013	-0.005	0.023	0.093	0.594	0.245	12.815	1.701	1.864	16.077
18064P	NS	0.003	-0.007	0.005	0.012	0.020	-0.008	0.184	0.050	0.117	3.289
18076P	NS	-0.038	-0.003	0.011	0.090	0.040	-0.142	8.960	0.754	0.206	20.081
18077P	NS	0.018	-0.002	0.008	0.010	0.003	-0.005	0.070	0.018	0.007	0.988

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
18098P	65.667	146.597	C-6	10	5	25	0	248.400	1.660	0.033	0.735	-0.735	93.559	0.107	0.936
18102P	65.561	146.997	C-6	9	4	31	0	322.700	0.151	NS	0.056	0.122	0.842	-0.047	-0.234
18108P	65.562	146.697	C-6	9	5	34	0	263.600	0.195	NS	0.061	0.018	1.258	-0.074	-0.370
18109P	65.488	145.933	B-4	8	9	29	0	298.800	4.580	NS	1.839	6.284	-18.394	-1.533	-7.664
18116P	65.691	146.888	C-6	10	4	15	0	180.400	1.370	NS	1.139	-0.987	91.131	-0.759	-13.670
18128P	65.577	146.503	C-6	9	6	28	0	245.900	1.120	NS	1.321	-0.109	-2.733	-0.455	-2.277
18143P	65.505	146.197	C-5	8	7	24	0	305.600	6.790	NS	1.777	208.855	24.440	-2.222	-11.109
18151P	65.422	146.758	B-6	7	5	20	0	280.400	2.990	NS	0.320	1.813	10.663	-1.066	-5.332
18176P	65.439	145.961	B-4	7	9	18	0	411.300	2.810	NS	1.366	0.376	5.466	-0.683	-3.416
18192P	65.422	146.242	B-5	7	7	23	0	248.200	0.775	NS	0.718	0.781	1.561	-0.312	-1.561
18210P	65.392	146.431	B-5	7	6	36	0	300.900	4.040	NS	1.477	0.188	-4.028	-1.343	-6.713
18229P	65.603	146.973	C-6	9	4	17	0	326.200	0.714	NS	0.854	0.193	11.601	-0.219	-1.532
18278P	65.535	146.225	C-5	8	7	12	0	288.100	3.200	NS	1.222	0.444	18.882	-1.111	-5.554
18280P	65.498	146.361	B-5	8	7	29	0	366.900	2.500	NS	0.143	6.541	6.132	-0.681	-3.407
18312P	65.395	145.990	B-4	7	8	36	0	334.900	37.100	-0.055	1.883	-0.554	44.312	-11.078	-55.390
18317P	65.559	146.745	C-6	9	5	32	0	245.800	1.130	NS	0.225	-0.276	32.640	0.460	-3.678
18323P	65.403	146.407	B-5	7	6	25	0	288.000	1.170	NS	0.390	-0.098	5.688	-0.406	-2.031
18332P	65.474	146.265	B-5	8	7	35	0	315.100	7.620	NS	1.040	33.856	-7.255	-2.418	-12.091
18349P	65.680	146.495	C-5	10	6	21	-5	327.100	0.247	NS	0.113	-0.106	9.061	0.227	-1.057
18375P	65.477	145.650	B-4	8	10	34	0	286.100	9.830	NS	1.684	-0.344	-10.308	-3.436	-17.179
18392P	65.480	146.529	B-6	8	6	33	0	358.500	2.640	0.004	2.283	8.837	-6.628	0.353	0.515
18403P	65.494	146.799	B-6	8	5	30	0	309.000	0.304	0.000	0.091	-0.197	-0.295	0.295	-3.247
18413P	65.438	146.116	B-5	7	8	16	0	221.300	0.516	NS	0.420	0.058	-0.700	-0.233	-1.166
18415P	65.614	146.867	C-6	9	4	14	0	240.200	1.950	0.024	0.755	3.004	89.301	-0.812	-8.118
18420P	65.523	145.823	C-4	8	9	14	0	229.200	1.260	NS	0.357	0.434	3.848	-0.550	-2.749

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
18098P	0.401	0.048	-0.027	0.035	0.165	100.242	0.668	35.419	2.439	13.366	23.791
18102P	NS	0.014	-0.002	0.020	0.014	0.098	-0.005	0.080	0.016	1.217	0.407
18108P	NS	0.018	-0.004	0.014	0.044	0.059	0.030	0.133	0.055	0.030	0.903
18109P	NS	0.261	-0.123	0.613	1.380	3.372	0.460	1.073	0.169	29.123	3.985
18116P	NS	-0.038	-0.038	0.072	0.456	22.783	1.215	32.655	6.311	12.151	122.267
18128P	NS	0.109	-0.036	0.073	0.137	0.046	0.091	0.273	0.109	0.346	2.824
18143P	NS	0.200	-0.111	0.107	0.444	933.181	1.111	0.667	0.422	2.444	0.889
18151P	NS	0.181	-0.053	0.117	0.746	4.372	1.280	3.732	0.778	1.813	10.557
18176P	NS	0.130	-0.034	0.178	0.615	0.109	0.137	0.752	0.123	10.931	3.894
18192P	NS	0.084	-0.016	0.122	0.312	0.037	0.156	0.468	0.178	0.375	2.155
18210P	NS	0.282	-0.067	0.097	0.671	0.161	0.537	0.403	0.188	0.537	2.014
18229P	NS	0.066	-0.011	0.153	0.044	52.532	0.088	2.627	0.510	1.839	8.821
18278P	NS	0.178	-0.056	0.355	0.666	2.221	0.555	0.889	0.267	0.467	2.888
18280P	NS	0.041	-0.034	0.191	0.545	0.164	0.545	0.545	0.232	0.211	1.499
18312P	NS	1.772	-0.554	2.105	17.725	-0.222	-1.108	1.108	0.222	1.551	2.216
18317P	NS	0.041	-0.023	0.023	0.092	50.570	0.506	8.275	1.292	2.299	21.285
18323P	NS	0.057	-0.028	0.223	0.366	0.447	0.122	0.366	1.844	0.382	1.828
18332P	NS	0.145	-0.121	0.109	0.725	1015.678	2.418	1.209	0.750	8.464	1.451
18349P	NS	-0.011	-0.004	0.007	0.038	31.715	0.151	4.380	0.633	1.133	13.139
18375P	NS	0.481	-0.172	3.058	4.123	-0.069	-0.344	0.344	0.069	0.172	1.374
18392P	0.884	0.116	-0.029	0.604	0.237	1.326	0.412	0.538	0.289	0.611	1.767
18403P	NS	0.066	-0.005	0.017	0.089	0.197	0.512	1.082	0.207	0.344	19.283
18413P	NS	0.061	-0.012	0.149	0.256	0.979	0.117	0.233	0.114	0.490	1.492
18415P	NS	0.089	-0.041	0.027	0.325	389.675	2.030	45.462	6.332	89.301	94.172
18420P	NS	0.132	-0.027	0.187	0.605	-0.011	0.220	0.330	0.126	0.368	3.463

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
18440P	65.457	146.352	B-5	7	7	5	0	280.200	4.210	NS	2.103	0.300	-7.512	-1.502	-7.512
18443P	65.642	146.868	C-6	9	4	2	0	246.600	0.323	NS	0.275	-0.210	10.348	-0.131	-2.751
18448P	65.531	145.717	C-4	8	10	9	0	433.900	8.210	NS	3.595	-0.189	7.569	-1.892	-9.461
18465P	65.462	145.954	B-4	7	9	5	0	315.100	1.920	NS	0.518	31.685	-1.828	-0.609	-3.047
18479P	65.631	146.949	C-6	9	4	5	0	402.500	0.085	0.000	0.057	-0.017	1.816	0.042	0.401
18491P	65.515	145.642	C-4	8	10	14	0	507.800	3.640	NS	2.652	0.366	5.735	-0.717	-3.584
18492P	65.539	146.668	C-6	8	5	11	0	294.500	0.557	-0.001	0.322	0.624	3.594	0.129	0.530
18498P	65.684	146.890	C-6	10	4	22	0	206.700	1.120	NS	0.704	-0.542	520.174	-0.542	10.837
18502P	65.604	146.613	C-6	9	5	13	0	321.800	0.275	0.002	0.402	-0.179	1.966	0.231	0.538
18532P	65.644	146.657	C-6	10	5	35	0	233.900	0.631	0.022	0.324	-0.432	91.723	-8.093	-16.186
18547P	65.420	146.045	B-5	7	8	23	0	296.900	2.190	NS	6.344	26.554	-2.213	-0.738	14.752
18557P	65.510	146.081	C-5	8	8	22	0	372.400	1.500	NS	0.403	0.052	3.222	-0.403	-2.014
18561P	65.427	145.973	B-4	7	9	18	0	367.500	6.420	NS	1.170	0.664	-12.229	-1.747	-8.735
18570P	65.560	146.810	C-6	9	4	36	0	290.800	2.270	NS	0.422	-0.562	77.280	-0.781	-4.684
18574P	65.486	146.723	B-6	8	5	28	2	199.700	0.215	-0.001	0.129	0.592	18.302	-0.323	-5.275
18578P	65.668	146.699	C-6	10	5	27	0	207.300	0.027	-0.002	0.029	0.031	2.735	0.078	-0.378
18579P	65.510	145.845	C-4	8	9	23	0	378.700	1.330	NS	0.351	-0.077	-2.107	-0.351	-1.756
18584P	65.449	146.374	B-5	7	7	7	0	269.900	4.150	NS	1.230	-0.292	-6.150	-1.538	-7.688
18591P	65.573	146.446	C-5	9	6	26	0	309.500	0.846	NS	0.383	-0.301	-9.020	-0.273	4.374
18593P	65.489	146.378	B-5	8	7	30	0	358.200	4.520	NS	0.656	1.640	7.571	-1.262	-6.309
18598P	65.496	146.758	B-6	8	5	29	0	294.000	0.425	-0.001	0.097	-0.188	-9.541	-0.145	-3.036
18600P	65.465	146.871	B-6	7	4	2	0	398.700	1.690	NS	0.424	0.089	5.510	-0.424	-2.119
18609P	65.447	146.082	B-5	7	8	10	0	371.100	1.580	NS	5.109	0.264	5.961	-0.426	-2.129
18616P	65.563	146.776	C-6	9	5	31	0	402.100	3.810	NS	0.152	-0.606	94.753	-0.948	-5.685
18640P	65.482	146.565	B-6	8	6	32	0	186.300	3.300	0.009	1.771	0.213	10.628	0.567	1.240

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
18440P	NS	0.090	-0.075	0.075	0.451	480.799	1.052	0.751	0.616	8.865	1.803
18443P	NS	-0.007	-0.007	0.014	0.118	0.236	0.419	12.181	2.423	3.275	23.708
18448P	NS	0.303	-0.095	0.397	2.460	0.378	0.189	0.189	0.095	1.079	1.135
18465P	NS	0.104	-0.030	0.250	0.427	0.463	0.244	0.183	0.091	1.767	1.036
18479P	NS	0.011	-0.001	0.005	0.023	0.021	-0.008	0.089	0.027	0.008	0.627
18491P	NS	0.093	-0.036	1.434	0.573	0.172	0.215	0.287	0.115	0.337	1.290
18492P	0.187	0.044	-0.008	0.182	0.084	0.026	0.119	0.435	0.236	-0.136	1.035
18498P	NS	-0.027	-0.027	0.103	0.433	8.128	-0.054	10.837	1.723	7.044	36.737
18502P	0.496	0.042	-0.003	0.050	0.026	0.027	0.009	0.137	0.051	-0.094	0.983
18532P	NS	-0.132	-0.013	-0.015	0.243	431.637	2.023	26.977	2.968	29.675	75.537
18547P	NS	0.184	-0.184	0.546	0.516	132.772	0.221	0.369	0.118	44.257	1.401
18557P	NS	0.085	-0.020	0.048	0.403	0.024	0.242	0.483	0.298	0.149	1.692
18561P	NS	0.280	-0.087	0.367	1.747	0.489	0.349	0.175	0.122	62.890	1.223
18570P	NS	0.047	-0.039	0.027	0.156	132.703	2.420	24.979	3.708	7.728	57.687
18574P	NS	-0.068	-0.005	0.016	0.194	0.108	0.398	10.658	0.968	0.538	40.373
18578P	NS	0.006	-0.008	0.003	0.023	0.013	-0.013	0.079	0.021	0.008	0.887
18579P	NS	0.081	-0.018	2.177	0.351	-0.007	0.176	0.246	0.148	0.351	2.704
18584P	NS	0.092	-0.077	0.075	0.461	553.538	1.384	0.461	0.554	13.685	1.538
18591P	NS	0.041	-0.014	0.038	0.273	1.039	1.941	3.553	1.659	13.667	11.672
18593P	NS	0.202	-0.063	0.069	0.883	3.533	0.631	0.631	0.391	1.640	1.893
18598P	NS	0.068	-0.007	0.022	0.159	0.035	0.231	4.626	0.525	0.275	16.480
18600P	NS	0.076	-0.021	0.072	0.170	4.663	0.551	2.925	0.543	1.102	7.418
18609P	NS	0.085	-0.043	0.852	0.426	0.553	0.170	0.298	0.187	0.468	3.023
18616P	NS	-0.047	-0.047	0.022	0.095	132.654	4.738	35.058	4.652	21.793	77.887
18640P	1.700	0.310	-0.071	0.602	0.395	9.034	0.514	1.098	0.489	1.382	2.533

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
18649P	65.569	146.658	C-6	9	5	35	0	214.400	0.478	NS	0.085	0.038	2.229	-0.223	-1.115
18675P	65.544	146.251	C-5	8	7	2	0	331.000	2.420	NS	1.170	0.168	7.311	-0.731	-3.656
18689P	65.395	146.727	B-6	7	5	33	0	383.800	1.990	-0.003	0.052	-0.140	6.222	0.109	1.970
19055P	65.556	146.293	C-5	8	7	3	0	232.900	2.170	NS	5.777	-0.261	13.044	-0.932	-4.659
19066P	65.670	146.880	C-6	10	4	27	3	248.700	0.667	0.004	0.563	-0.483	-0.805	-0.268	-8.314
19077P	65.450	145.861	B-4	7	9	10	0	478.800	10.400	NS	1.499	71.679	-10.860	-2.172	-10.860
19102P	65.562	146.265	C-5	9	7	34	0	245.500	0.634	NS	0.852	-0.209	8.522	-0.258	-2.066
19118P	65.493	146.555	B-6	8	6	29	0	370.800	2.440	0.039	4.475	-0.355	11.845	0.342	0.790
19120P	65.411	146.143	B-5	7	8	29	0	269.400	0.448	NS	1.646	-0.100	-2.661	-0.166	-0.831
19130P	65.631	146.943	C-6	9	4	4	0	251.100	0.083	-0.004	0.112	-0.026	3.305	0.033	-0.397
19150P	65.538	146.668	C-6	8	5	11	0	336.800	0.257	0.000	0.130	-0.038	-1.755	-0.076	0.763
19161P	65.396	146.763	B-6	7	5	32	0	219.500	3.970	0.009	0.615	-0.289	10.852	0.253	0.723
19174P	65.420	146.776	B-6	7	5	20	0	109.500	0.437	NS	0.024	43.900	-1.197	-0.399	-1.995
19183P	65.454	146.918	B-6	7	4	10	0	340.100	0.487	-0.001	0.097	-0.026	-0.430	-0.143	0.859
19186P	65.555	146.896	C-6	8	4	3	0	135.300	0.015	-0.001	0.008	-0.022	-0.665	0.022	0.477
19187P	65.391	146.557	B-6	7	6	32	0	274.700	1.880	-0.003	1.506	0.582	4.106	0.390	0.821
19197P	65.610	146.684	C-6	9	5	15	0	248.100	0.146	0.002	0.524	-0.224	17.654	-0.177	-3.237
19222P	65.525	146.930	C-6	8	4	16	0	316.900	0.002	0.000	0.000	0.010	-0.164	0.013	0.145
19225P	65.481	146.535	B-6	8	6	33	0	206.800	10.500	0.025	0.508	-0.305	10.155	0.711	2.031
19238P	65.459	145.821	B-4	7	9	2	0	400.500	53.700	NS	3.486	0.670	-40.225	-13.408	-67.041
19258P	65.554	146.713	C-6	8	5	3	0	156.800	0.185	NS	0.103	0.035	2.006	-0.118	-0.590
19264P	65.473	146.847	B-6	8	4	36	0	255.700	0.622	NS	0.073	0.085	5.838	-0.243	-1.216
19277P	65.461	145.949	B-4	7	9	5	0	223.000	2.410	NS	12.969	1.729	-6.484	-1.081	-5.404
19287P	65.495	145.936	B-4	8	9	29	0	267.300	6.440	NS	5.300	146.966	-50.595	-2.409	-14.456
19298P	65.551	146.266	C-5	8	7	2	0	253.700	1.980	NS	2.497	-0.234	-7.024	-0.780	-3.902

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
18649P	NS	0.038	-0.011	0.027	0.111	0.080	0.111	0.223	0.098	0.051	0.713
18675P	NS	0.117	-0.037	0.307	0.439	0.804	0.366	0.658	0.314	0.950	2.047
18689P	0.124	0.046	-0.021	0.046	0.256	0.778	0.161	1.348	0.354	0.674	2.255
19055P	NS	0.168	-0.047	1.398	0.559	13.976	1.584	0.839	1.165	5.311	6.802
19066P	NS	-0.070	-0.013	0.038	0.241	126.051	0.563	18.505	3.004	9.923	58.466
19077P	NS	0.282	-0.109	0.369	0.869	4.779	0.652	0.217	0.130	73.851	1.303
19102P	NS	0.057	-0.013	0.646	0.362	3.357	-0.026	0.620	0.191	0.227	19.394
19118P	0.921	0.115	-0.026	0.349	0.166	1.974	0.724	3.685	1.007	2.961	6.778
19120P	NS	0.040	-0.008	3.326	0.183	59.866	0.083	0.233	0.096	0.632	1.280
19130P	NS	0.022	-0.002	0.010	0.020	0.033	-0.013	0.073	0.021	0.014	0.879
19150P	NS	0.017	-0.004	0.021	0.084	-0.010	0.320	0.664	0.160	0.465	2.159
19161P	0.543	0.170	-0.072	0.127	0.273	705.376	0.687	1.031	0.481	16.821	2.026
19174P	NS	0.080	-0.020	0.029	0.359	11.973	0.958	2.195	0.627	3.392	5.707
19183P	NS	0.096	-0.007	0.020	0.129	0.043	-0.014	0.072	0.036	0.011	0.716
19186P	NS	0.005	-0.009	0.091	0.038	0.011	-0.006	0.222	0.036	0.200	1.508
19187P	0.513	0.181	0.055	0.212	0.223	0.643	0.287	0.472	0.233	1.095	1.328
19197P	NS	0.038	-0.071	0.023	0.053	0.059	-0.100	4.296	0.594	2.177	12.888
19222P	NS	-0.001	-0.002	0.000	0.006	0.001	-0.001	0.008	0.001	0.000	0.069
19225P	0.660	0.980	-0.203	0.442	0.782	21.833	1.117	1.219	0.721	1.219	3.960
19238P	NS	1.609	-0.670	0.711	14.749	2.413	-1.341	-1.341	-0.268	12.604	1.341
19258P	NS	0.024	-0.006	0.025	0.071	0.224	0.047	0.236	0.094	0.070	1.203
19264P	NS	0.032	-0.012	0.024	0.146	0.657	0.316	1.873	0.360	0.389	4.014
19277P	NS	0.216	-0.054	0.259	0.540	1.297	0.108	0.216	0.130	24.857	0.973
19287P	NS	0.482	-0.120	0.385	1.927	13.010	0.723	2.168	0.265	127.692	12.769
19298P	NS	0.164	-0.062	0.492	0.702	1.561	0.312	1.171	0.414	0.492	16.780

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
19316P	65.657	146.412	C-5	10	6	36	0	242.600	0.957	NS	0.907	788.953	-13.018	-0.394	-2.367
19337P	65.640	146.384	C-5	9	7	6	0	251.700	2.660	NS	1.268	-0.296	19.023	-1.057	-5.284
19405P	65.463	146.618	B-6	7	5	1	0	152.500	0.513	NS	0.158	-0.067	-2.691	-0.336	-1.682
19411P	65.424	146.635	B-6	7	5	24	0	180.800	4.200	0.023	1.533	580.752	-4.646	0.209	0.697
19414P	65.537	146.549	C-6	8	6	8	0	262.200	0.870	0.007	1.228	-0.896	21.899	0.133	0.830
19416P	65.658	146.402	C-5	10	6	25	0	263.800	1.920	NS	2.693	24.746	-2.183	-0.728	-3.639
19421P	65.453	146.552	B-6	7	6	8	0	194.200	1.030	0.003	-0.143	-0.424	14.320	-0.027	0.530
19449P	65.551	146.377	C-5	8	7	6	0	285.600	4.380	NS	15.029	-0.353	-7.668	-1.534	-7.668
19459P	65.477	145.714	B-4	8	10	33	0	287.800	13.400	NS	0.279	-0.233	13.968	-4.656	-23.280
19461P	65.452	146.450	B-5	7	6	11	0	234.700	0.933	0.006	0.716	-0.286	3.180	0.024	0.278
19468P	65.457	145.759	B-4	7	10	6	0	304.700	60.300	NS	2.177	-0.989	-59.370	-19.790	-98.950
19472P	65.402	146.359	B-5	7	7	29	0	333.400	2.070	0.006	1.552	6.209	8.071	0.174	0.931
19474P	65.543	146.495	C-5	8	6	3	12	400.400	3.390	NS	0.389	-0.152	10.160	-0.847	-4.233
19475P	65.652	146.739	C-6	10	5	32	0	301.900	0.228	NS	0.052	-0.136	7.175	-0.076	3.398
19479P	65.405	146.320	B-5	7	7	28	0	257.500	2.200	NS	0.692	239.223	10.252	-0.854	-4.272
19488P	65.380	146.095	B-5	6	8	4	0	290.700	8.270	-0.014	3.129	-0.541	-19.914	-2.845	-14.224
19492P	65.482	146.902	B-6	8	4	34	6	307.500	0.135	NS	0.036	-0.070	4.829	-0.044	-0.702
19506P	65.516	145.730	C-4	8	10	17	0	394.500	2.470	NS	0.532	0.069	1.878	-0.626	-3.131
19531P	65.621	146.932	C-6	9	4	9	0	105.900	0.098	NS	0.044	-0.014	1.851	-0.093	-0.463
19543P	65.514	146.060	C-5	8	8	14	0	416.600	4.580	NS	2.309	1066.395	-3.298	-1.099	-5.497
19559P	65.455	145.917	B-4	7	9	9	0	273.900	2.500	NS	9.127	3.468	-46.550	-0.913	18.255
19571P	65.533	146.797	C-6	8	5	7	0	363.100	0.094	NS	0.023	-0.008	0.518	-0.026	-0.129
19588P	65.490	146.392	B-5	8	7	30	4	326.000	6.030	0.009	1.424	-0.222	9.248	0.536	1.295
19593P	65.494	146.206	B-5	8	7	25	0	401.900	1.780	NS	0.266	0.044	3.100	-0.443	-2.214
19594P	65.463	146.638	B-6	7	5	1	0	256.700	0.756	NS	0.442	-0.766	73.627	-0.295	-1.473

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
19316P	NS	0.126	-0.091	0.118	0.237	0.032	0.158	0.552	0.292	0.264	5.838
19337P	NS	0.264	-0.053	0.116	0.634	7.609	3.382	1.374	1.522	20.079	6.024
19405P	NS	0.071	-0.017	0.074	0.269	13.456	0.505	1.615	0.333	0.639	4.407
19411P	0.720	0.091	-0.093	0.060	0.216	998.894	0.860	1.347	0.578	27.876	2.230
19414P	0.242	0.083	-0.013	-0.026	0.258	0.763	7.963	14.600	5.442	6.304	37.162
19416P	NS	0.284	-0.036	0.189	0.728	2.839	2.038	1.165	1.485	13.101	8.370
19421P	0.233	0.020	-0.021	-0.013	0.152	36.066	0.477	3.394	1.071	4.986	5.076
19449P	NS	0.245	-0.077	0.322	0.767	8.895	0.767	0.613	0.598	7.055	1.840
19459P	NS	0.745	-0.233	0.559	6.518	-0.093	0.466	0.466	0.093	-0.186	1.397
19461P	0.107	0.010	-0.016	0.025	0.080	36.573	0.716	0.755	0.620	5.963	1.212
19468P	NS	2.177	-0.989	1.544	19.790	-0.396	-1.979	-1.979	0.396	10.884	3.958
19472P	0.354	0.071	0.137	0.205	0.325	1.304	0.317	0.869	0.319	0.993	3.104
19474P	NS	0.076	-0.042	0.186	0.847	0.305	1.609	1.863	0.593	0.686	2.879
19475P	NS	-0.004	-0.004	0.003	0.083	0.906	0.317	11.328	1.699	0.831	19.485
19479P	NS	0.094	-0.043	0.162	0.854	1.794	0.427	0.854	0.222	0.760	4.101
19488P	NS	0.484	-0.142	6.259	3.983	8.250	0.284	0.569	0.228	8.535	2.560
19492P	NS	-0.008	-0.022	0.048	0.035	0.022	0.026	0.439	0.115	0.029	6.849
19506P	NS	0.100	-0.031	0.106	0.501	0.426	0.125	0.125	0.069	0.401	0.563
19531P	NS	-0.005	-0.005	0.005	0.009	47.195	-0.009	0.037	0.010	0.023	0.851
19543P	NS	0.231	-0.055	0.836	0.770	7.916	0.440	0.660	0.187	3.188	1.979
19559P	NS	0.201	0.137	0.201	0.548	0.420	0.183	0.365	0.173	91.274	0.913
19571P	NS	0.010	-0.002	0.004	0.010	0.003	-0.003	0.041	0.014	0.005	0.300
19588P	1.221	0.335	-0.074	0.087	0.483	5.549	0.481	0.980	0.721	2.590	2.127
19593P	NS	0.071	-0.022	0.066	0.399	0.035	0.266	0.443	0.142	0.111	1.329
19594P	NS	-0.032	-0.015	-0.012	0.147	0.289	4.712	19.437	4.123	8.835	57.134

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
19601P	65.520	146.743	C-6	8	5	16	0	324.400	0.531	NS	0.156	0.049	5.074	-0.164	-0.818
19607P	65.482	146.574	B-6	8	6	32	0	306.000	3.010	0.049	10.820	4.230	20.657	0.492	0.492
19614P	65.483	146.810	B-6	8	5	31	0	339.600	0.559	NS	0.066	-0.033	2.304	-0.165	-0.823
19642P	65.670	146.917	C-6	10	4	28	0	41.300	0.029	NS	0.084	0.051	13.341	-0.070	0.632
19660P	65.664	146.599	C-6	10	5	25	0	311.700	1.070	0.021	1.064	2.472	37.761	0.106	1.648
19669P	65.526	146.218	C-5	8	7	13	0	288.100	3.570	NS	0.669	3.841	-3.717	-1.239	-6.196
19678P	65.679	146.887	C-6	10	4	22	0	152.300	0.364	0.001	0.430	-0.478	-23.900	-0.478	-7.887
19684P	65.598	146.772	C-6	9	5	19	0	222.500	0.595	0.017	-0.374	-1.177	29.416	0.086	2.139
19690P	65.425	146.063	B-5	7	8	22	0	267.900	3.480	NS	19.485	3.637	-3.897	-1.299	19.485
19701P	65.553	146.571	C-6	8	6	5	0	301.600	0.357	0.002	0.166	-0.178	2.604	0.391	0.462
19710P	65.423	146.748	B-6	7	5	20	0	331.100	1.030	NS	0.084	-0.034	2.800	-0.311	-1.555
19728P	65.403	146.797	B-6	7	5	30	0	382.500	7.940	-0.010	1.578	0.830	-4.152	0.415	0.415
19736P	65.570	146.452	C-5	9	6	35	-15	238.600	1.260	NS	0.634	-0.164	7.921	-0.528	-2.640
19738P	65.509	146.432	C-5	8	6	24	0	302.900	1.900	NS	0.364	-0.075	5.018	-0.627	-3.136
19745P	65.539	146.765	C-6	8	5	8	0	262.500	0.036	NS	0.005	-0.007	-0.041	0.014	0.096
19754P	65.433	146.716	B-6	7	5	16	0	325.000	6.210	-0.010	0.803	-0.363	19.108	-1.911	-9.554
19758P	65.629	146.660	C-6	9	5	11	0	339.300	0.362	0.002	0.203	-0.034	-1.707	-0.107	-0.533
19765P	65.587	146.704	C-6	9	5	21	0	198.300	0.015	NS	0.002	-0.011	-0.386	0.015	-0.129
19774P	65.682	146.960	C-6	10	4	20	0	128.400	0.671	NS	0.282	-0.063	2090.343	-0.523	3.136
19788P	65.628	146.821	C-6	9	4	12	0	392.100	1.060	0.011	0.297	-0.487	16.220	0.059	1.081
19801P	65.381	146.098	B-5	6	8	4	0	329.200	2.740	-0.004	0.799	-0.092	-3.329	-0.832	-4.162
19823P	65.507	146.339	C-5	8	7	20	0	300.900	10.800	NS	3.123	12.203	-10.768	-3.589	-17.946
19825P	65.670	146.880	C-6	10	4	27	-3	244.600	1.260	0.003	0.927	1.133	72.118	-0.515	-14.939
19826P	65.428	146.227	B-5	7	7	13	0	246.000	0.868	NS	1.270	0.180	-1.059	-0.353	-1.764
19828P	65.583	146.513	C-6	9	6	28	0	116.000	0.418	NS	0.577	0.090	2.883	-0.360	-1.802

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
19601P	NS	0.018	-0.008	0.044	0.082	1.260	0.393	2.292	0.398	0.426	4.158
19607P	0.885	0.261	-0.039	0.679	0.350	8.853	3.344	4.918	1.908	15.739	9.787
19614P	NS	0.018	-0.008	0.016	0.115	0.543	0.165	0.922	0.244	0.313	2.420
19642P	NS	-0.004	-0.004	0.008	0.049	0.045	0.028	0.204	0.058	0.029	1.215
19660P	0.446	0.042	-0.014	-0.048	0.152	130.446	0.618	30.209	3.536	6.522	66.596
19669P	NS	0.260	-0.062	0.335	1.115	5.204	0.867	0.867	0.310	0.520	1.487
19678P	NS	0.134	-0.012	0.045	0.239	0.191	0.598	19.837	4.445	2.629	48.995
19684P	0.535	0.026	-0.011	0.059	0.203	82.899	1.337	40.112	4.386	37.438	55.890
19690P	NS	0.312	0.169	2.468	0.909	19.485	0.260	0.390	0.104	49.362	1.169
19701P	0.296	0.039	0.098	0.028	0.052	0.028	0.056	0.201	0.106	-0.118	0.627
19710P	NS	0.034	-0.016	0.047	0.249	0.236	0.218	0.933	0.240	0.280	2.084
19728P	0.976	0.174	-0.083	0.104	0.243	788.810	0.457	0.644	0.293	7.058	1.661
19736P	NS	0.090	-0.026	0.095	0.422	1.637	1.426	1.848	0.834	4.489	6.759
19738P	NS	0.056	-0.031	0.144	0.502	0.389	0.439	0.627	0.188	0.207	1.317
19745P	NS	0.005	-0.001	0.001	0.011	0.002	0.010	0.070	0.017	0.009	0.154
19754P	NS	0.287	-0.096	0.344	1.338	32.483	3.822	5.923	1.567	5.350	15.668
19758P	NS	0.049	-0.005	0.028	0.053	0.128	-0.011	0.160	0.037	0.341	1.067
19765P	NS	-0.002	-0.003	0.000	0.011	0.008	0.022	0.057	0.017	0.012	0.474
19774P	NS	0.063	-0.026	0.094	0.052	0.084	-0.052	-0.052	0.021	0.037	0.366
19788P	0.130	0.015	-0.011	-0.013	0.165	62.178	1.622	29.737	9.273	6.488	41.092
19801P	NS	0.166	-0.042	1.332	1.082	0.732	0.083	0.250	0.083	0.832	0.832
19823P	NS	0.359	-0.179	1.184	1.795	0.359	1.795	1.436	0.538	1.005	3.589
19825P	NS	0.211	-0.026	0.067	0.464	123.630	1.082	29.362	4.476	13.908	50.585
19826P	NS	0.145	-0.018	0.127	0.282	0.007	0.141	0.247	0.116	0.099	2.082
19828P	NS	0.076	-0.018	0.162	0.180	0.072	0.072	0.252	0.144	0.151	1.333

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
19830P	65.560	146.838	C-6	9	4	36	0	287.600	3.600	0.063	3.255	-2.879	287.900	0.200	3.129
19853P	65.605	146.536	C-6	9	6	17	0	260.800	0.234	NS	0.075	0.033	1.077	-0.090	-0.449
19854P	65.548	146.338	C-5	8	7	5	0	337.300	1.980	NS	1.057	-0.088	5.283	-0.587	-2.935
19859P	65.443	146.882	B-6	7	4	11	0	361.900	0.781	-0.001	0.060	0.030	-1.295	-0.216	-1.079
19872P	65.669	146.561	C-6	10	6	29	0	234.600	0.095	0.001	0.089	-0.142	5.669	0.061	0.373
19918P	65.554	146.717	C-6	8	5	4	0	248.500	0.203	NS	0.082	-0.073	7.352	-0.082	-0.899
19920P	65.510	146.691	C-6	8	5	22	0	222.100	0.193	0.000	0.096	0.295	14.773	0.695	1.999
19963P	65.570	146.452	C-5	9	6	35	15	296.100	3.620	NS	1.223	-0.281	-6.113	-1.223	-6.113
19971P	65.676	146.963	C-6	10	4	20	0	108.600	0.054	NS	0.065	-0.022	84.530	-0.050	0.994
19976P	65.446	146.845	B-6	7	4	12	0	309.700	1.010	-0.002	0.065	-0.046	2.609	-0.326	-1.631
21413P	65.418	146.485	B-5	7	6	22	0	439.800	1.670	NS	0.125	-0.053	2.658	-0.380	-1.899
21425P	65.454	145.646	B-4	7	10	11	0	228.700	75.200	NS	2.959	-1.644	-98.645	-32.882	-164.408
21442P	65.601	146.742	C-6	9	5	17	0	223.500	0.624	NS	0.363	-0.726	-27.919	-0.279	-7.259
21459P	65.460	146.363	B-5	7	7	5	0	210.100	3.840	0.009	0.475	62.142	5.483	0.128	0.366
21474P	65.656	146.561	C-6	10	6	32	0	259.800	0.018	-0.001	-0.024	-0.083	1.801	0.009	0.069
21517P	65.400	146.793	B-6	7	5	30	0	259.900	1.210	-0.002	-0.130	-0.382	8.846	0.084	0.978
21531P	65.684	146.432	C-5	10	6	23	7	302.600	2.560	NS	0.931	-0.042	118.440	-0.846	-6.768
21535P	65.519	145.851	C-4	8	9	14	0	306.400	1.010	NS	0.241	3.626	2.307	-0.330	-1.648
21550P	65.511	145.656	C-4	8	10	22	0	409.800	32.900	NS	8.028	-0.482	24.085	-8.028	-40.142
21598P	65.436	145.961	B-4	7	9	18	0	329.300	1.810	NS	1.044	0.605	7.145	-0.550	-2.748
21601P	65.415	146.446	B-5	7	6	23	0	200.500	3.130	NS	0.453	-0.187	-4.683	-1.561	-7.805
21611P	65.412	146.177	B-5	7	8	30	0	255.700	0.601	NS	1.387	-0.089	3.761	-0.235	-1.175
21615P	65.658	146.416	C-5	10	6	25	0	563.100	0.116	NS	0.008	-0.008	1.174	-0.021	0.144
21649P	65.580	146.443	C-5	9	6	26	0	275.200	1.010	NS	0.261	-0.044	2.569	-0.367	-1.835
21690P	65.487	146.059	B-5	8	8	26	0	566.500	5.360	NS	3.595	0.568	-8.515	-0.946	-4.731

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
19830P	0.726	0.031	-0.050	-0.081	0.223	776.078	3.505	45.063	10.490	73.853	92.754
19853P	NS	0.022	-0.004	0.010	0.090	0.090	0.036	0.153	0.062	0.024	0.906
19854P	NS	0.053	-0.029	0.205	0.470	2.583	0.470	0.646	0.340	1.350	1.115
19859P	NS	0.078	-0.011	0.012	0.173	0.047	0.043	0.151	0.056	0.015	0.950
19872P	0.113	0.010	-0.002	0.018	0.014	39.685	-0.005	0.607	0.069	0.085	4.211
19918P	NS	0.010	-0.004	0.006	0.049	0.515	0.049	2.777	0.334	0.302	6.225
19920P	NS	0.026	-0.004	0.017	0.122	0.087	0.426	10.428	1.295	1.651	40.581
19963P	NS	0.257	-0.061	0.232	0.611	5.624	3.668	4.157	1.589	14.671	14.426
19971P	NS	0.011	-0.002	0.016	0.035	1.989	0.010	0.244	0.067	0.015	1.606
19976P	NS	0.062	-0.016	0.014	0.261	0.039	0.033	0.326	0.163	0.029	2.218
21413P	NS	-0.019	-0.019	0.003	0.038	7.215	0.228	1.215	0.289	1.101	1.975
21425P	NS	3.946	-1.644	3.025	32.882	-0.658	-3.288	-3.288	-0.658	-1.315	3.288
21442P	NS	-0.064	-0.014	-0.011	0.168	184.268	1.089	39.087	4.383	27.361	48.021
21459P	0.311	0.077	-0.073	0.035	0.249	106.007	0.640	1.151	0.837	10.418	1.736
21474P	-0.001	0.001	0.032	0.010	0.005	0.007	-0.003	0.097	0.010	0.062	1.323
21517P	0.051	0.043	-0.019	0.084	0.258	1.909	0.419	1.117	0.335	2.235	3.357
21531P	NS	0.135	-0.042	0.045	0.338	423.001	1.523	49.068	5.558	7.360	135.360
21535P	NS	0.073	-0.016	0.310	0.330	0.033	0.132	0.165	0.089	0.923	1.483
21550P	NS	1.044	-0.401	2.168	9.634	1.285	-0.803	0.803	0.161	1.204	2.408
21598P	NS	0.099	-0.027	0.099	0.385	0.770	0.165	1.979	0.275	11.543	11.982
21601P	NS	-0.078	-0.078	0.012	-0.156	421.496	0.468	0.781	0.437	4.996	1.093
21611P	NS	0.068	-0.019	2.327	0.306	25.855	0.118	0.212	0.075	0.470	1.598
21615P	NS	0.003	-0.001	0.002	0.025	0.006	0.025	0.167	0.042	0.020	1.030
21649P	NS	0.018	-0.018	0.014	0.073	1.064	0.404	0.514	0.316	3.156	1.615
21690P	NS	0.255	-0.047	0.804	0.662	6.434	0.378	0.378	0.132	4.258	1.892

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
21706P	65.380	146.170	B-5	6	8	6	0	210.300	1.070	-0.003	1.119	-0.122	-4.579	-0.509	-2.544
21707P	65.658	146.992	C-6	10	4	31	0	267.200	0.240	0.002	0.117	0.032	8.982	-0.090	1.886
21710P	65.475	146.262	B-5	8	7	35	0	119.700	0.239	NS	0.124	-0.036	2.596	-0.200	-0.998
21728P	65.467	146.883	B-6	7	4	2	0	322.700	0.073	NS	0.022	0.045	2.715	-0.023	-0.362
21739P	65.498	146.778	B-6	8	5	29	0	306.800	2.870	NS	1.684	0.617	11.226	-0.935	-4.677
21753P	65.665	146.730	C-6	10	5	28	0	359.600	0.489	0.001	0.072	-0.177	27.197	-0.136	-4.080
21758P	65.462	146.912	B-6	7	4	3	0	243.700	2.330	-0.005	1.339	0.249	6.693	-0.956	-4.780
21759P	65.488	146.705	B-6	8	5	27	0	221.800	0.314	0.001	0.072	9.344	18.404	-0.142	-1.840
21773P	65.460	146.409	B-5	7	6	1	0	309.500	1.380	0.007	1.516	-0.285	2.675	0.143	0.446
21777P	65.542	146.715	C-6	8	5	9	0	190.200	0.700	NS	0.250	-0.405	32.387	-0.368	-1.840
21780P	65.519	145.660	C-4	8	10	15	0	451.900	28.100	NS	6.840	0.684	18.655	-6.218	-31.091
21782P	65.666	146.920	C-6	10	4	28	0	245.000	0.008	NS	0.000	-0.008	2.286	-0.003	-0.091
21792P	65.536	146.717	C-6	8	5	9	0	258.200	1.320	NS	0.562	-0.337	24.539	-0.511	-4.090
21803P	65.556	146.569	C-6	8	6	5	0	262.600	0.557	0.002	0.361	-0.233	5.515	0.700	0.615
21823P	65.633	146.328	C-5	9	7	5	0	325.800	2.530	NS	0.109	28.732	15.531	-0.777	-3.883
21845P	65.403	146.640	B-6	7	5	25	0	297.600	4.430	NS	0.729	-0.179	4.466	-1.489	-7.443
21872P	65.484	146.725	B-6	8	5	28	0	252.900	0.275	0.002	0.095	5.763	4.567	-0.109	-0.870
21887P	65.488	145.927	B-4	8	9	29	0	331.000	3.240	NS	11.746	-1.175	-8.810	-0.979	-7.831
21895P	65.692	146.803	C-6	10	5	18	0	43.200	0.036	NS	0.167	-0.038	10.000	0.083	2.583
21923P	65.512	146.717	C-6	8	5	21	0	478.700	0.329	0.000	0.096	-0.103	-0.206	0.275	-1.718
21924P	65.543	146.496	C-5	8	6	3	-12	378.600	3.330	NS	0.413	-0.202	-2.639	-0.880	-4.398
21928P	65.394	146.769	B-6	7	5	32	0	288.900	1.200	-0.002	0.141	-0.112	5.400	0.079	0.914
21952P	65.675	146.882	C-6	10	4	22	0	93.100	0.740	NS	1.272	-1.749	95.381	-0.795	-24.640
21959P	65.536	146.631	C-6	8	5	12	0	362.400	4.380	0.030	1.692	0.641	14.503	1.148	1.209
21960P	65.594	146.422	C-5	9	6	24	9	252.900	4.630	NS	1.831	-0.915	-5.492	-1.831	-9.154

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
21706P	NS	0.076	-0.025	1.832	0.458	0.458	0.051	0.254	0.086	0.229	0.611
21707P	NS	0.038	-0.004	0.028	0.054	0.090	-0.018	0.171	0.044	0.015	1.293
21710P	NS	0.042	-0.010	0.040	0.160	0.260	0.100	0.240	0.164	0.200	0.719
21728P	NS	-0.001	-0.011	0.009	0.018	0.588	-0.011	0.188	0.038	-0.001	3.009
21739P	NS	0.187	-0.047	0.206	0.374	8.980	1.590	6.548	1.057	2.339	20.300
21753P	NS	-0.041	-0.007	-0.003	0.218	0.802	0.354	13.598	1.496	0.490	21.486
21758P	NS	0.172	-0.048	0.239	0.287	11.473	1.052	5.067	0.994	1.530	13.098
21759P	NS	0.031	-0.007	0.008	0.142	0.142	0.694	13.166	1.897	0.538	37.374
21773P	0.446	0.051	-0.018	0.049	0.186	66.882	0.379	0.803	0.798	4.459	1.213
21777P	NS	-0.018	-0.018	0.040	0.147	239.222	1.251	12.145	1.877	6.257	31.540
21780P	NS	0.808	-0.311	1.492	6.218	0.746	-0.622	0.622	0.187	0.622	1.865
21782P	NS	0.000	-0.002	0.000	0.006	0.001	-0.003	0.030	0.007	0.091	0.457
21792P	NS	0.072	-0.026	0.066	0.153	230.054	0.920	13.292	1.728	5.112	32.208
21803P	0.551	0.082	-0.008	0.051	0.062	0.030	0.087	0.297	0.212	0.176	0.443
21823P	NS	0.132	-0.039	0.023	0.699	0.031	0.078	0.621	0.256	0.124	2.796
21845P	NS	-0.074	-0.074	0.007	0.149	163.743	0.298	0.298	0.238	5.657	0.595
21872P	NS	0.033	-0.005	0.010	0.054	0.109	0.185	4.893	0.528	0.217	14.462
21887P	NS	0.117	-0.049	0.063	0.294	3.328	0.294	2.056	0.323	185.982	14.487
21895P	NS	0.040	-0.004	0.023	0.050	0.667	-0.017	0.250	0.069	0.100	2.158
21923P	NS	0.030	-0.003	0.012	0.117	0.034	0.076	2.268	0.370	0.337	7.972
21924P	NS	0.150	-0.044	0.194	0.968	0.457	1.935	1.935	0.642	1.055	3.342
21928P	0.096	0.027	0.058	0.075	0.208	0.096	0.291	0.706	0.304	0.415	1.180
21952P	NS	-0.040	-0.040	0.059	0.397	198.711	3.179	65.972	9.538	30.204	178.840
21959P	2.175	0.196	-0.048	0.205	0.300	1.571	2.055	3.626	1.354	5.801	9.330
21960P	NS	0.220	-0.092	0.201	0.915	23.800	15.928	8.055	6.957	131.677	22.701

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
21970P	65.421	146.040	B-5	7	8	23	0	307.500	4.030	NS	15.727	5.635	28.833	-1.311	-9.174
21985P	65.532	146.605	C-6	8	6	7	0	362.000	0.857	0.001	1.657	0.166	3.314	0.497	1.042
21996P	65.521	146.642	C-6	8	5	13	0	287.600	0.392	0.005	0.232	-0.668	27.260	0.136	1.227
22003P	65.448	146.445	B-5	7	6	11	0	293.400	5.640	-0.010	1.557	-0.211	-5.767	-0.096	-0.192
22019P	65.623	146.500	C-6	9	6	9	0	311.000	0.464	NS	0.100	-0.024	1.641	-0.149	-0.746
22039P	65.535	146.617	C-6	8	5	12	0	100.700	0.227	NS	0.902	0.147	2.029	0.225	-1.127
22040P	65.594	146.422	C-5	9	6	24	-9	298.700	1.510	NS	0.758	-0.389	16.682	-0.506	-4.044
22063P	65.411	145.913	B-4	7	9	28	0	244.400	23.100	-0.047	1.134	-1.323	-56.710	2.079	11.342
22067P	65.427	146.760	B-6	7	5	17	0	182.000	0.507	NS	0.078	-0.050	2.786	-0.279	-1.393
22069P	65.641	146.957	C-6	9	4	5	0	282.300	0.183	0.001	0.182	-0.036	14.910	0.065	0.454
22092P	65.472	146.784	B-6	8	5	31	0	289.800	2.030	NS	1.611	0.105	2.802	-0.700	-3.502
22102P	65.630	146.702	C-6	9	5	4	0	291.700	1.430	0.049	0.980	-1.128	78.437	-0.490	-17.648
22108P	65.687	146.886	C-6	10	4	15	0	191.400	0.576	NS	0.512	-0.301	14.144	-0.301	-4.213
22114P	65.601	146.959	C-6	9	4	17	0	235.100	0.995	NS	1.439	80.413	13.120	-0.423	-2.116
22121P	65.672	146.882	C-6	10	4	22	0	277.200	0.435	NS	0.204	-0.220	15.693	0.157	-2.982
22189P	65.669	146.567	C-6	10	6	30	0	287.700	1.290	0.018	0.807	-0.942	44.838	0.166	2.376
22200P	65.494	146.561	B-6	8	6	29	0	224.100	0.360	0.003	0.337	-0.707	14.137	0.059	0.434
22210P	65.447	145.951	B-4	7	9	8	0	264.700	1.870	NS	4.451	-0.283	-5.652	-0.706	-3.532
22211P	65.427	146.729	B-6	7	5	21	0	177.200	0.522	NS	0.044	-0.056	5.302	-0.295	2.357
22225P	65.523	145.969	C-4	8	9	18	13	385.000	3.060	NS	3.259	1.987	-16.691	-0.795	-4.769
22249P	65.525	146.058	C-5	8	8	14	-11	436.000	5.350	NS	2.945	4.049	11.044	-1.227	-6.135
22254P	65.399	146.364	B-5	7	7	29	0	384.200	4.650	0.006	1.452	-0.145	4.841	0.315	0.484
22278P	65.612	146.882	C-6	9	4	15	0	307.000	2.820	0.037	1.470	-1.102	84.508	-0.919	-14.697
22279P	65.631	146.366	C-5	9	7	6	0	445.400	2.360	NS	0.323	2.755	7.948	-0.530	-2.649
22296P	65.414	146.553	B-6	7	6	20	0	171.000	2.850	0.017	0.900	-0.150	-3.333	0.517	1.167

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
21970P	NS	0.341	0.079	0.629	0.917	5.373	0.393	0.524	0.079	61.597	1.311
21985P	1.160	0.080	0.028	0.069	0.069	0.114	0.213	1.397	0.324	1.515	3.788
21996P	0.063	0.020	-0.005	-0.019	0.077	0.136	1.172	11.449	2.235	4.634	27.533
22003P	0.154	0.015	-0.077	0.008	0.213	538.241	0.807	1.192	0.607	15.571	1.692
22019P	NS	0.025	-0.007	0.019	0.090	0.012	0.075	0.254	0.095	0.060	1.089
22039P	NS	0.079	-0.011	0.126	0.180	0.018	0.090	0.248	0.162	0.038	0.992
22040P	NS	0.106	-0.025	0.071	0.455	2.629	3.235	2.528	2.214	28.309	8.088
22063P	1.229	2.457	0.473	1.134	18.242	-0.189	0.284	0.737	0.274	0.567	2.646
22067P	NS	-0.014	-0.014	0.033	0.223	0.173	0.111	0.613	0.203	0.092	3.454
22069P	NS	0.037	-0.003	0.019	0.052	0.065	-0.013	0.162	0.049	0.019	1.770
22092P	NS	0.238	-0.035	0.315	0.210	0.224	0.070	0.700	0.189	0.035	2.802
22102P	NS	-0.137	10.295	0.027	0.441	387.281	2.010	49.023	6.324	28.433	93.634
22108P	NS	-0.015	-0.015	0.007	0.030	0.572	0.090	2.167	0.361	0.482	6.350
22114P	NS	0.110	-0.021	0.309	0.085	7.195	0.042	2.158	0.394	3.132	7.660
22121P	NS	-0.008	-0.008	0.013	0.078	2.197	0.455	12.240	2.589	2.354	28.404
22189P	1.076	0.051	-0.018	0.072	0.181	233.160	0.942	26.903	3.376	21.074	60.532
22200P	0.055	0.038	-0.006	-0.019	0.149	0.141	4.337	9.157	2.924	5.301	19.438
22210P	NS	0.191	0.064	0.459	0.283	0.155	0.141	0.212	0.092	47.333	0.848
22211P	NS	-0.015	-0.015	0.106	0.353	0.041	0.236	0.884	0.277	0.162	2.445
22225P	NS	0.215	-0.040	0.246	0.795	0.954	0.238	0.874	0.175	50.073	10.968
22249P	NS	0.282	-0.074	0.933	0.982	6.135	0.614	0.736	0.233	2.822	2.086
22254P	1.113	0.161	-0.048	0.086	0.177	11.256	0.218	0.666	0.234	2.542	1.368
22278P	NS	-0.101	-0.046	0.038	0.276	477.655	1.929	23.883	4.060	34.906	54.930
22279P	NS	0.106	-0.026	0.143	0.477	0.530	0.106	0.636	0.212	0.350	4.451
22296P	2.500	0.448	-0.067	0.167	0.340	7.833	0.200	0.500	0.250	1.217	1.383

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
22312P	65.485	146.812	B-6	8	5	30	0	527.000	2.630	-0.002	0.374	32.438	-1.497	-0.499	-2.994
22342P	65.399	146.348	B-5	7	7	29	0	230.800	1.020	0.002	1.326	-0.133	3.536	0.168	0.707
22369P	65.518	146.738	C-6	8	5	16	0	228.600	0.386	NS	0.388	-0.127	5.234	-0.169	-1.520
22376P	65.486	145.859	B-4	8	9	27	0	183.900	1.470	NS	4.396	-1.119	-26.378	-0.799	-11.191
22383P	65.409	146.557	B-6	7	6	29	0	228.100	5.250	0.012	2.187	11.048	4.603	0.506	1.151
22384P	65.388	146.026	B-5	7	8	35	0	252.000	9.510	-0.019	0.528	-0.264	-11.321	-3.774	-18.869
22391P	65.675	146.719	C-6	10	5	21	0	204.200	0.010	-0.001	0.012	0.049	2.400	0.044	0.588
22435P	65.533	146.759	C-6	8	5	8	0	320.400	0.710	NS	0.355	0.058	2.216	-0.222	-1.108
22457P	65.448	146.027	B-5	7	8	11	0	469.000	2.310	NS	0.837	0.261	-2.955	-0.493	-2.463
22459P	65.628	146.853	C-6	9	4	11	0	232.300	1.620	0.038	4.045	-2.162	83.685	0.133	1.813
22472P	65.665	146.725	C-6	10	5	28	0	546.000	1.310	-0.001	0.010	-0.053	3.599	-0.240	-1.200
22545P	65.573	146.761	C-6	9	5	29	0	214.600	0.267	0.010	0.373	-0.684	27.372	0.067	0.747
22564P	65.411	145.834	B-4	7	9	26	0	241.400	70.900	-0.147	0.881	-5.287	205.592	4.993	32.307
22590P	65.473	145.861	B-4	8	9	34	0	386.500	3.710	NS	4.032	0.874	-20.158	-0.960	-5.759
22611P	65.629	146.850	C-6	9	4	11	0	296.700	0.401	0.012	-0.230	-0.595	20.273	0.070	0.635
22614P	65.398	146.361	B-5	7	7	29	0	278.700	1.070	0.004	6.143	8.062	2.687	0.288	0.576
22622P	65.663	146.596	C-6	10	5	25	0	285.700	0.758	0.130	0.849	-0.531	29.184	0.135	0.796
22637P	65.480	146.644	B-6	8	5	35	0	288.500	0.973	NS	0.573	0.708	47.217	-0.337	-8.769
22655P	65.376	146.672	B-6	6	5	2	0	251.400	0.281	-0.001	0.099	-0.035	2.906	-0.112	0.559
22662P	65.469	146.878	B-6	7	4	2	0	224.000	4.170	NS	1.582	-0.428	29.786	-1.862	-9.308
22683P	65.445	146.073	B-5	7	8	10	0	332.200	3.430	NS	6.711	4.956	-3.098	-1.033	-5.163
22836P	65.601	146.191	C-5	9	7	13	0	317.300	3.470	NS	0.995	-0.252	10.936	-1.094	-5.468
22840P	65.647	146.640	C-6	10	5	35	0	613.600	0.978	0.007	0.207	-0.351	25.502	0.126	0.877
22841P	65.490	146.392	B-5	8	7	30	-4	260.700	4.020	-0.008	1.419	0.601	7.710	0.432	1.079
22872P	65.519	146.181	C-5	8	8	18	0	311.200	4.160	NS	1.871	16.041	13.368	-1.337	-6.684

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
22312P	NS	0.065	-0.025	0.065	0.250	59.886	1.347	5.989	1.038	3.094	16.020
22342P	0.261	0.094	-0.018	0.203	0.187	1.679	0.150	0.318	0.182	1.503	0.840
22369P	NS	-0.008	-0.008	0.035	0.084	0.810	0.236	3.039	0.437	0.810	7.784
22376P	NS	0.088	-0.040	0.041	0.400	0.879	-0.080	2.878	0.352	191.843	23.261
22383P	1.243	0.525	-0.092	0.147	0.463	14.730	0.414	0.506	0.235	1.519	1.565
22384P	NS	0.717	-0.189	0.336	5.661	0.075	-0.377	-0.377	0.075	0.981	0.755
22391P	NS	-0.003	-0.007	0.002	0.017	0.005	0.069	0.059	0.016	0.021	0.191
22435P	NS	0.078	-0.011	0.080	0.066	0.044	0.022	0.310	0.102	0.066	1.042
22457P	NS	0.108	-0.025	0.458	0.394	12.313	0.197	0.148	0.064	0.690	0.739
22459P	1.604	0.051	-0.028	-0.105	0.287	355.661	2.580	54.395	9.275	55.790	94.843
22472P	NS	0.082	-0.012	-0.001	0.024	0.360	0.072	2.879	0.365	0.204	9.669
22545P	0.199	0.020	-0.005	0.042	0.079	0.187	0.299	14.930	1.792	5.350	24.261
22564P	6.461	6.021	-1.175	-0.117	51.692	-0.587	-0.294	1.087	0.940	-2.056	5.287
22590P	NS	0.086	0.960	0.054	0.288	1.056	0.096	1.248	0.163	124.787	7.007
22611P	0.096	0.012	-0.005	-0.019	0.103	-0.018	0.162	16.218	2.771	1.892	28.247
22614P	0.576	0.119	0.027	0.998	0.202	0.422	0.104	0.292	0.138	0.998	1.785
22622P	0.531	0.042	-0.011	-0.029	0.085	1.671	0.172	9.286	1.250	0.610	17.909
22637P	NS	0.040	-0.017	0.020	0.270	0.607	6.408	17.538	4.890	11.467	58.009
22655P	NS	0.028	-0.006	0.019	0.145	0.112	0.056	0.145	0.051	0.279	0.481
22662P	NS	0.316	-0.093	0.261	0.558	242.009	3.723	10.797	1.955	6.702	28.110
22683P	NS	0.289	-0.093	0.981	0.723	3.924	0.413	0.413	0.145	6.092	1.136
22836P	NS	0.328	-0.066	0.689	0.984	16.404	0.547	0.875	0.241	0.131	2.625
22840P	0.430	0.041	-0.701	0.033	0.068	0.335	0.092	6.854	0.674	0.414	18.011
22841P	0.925	0.301	1.126	0.074	0.402	5.705	0.416	0.925	0.652	2.621	1.804
22872P	NS	0.241	-0.080	0.348	0.936	12.432	0.936	1.337	0.468	1.297	4.010

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
22877P	65.521	146.887	C-6	8	4	15	0	451.200	0.012	0.000	0.001	-0.010	-0.452	-0.008	-0.146
22881P	65.569	146.313	C-5	9	7	33	0	262.000	1.820	NS	8.336	0.507	-12.504	-0.695	5.557
22882P	65.583	146.437	C-5	9	6	26	0	302.600	1.210	NS	1.839	-1.040	15.995	-0.400	-2.799
22883P	65.623	146.640	C-6	9	5	11	0	260.900	0.032	-0.002	0.032	-0.022	1.227	0.037	-0.319
22889P	65.457	145.754	B-4	7	10	6	0	564.800	255.000	NS	2.709	-2.257	-135.446	-45.149	-225.744
22894P	65.541	146.235	C-5	8	7	11	0	267.500	5.840	NS	1.244	0.742	21.832	-2.183	-10.916
22898P	65.455	146.552	B-6	7	6	8	0	238.700	1.660	0.003	0.216	-0.160	9.041	0.042	0.487
22907P	65.584	146.441	C-5	9	6	26	0	272.900	0.747	NS	0.383	-0.109	-3.832	-0.274	-1.369
22970P	65.482	146.901	B-6	8	4	34	-6	293.000	0.027	NS	0.004	0.023	-0.461	-0.009	-0.184
22981P	65.685	146.432	C-5	10	6	23	-7	290.400	2.080	NS	0.788	-0.143	100.275	-0.716	-7.163
22984P	65.629	146.478	C-5	9	6	3	0	370.200	0.576	NS	0.202	-0.033	3.267	-0.156	-0.778
23009P	65.517	146.363	C-5	8	7	17	0	205.500	2.670	NS	1.000	3.378	-10.394	-1.299	-6.496
23042P	65.466	145.780	B-4	7	10	6	0	327.500	17.700	NS	2.000	-0.757	-27.023	-5.405	-27.023
23046P	65.511	145.662	C-4	8	10	22	0	509.600	19.800	NS	5.440	0.932	15.542	-3.885	-19.427
23419P	65.488	146.093	B-5	8	8	27	0	228.400	1.270	NS	1.446	0.078	2.780	-0.556	-2.780
23422P	65.496	145.826	B-4	8	9	26	0	397.300	3.980	NS	1.703	0.581	3.005	-1.002	-5.009
23424P	65.587	146.752	C-6	9	5	20	0	234.600	0.511	0.015	0.457	-0.828	63.167	0.089	1.830
23437P	65.430	146.721	B-6	7	5	16	0	170.900	0.064	NS	0.009	-0.010	0.487	-0.037	-0.187
23453P	65.457	146.405	B-5	7	6	1	0	231.200	5.490	NS	2.375	-0.214	-7.124	-2.375	-11.873
23454P	65.398	146.382	B-5	7	7	31	0	208.500	0.939	NS	2.792	0.158	-1.351	-0.450	-2.252
23456P	65.634	146.861	C-6	9	4	2	0	220.800	0.493	NS	0.380	-0.648	35.725	-0.223	-9.601
23463P	65.446	146.328	B-5	7	7	9	0	230.700	2.170	NS	0.705	50.793	14.109	-0.941	-4.703
23485P	65.552	146.725	C-6	8	5	4	0	352.600	2.360	NS	0.261	-0.194	6.693	-0.669	-3.347
23493P	65.691	146.727	C-6	10	5	16	0	596.900	0.160	0.000	0.018	-0.080	7.237	-0.080	-1.340
23495P	65.661	146.624	C-6	10	5	25	0	424.800	1.480	0.017	0.871	-1.219	66.196	0.164	1.428

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
22877P	NS	-0.002	-0.003	0.001	0.007	0.003	-0.005	0.035	0.007	0.004	0.306
22881P	NS	0.167	-0.035	0.973	0.625	152.824	0.347	0.764	0.250	1.111	12.295
22882P	NS	0.060	-0.020	0.025	0.320	55.981	12.396	2.759	9.117	87.971	7.118
22883P	NS	0.008	-0.001	0.005	0.010	0.012	-0.011	0.090	0.013	0.011	1.014
22889P	NS	7.224	-2.257	2.664	58.693	-0.903	-4.515	-4.515	-0.903	-1.806	4.515
22894P	NS	0.393	-0.109	0.179	1.092	0.087	0.437	2.183	0.415	-0.087	7.859
22898P	0.038	0.033	0.042	-0.004	0.143	8.345	0.348	3.477	0.939	3.964	4.833
22907P	NS	0.079	-0.014	0.033	0.328	0.049	0.082	0.438	0.233	0.263	5.201
22970P	NS	0.003	-0.005	0.002	0.006	0.002	-0.006	0.138	0.027	0.027	2.313
22981P	NS	-0.072	-0.279	0.062	0.215	544.353	1.433	43.691	4.906	7.019	153.278
22984P	NS	0.053	-0.008	0.023	0.156	0.034	0.078	0.420	0.208	0.142	3.516
23009P	NS	0.130	-0.065	0.221	1.299	0.052	1.039	1.169	0.312	0.195	1.689
23042P	NS	0.811	-0.378	6.485	7.566	0.432	-0.540	1.081	0.216	18.916	6.485
23046P	NS	0.544	-0.194	0.855	4.662	0.233	-0.389	0.389	0.155	0.311	1.554
23419P	NS	0.128	-0.028	0.111	0.278	0.011	0.167	0.334	0.200	0.217	1.223
23422P	NS	0.140	-0.050	0.066	0.501	7.213	0.401	0.200	0.120	1.803	1.102
23424P	0.240	0.031	-0.009	-0.024	0.157	0.218	0.261	23.960	2.897	4.356	39.643
23437P	NS	-0.002	-0.002	0.007	0.049	0.010	0.037	0.120	0.036	0.013	0.266
23453P	NS	-0.119	-0.119	0.014	-0.237	185.216	0.712	0.475	0.380	4.512	0.950
23454P	NS	0.117	-0.023	0.631	0.225	0.676	0.135	0.315	0.144	0.631	1.171
23456P	NS	-0.011	-0.011	0.014	0.134	71.449	1.250	29.026	5.716	13.620	55.820
23463P	NS	0.085	-0.047	0.113	0.752	150.498	0.470	0.752	0.207	1.505	2.257
23485P	NS	-0.033	-0.033	0.019	0.067	281.112	0.535	8.701	1.017	4.351	20.816
23493P	NS	-0.014	-0.001	0.002	0.056	0.027	-0.043	2.949	0.445	0.174	7.211
23495P	0.697	0.048	-0.014	-0.049	0.171	195.104	0.488	23.691	2.254	7.316	54.002

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
23500P	65.477	146.838	B-6	8	4	36	0	242.800	1.080	NS	0.534	-0.196	-8.451	-0.445	2.669
23536P	65.557	146.468	C-5	8	6	2	0	306.700	6.350	NS	1.739	-0.290	8.282	-2.070	-10.352
23537P	65.620	146.863	C-6	9	4	11	0	181.800	0.291	0.005	0.224	-0.400	-0.480	-0.160	-5.602
23564P	65.651	146.973	C-6	10	4	32	0	228.900	0.008	0.000	0.002	-0.013	0.839	0.010	0.489
23579P	65.541	146.711	C-6	8	5	10	0	330.300	1.220	-0.002	0.443	-0.081	-1.108	-0.369	-1.847
23592P	65.406	146.435	B-5	7	6	25	0	324.900	5.000	NS	0.677	-0.185	4.617	-1.539	-7.695
23606P	65.624	146.638	C-6	9	5	11	0	294.900	0.106	0.000	0.111	-0.023	-0.108	0.036	-0.288
23619P	65.676	146.959	C-6	10	4	20	0	107.200	0.143	NS	0.187	0.023	320.149	-0.133	-0.667
23640P	65.610	146.402	C-5	9	6	13	0	323.400	2.060	NS	1.210	-0.312	7.007	-0.637	-5.096
23648P	65.478	146.529	B-6	8	6	33	0	225.200	0.961	0.004	0.597	-0.132	2.560	0.226	0.597
23656P	65.512	146.318	C-5	8	7	21	0	348.000	1.850	NS	0.585	-0.037	3.721	-0.532	-2.658
23676P	65.623	146.497	C-5	9	6	9	0	283.800	0.084	NS	0.017	-0.011	0.947	-0.030	0.148
23679P	65.659	146.632	C-6	10	5	26	0	525.100	2.840	0.041	-1.893	-2.055	59.493	0.114	1.623
23726P	65.423	146.238	B-5	7	7	23	0	359.000	1.650	NS	1.517	0.345	3.217	-0.460	-2.298
23743P	65.479	146.580	B-6	8	6	31	0	183.500	1.470	NS	0.264	-0.056	2.403	-0.801	-4.005
23749P	65.658	146.872	C-6	10	4	26	0	122.600	0.376	NS	0.368	0.368	20.855	-0.307	-3.987
24119P	65.400	146.408	B-5	7	6	25	0	321.600	3.040	NS	2.647	0.274	-2.836	-0.945	-4.726
24136P	65.610	146.679	C-6	9	5	15	0	170.400	0.009	-0.001	0.017	0.021	-0.016	0.021	0.359
24140P	65.642	146.654	C-6	9	5	2	0	285.400	0.298	0.013	0.219	-0.188	-0.313	0.313	-2.610
24153P	65.583	146.517	C-6	9	6	28	0	201.300	0.773	NS	0.211	-0.042	4.608	-0.384	-1.920
24178P	65.620	146.954	C-6	9	4	8	0	182.600	0.147	0.000	0.233	-0.044	-0.242	0.081	0.966
24187P	65.623	146.374	C-5	9	7	7	0	290.500	4.020	NS	1.259	-0.263	-9.687	-1.384	-6.919
24188P	65.551	146.270	C-5	8	7	3	0	281.100	4.870	NS	3.292	-0.398	-5.197	-1.732	-8.662
24203P	65.486	146.723	B-6	8	5	28	-2	223.200	0.363	0.012	0.374	6.993	-13.987	0.325	-4.879
24209P	65.676	146.530	C-6	10	6	20	0	359.300	1.250	NS	0.417	0.487	52.185	0.348	-1.739

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
23500P	NS	-0.022	-0.022	0.071	0.267	5.338	0.979	4.359	0.689	2.269	13.300
23536P	NS	0.331	-0.104	0.621	0.828	19.669	1.242	1.863	0.663	6.625	4.969
23537P	NS	-0.045	-0.008	0.010	0.224	0.134	-0.016	11.685	1.985	8.483	18.728
23564P	NS	0.002	-0.005	0.001	0.012	0.003	0.006	0.020	0.008	0.000	0.109
23579P	NS	0.044	-0.018	0.074	0.259	2.844	1.441	2.438	0.687	1.108	5.614
23592P	NS	0.339	-0.077	0.071	1.077	9.849	0.769	0.462	0.215	2.308	2.462
23606P	NS	0.014	-0.002	0.020	0.025	0.036	-0.011	0.079	0.023	0.014	0.701
23619P	NS	0.040	-0.007	0.033	0.027	0.115	-0.013	0.107	0.047	-0.005	0.640
23640P	NS	0.089	-0.032	0.083	0.318	203.834	4.841	2.038	2.140	95.547	6.943
23648P	0.469	0.079	-0.017	0.324	0.180	0.384	0.243	0.683	0.243	0.555	1.395
23656P	NS	0.106	-0.027	0.074	0.425	0.266	0.319	0.532	0.245	0.346	2.073
23676P	NS	0.007	-0.003	0.003	0.021	0.012	0.018	0.095	0.035	0.017	0.417
23679P	0.260	0.010	-0.022	-0.050	0.076	37.859	0.297	51.381	7.193	-4.219	79.505
23726P	NS	0.156	-0.023	0.175	0.322	0.092	0.184	0.322	0.165	0.152	1.792
23743P	NS	-0.040	-0.040	0.066	0.080	3.284	0.561	1.041	0.344	1.843	3.124
23749P	NS	-0.015	-0.089	0.031	0.153	1.901	0.307	6.640	0.984	3.374	25.885
24119P	NS	0.189	-0.047	0.161	0.378	0.284	0.284	0.284	0.132	0.359	1.040
24136P	NS	0.002	-0.005	0.002	0.016	0.005	-0.004	0.169	0.009	0.000	0.500
24140P	NS	-0.028	-0.005	0.010	0.084	102.327	0.115	4.072	0.534	1.671	11.590
24153P	NS	0.069	-0.019	0.069	0.307	0.031	0.230	0.883	0.338	0.119	1.075
24178P	NS	0.029	-0.004	0.019	0.056	0.081	0.024	0.354	0.087	0.161	1.723
24187P	NS	0.332	-0.083	0.166	1.245	0.747	0.554	0.692	0.291	1.661	3.321
24188P	NS	0.364	-0.087	0.936	1.386	19.057	2.252	1.559	1.195	4.678	3.465
24203P	NS	-0.047	-0.008	0.026	0.146	0.042	0.472	9.595	1.155	0.504	27.973
24209P	NS	0.042	-0.017	0.021	0.104	834.957	0.870	19.134	2.334	8.697	53.924

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
24220P	65.578	146.506	C-6	9	6	28	0	190.900	0.531	NS	0.072	0.053	2.225	-0.278	1.669
24238P	65.523	145.968	C-4	8	9	18	-13	342.800	2.970	NS	2.079	-0.606	-23.393	-0.866	-6.931
24254P	65.600	146.740	C-6	9	5	20	0	385.900	0.866	NS	0.651	-0.561	51.614	0.224	3.815
24258P	65.536	146.716	C-6	8	5	9	-8	260.500	2.090	NS	0.802	-0.289	28.883	-0.802	-4.012
24270P	65.402	146.416	B-5	7	6	25	0	304.000	11.100	NS	1.205	-0.548	-14.605	-3.651	-18.257
24271P	65.483	146.897	B-6	8	4	34	0	326.500	0.083	NS	0.010	-0.033	-0.076	-0.025	-0.432
24314P	65.545	146.501	C-6	8	6	3	0	236.700	0.487	NS	0.556	0.088	2.675	-0.206	-1.029
24348P	65.465	146.297	B-5	7	7	3	0	262.500	1.280	NS	0.536	0.049	4.389	-0.488	-2.438
24349P	65.657	146.811	C-6	10	4	36	0	210.900	0.496	0.008	0.259	-0.200	-8.231	0.235	-2.822
24354P	65.572	146.709	C-6	9	5	28	0	292.600	0.083	NS	0.043	-0.018	1.390	-0.028	-0.227
24359P	65.516	146.400	C-5	8	7	18	0	287.700	3.520	NS	1.223	0.171	7.341	-1.223	-6.117
24377P	65.440	146.117	B-5	7	8	16	0	390.500	1.890	NS	0.581	-0.160	-1.452	-0.484	-2.420
24392P	65.473	146.202	B-5	8	7	36	0	230.500	1.520	NS	0.112	0.442	13.189	-0.659	-3.297
24402P	65.441	146.483	B-5	7	6	15	0	310.700	5.970	0.019	24.979	-0.500	11.529	-0.096	0.192
24403P	65.557	146.884	C-6	9	4	34	0	288.400	4.510	0.016	1.720	-0.438	23.457	-1.564	-7.819
24404P	65.670	146.406	C-5	10	6	25	0	352.000	1.940	NS	1.378	-0.226	19.841	-0.551	-2.756
24417P	65.598	146.554	C-6	9	6	20	0	197.500	0.156	NS	0.019	-0.020	1.422	-0.079	-0.395
24431P	65.649	146.974	C-6	10	4	32	0	202.200	0.075	0.000	0.085	0.022	7.047	0.037	0.631
24435P	65.492	146.429	B-5	8	6	25	0	148.800	1.070	-0.004	1.510	-0.216	7.910	0.403	1.510
24448P	65.498	146.525	B-6	8	6	28	0	398.500	2.550	0.010	1.152	-0.480	15.358	0.294	0.640
24450P	65.692	146.776	C-6	10	5	18	0	81.000	0.003	NS	0.002	0.010	-0.337	0.011	-0.019
24452P	65.609	146.352	C-5	9	7	17	0	283.100	3.200	NS	1.469	-0.226	14.694	-1.130	-5.652
24458P	65.510	145.957	C-4	8	9	20	0	279.600	1.790	NS	3.393	-0.435	-13.444	-0.640	-3.841
24485P	65.682	146.639	C-6	10	5	23	0	329.800	2.240	0.014	1.358	0.156	7.471	-0.679	-3.396
24497P	65.599	146.560	C-6	9	6	20	0	310.400	0.062	NS	0.056	-0.012	0.499	0.020	0.160

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
24220P	NS	0.050	-0.014	0.021	0.167	0.206	0.139	0.389	0.178	0.039	1.780
24238P	NS	0.208	-0.139	0.199	0.866	1.040	-0.087	0.866	0.165	23.393	7.104
24254P	NS	0.016	-0.011	0.020	0.090	35.906	0.404	22.441	2.693	3.815	65.079
24258P	NS	0.056	-0.040	0.096	0.160	449.290	2.407	12.837	1.918	7.542	29.043
24270P	NS	0.183	-0.183	0.055	0.730	985.855	0.730	0.730	0.511	17.526	1.461
24271P	NS	-0.001	-0.010	0.005	0.038	0.016	-0.015	0.244	0.083	0.016	3.025
24314P	NS	0.056	-0.012	0.027	0.185	0.058	0.041	0.267	0.136	0.782	2.778
24348P	NS	0.088	-0.024	0.078	0.390	0.244	0.195	0.439	0.273	0.249	1.707
24349P	NS	0.063	-0.012	0.035	0.188	0.282	-0.094	3.528	0.571	1.011	10.701
24354P	NS	0.006	-0.001	0.005	0.031	0.020	0.009	0.238	0.066	0.034	1.926
24359P	NS	0.086	-0.061	0.294	0.734	0.147	0.734	0.734	0.269	0.294	1.223
24377P	NS	0.044	-0.039	1.888	0.581	-0.010	0.290	0.581	0.208	0.455	2.130
24392P	NS	0.086	-0.033	0.044	0.396	0.040	0.264	0.396	0.112	-0.026	0.659
24402P	0.749	0.013	-0.077	0.019	0.177	672.514	0.922	3.266	1.216	59.565	4.765
24403P	NS	-0.078	-0.078	0.156	0.156	500.416	2.502	2.815	0.641	14.074	6.412
24404P	NS	0.127	-0.028	0.110	0.441	2.866	1.543	1.102	1.080	14.330	6.889
24417P	NS	0.013	-0.004	0.006	0.071	0.158	0.055	0.166	0.077	0.035	0.869
24431P	NS	0.016	-0.002	0.009	0.030	0.037	0.007	0.089	0.030	0.016	0.682
24435P	0.791	0.125	-0.029	0.201	0.347	0.273	0.388	1.079	0.437	0.518	2.121
24448P	0.602	0.104	-0.026	0.154	0.205	1.026	3.072	7.039	1.849	12.798	12.478
24450P	NS	0.000	-0.003	0.001	0.009	0.001	-0.002	0.008	0.006	0.000	0.025
24452P	NS	0.305	-0.057	0.203	0.791	0.339	0.339	0.565	0.181	0.452	1.130
24458P	NS	0.166	-0.096	0.198	0.576	0.563	0.192	0.832	0.205	56.338	9.667
24485P	NS	0.095	0.095	0.095	0.068	48.223	-0.068	0.408	0.170	5.637	2.241
24497P	NS	0.005	-0.001	0.005	0.016	0.005	0.014	0.096	0.038	0.020	0.575

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Dup. Code	Sample Weight	Heavy Min. Weight	Ag	As	Au(ppb)	Ba	Co	Cr
24510P	65.423	145.879	B-4	7	9	22	0	388.200	170.000	-0.219	0.876	-2.190	306.543	-43.792	-218.959
24537P	65.517	146.106	C-5	8	8	16	0	298.400	1.550	NS	0.291	0.062	6.233	-0.519	-2.597
24548P	65.417	146.786	B-6	7	5	19	0	52.900	2.580	NS	1.122	5.365	87.788	-4.877	-24.386
24575P	65.614	146.685	C-6	9	5	15	0	253.400	0.361	-0.001	0.356	-0.356	29.917	-0.285	-5.699
24578P	65.535	146.576	C-6	8	6	8	0	178.000	1.690	-0.005	2.753	-0.693	15.191	1.044	1.139
24581P	65.408	146.661	B-6	7	5	26	0	285.700	3.030	-0.005	0.467	0.138	3.182	0.127	0.318
24596P	65.423	145.884	B-4	7	9	22	0	316.600	8.890	-0.014	1.264	-0.421	-8.424	-2.808	-14.040
24599P	65.474	146.108	B-5	8	8	33	0	196.000	0.621	NS	0.298	-0.057	2.218	-0.317	-1.584
24631P	65.601	146.400	C-5	9	6	13	0	253.400	0.127	NS	0.044	-0.023	-0.551	-0.050	-0.251
24636P	65.505	146.123	C-5	8	8	21	0	351.900	1.960	NS	0.290	0.056	3.899	-0.557	-2.785
24661P	65.440	146.118	B-5	7	8	16	0	286.000	0.800	NS	0.274	2.406	4.196	-0.280	-1.399
24665P	65.477	145.777	B-4	8	10	31	0	223.300	3.460	NS	1.209	-0.232	-6.198	-1.549	-7.747
24668P	65.570	146.895	C-6	9	4	34	-1	309.100	4.180	0.014	1.163	-0.487	18.932	-1.352	-6.762
24699P	65.669	146.731	C-6	10	5	28	0	315.400	0.124	0.000	0.067	-0.022	3.420	0.039	0.550
24707P	65.523	146.935	C-6	8	4	16	0	163.500	0.026	-0.002	0.017	-0.016	0.700	0.032	0.493
24711P	65.459	146.062	B-5	7	8	3	0	327.100	2.420	NS	4.661	35.512	-2.220	-0.740	-3.699
24729P	65.518	146.179	C-5	8	8	18	0	303.200	3.760	NS	0.422	-0.223	-7.441	-1.240	-6.201
24738P	65.521	145.850	C-4	8	9	14	0	303.700	2.740	NS	0.749	-0.099	7.218	-0.902	-4.511
24741P	65.537	146.484	C-5	8	6	10	0	404.700	13.800	NS	1.262	0.341	20.460	-3.410	-17.050
24742P	65.477	145.933	B-4	8	9	32	0	316.700	7.360	NS	4.416	53.451	-6.972	-2.324	-11.620

Station	Cu	Fe(%)	Mo	Sb	Sc	Sn	Ta	Th	U	W	La
24510P	NS	6.569	-2.190	0.263	61.309	-0.876	-4.379	-4.379	-0.876	-1.752	4.379
24537P	NS	0.109	-0.026	0.062	0.519	0.042	0.364	0.416	0.223	0.161	2.182
24548P	NS	0.878	-0.244	0.585	3.902	1.463	7.803	32.677	7.316	19.509	96.079
24575P	NS	-0.058	-0.007	0.012	0.157	0.356	0.370	17.096	1.895	1.083	48.295
24578P	1.329	0.249	-0.038	0.475	0.331	0.532	2.279	3.703	1.823	3.323	9.969
24581P	0.414	0.069	-0.042	0.054	0.094	869.653	0.127	0.520	0.187	2.015	0.859
24596P	NS	0.393	-0.140	2.752	3.370	2.246	0.281	0.281	0.168	7.581	1.404
24599P	NS	0.092	-0.016	0.063	0.285	0.089	0.158	0.253	0.165	2.123	0.982
24631P	NS	0.009	-0.003	0.005	0.030	0.025	0.200	0.155	0.075	1.153	0.692
24636P	NS	0.056	-0.028	0.072	0.501	0.100	0.390	0.501	0.228	0.167	1.949
24661P	NS	0.031	-0.014	0.308	0.364	0.112	0.168	0.364	0.143	0.336	2.042
24665P	NS	0.155	-0.077	1.224	1.549	0.713	-0.155	0.310	0.077	3.719	1.549
24668P	NS	0.081	-0.068	0.149	0.270	513.879	2.975	3.651	0.757	20.285	7.167
24699P	NS	0.013	-0.007	0.007	0.028	0.039	-0.012	0.291	0.040	0.011	0.995
24707P	NS	0.009	-0.006	0.013	0.022	0.016	-0.003	0.064	0.013	-0.001	0.313
24711P	NS	0.133	-0.037	1.258	0.444	13.317	0.296	0.296	0.104	0.348	1.258
24729P	NS	0.112	-0.062	0.069	0.496	148.813	0.620	0.868	0.285	1.240	0.992
24738P	NS	0.135	-0.045	0.397	0.722	-0.018	0.271	0.541	0.153	0.343	2.436
24741P	NS	0.511	-0.170	1.364	2.387	1.228	2.046	2.046	0.511	1.193	3.069
24742P	NS	0.535	-0.116	0.442	2.556	37.183	0.465	1.627	0.232	32.536	6.740

APPENDIX D

ROCK TRACE ELEMENT ANALYSES FOR THE LIME PEAK - MT PRINDLE AREA EAST CENTRAL ALASKA

compiled by T.B. Weglarz

APPENDIX D

ROCK TRACE ELEMENT ANALYSES FOR THE LIME PEAK - MT PRINDLE AREA EAST CENTRAL ALASKA

This appendix contains analytical data sets obtained from 494 rock grab and chip samples collected for the Alaska Division of Geological and Geophysical Surveys' Lime Peak - Mt Prindle Area mineral assessment during 1986. Analyses for rock samples collected in 1987 during follow up investigations are listed in Appendix F. Data for a single sample are arranged in 3-page sets. Page one of each set includes the following identification information for each sample: Station numbers that correspond to sample locations shown on Plate 5-1; Latitude (Lat.); Longitude (Long.); Circle Quadrangle 15-minute map designations (Quad.); Township (T.); Range (R.); and Section (Sec.). Page one of the three- page sets also contains a brief discription of the sample. The station number is repeated on each of the pages required to display the entire set of analyses for each sample. All analyses are reported in parts per million (ppm) unless otherwise indicated in the column heading. Negative numbers in the analytical data columns indicate that the element in question was not detected at a concentration equal to the absolute value of the negative value reported. Those elements that were not determined for specific samples are indicated as not analyzed (NA).

Grab samples consisted of single rock specimens weighing from 1/4 to one or two pounds; composite samples consisted of multiple rock fragments of variable size collected within a limited area (a few hundred square feet); and chip samples (designated "chan" in the discriptions) were comprised of systematically collected 1/2 inch to 1 inch rock chips taken in single or multiple rows across the strike of veins or outcropping rock strata. The composite and chip samples normally had an estimated weight of at least 10 pounds.

An attempt was made to analyze all rock samples for 29 elements. Most samples were analyzed for 31 elements. Instrumental neutron activation analytical methods were used to determine concentration levels of As, Au, Ba, Ca, Co, Cr, Cs, Fe, Hf, Mo, Na, Ni, Rb, Sb, Sc, Se, Ta, Th, U, W, La, Ce, Sm, Eu, Yb, and Lu. A hot LeFort aqua regia digestion followed by atomic absorbtion analysis of the resulting solution was used to quantify concentrations of Cu, Pb, Zn, and Ag. Sn concentrations were determined by X-ray fluorescence analysis of pressed powder pellets. Analytical work was conducted by Nuclear Activation Services, Ltd., Hamilton, Ontario, Canada under State contract CC-10-7-0006.

The following abbreviations have been used in the rock sample descriptions:

alb	albite
alt	alteration/altered
amph	amphibole
asp	arsenopyrite
az	azurite
bio	biotite
calc	calcite/calcic
carb	carbonate
cpy	chalcopyrite
chan	channel sample
chl	chlorite
cpx	clinopyroxene
csg	coarse-grained
comp	composite sample
cv	covellite
diop	diopside
ep	epidote
equig	equigranular
feld	feldspar
fng	fine-grained
fl	fluorite
gn	galena
gar	garnet
gr	granite
Gr1	same as map unit TKg_1
Gr2	same as map unit TKg_2
Gr3	same as map unit TKg_3
graph	graphite/graphitic
grd	granidiorite
grsn	greisen
hem	hematite/hematitic
hbl	hornblende
hfls	hornfels
FeOx	iron oxide
kspar	potassium feldspar
lamin	laminated
lim	limonite/limonitic
ls	limestone
mag	magnetic
mal	malachite
mb	marble
MnOx	manganese oxide
mgr	medium-grained
mo	molybdenite
musc	muscovite
porph	porphyritic/porphyry
py	pyrite
po	pyrrhotite
pyx	pyroxene
qtz	quartz
qtzt	quartzite
rk	rock
rx	rocks
smpl	sample
sch	scheelite
ser	seriate
sil	siliceous/silicate/silicified
sph	sphalerite
stb	stibnite
tm	tourmaline
tpz	topaz
vn(s)	veins
vlt(s)	veinlets
wx	weathered/weathering
wol	wollastonite
zinn	zinnwaldite

Appendix D Elemental analyses of rock grab and composite chip samples collected in the Lime Peak - Mt. Prindle area of the Circle Quadrangle, Alaska. Analyses are reported in parts per million (ppm) unless indicated otherwise. Negative numbers indicate that the element was not detected at a concentration level equal to the absolute value of the negative number reported. NA = not analyzed.

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
00650R	65.4964	146.5353	B-6	8	6	28	RUSTY QTZ-MICA SCHIST WITH QTZ VNS	1.0	160.0	-7.0	1000.0	3.9
00652R	65.3937	146.3579	B-5	7	7	32	DIKE OR PIPE ADJACENT TO HBL-BIO GRD	-0.5	4.0	-10.0	2000.0	3.6
00662R	65.5871	146.9234	C-6	9	4	21	FE-STAINED QTZ HFLS BRECCIA	20.0	130.0	-5.0	400.0	-0.5
04351R	65.6365	146.8282	C-6	9	4	1	QTZ-TM-MICA-FELD VNS IN QTZT	-0.5	2.0	-5.0	200.0	-0.6
04359R	65.4119	146.4513	C-6	9	5	9	QTZ-TM-TZ(?)-MICA GREISEN IN GR1	1.0	5.0	-5.0	-100.0	-1.2
04361R	65.6474	146.7668	C-6	10	5	32	TM GREISEN IN QTZT HFLS	-0.5	-2.0	-5.0	300.0	-0.8
04362R	65.6474	146.7668	C-6	10	5	32	BLACK HIGHLY ALT RK (MAFIC DIKE?)	-0.5	-2.0	-6.0	500.0	5.7
04363R	65.4459	146.0754	B-5	7	8	10	(CHAN) QTZ-BIO SCHIST WITH FEOX	-0.5	6.0	-5.0	200.0	1.1
04364R	65.4459	146.0754	B-5	7	8	10	(CHAN) GRAPH-QTZ-BIO SCHIST	-0.5	16.0	10.0	900.0	-1.7
04365R	65.4459	146.0754	B-5	7	8	10	CONCORDENT QTZ POD IN GRAPH SCHIST	-0.5	4.0	29.0	-100.0	-0.5
04366R	65.4459	146.0754	B-5	7	8	10	GRAPH SCHIST	-0.5	8.0	-8.0	700.0	-1.6
04367R	65.4459	146.0754	B-5	7	8	10	CONCORDENT QTZ POD IN GRAPH SCHIST	-0.5	-2.0	-5.0	-100.0	-0.6
04368R	65.4459	146.0754	B-5	7	8	10	(CHAN) QTZ-BIO SCHIST WITH FEOX	-0.5	8.0	-5.0	200.0	-1.1
04369R	65.4156	146.4151	B-5	7	6	24	(COMP) FE-STAINED QTZ VN/BRECCIA IN QTZT	-0.5	6.0	-5.0	200.0	-0.7
04370R	65.4138	146.4138	B-5	7	6	24	(COMP) FE-STAINED QTZ VN WITH PY AND GN	3.0	4.0	-5.0	100.0	1.4
04371R	65.4388	146.1654	B-5	7	8	18	QTZ VN RUBBLE IN QTZT	-0.5	2.0	-5.0	-100.0	-0.5
04372R	65.4347	146.1606	B-5	7	8	17	GRAPH SCHIST	-0.5	12.0	-9.0	800.0	-1.8
04373R	65.4321	146.1624	B-5	7	8	17	QTZ-MICA SCHIST	-0.5	2.0	-5.0	300.0	-1.0
04374R	65.4271	146.1644	B-5	7	8	18	CHL-QTZ-SER SCHIST WITH TRACE PY	-0.5	4.0	-6.0	100.0	-1.3
04375R	65.4236	146.1494	B-5	7	8	20	BLACK GRAPH-QTZ SCHIST	-0.5	-2.0	-6.0	600.0	-1.3

Appendix D (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
00650R	18.0	90.0	5.0	42.0	4.0	6.0	-4.0	1.50	300.0	NA	200.0	5.0	15.7
00652R	18.0	60.0	9.0	72.0	5.5	6.0	-4.0	1.20	400.0	10.0	230.0	1.8	21.5
00662R	29.0	10.0	1.0	NA	8.0	-1.0	6.0	-0.05	-200.0	NA	110.0	1.8	6.1
04351R	5.0	-10.0	5.0	NA	1.9	3.0	-4.0	0.69	-200.0	NA	130.0	-0.2	4.8
04359R	-5.0	-10.0	5.0	29.0	13.1	10.0	7.0	-0.05	-200.0	NA	220.0	0.6	7.4
04361R	5.0	30.0	6.0	10.0	2.6	4.0	-4.0	0.64	-200.0	NA	140.0	-0.2	5.8
04362R	35.0	160.0	9.0	10.0	7.6	5.0	-4.0	2.10	-200.0	NA	-50.0	-0.2	30.2
04363R	5.0	20.0	-1.0	9.5	1.4	4.0	-4.0	0.55	200.0	4.0	30.0	0.6	3.6
04364R	11.0	80.0	4.0	32.0	4.0	6.0	-4.0	0.46	500.0	8.0	230.0	2.0	15.8
04365R	-5.0	10.0	-1.0	5.5	0.5	-1.0	-4.0	-0.05	-200.0	2.0	-20.0	0.5	0.5
04366R	9.0	90.0	3.0	28.0	3.7	6.0	-4.0	0.58	-200.0	12.0	190.0	2.2	15.5
04367R	-5.0	10.0	-1.0	6.5	1.3	1.0	-4.0	0.22	-200.0	20.0	-20.0	0.4	1.2
04368R	5.0	30.0	2.0	26.0	1.9	6.0	-4.0	0.63	-200.0	4.0	40.0	1.2	4.1
04369R	5.0	20.0	2.0	5.5	0.9	2.0	-4.0	-0.05	-200.0	-2.0	80.0	0.7	3.5
04370R	6.0	10.0	-1.0	25.0	1.0	3.0	-4.0	1.00	-200.0	440.0	-30.0	0.2	2.3
04371R	-5.0	10.0	-1.0	3.5	0.2	1.0	-4.0	-0.05	-200.0	-2.0	-20.0	1.1	0.2
04372R	22.0	110.0	2.0	30.0	5.2	6.0	-5.0	1.20	400.0	-2.0	200.0	0.3	17.8
04373R	-5.0	30.0	1.0	6.0	1.2	6.0	-4.0	0.59	-200.0	-2.0	-30.0	0.4	3.3
04374R	5.0	20.0	-1.0	13.0	2.0	7.0	-4.0	1.50	-200.0	-2.0	60.0	2.6	3.2
04375R	-5.0	50.0	1.0	16.0	2.6	7.0	-4.0	0.68	400.0	-2.0	130.0	0.3	9.7

Appendix D (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
00650R	-6.0	16.0	-1.0	19.0	5.0	15.0	90.0	65.0	107.0	6.3	2.0	3.1	0.4
00652R	-5.0	12.0	-1.0	14.0	3.7	-4.0	220.0	57.0	95.0	11.1	3.0	2.8	0.4
00662R	-5.0	550.0	-1.0	4.7	1.3	8.0	290.0	22.0	23.0	1.1	0.5	0.7	0.1
04351R	-5.0	12.0	5.0	10.0	4.3	4.0	-50.0	29.0	63.0	6.8	0.5	7.5	1.1
04359R	-10.0	440.0	5.0	92.0	36.0	15.0	670.0	129.0	220.0	14.2	-0.9	10.4	1.6
04361R	-5.0	-2.0	-1.0	10.0	1.5	-4.0	-50.0	30.0	47.0	2.7	1.1	1.0	0.1
04362R	-5.0	2.0	-1.0	3.1	0.8	-4.0	110.0	25.0	56.0	4.7	-0.2	3.2	0.4
04363R	-5.0	-2.0	-1.0	5.9	1.2	-4.0	-50.0	14.0	27.0	2.6	-0.4	0.8	0.1
04364R	-8.0	8.0	-1.0	18.0	3.0	-4.0	-50.0	53.0	95.0	8.8	0.9	3.3	0.5
04365R	-5.0	-2.0	-1.0	1.6	0.7	-4.0	-50.0	1.0	3.0	0.3	0.2	0.5	0.1
04366R	-5.0	-2.0	2.0	14.0	2.4	5.0	120.0	51.0	101.0	7.7	0.9	2.8	0.4
04367R	-5.0	-2.0	-1.0	3.9	0.8	-4.0	-50.0	4.0	6.0	0.8	0.3	0.5	-0.1
04368R	-5.0	-2.0	-1.0	8.9	2.0	-4.0	70.0	19.0	36.0	3.6	0.7	1.3	0.3
04369R	-5.0	2.0	-1.0	5.5	1.0	-4.0	-50.0	12.0	27.0	1.6	-0.2	0.5	0.1
04370R	-5.0	4.0	-1.0	4.2	1.2	-4.0	300.0	9.0	12.0	1.5	0.7	0.9	0.1
04371R	-5.0	4.0	-1.0	-0.5	-0.5	-4.0	-50.0	1.0	-3.0	0.1	0.2	-0.2	-0.1
04372R	-5.0	4.0	-2.0	16.0	2.5	6.0	80.0	55.0	87.0	7.7	1.1	2.5	0.5
04373R	-5.0	-2.0	-1.0	7.0	1.0	-4.0	-50.0	16.0	27.0	2.3	0.6	0.9	0.2
04374R	-5.0	-2.0	-1.0	7.8	2.4	-4.0	-60.0	15.0	26.0	2.4	0.7	1.4	0.2
04375R	-5.0	2.0	-1.0	8.9	2.6	-4.0	150.0	30.0	53.0	4.5	1.2	1.6	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
04377R	65.4283	146.0683	B-5	7	8	15	(COMP) BLACK GRAPH-QTZ SCHIST	-0.5	10.0	-6.0	200.0	-1.0
04378R	65.4325	146.0676	B-5	7	8	15	QTZ VN FLOAT WITH CHL AND ANKERITE	-0.5	4.0	-5.0	100.0	-0.6
04379R	65.4396	146.0700	B-5	7	8	15	(CHAN) GRAPH-QTZ SCHIST WITH SULFIDE	-0.5	-2.0	46.0	700.0	-1.2
04380R	65.4396	146.0700	B-5	7	8	15	FE-STAINED QTZ VN FLOAT WITH TRACE PY	-0.5	3.0	370.0	-100.0	-1.1
04382R	65.4394	146.0693	B-5	7	8	15	QTZ-CARB-CHL VN WITH PY AND ASP	0.5	1400.0	-12.0	-200.0	3.9
04383R	65.4457	146.0746	B-5	7	8	10	(CHAN) QTZ-BIO GRIT WITH TRACE PY	-0.5	3.0	-5.0	200.0	-0.9
04384R	65.4457	146.0746	B-5	7	8	10	(CHAN) GRAPH-QTZ-BIO SCHIST	-0.5	6.0	-5.0	500.0	-1.0
04385R	65.4456	146.0751	B-5	7	8	10	(COMP) QTZ-BIO GRIT	-0.5	8.0	-5.0	600.0	-1.2
04386R	65.4456	146.0751	B-5	7	8	10	(CHAN) QTZ-BIO SCHIST	-0.5	4.0	-5.0	300.0	-1.0
04387R	65.4456	146.0751	B-5	7	8	10	(CHAN) QTZ-BIO GRIT	-0.5	3.0	-5.0	100.0	-0.8
04388R	65.4456	146.0751	B-5	7	8	10	(CHAN) QTZ-BIO-MUSC SCHIST	-0.5	11.0	-6.0	700.0	-1.3
04389R	65.4457	146.0746	B-5	7	8	10	(CHAN) CHL-BIO QTZT WITH FEOX	-0.5	2.0	-5.0	200.0	-0.8
04390R	65.4457	146.0746	B-5	7	8	10	CONCORDENT QTZ POD WITH FE-STAIN	-0.5	-2.0	-5.0	-100.0	-0.5
04391R	65.4457	146.0746	B-5	7	8	10	(CHAN) QTZ-BIO SCHIST WITH FEOX	-0.5	2.0	-5.0	200.0	-1.0
04392R	65.4457	146.0746	B-5	7	8	10	(CHAN) BLACK GRAPH SCHIST	-0.5	7.0	-7.0	700.0	-1.5
04400R	65.6650	146.6620	C-6	10	5	26	ORANGE WEATHERED QTZT HFLS	0.5	29.0	-6.0	800.0	-1.1
04401R	65.6706	146.6321	C-6	10	5	26	INTRUSIVE BRECCIA IN QTZT	-0.5	16.0	-5.0	200.0	-0.5
04403R	65.6641	146.6505	C-6	10	5	26	FE AND MN-STAINED AND SHEARED GR1	-0.5	-2.0	-5.0	200.0	-1.1
04404R	65.5990	146.7377	C-6	9	5	20	GREISEN IN GR1 FLOAT WITH PY	18.0	5.0	-5.0	200.0	0.7
04405R	65.6347	146.7019	C-6	9	5	4	QTZ-BIO-TM(?) GREISEN IN ALT GR1	2.0	22.0	-5.0	100.0	-0.9
04406R	65.6390	146.6764	C-6	9	5	3	GREISEN WITH PY, CPY, TM, AND FL	1.5	16.0	-5.0	100.0	-0.8
04409R	65.6320	146.6523	C-6	9	5	2	QTZ-BIO-KSPAR RHYOLITE PORPHYRY	-0.5	-2.0	-8.0	400.0	-1.7
04410R	65.6205	146.6911	C-6	9	5	10	(COMP) QTZ-TM GREISEN IN GR1	16.0	7.0	-7.0	-100.0	-1.7
04411R	65.6149	146.7132	C-6	9	5	9	(COMP) QTZ-TM-KSPAR GREISEN	2.5	-2.0	-7.0	100.0	-1.8
04412R	65.6099	146.7377	C-6	9	5	17	SHEARED GR1 WITH FEOX, MNOX, AND TM	-0.5	-2.0	-9.0	500.0	-2.6

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
04377R	13.0	70.0	-1.0	55.0	4.5	3.0	-4.0	0.61	-200.0	-2.0	30.0	0.4	13.6
04378R	-5.0	10.0	-1.0	13.0	1.4	-1.0	-4.0	0.38	-200.0	20.0	-20.0	1.2	1.5
04379R	14.0	80.0	3.0	59.0	3.5	5.0	-4.0	0.51	400.0	-2.0	190.0	0.5	18.1
04380R	-5.0	10.0	-1.0	6.5	0.3	4.0	-5.0	3.70	-200.0	-2.0	-30.0	0.4	1.6
04382R	10.0	20.0	-1.0	22.0	2.0	2.0	-5.0	4.50	-300.0	130.0	-30.0	-0.4	1.5
04383R	-5.0	10.0	-1.0	6.0	0.6	4.0	-4.0	0.51	-200.0	8.0	60.0	0.4	1.8
04384R	6.0	30.0	2.0	22.0	2.0	5.0	-4.0	0.15	200.0	8.0	80.0	0.6	6.1
04385R	-5.0	40.0	1.0	15.0	1.4	4.0	-4.0	0.32	-200.0	6.0	60.0	1.2	6.4
04386R	5.0	30.0	3.0	16.0	1.8	5.0	-4.0	0.28	200.0	12.0	90.0	1.0	4.4
04387R	-5.0	10.0	1.0	5.0	0.7	4.0	-4.0	0.41	-200.0	4.0	-20.0	0.6	1.9
04388R	5.0	70.0	3.0	21.0	2.7	6.0	-4.0	0.37	-200.0	-2.0	160.0	1.4	9.1
04389R	-5.0	10.0	1.0	5.0	0.7	4.0	-4.0	0.48	-200.0	-2.0	-20.0	0.5	2.0
04390R	-5.0	-10.0	-1.0	1.5	-0.2	1.0	-4.0	-0.05	-200.0	-2.0	-20.0	0.5	0.2
04391R	-5.0	30.0	1.0	11.0	1.2	4.0	-4.0	0.53	-200.0	2.0	40.0	0.4	2.9
04392R	9.0	50.0	2.0	29.0	3.3	5.0	-4.0	0.36	-200.0	8.0	170.0	0.7	11.8
04400R	-5.0	40.0	11.0	NA	5.5	4.0	-4.0	1.20	-200.0	NA	190.0	1.3	13.3
04401R	5.0	10.0	7.0	NA	1.7	2.0	5.0	0.37	-200.0	NA	200.0	3.1	6.1
04403R	-5.0	-10.0	5.0	NA	1.5	6.0	-4.0	2.00	-200.0	NA	390.0	1.3	5.2
04404R	29.0	60.0	-1.0	NA	14.8	6.0	5.0	-0.05	-200.0	NA	50.0	0.7	8.6
04405R	-5.0	-10.0	4.0	NA	5.2	6.0	-4.0	-0.05	-200.0	NA	250.0	0.8	1.4
04406R	-5.0	-10.0	1.0	NA	9.7	3.0	-4.0	-0.05	-200.0	NA	100.0	0.9	1.9
04409R	-5.0	150.0	6.0	0.5	0.8	6.0	-4.0	2.40	-300.0	NA	850.0	0.2	2.5
04410R	-5.0	110.0	1.0	210.0	16.2	4.0	-4.0	-0.05	-200.0	NA	90.0	0.7	5.3
04411R	-5.0	170.0	5.0	51.0	8.7	5.0	-4.0	0.27	-200.0	NA	350.0	1.3	5.4
04412R	-5.0	190.0	3.0	6.0	1.7	5.0	-4.0	1.50	-300.0	NA	820.0	-0.2	5.1

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
04377R	-6.0	2.0	-1.0	4.7	1.9	4.0	80.0	11.0	26.0	2.3	0.8	1.5	0.3
04378R	-5.0	4.0	-1.0	3.1	-0.5	-4.0	-50.0	2.0	7.0	0.5	-0.2	0.5	0.1
04379R	-5.0	6.0	1.0	7.7	1.8	-4.0	250.0	32.0	56.0	5.2	1.1	2.6	0.3
04380R	-7.0	2.0	-2.0	7.2	1.9	-4.0	110.0	15.0	25.0	-0.4	-0.7	0.4	0.1
04382R	-6.0	-2.0	-2.0	4.9	-1.5	-4.0	80.0	11.0	24.0	1.8	0.8	1.3	0.3
04383R	-5.0	-2.0	-1.0	5.7	1.2	-4.0	-50.0	13.0	23.0	1.9	0.5	0.7	0.2
04384R	-5.0	-2.0	-1.0	7.0	1.5	-4.0	70.0	19.0	39.0	3.2	1.1	1.3	0.2
04385R	-5.0	-2.0	1.0	9.1	2.4	-4.0	80.0	26.0	52.0	6.0	0.9	1.8	0.3
04386R	-5.0	-2.0	-1.0	8.0	2.1	-4.0	70.0	16.0	26.0	2.5	0.8	1.1	0.2
04387R	-5.0	-2.0	-1.0	4.4	1.1	-4.0	-50.0	11.0	20.0	1.7	-0.3	0.5	0.1
04388R	-5.0	-2.0	-1.0	9.1	2.3	-4.0	50.0	29.0	48.0	4.6	1.1	1.9	0.3
04389R	-5.0	-2.0	-1.0	4.9	1.2	-4.0	-50.0	9.0	16.0	1.5	0.4	0.6	0.1
04390R	-5.0	4.0	-1.0	0.7	-0.5	-4.0	-50.0	1.0	-3.0	0.1	-0.2	-0.2	-0.1
04391R	-5.0	-2.0	-1.0	5.5	1.2	-4.0	-50.0	14.0	22.0	2.3	0.5	0.7	0.1
04392R	-5.0	6.0	-1.0	11.0	2.2	4.0	-50.0	39.0	69.0	5.6	2.0	2.0	0.3
04400R	-5.0	2.0	-1.0	16.0	4.3	4.0	130.0	67.0	94.0	6.7	2.0	2.7	0.4
04401R	-5.0	6.0	1.0	6.4	3.9	18.0	80.0	14.0	35.0	2.7	-0.3	4.0	0.5
04403R	-5.0	28.0	2.0	55.0	15.2	4.0	110.0	59.0	111.0	6.1	0.5	7.3	1.1
04404R	-5.0	480.0	-1.0	11.0	2.7	39.0	1900.0	30.0	62.0	7.9	1.9	1.8	0.2
04405R	13.0	780.0	-1.0	51.0	7.7	210.0	-50.0	100.0	151.0	9.3	-0.6	3.7	0.6
04406R	-5.0	500.0	1.0	41.0	74.3	-4.0	570.0	62.0	102.0	6.5	-0.5	4.5	0.7
04409R	-5.0	20.0	8.0	64.0	14.1	8.0	-100.0	6.0	44.0	9.1	-0.7	13.1	2.1
04410R	-8.0	440.0	3.0	62.0	17.2	9.0	1700.0	64.0	112.0	11.5	-0.6	6.4	1.1
04411R	-5.0	86.0	4.0	57.0	28.1	5.0	1100.0	74.0	134.0	14.5	-0.7	6.9	1.3
04412R	-5.0	12.0	-2.0	44.0	5.3	7.0	110.0	113.0	180.0	14.8	1.5	4.9	0.9

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
04426R	65.5626	146.3891	B-4	7	9	20	QTZT HFLS CLASTS IN QTZ VN WITH ASP	-0.5	200.0	91.0	-100.0	-0.6
04427R	65.4462	145.9180	B-4	7	9	9	BLACK BIO-TM HFLS WITH PO, ASP, AND CPY	0.5	31.0	-6.0	100.0	3.6
04428R	65.4462	145.9180	B-4	7	9	9	QTZ-FELD PORPHYRY ASSOCIATED WITH FAULT	1.0	NA	NA	NA	NA
04429R	65.4451	145.9083	B-4	7	9	9	QTZ-FELD PORPHYRY DIKE(?) WITH PO	0.5	12.0	-7.0	100.0	-1.7
04430R	65.4394	145.9349	B-4	7	9	17	QTZ-FELD PORPHYRY	1.5	170.0	-7.0	400.0	-1.2
04433R	65.5770	146.6563	C-6	9	5	26	BLACK GRITTY QTZT WITH PY	-0.5	3.0	-5.0	300.0	-0.6
04434R	65.5648	146.3893	C-5	9	6	36	SMALL PY VN IN GR RUBBLE	20.0	390.0	34.0	500.0	-0.5
04437R	65.4482	145.9198	B-4	7	9	9	MASSIVE HFLS WITH BIO, TM, AND PO	0.5	16.0	-7.0	300.0	-1.1
04439R	65.6528	146.5915	C-6	10	6	31	CHL-MNOX-QTZ GREISEN IN GR2 RUBBLE	29.0	-2.0	-6.0	400.0	2.4
04440R	65.6600	146.6418	C-6	10	5	26	FL VLT IN GR2 WITH TRACE CHL, AND MNOX	1.5	-2.0	-6.0	600.0	12.0
04441R	65.6600	146.6418	C-6	10	5	26	CHL-QTZ-MNOX-FEOX VNS IN GR2	2.0	-2.0	-6.0	400.0	-1.1
04450R	65.6567	146.5783	C-6	10	6	31	GOSSANOUS QTZ-MNOX GREISEN IN GR2	0.5	-2.0	-9.0	400.0	-2.3
04451R	65.6563	146.5874	C-6	10	6	31	QTZ-TM GREISEN	5.5	9.0	-7.0	200.0	-1.8
04453R	65.6696	146.6576	C-6	10	5	26	SHEARED QTZT HFLS WITH AZURITE AND CAL	2.5	22.0	-7.0	200.0	3.4
04454R	65.4389	146.5988	B-6	7	6	18	QTZ VNS IN QTZ-MICA SCHIST AND QTZT	-0.5	2.0	-7.0	600.0	-1.6
04455R	65.6325	146.6106	B-6	7	5	13	BLACK QTZT WITH PY AND WHITE FELSIC QTZT	-0.5	10.0	-5.0	100.0	-1.0
04456R	65.6566	146.7310	C-6	10	5	33	ALT QTZT WITH SULFIDES, FEOX, AND TM(?)	1.0	8.0	-5.0	300.0	-0.8
04457R	65.6489	146.6118	C-6	10	5	36	QTZ-HEM-CHL GREISEN ALT GR1	2.5	-2.0	6.0	100.0	-1.1
04458R	65.6461	146.6284	C-6	10	5	36	CHL GREISEN SHEAR WITH MALACHITE	7.5	2.0	-7.0	300.0	-2.0
04459R	65.6793	146.6119	C-6	10	5	24	QTZ VNS IN FE-STAINED SANDSTONE	-0.5	38.0	-5.0	-100.0	-0.6
04461R	65.6777	146.5982	C-6	10	5	24	MASSIVE PO VNS	1.0	33.0	-5.0	700.0	0.9
04462R	65.6519	146.5851	C-6	10	6	31	QTZ-HEM-TREMOLITE VNS IN HFLS	-0.5	6.0	-5.0	400.0	-0.9
04463R	65.6550	146.5796	C-6	10	6	31	QTZ-MO VNS IN GR2	-0.5	-2.0	-10.0	400.0	-2.7
04464R	65.5758	146.8970	C-6	9	4	27	CHL-MUSC GREISEN IN GR3	9.5	21.0	-6.0	300.0	-1.1
04465R	65.6749	146.5926	C-6	10	6	19	GR2 WITH TRACE MO	-0.5	2.0	-8.0	300.0	-1.9

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
04426R	-5.0	320.0	1.0	0.5	0.7	1.0	-4.0	-0.05	-200.0	NA	30.0	19.0	1.3
04427R	14.0	260.0	2.0	160.0	5.5	5.0	-4.0	0.37	-200.0	NA	-30.0	1.0	13.1
04428R	NA	NA	NA	1.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
04429R	-5.0	130.0	11.0	0.5	0.6	5.0	-4.0	1.70	-200.0	NA	790.0	1.0	0.8
04430R	-5.0	140.0	14.0	54.0	1.8	5.0	-4.0	0.11	-200.0	NA	750.0	2.4	2.3
04433R	-5.0	20.0	2.0	15.0	1.5	4.0	-4.0	0.42	-200.0	NA	70.0	0.2	4.3
04434R	-5.0	-10.0	11.0	30.0	3.1	3.0	31.0	-0.05	-200.0	NA	360.0	11.0	2.9
04437R	33.0	130.0	96.0	140.0	8.1	6.0	-4.0	2.00	-300.0	NA	240.0	1.2	31.2
04439R	-5.0	10.0	1.0	350.0	17.0	7.0	33.0	-0.05	-200.0	NA	130.0	0.8	7.6
04440R	-5.0	-10.0	6.0	6.5	2.4	7.0	-4.0	0.79	-200.0	NA	900.0	0.3	3.9
04441R	-5.0	10.0	11.0	28.0	5.1	7.0	11.0	0.53	-200.0	NA	900.0	1.1	6.1
04450R	-5.0	250.0	5.0	4.0	1.2	4.0	-4.0	1.80	-300.0	NA	460.0	-0.2	5.5
04451R	-5.0	180.0	2.0	160.0	12.3	4.0	-4.0	-0.05	-200.0	NA	-40.0	0.8	4.6
04453R	20.0	190.0	3.0	740.0	4.7	8.0	5.0	0.56	-200.0	NA	160.0	1.1	6.1
04454R	7.0	290.0	7.0	19.0	2.7	6.0	-4.0	1.20	-200.0	NA	110.0	0.2	5.5
04455R	-5.0	240.0	4.0	35.0	1.4	4.0	-4.0	0.48	-200.0	NA	-20.0	-0.2	2.4
04456R	-5.0	250.0	1.0	240.0	1.6	3.0	-4.0	0.39	-200.0	NA	80.0	0.4	2.3
04457R	-5.0	150.0	1.0	44.0	4.3	1.0	-4.0	-0.05	200.0	NA	140.0	0.5	1.7
04458R	-5.0	180.0	2.0	4700.0	5.2	4.0	36.0	-0.05	-200.0	NA	330.0	0.3	2.6
04459R	-5.0	230.0	2.0	42.0	1.2	2.0	-4.0	-0.05	-200.0	NA	60.0	0.5	1.6
04461R	49.0	130.0	5.0	750.0	10.1	4.0	-4.0	0.28	-200.0	NA	160.0	0.4	5.5
04462R	6.0	240.0	7.0	14.0	3.3	4.0	-4.0	0.26	-200.0	NA	150.0	-0.2	3.3
04463R	-5.0	290.0	2.0	19.0	0.9	3.0	220.0	1.10	-200.0	NA	220.0	-0.2	3.8
04464R	-5.0	-10.0	12.0	30.0	6.3	3.0	-4.0	0.07	-200.0	48.0	790.0	3.0	5.6
04465R	-5.0	200.0	3.0	0.5	0.4	5.0	130.0	2.30	-200.0	NA	550.0	-0.2	2.9

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
04426R	-5.0	-2.0	-1.0	2.3	1.3	-4.0	-50.0	6.0	10.0	1.0	0.3	0.5	-0.1
04427R	-5.0	26.0	-1.0	5.6	1.4	-4.0	90.0	19.0	38.0	4.1	1.2	1.6	0.3
04428R	NA	56.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
04429R	-5.0	64.0	6.0	35.0	10.8	4.0	-80.0	14.0	56.0	6.5	-0.7	9.6	1.5
04430R	-5.0	270.0	4.0	83.0	33.7	6.0	270.0	25.0	63.0	4.7	-0.5	7.5	1.4
04433R	-5.0	-2.0	-1.0	5.2	1.5	-4.0	-50.0	22.0	40.0	2.1	-0.5	0.9	0.1
04434R	-5.0	110.0	6.0	16.0	11.9	5.0	290.0	20.0	40.0	3.1	0.4	4.6	0.6
04437R	-5.0	4.0	-1.0	7.9	2.0	-4.0	130.0	27.0	57.0	4.0	1.9	3.1	0.4
04439R	21.0	210.0	2.0	61.0	18.7	7.0	10000.0	99.0	220.0	12.9	-0.7	10.8	1.5
04440R	-5.0	12.0	-1.0	77.0	7.0	-4.0	540.0	123.0	220.0	12.9	1.1	11.8	1.6
04441R	-5.0	140.0	3.0	49.0	13.0	21.0	810.0	81.0	141.0	8.7	-0.8	5.9	0.9
04450R	-6.0	4.0	-2.0	49.0	18.5	-4.0	560.0	89.0	169.0	18.1	-0.9	9.3	1.6
04451R	-5.0	68.0	4.0	55.0	14.2	11.0	1700.0	70.0	138.0	20.2	1.3	13.7	2.1
04453R	-7.0	34.0	-1.0	9.8	4.9	4.0	1800.0	33.0	69.0	5.7	0.9	2.1	0.4
04454R	-5.0	8.0	-2.0	13.0	3.0	-4.0	-50.0	27.0	40.0	3.5	0.8	1.6	0.3
04455R	-5.0	32.0	-1.0	8.6	1.9	4.0	-50.0	18.0	33.0	4.1	0.8	1.0	0.1
04456R	-5.0	2.0	-1.0	4.9	41.3	-4.0	80.0	14.0	22.0	3.0	-0.3	1.2	0.2
04457R	-5.0	80.0	-1.0	16.0	4.0	5.0	560.0	44.0	78.0	5.9	-0.4	1.8	0.3
04458R	-5.0	510.0	-1.0	39.0	57.9	10.0	360.0	109.0	184.0	14.3	-0.8	5.7	1.4
04459R	-5.0	2.0	-1.0	3.0	1.7	-4.0	110.0	10.0	17.0	1.7	0.3	0.6	0.1
04461R	-5.0	90.0	1.0	3.7	2.7	-4.0	150.0	9.0	17.0	2.2	1.1	2.5	0.4
04462R	-5.0	8.0	1.0	7.5	2.0	-4.0	100.0	18.0	24.0	2.4	0.6	1.4	0.2
04463R	-7.0	6.0	-2.0	77.0	12.3	-4.0	90.0	181.0	365.0	41.2	-1.1	14.9	2.5
04464R	-5.0	320.0	9.0	14.0	17.7	4.0	130.0	24.0	82.0	20.0	-0.4	24.6	4.0
04465R	-5.0	6.0	5.0	32.0	22.9	6.0	-80.0	32.0	76.0	13.2	-0.7	14.1	2.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
04466R	65.4362	146.6030	B-6	7	6	18	FELSITE	8.5	7.0	-5.0	100.0	-1.1
04467R	65.6733	146.6002	C-6	10	5	24	APLITE	0.5	-2.0	-8.0	400.0	-1.7
04468R	65.6748	146.5933	C-6	10	6	19	(COMP) QTZ-CHL-TM GREISEN	1.0	3.0	-7.0	600.0	-1.4
04469R	65.6749	146.5928	C-6	10	6	19	QTZ-HEM-CLAY GREISEN ALT GR2	4.0	38.0	-7.0	600.0	-1.3
04470R	65.6748	146.5933	C-6	10	6	19	QTZ-CHL GREISEN WITH TRACE MO	6.0	-2.0	-6.0	400.0	-1.3
04471R	65.4421	146.5795	B-6	7	6	7	FELSITE	-0.5	2.0	-5.0	100.0	-1.3
04473R	65.6788	146.5778	C-6	10	6	19	GR1	-0.5	22.0	-8.0	300.0	-1.8
04474R	65.4325	146.6106	B-6	7	5	13	PYRITIC BLACK QTZT	-0.5	5.0	5.0	200.0	-1.3
04500R	65.5758	146.8970	C-6	9	4	27	APLITE OR QTZ BRECCIA DIKE WITH SULFIDES	-0.5	16.0	-7.0	300.0	-1.3
04501R	65.5756	146.8967	C-6	9	4	27	RUSTY QTZT BRECCIA HFLS WITH SULFIDES	-0.5	-2.0	-6.0	100.0	-0.7
04502R	65.5756	146.8967	C-6	9	4	27	QTZT HFLS WITH SULFIDES	-0.5	-2.0	-5.0	200.0	1.8
04503R	65.5756	146.8967	C-6	9	4	27	(COMP) MN-STAINED MUSC-FL GREISEN	1.5	28.0	-8.0	900.0	4.7
04504R	65.5756	146.8967	C-6	9	4	27	QTZ VN IN HFLS	-0.5	4.0	-5.0	200.0	-0.5
04505R	65.5756	146.8967	C-6	9	4	27	BLACK MUSC-FL GREISEN IN GR3	2.5	-2.0	-8.0	200.0	-1.2
04506R	65.5756	146.8967	C-6	9	4	27	GR3 WITH PATCHY AMBER MINERAL ALT	-0.5	-2.0	-8.0	200.0	-1.0
04507R	65.5756	146.8967	C-6	9	4	27	MUSC-CHL-TM GREISEN	3.0	5.0	-8.0	500.0	-1.3
04508R	65.5756	146.8967	C-6	9	4	27	MUSC-FL-CHL GREISEN IN GR3	6.5	10.0	14.0	400.0	-1.3
04509R	65.5756	146.8967	C-6	9	4	27	MUSC-HEM-QTZ-CHL GREISEN	1.0	-2.0	-7.0	700.0	-1.4
04510R	65.5756	146.8967	C-6	9	4	27	QTZ-FL VNS/BRECCIA	8.5	-2.0	-5.0	300.0	1.6
04511R	65.5756	146.8967	C-6	9	4	27	QTZ STOCKWORK IN HFLS WITH LOCAL MUSC VN	-0.5	4.0	-6.0	200.0	-0.8
04512R	65.5756	146.8967	C-6	9	4	27	QTZ-CHL GREISEN WITH FL VNS	3.0	-2.0	-5.0	200.0	-0.5
04513R	65.5756	146.8967	C-6	9	4	27	QTZ-CHL-HEM GREISEN WITH PY	5.0	43.0	-6.0	600.0	-0.9
04514R	65.5756	146.8967	C-6	9	4	27	QTZ-CHL-HEM-CASSITERITE(?) GREISEN IN GR	1.0	-2.0	-6.0	500.0	-1.3
04515R	65.5758	146.8970	C-6	9	4	27	MAFIC DIKE WITH PY AND PO	-0.5	2.0	-5.0	100.0	-0.9
04516R	65.5755	146.8952	C-6	9	4	27	MNOX-CHL-QTZ GREISEN IN GR1	16.0	11.0	-8.0	400.0	-1.7

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
04466R	-5.0	290.0	-1.0	12.0	0.4	3.0	-4.0	1.30	-200.0	NA	-40.0	0.2	0.8
04467R	5.0	210.0	2.0	7.5	0.5	3.0	26.0	2.20	-200.0	NA	560.0	0.9	4.3
04468R	-5.0	170.0	7.0	33.0	9.8	4.0	20.0	0.07	-200.0	NA	670.0	0.6	4.9
04469R	14.0	190.0	12.0	27.0	6.7	2.0	280.0	-0.05	-200.0	NA	160.0	4.3	4.2
04470R	-5.0	310.0	12.0	210.0	4.4	7.0	230.0	-0.05	-200.0	NA	660.0	9.0	5.0
04471R	-5.0	250.0	1.0	2.5	0.7	4.0	-4.0	1.90	-200.0	NA	-40.0	0.3	1.7
04473R	-5.0	-10.0	11.0	3.5	1.3	5.0	6.0	2.20	400.0	NA	900.0	0.2	7.0
04474R	-5.0	20.0	3.0	20.0	1.2	5.0	-4.0	0.86	-200.0	NA	-30.0	-0.2	2.7
04500R	10.0	60.0	28.0	56.0	3.6	-1.0	-4.0	0.23	-200.0	-2.0	1000.0	0.6	10.1
04501R	-5.0	20.0	31.0	26.0	2.9	6.0	-4.0	-0.05	-200.0	-2.0	810.0	0.7	4.5
04502R	-5.0	20.0	25.0	37.0	2.3	8.0	-4.0	0.31	-200.0	-2.0	840.0	0.4	4.6
04503R	-5.0	10.0	13.0	5.0	2.6	5.0	-4.0	0.21	-200.0	86.0	1500.0	0.4	8.7
04504R	-5.0	20.0	16.0	32.0	2.0	7.0	-4.0	0.83	-200.0	-2.0	380.0	0.4	3.1
04505R	-5.0	-10.0	35.0	19.0	4.9	-1.0	-4.0	0.25	-200.0	40.0	2200.0	1.9	13.1
04506R	-5.0	10.0	13.0	2.5	0.9	3.0	-4.0	3.20	-300.0	-2.0	1700.0	-0.2	5.7
04507R	-5.0	-10.0	23.0	15.0	5.0	5.0	-4.0	0.06	-200.0	86.0	1800.0	3.1	7.5
04508R	-5.0	20.0	24.0	48.0	4.8	6.0	-4.0	0.09	-200.0	36.0	1500.0	2.6	11.2
04509R	-5.0	-10.0	8.0	70.0	8.2	5.0	-4.0	-0.05	300.0	72.0	800.0	6.3	5.1
04510R	-5.0	20.0	2.0	23.0	1.3	1.0	-4.0	-0.05	200.0	58.0	340.0	0.7	2.2
04511R	-5.0	20.0	21.0	9.0	2.2	5.0	-4.0	0.23	-200.0	-2.0	880.0	0.5	5.6
04512R	-5.0	10.0	1.0	50.0	7.6	3.0	-4.0	-0.05	-200.0	130.0	160.0	1.3	4.1
04513R	-5.0	20.0	3.0	380.0	6.9	-1.0	-4.0	-0.05	-200.0	240.0	210.0	12.0	4.2
04514R	-5.0	-10.0	7.0	42.0	3.4	4.0	-4.0	-0.05	300.0	70.0	730.0	4.3	5.0
04515R	11.0	30.0	11.0	15.0	5.2	5.0	4.0	0.24	-200.0	-2.0	160.0	0.4	4.0
04516R	-5.0	10.0	2.0	3.0	5.6	6.0	-4.0	0.17	-200.0	190.0	330.0	1.1	9.8

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
04466R	-5.0	2.0	-1.0	5.8	1.2	-4.0	160.0	6.0	12.0	0.9	-0.4	0.7	0.1
04467R	-5.0	6.0	7.0	28.0	18.3	-4.0	-80.0	15.0	47.0	5.7	-0.7	11.3	2.0
04468R	-5.0	1400.0	2.0	34.0	15.3	9.0	900.0	50.0	100.0	13.9	0.6	14.0	2.3
04469R	-5.0	48.0	-1.0	11.0	59.0	6.0	1500.0	38.0	74.0	15.5	-0.5	11.8	2.4
04470R	-5.0	580.0	4.0	52.0	38.1	7.0	210.0	43.0	97.0	17.3	-0.5	17.3	3.1
04471R	-5.0	-2.0	2.0	5.7	1.2	-4.0	-60.0	10.0	17.0	1.3	-0.5	0.7	0.1
04473R	12.0	32.0	8.0	53.0	10.7	9.0	-60.0	41.0	95.0	12.5	-0.7	12.0	1.7
04474R	-5.0	22.0	-1.0	10.0	2.0	8.0	-40.0	23.0	44.0	3.6	0.7	0.9	0.2
04500R	-6.0	24.0	-1.0	12.0	2.5	39.0	100.0	36.0	57.0	5.3	0.9	1.7	0.3
04501R	-6.0	12.0	3.0	8.2	2.6	220.0	70.0	13.0	24.0	2.5	0.6	1.2	0.2
04502R	-5.0	8.0	-1.0	8.9	2.0	21.0	50.0	19.0	34.0	3.2	-0.4	1.3	0.3
04503R	-10.0	58.0	21.0	21.0	15.9	300.0	150.0	49.0	155.0	30.8	-0.6	32.4	4.8
04504R	-5.0	6.0	-1.0	9.6	2.9	35.0	-50.0	16.0	34.0	3.5	0.6	1.7	0.2
04505R	17.0	140.0	27.0	20.0	15.7	68.0	260.0	29.0	105.0	18.0	-0.5	23.7	3.6
04506R	11.0	-2.0	13.0	9.1	9.6	22.0	50.0	10.0	30.0	4.1	-0.3	4.1	0.7
04507R	-10.0	210.0	13.0	22.0	27.2	6.0	370.0	33.0	129.0	25.1	-0.5	41.7	6.2
04508R	-12.0	78.0	29.0	17.0	19.3	220.0	150.0	36.0	116.0	22.2	-0.5	28.1	4.5
04509R	-11.0	240.0	22.0	20.0	24.1	4.0	400.0	38.0	130.0	23.0	-0.5	35.9	5.7
04510R	-5.0	26.0	2.0	4.2	4.1	-4.0	220.0	14.0	54.0	9.0	0.4	16.4	2.5
04511R	-5.0	14.0	1.0	8.7	2.4	26.0	50.0	17.0	40.0	5.1	0.6	2.2	0.4
04512R	-6.0	46.0	8.0	6.4	8.8	4.0	280.0	4.0	26.0	3.8	-0.2	13.7	2.2
04513R	9.0	2600.0	4.0	6.8	9.6	24.0	440.0	12.0	62.0	16.9	-0.3	27.7	4.2
04514R	-8.0	200.0	11.0	14.0	14.6	10.0	240.0	35.0	118.0	24.3	-0.4	31.4	4.9
04515R	-5.0	8.0	-1.0	7.6	1.4	-4.0	130.0	18.0	36.0	3.0	0.5	1.4	0.2
04516R	-5.0	90.0	3.0	40.0	27.7	4.0	360.0	76.0	118.0	14.5	0.7	9.4	1.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
04517R	65.5755	146.8952	C-6	9	4	27	CHL-QTZ-HEM GREISEN	2.0	4.0	-7.0	500.0	-1.6
04518R	65.5755	146.8952	C-6	9	4	27	CHL-QTZ GREISEN IN GR3	11.0	6.0	-8.0	300.0	-2.1
04519R	65.5917	146.9244	C-6	9	4	21	QTZ-FL VNS IN QTZT HFLS	2.0	-2.0	-5.0	100.0	2.0
04520R	65.5917	146.9241	C-6	9	4	21	QTZT HFLS WITH PY, CHL, AND FEOX	-0.5	8.0	-10.0	900.0	-1.9
04521R	65.5917	146.9241	C-6	9	4	21	MUSC-CHL-QTZ GREISEN VNS IN QTZT HFLS	-0.5	2.0	-5.0	100.0	-1.1
04522R	65.5917	146.9244	C-6	9	4	21	FL-QTZ-CHL GREISEN BRECCIA IN HFLS	24.0	2.0	-6.0	400.0	26.0
04523R	65.5917	146.9241	C-6	9	4	21	CHL-QTZ-HEM GREISEN	1.0	2.0	-7.0	300.0	-1.5
04524R	65.5917	146.9241	C-6	9	4	21	CHL-QTZ-HEM GREISEN	0.5	3.0	-7.0	200.0	-1.5
04525R	65.5587	146.3890	C-5	9	6	36	MUSC-QTZ-TM-CHL GREISEN ALT GR2	0.5	41.0	-7.0	-100.0	-1.5
04526R	65.5587	146.3890	C-5	9	6	36	MUSC-QTZ-TM-CHL GREISEN ALT GR2	2.0	150.0	-6.0	200.0	-1.2
04527R	65.5870	146.3501	C-5	9	7	20	GAR-PYX SKARNOID	-0.5	2.0	13.0	200.0	15.0
04528R	65.5870	146.3501	C-5	9	7	20	AXINITE WITH AMBER GAR OR SCHEELITE	-0.5	8.0	-5.0	-100.0	5.9
04529R	65.4235	146.5246	B-6	7	6	21	GR1 OR GR2 WITH APLITE DIKES AND QTZT	2.0	98.0	15.0	200.0	-1.5
04530R	65.4128	146.4619	B-5	7	6	23	BLACK BIO(?)-GAR QTZT WITH PY	0.5	5.0	-5.0	200.0	-1.1
04531R	65.4128	146.4619	B-5	7	6	23	CHL-AMPH SKARN	8.5	4.0	-9.0	-200.0	3.6
04532R	65.4128	146.4619	B-5	7	6	23	(COMP) QTZ-CHL-FL SKARN IN CALC-SIL HFLS	20.0	280.0	-9.0	400.0	2.7
04533R	65.4162	146.4586	B-5	7	6	23	CALC-SIL SKARN FLOAT	-0.5	25.0	-7.0	-100.0	17.0
04534R	65.4089	146.5090	B-6	7	6	28	GREEN QTZ BRECCIA/GOUGE WITH PY AND FEOX	1.5	6.0	-5.0	200.0	1.2
04535R	65.4126	146.4546	B-5	7	6	23	CALC-SIL HFLS WITH PO ADJACENT GR3	1.0	17.0	-9.0	-200.0	14.0
04536R	65.4126	146.4546	B-5	7	6	23	GAR-IDOCRASE SKARN OR SKARNOID	0.5	7.0	-10.0	-100.0	16.0
04537R	65.4119	146.4507	B-5	7	6	26	GAR-AMPH SKARN WITH POSSIBLE SCHEELITE	16.0	5.0	11.0	200.0	-1.0
04538R	65.4119	146.4507	B-5	7	6	26	(COMP) MASSIVE AMPH-CHL SKARN	1.0	-2.0	-8.0	300.0	9.6
04539R	65.4119	146.4507	B-5	7	6	26	BIO-QTZ HFLS WITH PO	0.5	5.0	-8.0	500.0	11.0
04540R	65.3923	146.4906	B-5	7	6	34	QTZ-FL VN WITH SULFIDES AND MALACHITE	1.0	3.0	-5.0	200.0	2.6
04541R	65.3923	146.4906	B-5	7	6	34	QTZ-HEM VN/FAULT GOUGE	-0.5	14.0	-7.0	300.0	-1.0

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
04517R	-5.0	10.0	2.0	97.0	5.4	5.0	-4.0	0.08	-200.0	150.0	400.0	1.8	6.3
04518R	-5.0	10.0	2.0	11.0	6.0	4.0	11.0	0.21	400.0	2100.0	410.0	0.9	8.1
04519R	-5.0	20.0	-1.0	36.0	0.8	5.0	-4.0	1.00	-200.0	180.0	70.0	0.9	1.6
04520R	14.0	100.0	10.0	66.0	4.5	6.0	-4.0	0.73	-300.0	6.0	340.0	1.6	17.8
04521R	-5.0	20.0	2.0	24.0	1.9	4.0	-4.0	1.10	-200.0	6.0	130.0	0.5	3.0
04522R	7.0	20.0	-1.0	84.0	4.9	1.0	-4.0	0.60	-200.0	13000.0	250.0	0.7	4.0
04523R	5.0	10.0	3.0	19.0	6.5	3.0	-4.0	0.09	-200.0	370.0	340.0	1.0	4.6
04524R	-5.0	10.0	4.0	8.5	6.3	4.0	-4.0	0.07	-200.0	190.0	350.0	0.6	5.2
04525R	-5.0	10.0	6.0	47.0	0.8	2.0	-4.0	1.70	-200.0	46.0	350.0	1.8	3.7
04526R	-5.0	10.0	11.0	9.5	0.7	4.0	-4.0	0.23	-200.0	390.0	460.0	2.3	2.9
04527R	24.0	20.0	-1.0	4.0	15.9	1.0	-4.0	0.05	-200.0	-2.0	-30.0	0.2	2.6
04528R	-5.0	10.0	-1.0	4.0	2.9	3.0	-4.0	-0.05	-200.0	-2.0	-20.0	-0.2	1.1
04529R	-5.0	10.0	2.0	3.0	1.0	4.0	-4.0	5.70	-300.0	150.0	-60.0	1.4	1.7
04530R	8.0	30.0	6.0	310.0	1.7	2.0	-4.0	0.66	-200.0	4.0	110.0	0.2	4.6
04531R	10.0	20.0	102.0	100.0	16.2	4.0	-4.0	0.14	-200.0	190.0	320.0	4.1	3.7
04532R	9.0	20.0	101.0	250.0	12.1	3.0	-4.0	0.15	-200.0	1000.0	440.0	3.7	3.1
04533R	12.0	50.0	11.0	2.0	7.8	4.0	-4.0	0.28	-200.0	-2.0	40.0	23.0	8.1
04534R	-5.0	20.0	3.0	32.0	2.6	4.0	-4.0	0.25	-200.0	100.0	-20.0	1.5	2.2
04535R	7.0	50.0	4.0	15.0	8.1	11.0	-4.0	0.23	-200.0	-2.0	-30.0	12.0	7.4
04536R	11.0	20.0	7.0	220.0	7.0	3.0	-4.0	1.00	-200.0	-2.0	40.0	0.7	5.7
04537R	-5.0	10.0	8.0	30.0	5.3	3.0	6.0	1.20	-200.0	36.0	630.0	0.6	9.0
04538R	-5.0	20.0	17.0	120.0	12.9	4.0	-4.0	0.76	-200.0	-2.0	140.0	2.9	4.9
04539R	41.0	70.0	14.0	120.0	6.9	3.0	24.0	0.08	-200.0	2.0	130.0	1.0	15.0
04540R	-5.0	10.0	1.0	100.0	0.6	3.0	-4.0	-0.05	-200.0	8.0	90.0	0.3	1.8
04541R	210.0	20.0	3.0	120.0	10.1	3.0	-4.0	-0.05	400.0	44.0	90.0	1.2	4.2

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
04517R	-5.0	14.0	4.0	42.0	29.0	18.0	290.0	87.0	135.0	18.3	-0.6	12.8	2.0
04518R	-5.0	36.0	3.0	47.0	22.2	-4.0	1200.0	112.0	222.0	26.2	-0.7	12.1	1.7
04519R	-5.0	12.0	-1.0	7.3	1.7	8.0	250.0	10.0	27.0	2.2	0.4	1.7	0.3
04520R	-8.0	10.0	-1.0	20.0	5.5	-4.0	70.0	63.0	114.0	9.6	1.9	2.9	0.5
04521R	-5.0	12.0	-1.0	5.8	1.4	-4.0	70.0	12.0	23.0	2.0	1.1	1.0	0.1
04522R	-6.0	24.0	-1.0	4.5	2.6	8.0	1100.0	14.0	30.0	3.4	3.4	5.2	0.7
04523R	7.0	120.0	1.0	35.0	11.3	4.0	890.0	60.0	132.0	11.3	0.7	6.8	1.1
04524R	-7.0	110.0	3.0	35.0	19.4	12.0	680.0	67.0	130.0	14.4	0.9	9.2	1.4
04525R	-8.0	42.0	8.0	14.0	9.3	6.0	-60.0	17.0	39.0	3.9	0.6	3.5	0.6
04526R	-5.0	54.0	5.0	20.0	15.4	7.0	230.0	30.0	57.0	5.2	-0.4	3.1	0.6
04527R	-5.0	100.0	1.0	4.9	1.9	-4.0	340.0	20.0	35.0	4.7	1.2	2.0	0.2
04528R	5.0	1800.0	-1.0	4.2	1.1	18.0	120.0	10.0	16.0	2.0	0.6	0.6	0.1
04529R	9.0	250.0	2.0	17.0	22.0	-4.0	100.0	20.0	38.0	4.5	-0.4	3.6	0.8
04530R	-5.0	18.0	-1.0	4.3	0.9	-4.0	-50.0	11.0	19.0	1.8	0.5	1.2	0.2
04531R	-7.0	1100.0	-1.0	4.5	1.8	57.0	4000.0	9.0	26.0	2.7	1.6	0.9	0.1
04532R	-7.0	18000.0	-1.0	4.9	1.7	170.0	1500.0	10.0	30.0	2.2	1.1	1.1	0.1
04533R	-6.0	320.0	1.0	11.0	2.8	79.0	630.0	37.0	71.0	4.5	1.5	1.2	0.3
04534R	-5.0	540.0	-1.0	5.9	0.8	4.0	440.0	13.0	27.0	1.7	0.3	0.7	0.1
04535R	-14.0	2400.0	-1.0	20.0	7.4	250.0	1000.0	97.0	161.0	9.7	7.3	4.4	0.8
04536R	-8.0	360.0	-1.0	7.9	2.8	760.0	290.0	45.0	78.0	5.1	2.9	1.5	0.3
04537R	-5.0	180.0	5.0	11.0	10.0	4.0	180.0	11.0	31.0	3.5	-0.3	2.3	0.4
04538R	-6.0	2800.0	-1.0	6.6	8.2	14.0	300.0	25.0	46.0	4.6	5.3	1.8	0.4
04539R	-8.0	66.0	1.0	15.0	25.4	4.0	140.0	54.0	88.0	8.2	1.3	2.7	0.6
04540R	-5.0	2.0	-1.0	3.4	0.5	4.0	-50.0	9.0	18.0	1.9	0.7	0.9	0.1
04541R	-5.0	-2.0	-1.0	16.0	8.0	-4.0	220.0	19.0	46.0	5.9	1.1	2.2	0.4

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
04542R	65.3923	146.4906	B-5	7	6	34	QTZ-HEM VN/FAULT GOUGE	-0.5	25.0	-7.0	300.0	-1.2
04543R	65.3940	146.4839	B-5	7	6	34	QTZT HFLS	-0.5	3.0	-5.0	100.0	-0.5
04544R	65.4070	146.5824	B-5	7	6	30	GR(?)	-0.5	3.0	-6.0	100.0	-0.7
04547R	65.5756	146.8967	C-6	9	4	27	QTZ VN IN HFLS	-0.5	-2.0	-8.0	300.0	1.6
04548R	65.5756	146.8967	C-6	9	4	27	GRAY QTZ VNS	-0.5	-2.0	-5.0	100.0	-0.8
04549R	65.5756	146.8967	C-6	9	4	27	QTZ GREISEN IN GR3	0.5	4.0	-10.0	500.0	-1.2
04550R	65.5756	146.8967	C-6	9	4	27	MNOX GREISEN IN QTZT HFLS	4.5	9.0	-7.0	100.0	-0.5
04552R	65.4457	146.3847	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	4.0	-5.0	100.0	-0.5
04553R	65.4457	146.3847	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	4.0	-5.0	-100.0	-0.5
04554R	65.4457	146.3847	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	1.5	28.0	-5.0	300.0	4.2
04555R	65.4458	146.3842	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	3.0	-5.0	100.0	4.4
04556R	65.4457	146.3847	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	12.0	-5.0	100.0	3.5
04557R	65.4457	146.3847	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	2.0	-5.0	100.0	-0.5
04558R	65.4458	146.3842	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	5.0	-5.0	100.0	1.4
04559R	65.4457	146.3847	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	-2.0	-5.0	100.0	2.6
04560R	65.4458	146.3842	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	0.5	-2.0	-5.0	100.0	-0.5
04561R	65.4458	146.3842	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	2.0	-5.0	100.0	7.9
04562R	65.4458	146.3842	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	6.0	-5.0	-100.0	18.0
04563R	65.4458	146.3842	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	2.0	-5.0	100.0	-0.5
04564R	65.4458	146.3842	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	6.0	-5.0	100.0	-0.5
04565R	65.4458	146.3842	B-5	7	7	7	CHALCEDONY-FL VNS IN SHEARED/ALT GR1	-0.5	3.0	-5.0	200.0	-0.6
04571R	65.4031	146.1731	B-5	7	8	30	(COMP) PRE-META QTZ-ANKERITE-CHL VN	-0.5	11.0	-5.0	100.0	-0.5
04572R	65.4114	146.1905	B-5	7	8	30	GRAPH-MUSC QTZT FLOAT WITH PY-ASP VNS	-0.5	-2.0	-5.0	100.0	-0.7
04896R	65.6358	146.7254	C-6	9	5	4	BIO-TM PORPHYRY DIKE	-0.5	4.0	-6.0	100.0	-1.1
05251R	65.6365	146.8282	C-6	9	4	1	FELSIC DIKE IN QTZT	-0.5	-2.0	-5.0	200.0	-0.8

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
04542R	6.0	60.0	5.0	66.0	8.0	3.0	-4.0	0.07	200.0	10.0	80.0	1.4	11.2
04543R	-5.0	10.0	5.0	7.0	0.3	1.0	-4.0	-0.05	-200.0	-2.0	70.0	1.2	1.1
04544R	-5.0	10.0	-1.0	5.0	0.3	4.0	-4.0	2.50	-200.0	-2.0	-20.0	0.2	1.2
04547R	6.0	30.0	42.0	28.0	3.8	7.0	-4.0	1.10	-200.0	-2.0	1600.0	1.0	8.3
04548R	-5.0	10.0	3.0	1.0	0.2	1.0	-4.0	0.07	-200.0	-2.0	110.0	-0.2	0.8
04549R	-5.0	10.0	24.0	5.5	2.3	-1.0	-4.0	0.10	-200.0	32.0	1300.0	1.0	8.0
04550R	6.0	30.0	12.0	87.0	3.6	5.0	-4.0	0.13	-200.0	30.0	650.0	0.4	6.2
04552R	-5.0	-10.0	12.0	-0.5	0.5	2.0	-4.0	-0.05	-200.0	NA	560.0	1.6	3.1
04553R	-5.0	-10.0	8.0	9.5	1.0	-1.0	-4.0	-0.05	-200.0	NA	70.0	3.4	1.4
04554R	-5.0	-10.0	5.0	21.0	2.7	-1.0	5.0	-0.05	-200.0	NA	50.0	1.6	1.0
04555R	-5.0	-10.0	4.0	10.0	0.3	-1.0	-4.0	-0.05	-200.0	NA	50.0	2.1	1.3
04556R	-5.0	-10.0	8.0	8.0	0.4	2.0	-4.0	-0.05	-200.0	NA	300.0	1.4	2.1
04557R	-5.0	-10.0	9.0	3.0	0.6	3.0	-4.0	0.05	-200.0	NA	340.0	1.0	2.8
04558R	-5.0	-10.0	12.0	1.5	0.7	2.0	4.0	0.05	-84.0	NA	460.0	2.1	3.2
04559R	-5.0	-10.0	7.0	-0.5	0.5	2.0	-4.0	-0.05	-200.0	NA	230.0	1.0	2.3
04560R	-5.0	-10.0	5.0	10.0	0.5	2.0	-4.0	-0.05	-200.0	NA	190.0	1.0	1.9
04561R	-5.0	-10.0	6.0	1.5	0.4	1.0	-4.0	-0.05	-200.0	NA	150.0	1.4	2.3
04562R	-5.0	-10.0	3.0	1.5	0.6	1.0	-4.0	-0.05	-200.0	NA	70.0	1.1	1.9
04563R	-5.0	-10.0	7.0	11.0	0.4	1.0	-4.0	-0.05	-200.0	NA	350.0	0.6	2.0
04564R	-5.0	-10.0	10.0	7.0	0.5	3.0	-4.0	0.07	-200.0	NA	570.0	0.6	2.7
04565R	-5.0	-10.0	26.0	-0.5	0.7	3.0	-4.0	0.13	-200.0	NA	820.0	0.8	4.2
04571R	-5.0	10.0	-1.0	4.5	0.5	1.0	-4.0	0.95	-200.0	44.0	-30.0	2.9	0.4
04572R	-5.0	20.0	1.0	5.5	1.3	4.0	-4.0	-0.05	-200.0	4.0	20.0	0.7	2.3
04896R	-5.0	-10.0	21.0	NA	0.8	6.0	-4.0	2.60	-200.0	NA	780.0	0.5	2.3
05251R	-5.0	-10.0	4.0	NA	0.5	5.0	-4.0	1.80	-200.0	NA	360.0	-0.2	3.7

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
04542R	-5.0	2.0	-1.0	16.0	3.5	-4.0	100.0	28.0	51.0	4.6	0.6	1.8	0.3
04543R	-5.0	24.0	-1.0	1.6	0.6	-4.0	-50.0	2.0	5.0	0.3	0.2	0.2	-0.1
04544R	-5.0	4.0	-1.0	4.0	1.9	-4.0	-50.0	15.0	26.0	1.3	0.6	0.6	0.1
04547R	-6.0	20.0	-1.0	9.9	1.5	19.0	90.0	16.0	41.0	3.4	1.0	2.1	0.3
04548R	-5.0	-2.0	1.0	4.0	1.2	-4.0	-50.0	16.0	39.0	5.1	0.3	5.6	0.7
04549R	-10.0	46.0	10.0	21.0	47.4	800.0	70.0	37.0	128.0	24.4	-0.4	31.3	5.4
04550R	-7.0	22.0	4.0	9.8	4.1	13.0	130.0	24.0	46.0	4.3	-0.4	2.0	0.3
04552R	-5.0	30.0	2.0	13.0	16.4	-4.0	-50.0	13.0	32.0	2.5	-0.3	3.7	0.6
04553R	-5.0	26.0	1.0	7.2	10.9	4.0	-50.0	11.0	27.0	1.3	-0.3	1.4	0.3
04554R	-5.0	10.0	-1.0	3.3	35.2	-4.0	120.0	9.0	26.0	1.5	-0.3	1.7	0.2
04555R	-5.0	20.0	-1.0	4.4	6.1	4.0	-50.0	18.0	37.0	3.1	0.5	2.4	0.3
04556R	-5.0	32.0	2.0	9.2	9.4	-4.0	-50.0	10.0	25.0	2.6	-0.3	4.0	0.6
04557R	-5.0	54.0	3.0	16.0	12.3	-4.0	-50.0	20.0	35.0	3.6	-0.4	4.6	0.7
04558R	-5.0	54.0	2.0	13.0	12.6	-4.0	-50.0	14.0	34.0	2.6	-0.3	3.9	0.6
04559R	11.0	32.0	2.0	10.0	15.0	-4.0	-50.0	12.0	23.0	2.1	-0.3	3.2	0.6
04560R	-5.0	20.0	2.0	10.0	12.6	-4.0	-50.0	10.0	23.0	1.8	-0.3	2.9	0.4
04561R	-5.0	18.0	1.0	6.2	7.5	-4.0	-50.0	7.0	21.0	2.0	0.4	3.7	0.5
04562R	-5.0	10.0	-1.0	4.3	6.5	-4.0	-50.0	7.0	22.0	2.8	0.7	5.2	0.6
04563R	-5.0	22.0	2.0	9.0	10.3	-4.0	-50.0	10.0	23.0	1.8	-0.3	2.7	0.5
04564R	-5.0	350.0	3.0	14.0	15.5	-4.0	-50.0	14.0	29.0	2.5	-0.3	3.7	0.6
04565R	-5.0	32.0	5.0	17.0	23.6	-4.0	-50.0	18.0	41.0	3.2	-0.4	4.9	0.9
04571R	-5.0	-2.0	-1.0	1.4	0.6	-4.0	-50.0	2.0	3.0	0.4	-0.3	0.7	0.1
04572R	-5.0	-2.0	-1.0	5.4	1.7	-4.0	-50.0	13.0	27.0	2.0	0.7	0.8	0.1
04896R	-5.0	22.0	4.0	49.0	12.3	5.0	-60.0	26.0	57.0	6.3	-0.7	9.5	1.3
05251R	-5.0	4.0	1.0	33.0	6.4	-4.0	-50.0	17.0	31.0	2.7	0.9	5.2	0.7

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
05252R	65.6611	146.6792	C-6	10	5	27	ALT FELSIC DIKE IN HFLS	-0.5	3.0	-7.0	400.0	-1.1
05253R	65.6615	146.6796	C-6	10	5	27	FELSIC DIKE/VN IN HFLS	-0.5	-2.0	-5.0	700.0	-0.7
05254R	65.6531	146.6971	C-6	10	5	34	GR2 GREISEN RUBBLE	0.5	2.0	6.0	100.0	-0.9
05255R	65.4139	146.5799	B-6	7	6	19	SIL-ALT AND BRECCIATED GR2	1.0	270.0	28.0	300.0	-0.5
05313R	65.4349	146.5786	B-6	7	6	18	CLEAN GR2 WITH INTERSTITIAL TM	-0.5	3.0	-5.0	100.0	-0.9
05322R	65.3910	146.6150	B-6	7	5	36	ORANGE-WEATHERING FELSITE RUBBLE	0.5	14.0	-9.0	300.0	-2.0
05325R	65.3988	146.6483	B-6	7	5	26	QTZ VN/BRECCIA IN RUBBLE	-0.5	88.0	11.0	300.0	0.8
05326R	65.4009	146.6502	B-6	7	5	26	FE-STAINED QTZ BRECCIA	2.5	11.0	-6.0	100.0	-1.3
05327R	65.4009	146.6502	B-6	7	5	26	FELSIC INTRUSIVE	-0.5	3.0	-7.0	200.0	2.1
05328R	65.4009	146.6502	B-6	7	5	26	ORANGE-WEATHERING QTZ SCHIST	-0.5	12.0	-7.0	800.0	-1.5
05330R	65.6637	146.7113	C-6	10	5	28	GREENSTONE IN CONTACT WITH GR	2.0	-2.0	-5.0	100.0	-0.6
05331R	65.4473	146.0750	B-5	7	8	10	(CHAN) GRAPH SCHIST AND QTZ-BIO SCHIST	-0.5	9.0	-9.0	800.0	-1.7
05332R	65.4474	146.0753	B-5	7	8	10	CONCORDENT QTZ POD	-0.5	4.0	-5.0	200.0	-0.7
05333R	65.4474	146.0753	B-5	7	8	10	(CHAN) SULFITIC QTZ-BIO SCHIST WITH FEOX	-0.5	7.0	-5.0	200.0	-1.0
05334R	65.4474	146.0753	B-5	7	8	10	(CHAN) SULFITIC QTZ-BIO SCHIST WITH FEOX	-0.5	22.0	-6.0	400.0	-1.1
05335R	65.4474	146.0753	B-5	7	8	10	(CHAN) QTZ-BIO SCHIST AND GRAPH SCHIST	-0.5	25.0	-7.0	600.0	-1.4
05336R	65.4474	146.0753	B-5	7	8	10	(CHAN) CLAY ALT SULFIDE-RICH POD	-0.5	46.0	-10.0	600.0	-2.0
05341R	65.5915	146.9036	C-6	9	4	22	(COMP) GR1 GREISEN FLOAT	3.5	4.0	-7.0	200.0	-1.7
05342R	65.5993	146.9015	C-6	9	4	22	(COMP) RUSTY GR2 GREISEN FLOAT	1.5	2.0	-6.0	300.0	-1.3
05343R	65.6022	146.9010	C-6	9	4	15	DARK GREISEN ALT FLOAT	3.5	3.0	-5.0	300.0	-1.1
05344R	65.5949	146.8600	C-6	9	4	23	GOSSANOUS HEM-CHL GR1 GREISEN	110.0	280.0	-8.0	100.0	-1.2
05345R	65.6111	146.8631	C-6	9	4	14	GREEN GR1 GREISEN FLOAT	1.0	3.0	-6.0	200.0	-1.2
05346R	65.6149	146.8646	C-6	9	4	11	WEAK FE-STAINED GR1 GREISEN	1.5	85.0	-7.0	100.0	-1.9
05347R	65.4378	146.6001	B-6	7	6	18	RUSTY PHYLLITE HFLS WITH QTZ VNS	-0.5	4.0	-5.0	1900.0	-1.0
05348R	65.4355	146.6048	B-6	7	6	18	QTZ-MICA SCHIST	-0.5	-2.0	-5.0	500.0	-1.0

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
05252R	-5.0	-10.0	3.0	NA	0.9	7.0	-4.0	2.40	-200.0	NA	400.0	-0.2	3.7
05253R	5.0	10.0	2.0	NA	0.9	4.0	-4.0	2.70	-200.0	NA	230.0	-0.2	4.4
05254R	-5.0	-10.0	2.0	NA	16.2	6.0	-4.0	-0.05	-200.0	NA	140.0	5.5	5.1
05255R	-5.0	-10.0	7.0	NA	1.4	1.0	-4.0	0.54	-200.0	NA	190.0	11.0	1.1
05313R	-5.0	-10.0	35.0	NA	0.6	-1.0	-4.0	2.30	-200.0	NA	800.0	0.6	3.2
05322R	5.0	160.0	6.0	2.5	-0.2	1.0	-4.0	4.90	-300.0	NA	830.0	-0.2	1.1
05325R	-5.0	260.0	6.0	3.5	0.8	-1.0	-4.0	-0.05	-200.0	NA	210.0	6.8	2.2
05326R	-5.0	200.0	9.0	9.5	1.0	1.0	18.0	1.90	-200.0	NA	870.0	12.0	2.7
05327R	-5.0	150.0	10.0	6.0	0.7	2.0	-4.0	3.10	-200.0	NA	850.0	3.0	4.6
05328R	12.0	210.0	16.0	20.0	4.3	4.0	-4.0	1.00	-200.0	NA	730.0	7.7	12.1
05330R	24.0	110.0	1.0	15.0	9.1	8.0	-4.0	0.30	-200.0	NA	-30.0	2.4	7.6
05331R	9.0	60.0	2.0	34.0	3.1	6.0	-4.0	0.70	-200.0	10.0	200.0	3.5	12.3
05332R	5.0	20.0	1.0	20.0	1.1	2.0	-4.0	0.10	-200.0	6.0	30.0	1.1	3.0
05333R	-5.0	40.0	1.0	15.0	1.4	4.0	-4.0	0.30	-200.0	6.0	40.0	1.1	5.3
05334R	-5.0	40.0	2.0	17.0	1.6	5.0	-4.0	0.32	-200.0	6.0	70.0	1.5	6.3
05335R	-5.0	50.0	5.0	20.0	3.0	5.0	-4.0	0.21	-200.0	6.0	130.0	1.7	10.4
05336R	7.0	70.0	19.0	44.0	4.7	7.0	-4.0	0.16	-200.0	20.0	90.0	4.7	14.6
05341R	-5.0	180.0	3.0	53.0	9.5	4.0	-4.0	0.21	-200.0	NA	460.0	2.7	5.5
05342R	-5.0	190.0	6.0	19.0	9.1	4.0	-4.0	0.15	-200.0	NA	600.0	1.5	6.1
05343R	-5.0	160.0	1.0	23.0	10.3	3.0	-4.0	0.10	-200.0	NA	100.0	2.0	4.6
05344R	-5.0	160.0	3.0	720.0	27.3	1.0	-4.0	0.12	-200.0	NA	-40.0	3.5	3.1
05345R	-5.0	200.0	10.0	62.0	7.1	4.0	-4.0	-0.05	-200.0	NA	570.0	0.8	5.7
05346R	-5.0	210.0	11.0	12.0	2.8	3.0	-4.0	0.26	-200.0	NA	760.0	0.6	5.0
05347R	8.0	80.0	13.0	12.0	3.1	13.0	-4.0	0.33	-200.0	NA	340.0	0.4	15.0
05348R	-5.0	40.0	5.0	10.0	2.8	5.0	-4.0	1.50	-200.0	NA	100.0	0.3	8.2

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
05252R	-5.0	-2.0	1.0	51.0	12.0	-4.0	-50.0	95.0	123.0	13.7	-0.9	8.9	1.1
05253R	-5.0	8.0	2.0	13.0	8.9	6.0	-50.0	29.0	64.0	7.5	0.8	13.0	1.7
05254R	-5.0	130.0	1.0	71.0	12.8	4.0	620.0	78.0	143.0	9.7	-0.6	6.3	0.9
05255R	-5.0	68.0	-1.0	5.5	79.4	5.0	140.0	10.0	13.0	1.1	0.4	2.0	-0.1
05313R	-5.0	48.0	-1.0	11.0	5.1	8.0	-50.0	10.0	20.0	2.0	-0.5	3.2	0.5
05322R	-5.0	380.0	49.0	6.2	12.0	8.0	-110.0	4.0	6.0	0.7	-0.7	0.5	-0.1
05325R	-5.0	22.0	-1.0	3.1	1.3	-4.0	-50.0	13.0	14.0	1.0	-0.3	0.5	0.1
05326R	-5.0	8.0	7.0	9.0	6.2	-4.0	-70.0	5.0	8.0	1.3	-0.5	1.5	0.3
05327R	-10.0	14.0	13.0	13.0	8.2	4.0	-80.0	10.0	17.0	2.7	0.7	3.4	0.6
05328R	13.0	8.0	-1.0	15.0	3.5	10.0	130.0	36.0	66.0	5.5	-0.6	2.2	0.4
05330R	-5.0	-2.0	1.0	7.3	2.5	-4.0	8400.0	5.0	6.0	-0.1	0.6	1.9	0.3
05331R	-5.0	4.0	-1.0	16.0	1.8	-4.0	130.0	50.0	89.0	7.5	-0.7	2.0	0.3
05332R	-5.0	-2.0	-1.0	4.0	0.9	-4.0	50.0	11.0	18.0	1.7	-0.3	0.5	0.1
05333R	-5.0	-2.0	-1.0	7.1	2.0	-4.0	70.0	24.0	43.0	3.8	-0.4	1.3	0.2
05334R	-5.0	-2.0	-1.0	5.4	2.2	-4.0	60.0	26.0	50.0	4.9	1.1	2.1	0.3
05335R	11.0	-2.0	-1.0	6.3	1.6	-4.0	90.0	37.0	66.0	8.2	1.5	4.0	0.6
05336R	-6.0	6.0	-1.0	40.0	2.6	-4.0	100.0	75.0	119.0	12.7	3.0	5.4	0.8
05341R	-5.0	250.0	2.0	41.0	54.2	12.0	2400.0	77.0	140.0	17.0	-0.6	9.1	2.0
05342R	-5.0	640.0	5.0	58.0	43.1	9.0	1000.0	54.0	101.0	15.9	0.5	12.6	2.4
05343R	-5.0	130.0	4.0	42.0	35.9	-4.0	940.0	44.0	89.0	21.2	-0.4	16.7	2.6
05344R	-5.0	140.0	-1.0	45.0	29.6	5.0	2200.0	36.0	58.0	8.8	-0.4	7.1	1.4
05345R	-5.0	150.0	4.0	58.0	20.6	8.0	1300.0	59.0	111.0	14.4	-0.4	9.3	1.5
05346R	-5.0	80.0	-1.0	68.0	19.3	4.0	270.0	115.0	189.0	18.4	-0.7	7.7	1.4
05347R	-5.0	4.0	-1.0	23.0	6.3	-4.0	90.0	62.0	119.0	10.1	1.8	4.0	0.5
05348R	-5.0	4.0	-1.0	11.0	2.3	4.0	-60.0	30.0	51.0	2.8	1.1	1.1	0.2

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
05349R	65.4355	146.6048	B-6	7	6	18	CONCORDENT QTZ VN IN RUSTY QTZT	-0.5	2.0	-7.0	400.0	-1.6
05350R	65.4338	146.6069	B-6	7	6	18	RUSTY QTZ WITH LIM CLOTS	-0.5	3.0	-5.0	-100.0	-0.5
05375R	65.6729	146.9946	C-6	10	4	19	BEDDED BLACK CHL ARGILLITE FLOAT	0.5	20.0	5.0	1300.0	-0.6
05377R	65.6038	146.9243	C-6	9	4	16	RUSTY QTZT WITH PO	1.0	10.0	-7.0	600.0	3.4
05400R	65.6047	146.9261	C-6	9	4	16	RUSTY-WEATHERING DARK FNG RK	1.0	12.0	-6.0	900.0	-0.5
05401R	65.6244	146.6541	C-6	9	5	11	(COMP) QTZ-FELD GR2 PORPHYRY	-0.5	-2.0	-5.0	700.0	-0.9
05402R	65.3931	146.6729	B-6	7	5	35	RUSTY BLACK SCHIST/WHITE LAMINATIONS	1.0	41.0	-6.0	600.0	4.8
05403R	65.3989	146.6636	B-6	7	5	26	(COMP) RUSTY-WEATHERING QTZT/QTZ VNS	-0.5	6.0	-5.0	-100.0	-0.5
05404R	65.3968	146.6650	B-6	7	5	35	(COMP) RUSTY LAMINATED QTZT/QTZ VNS	-0.5	-2.0	-5.0	-100.0	-0.9
05553R	65.6899	146.5188	C-6	10	6	16	HIGHLY ALT MN-STAINED RK	2.0	5.0	-5.0	200.0	0.7
05575R	65.4521	146.7935	B-6	7	5	7	QTZ SCHIST WITH ANKERITE(?)	-0.5	-2.0	-5.0	200.0	-0.5
05577R	65.6898	146.7519	C-6	10	5	17	QTZ VN WITH FL, FEOX, AND SULFIDES	-0.5	2.0	-5.0	200.0	2.3
05578R	65.5783	146.4767	C-5	9	6	27	INTERMEDIATE INTRUSIVE RK WITH SULFIDES	0.5	4.0	-6.0	2800.0	-1.2
05579R	65.5804	146.4764	C-5	9	6	27	SULFIDE-BEARING FE-STAINED RUBBLE	1.0	14.0	-5.0	200.0	-0.5
05580R	65.5317	146.6913	C-6	8	5	10	QTZ-FEOX VN	-0.5	2.0	-5.0	200.0	-0.8
05581R	65.5522	146.4846	C-5	8	6	3	RUSTY-WEATHERING QTZ SCHIST WITH PO	0.5	-2.0	-9.0	-100.0	6.7
05582R	65.5501	146.4858	C-5	8	6	3	TM-QTZ GREISEN RUBBLE	-0.5	7.0	-5.0	-100.0	-0.8
05583R	65.5585	146.3925	C-5	9	6	36	FL, MUSC, TM, AND MINOR MO IN GR2	-0.5	260.0	-6.0	100.0	-1.3
05584R	65.4462	145.9180	B-4	7	9	9	POSSIBLE AU OR FE-STAINED PO IN SCHIST	1.5	7200.0	7900.0	-500.0	-1.1
05585R	65.4484	145.9159	B-4	7	9	9	(COMP) HFLS WITH ASP(?), GAR, TM, AND MO	1.5	5400.0	2800.0	-400.0	1.6
05586R	65.4441	145.9164	B-4	7	9	9	(COMP) TM-QTZ VN WITH VISIBLE MO	4.0	56.0	37.0	100.0	-0.9
05587R	65.4468	146.5207	B-6	7	6	9	FL AND TM IN GR RUBBLE	-0.5	-2.0	-8.0	500.0	-1.9
05591R	65.5336	146.3434	C-5	8	7	8	(COMP) RED CLAY AND FE-STAINED RUBBLE	-0.5	-2.0	-5.0	300.0	1.1
05593R	65.6049	146.4249	C-5	9	6	14	FE-RICH QTZ VNS	1.0	26.0	-6.0	300.0	-1.1
05594R	65.4753	146.4928	B-5	8	6	34	QTZ-FL ALT GR2 WITH PY	6.5	150.0	-8.0	400.0	4.4

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
05349R	-5.0	50.0	6.0	23.0	2.0	5.0	-4.0	1.90	-200.0	NA	80.0	-0.2	5.9
05350R	-5.0	-10.0	2.0	18.0	1.0	-1.0	-4.0	-0.05	-200.0	NA	30.0	0.3	1.1
05375R	5.0	220.0	1.0	110.0	3.5	1.0	-4.0	-0.05	-200.0	NA	50.0	4.8	3.3
05377R	15.0	180.0	3.0	58.0	4.6	5.0	-4.0	1.30	-200.0	NA	140.0	1.2	15.7
05400R	9.0	220.0	7.0	58.0	3.0	5.0	-4.0	0.69	-200.0	NA	280.0	2.1	13.8
05401R	-5.0	150.0	11.0	0.5	0.9	5.0	-4.0	1.20	-200.0	NA	830.0	0.3	2.2
05402R	11.0	210.0	4.0	120.0	3.1	4.0	-4.0	0.62	-200.0	NA	140.0	4.5	10.5
05403R	-5.0	250.0	5.0	17.0	0.8	1.0	-4.0	0.21	-200.0	NA	20.0	0.9	0.8
05404R	-5.0	260.0	1.0	3.5	0.5	3.0	-4.0	0.95	-200.0	NA	40.0	1.0	1.2
05553R	29.0	60.0	-1.0	NA	14.8	6.0	5.0	-0.05	-200.0	NA	50.0	0.7	8.6
05575R	-5.0	10.0	1.0	NA	1.1	5.0	-4.0	0.54	-200.0	NA	30.0	0.2	2.5
05577R	-5.0	-10.0	-1.0	NA	2.3	2.0	-4.0	0.43	-200.0	NA	20.0	0.2	1.7
05578R	13.0	50.0	3.0	NA	3.4	7.0	8.0	1.90	-200.0	NA	240.0	0.9	14.9
05579R	20.0	10.0	-1.0	NA	1.0	2.0	-4.0	-0.05	-200.0	NA	30.0	1.7	2.7
05580R	7.0	20.0	-1.0	NA	2.7	-1.0	-4.0	2.10	-200.0	NA	40.0	1.4	4.9
05581R	27.0	430.0	7.0	120.0	5.4	2.0	-4.0	2.00	-300.0	NA	-50.0	0.4	34.2
05582R	7.0	120.0	-1.0	5.5	1.7	-1.0	-4.0	0.31	-200.0	NA	-20.0	-0.2	6.1
05583R	-5.0	180.0	10.0	12.0	0.7	3.0	-4.0	1.60	-200.0	NA	490.0	0.2	2.8
05584R	9.0	100.0	6.0	290.0	1.9	-1.0	-9.0	0.20	-200.0	NA	60.0	10.0	6.3
05585R	11.0	110.0	5.0	240.0	2.1	2.0	11.0	0.14	300.0	NA	-30.0	10.0	7.2
05586R	7.0	170.0	1.0	89.0	2.2	2.0	55.0	0.29	-200.0	NA	-20.0	0.5	11.9
05587R	-5.0	-10.0	14.0	0.5	1.4	4.0	-4.0	1.80	-200.0	NA	540.0	-0.2	5.0
05591R	5.0	20.0	-1.0	23.0	2.7	2.0	-4.0	0.13	-200.0	NA	30.0	0.9	3.4
05593R	5.0	10.0	1.0	21.0	2.1	2.0	-4.0	0.83	-200.0	NA	90.0	6.8	3.3
05594R	-5.0	-10.0	6.0	3.0	1.4	2.0	-4.0	0.22	-200.0	NA	240.0	28.0	3.0

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
05349R	-5.0	2.0	-2.0	9.0	2.1	-4.0	-60.0	24.0	41.0	3.2	1.2	1.0	0.2
05350R	-5.0	-2.0	-1.0	2.0	0.8	-4.0	-50.0	3.0	5.0	0.3	-0.2	1.1	0.1
05375R	-5.0	2.0	-1.0	3.4	5.6	-4.0	100.0	11.0	13.0	1.5	-0.2	0.7	0.1
05377R	-5.0	16.0	1.0	13.0	3.7	-4.0	60.0	44.0	69.0	8.0	1.2	2.8	0.4
05400R	-5.0	6.0	1.0	14.0	3.8	-4.0	110.0	44.0	82.0	7.3	1.1	2.5	0.5
05401R	-5.0	28.0	6.0	50.0	11.2	-4.0	60.0	6.0	31.0	3.4	-0.4	10.3	1.5
05402R	-5.0	2.0	-1.0	11.0	5.9	-4.0	-50.0	40.0	59.0	6.7	1.1	2.5	0.4
05403R	-5.0	8.0	-1.0	2.3	0.7	-4.0	-50.0	4.0	6.0	0.5	0.3	-0.2	-0.1
05404R	-5.0	34.0	-1.0	4.5	1.1	-4.0	-50.0	4.0	11.0	0.7	-0.3	0.5	0.1
05553R	-5.0	32.0	-1.0	11.0	2.7	39.0	1900.0	30.0	62.0	7.9	1.9	1.8	0.2
05575R	-5.0	4.0	-1.0	6.1	1.0	-4.0	-50.0	14.0	22.0	1.4	0.7	0.8	0.1
05577R	-5.0	-2.0	-1.0	2.4	0.6	-4.0	-50.0	5.0	13.0	1.1	-0.2	0.6	0.1
05578R	-5.0	-2.0	-1.0	28.0	8.2	5.0	220.0	85.0	133.0	7.9	2.1	2.3	0.3
05579R	-5.0	8.0	-1.0	440.0	15.2	-4.0	-50.0	17.0	42.0	5.4	1.6	4.1	0.5
05580R	-5.0	-2.0	-1.0	5.4	1.5	-4.0	60.0	12.0	20.0	1.2	-0.5	0.5	0.1
05581R	-5.0	24.0	-1.0	1.3	-0.8	-4.0	150.0	13.0	26.0	3.2	1.3	1.2	0.2
05582R	-5.0	18.0	-1.0	6.1	2.2	12.0	100.0	18.0	29.0	3.3	0.9	0.7	0.1
05583R	-6.0	40.0	2.0	16.0	10.8	6.0	-50.0	23.0	43.0	5.3	-0.5	4.5	0.8
05584R	-10.0	-2.0	-1.0	3.5	-2.0	11.0	90.0	7.0	19.0	1.6	-0.5	2.5	-0.1
05585R	27.0	4.0	-1.0	1.8	-1.7	7.0	60.0	6.0	20.0	1.7	-0.4	1.2	0.1
05586R	-5.0	42.0	-1.0	6.1	2.2	11.0	-50.0	15.0	24.0	3.1	-0.3	1.3	0.2
05587R	-5.0	22.0	-2.0	27.0	15.8	5.0	-70.0	43.0	87.0	9.0	1.3	4.8	0.9
05591R	-5.0	2.0	-1.0	4.0	1.1	-4.0	60.0	12.0	21.0	1.8	0.8	0.7	0.1
05593R	-5.0	8.0	-1.0	7.8	2.9	-4.0	80.0	16.0	25.0	2.5	0.5	0.9	0.2
05594R	-5.0	10.0	2.0	12.0	7.5	-4.0	-34.0	25.0	43.0	4.5	1.0	2.3	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
05596R	65.4690	146.8230	B-6	7	4	1	BULL COCKSCOMB-QTZ FLOAT WITH ASP(?)	10.0	4.0	64.0	-100.0	-0.7
05600R	65.6123	146.7949	C-6	9	5	18	GR2	-0.5	9.0	-5.0	200.0	-0.9
05901R	65.6109	146.7975	C-6	9	5	18	GR2	-0.5	4.0	-8.0	300.0	-1.8
05902R	65.6123	146.7952	C-6	9	5	18	GREISEN VLT IN GR2	-0.5	-2.0	-5.0	100.0	-0.8
05903R	65.6107	146.8126	C-6	9	4	13	GR2	-0.5	-2.0	-5.0	100.0	-0.9
05904R	65.6107	146.8126	C-6	9	4	13	FINE GRAINED BIO GR DIKE	-0.5	-2.0	-5.0	200.0	-0.9
05906R	65.6192	146.8462	C-6	9	4	11	GR1 WITH MINERALIZED JOINT SURFACES	2.5	60.0	5.0	200.0	-0.8
05907R	65.6148	146.7178	C-6	9	5	9	HEM-STAINED GR1 FLOAT	-0.5	2.0	-5.0	300.0	-0.7
05908R	65.6136	146.7233	C-6	9	5	16	ANDESITE PORPHYRY DIKE	-0.5	2.0	-7.0	400.0	3.8
05912R	65.6006	146.7054	C-6	9	5	16	ALT PORPHYRITIC DIKE	-0.5	4.0	-5.0	100.0	4.8
05915R	65.4184	146.3945	B-5	7	7	19	CRUSHED QTZT FAULT BRECCIA	-0.5	35.0	25.0	100.0	-0.5
05916R	65.4457	146.3847	B-5	7	7	7	GR FLOAT WITH INTERSTITIAL PY	-0.5	34.0	17.0	200.0	-2.0
05917R	65.4527	146.3623	B-5	7	7	8	PY AND PURPLE FL	0.5	23.0	16.0	100.0	1.6
05919R	65.5920	146.9239	C-6	9	4	21	GR WITH GREISEN	5.5	14.0	-5.0	400.0	-0.7
05920R	65.5756	146.8967	C-6	9	4	27	PYRITIC QTZT	4.0	63.0	10.0	-100.0	-0.5
05921R	65.5920	146.9239	C-6	9	4	21	(COMP) WEATHERED PY VLTS IN GR1	4.0	55.0	-5.0	300.0	-0.8
05922R	65.5962	146.9526	C-6	9	4	20	(COMP) FE-STAINED QTZT	-0.5	12.0	-7.0	1100.0	-1.2
05923R	65.4704	146.4388	B-5	8	6	35	(COMP) GREEN QTZT WITH DISSEMINATED PY	1.0	190.0	-6.0	1000.0	-0.7
05925R	65.5920	146.9239	C-6	9	4	21	FL BRECCIA IN QTZ-FELD MATRIX	1.0	9.0	-5.0	200.0	19.0
05926R	65.5915	146.9036	C-6	9	4	22	GREISEN WITH FL	8.5	16.0	16.0	500.0	-1.7
05927R	65.5894	146.8906	C-6	9	4	22	GREISEN VN WITH PY	3.0	37.0	-14.0	200.0	-3.1
05928R	65.5912	146.8759	C-6	9	4	22	SCORIACEOUS GREISEN FLOAT	7.0	280.0	44.0	1000.0	5.5
05929R	65.5919	146.8699	C-6	9	4	23	GREISEN WITH FL	3.0	52.0	9.0	200.0	2.5
05930R	65.5954	146.8656	C-6	9	4	23	GREISEN WITH TM CLOTS	4.0	34.0	-5.0	300.0	2.7
05931R	65.4833	146.9958	B-6	8	4	31	ALT QTZT WITH PY	0.5	840.0	8.0	5400.0	-3.1

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
05596R	-5.0	-10.0	1.0	13.0	-0.2	1.0	-4.0	-0.05	-200.0	22.0	-20.0	110.0	0.2
05600R	-5.0	-10.0	9.0	NA	0.7	5.0	5.0	2.40	-200.0	NA	670.0	0.2	4.4
05901R	-5.0	10.0	9.0	-0.5	1.1	6.0	-4.0	2.30	-300.0	NA	970.0	0.6	5.9
05902R	-5.0	-10.0	19.0	NA	1.8	6.0	-4.0	2.00	-200.0	NA	890.0	0.3	5.2
05903R	-5.0	-10.0	5.0	NA	0.8	6.0	-4.0	2.50	-200.0	NA	720.0	-0.2	3.0
05904R	-5.0	-10.0	6.0	NA	0.6	6.0	-4.0	2.50	-200.0	NA	650.0	-0.2	2.9
05906R	-5.0	-10.0	3.0	NA	5.7	4.0	-4.0	0.21	-200.0	NA	320.0	4.4	3.6
05907R	-5.0	-10.0	4.0	NA	11.4	2.0	6.0	-0.05	-200.0	NA	130.0	2.9	2.9
05908R	33.0	150.0	8.0	NA	6.8	-1.0	-4.0	1.90	-200.0	NA	180.0	0.5	26.4
05912R	43.0	360.0	-1.0	NA	7.3	5.0	-4.0	0.07	-200.0	NA	-20.0	5.5	47.7
05915R	-5.0	230.0	5.0	0.5	0.4	1.0	-4.0	-0.05	-200.0	NA	20.0	0.9	0.7
05916R	-5.0	210.0	5.0	6.5	0.8	2.0	-4.0	3.30	-300.0	NA	510.0	0.3	2.1
05917R	-5.0	250.0	3.0	21.0	0.6	-1.0	-4.0	-0.05	-200.0	NA	50.0	2.2	1.6
05919R	-5.0	-10.0	35.0	27.0	5.2	4.0	-4.0	0.05	-200.0	NA	1900.0	2.7	9.6
05920R	-5.0	-10.0	-1.0	100.0	2.9	2.0	-4.0	-0.05	-200.0	NA	-20.0	6.5	1.3
05921R	5.0	-10.0	3.0	97.0	9.5	4.0	4.0	0.17	-200.0	NA	260.0	1.5	5.6
05922R	-5.0	90.0	14.0	35.0	4.5	8.0	29.0	0.63	-200.0	NA	390.0	3.5	23.3
05923R	15.0	70.0	47.0	170.0	4.1	5.0	-4.0	1.10	-200.0	NA	310.0	0.7	14.8
05925R	-5.0	20.0	3.0	NA	0.6	-1.0	-4.0	-0.05	-200.0	NA	90.8	-5.0	0.0
05926R	-5.0	150.0	-1.0	26.0	5.0	1.0	-4.0	0.09	-200.0	NA	490.0	2.7	9.5
05927R	-5.0	50.0	3.0	10.0	10.0	5.0	-4.0	6.00	-400.0	NA	-90.0	1.1	5.4
05928R	-5.0	100.0	2.0	550.0	12.0	2.0	6.0	0.07	-400.0	NA	250.0	45.0	10.4
05929R	-5.0	120.0	-1.0	900.0	11.8	2.0	-4.0	-0.05	-200.0	NA	70.0	11.0	4.8
05930R	-5.0	150.0	4.0	170.0	7.0	2.0	-4.0	-0.05	-200.0	NA	640.0	1.6	5.1
05931R	7.0	90.0	3.0	35.0	5.6	22.0	-4.0	0.34	-300.0	NA	800.0	170.0	7.3

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
05596R	-5.0	-2.0	-1.0	-0.5	-1.1	16.0	-50.0	-1.0	-3.0	0.1	-0.3	-0.5	-0.1
05600R	-5.0	6.0	1.0	42.0	5.9	-4.0	-50.0	26.0	66.0	7.6	-0.6	10.2	1.3
05901R	-5.0	12.0	8.0	58.0	15.5	-4.0	-70.0	27.0	73.0	11.6	-0.7	12.1	1.8
05902R	-5.0	14.0	4.0	30.0	9.3	-4.0	-50.0	20.0	54.0	7.2	-0.5	10.1	1.4
05903R	8.0	8.0	4.0	39.0	11.9	-4.0	130.0	15.0	43.0	6.5	-0.6	9.8	1.4
05904R	-5.0	14.0	4.0	49.0	15.5	-4.0	70.0	17.0	51.0	5.8	-0.6	9.6	1.4
05906R	5.0	72.0	-1.0	51.0	28.7	5.0	570.0	77.0	132.0	9.0	0.5	6.7	1.1
05907R	-5.0	24.0	1.0	37.0	19.6	-4.0	1100.0	62.0	134.0	12.2	-0.4	8.7	1.2
05908R	-5.0	2.0	-1.0	8.1	2.7	150.0	120.0	43.0	91.0	8.9	1.0	6.0	0.7
05912R	-5.0	72.0	1.0	3.5	1.8	-4.0	810.0	34.0	69.0	6.7	2.4	1.3	0.1
05915R	-5.0	-2.0	-1.0	2.0	0.8	-4.0	-50.0	8.0	10.0	0.8	0.3	0.2	-0.1
05916R	-5.0	66.0	8.0	17.0	23.0	-4.0	-100.0	15.0	37.0	4.5	-0.8	4.5	0.8
05917R	-5.0	28.0	1.0	4.4	7.0	-4.0	-50.0	6.0	12.0	1.6	-0.2	1.6	0.3
05919R	-6.0	260.0	15.0	17.0	18.0	7.0	120.0	30.0	107.0	13.2	-0.5	29.1	3.8
05920R	-5.0	8.0	-1.0	2.9	1.2	-4.0	-50.0	5.0	13.0	0.9	-0.2	0.6	0.1
05921R	-5.0	820.0	-1.0	29.0	12.7	7.0	560.0	54.0	103.0	7.2	-0.6	8.5	1.2
05922R	5.0	10.0	2.0	23.0	7.2	6.0	70.0	79.0	131.0	8.3	1.5	4.2	0.7
05923R	-5.0	66.0	-1.0	16.0	5.0	6.0	50.0	57.0	94.0	5.7	1.2	2.5	0.5
05925R	0.0	6.0	-1.0	2.5	5.9	5.0	130.0	13.0	35.0	4.2	1.0	9.5	1.1
05926R	-5.0	110.0	2.0	14.0	36.6	6.0	1100.0	59.0	81.0	15.3	-0.6	12.2	2.4
05927R	-6.0	92.0	-3.0	43.0	20.1	-5.0	820.0	98.0	154.0	23.7	-1.2	11.6	1.9
05928R	-5.0	100.0	-2.0	34.0	161.0	8.0	9500.0	190.0	272.0	38.3	-1.1	36.5	7.1
05929R	-5.0	160.0	-1.0	23.0	28.7	6.0	3600.0	36.0	67.0	8.0	-0.5	5.4	1.2
05930R	-5.0	130.0	2.0	38.0	21.9	7.0	570.0	45.0	85.0	14.1	-0.5	8.4	1.5
05931R	-11.0	-2.0	-2.0	71.0	26.0	31.0	-80.0	180.0	272.0	25.6	5.6	4.3	-0.1

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Co(%)
06435R	65.4813	146.5283	B-6	8	6	33	(COMP) GRAPH SCHIST WITH FEOX AND PY	-0.5	3.0	-9.0	1000.0	-1.9
06436R	65.4821	146.5255	B-6	8	6	33	(COMP) LIM-SULFATE-STAINED GRAPH SCHIST	-0.5	3.0	-7.0	600.0	-1.6
06440R	65.4254	146.6335	B-6	7	5	24	RUSTY QTZ-MICA SCHIST WITH ASP AND PY	-0.5	3.0	-6.0	400.0	-1.4
06441R	65.6222	146.6523	C-6	9	5	11	GAR-PYX SKARN ALT QTZT BOULDER	4.5	4.0	-8.0	200.0	12.0
06442R	65.6222	146.6527	C-6	9	5	11	(COMP) RHYOLITE WITH MINOR FL	-0.5	2.0	-6.0	900.0	-1.2
06443R	65.6222	146.6523	C-6	9	5	11	RHYOLITE PORPHYRY FLOAT	-0.5	2.0	-6.0	1200.0	-1.2
06444R	65.6210	146.6533	C-6	9	5	11	(COMP) RHYOLITE PORPHYRY	-0.5	2.0	-7.0	400.0	-1.3
06445R	65.6210	146.6533	C-6	9	5	11	VUGGY ALT RHYOLITE PORPHYRY	-0.5	-2.0	-7.0	400.0	-1.6
06446R	65.6179	146.6759	C-6	9	5	10	(COMP) PERVASIVELY ALT GR1 OR GR2	2.5	-2.0	-9.0	200.0	-2.0
06449R	65.6004	146.7593	C-6	9	5	17	CHL ALT GR WITH ASP AND CPY/PO(?)	18.0	13000.0	40.0	200.0	-2.4
06450R	65.6005	146.7549	C-6	9	5	17	CHL ALT GR2	1.0	66.0	-7.0	200.0	-1.6
06452R	65.4345	146.4979	B-5	7	6	15	(COMP) SMALL SIL VN/BRECCIA IN GR2	7.0	58.0	-6.0	100.0	-1.1
06457R	65.4324	146.5401	B-6	7	6	16	ORANGE GR2 WITH TM VNS AND EP VLTS	-0.5	2.0	-8.0	-100.0	-1.7
06459R	65.6810	146.5760	C-6	10	6	19	(COMP, 100 SQ FT) STOCKWORK QTZ VN/HFLS	-0.5	3.0	-5.0	200.0	-0.7
06460R	65.6806	146.5851	C-6	10	6	19	(COMP) CALC-SIL HFLS WITH EP VNS	1.0	2.0	-8.0	2900.0	9.2
06461R	65.6806	146.5851	B-6	10	6	19	(COMP, 200 BY 200 FT AREA) ALT GR2	-0.5	-2.0	-8.0	300.0	3.2
06462R	65.6776	146.5986	C-6	10	5	24	(COMP) VNO HFLS, SOME WITH AXINITE	-0.5	20.0	-8.0	500.0	-1.6
06463R	65.6777	146.5982	C-6	10	5	24	(COMP) FELD VN IN GR2 DIKE WITH TM CLOTS	-0.5	2.0	-7.0	400.0	2.1
06464R	65.6855	146.6125	C-6	10	5	24	(COMP) HFLS WITH BLACK VNS	0.5	4.0	-5.0	1300.0	5.1
06465R	65.6855	146.6125	C-6	10	5	24	CALC-SIL HFLS WITH ACT-AXINITE-EP VLTS	1.0	2.0	6.0	8100.0	7.8
06466R	65.6905	146.6095	C-6	10	5	13	(COMP) CHL ALT DIKE WITH BLACK VNS	0.5	-2.0	-5.0	2300.0	3.3
06467R	65.6769	146.6099	C-6	10	5	24	FL SKARN	0.5	60.0	-5.0	300.0	21.0
06468R	65.6769	146.6099	C-6	10	5	24	IDOCRASE-GAR SKARNOID IN MARBLE RUBBLE	1.0	12.0	-5.0	100.0	18.0
06469R	65.6769	146.6099	C-6	10	5	24	LAYERED FL-RICH RX REPLACING MARBLE	1.0	3.0	-5.0	100.0	26.0
06470R	65.6769	146.6099	C-6	10	5	24	CHL-QTZ-FL "SKARN"	1.5	5.0	-5.0	100.0	21.0

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
06435R	-5.0	330.0	3.0	13.0	2.9	7.0	5.0	1.20	-300.0	NA	150.0	0.7	11.4
06436R	-5.0	320.0	3.0	19.0	3.3	4.0	-4.0	0.98	-200.0	NA	70.0	0.4	8.1
06440R	5.0	30.0	4.0	13.0	1.8	6.0	-4.0	0.98	-200.0	NA	140.0	0.2	5.9
06441R	19.0	90.0	69.0	-0.5	11.6	2.0	-4.0	0.47	300.0	NA	-40.0	4.4	2.5
06442R	-5.0	160.0	14.0	-0.5	1.0	4.0	-4.0	0.96	-200.0	NA	970.0	-0.2	2.3
06443R	-5.0	140.0	13.0	-0.5	1.0	5.0	-4.0	0.82	-200.0	NA	1000.0	1.0	2.3
06444R	-5.0	150.0	9.0	-0.5	1.0	5.0	-4.0	1.80	-200.0	NA	760.0	0.3	2.4
06445R	-5.0	180.0	8.0	-0.5	1.1	5.0	-4.0	1.70	-200.0	NA	690.0	-0.2	2.3
06446R	-5.0	150.0	2.0	7.0	8.5	5.0	-4.0	-0.05	-200.0	NA	350.0	0.6	5.3
06449R	16.0	100.0	35.0	2900.0	13.6	3.0	38.0	-0.05	-400.0	NA	-70.0	8.9	3.1
06450R	-5.0	150.0	5.0	300.0	5.0	4.0	-4.0	-0.05	-200.0	NA	600.0	0.3	5.5
06452R	-5.0	250.0	6.0	14.0	0.7	1.0	-4.0	1.10	-200.0	NA	320.0	2.8	5.4
06457R	-5.0	10.0	23.0	0.5	1.0	3.0	-4.0	2.10	-200.0	NA	680.0	0.3	4.3
06459R	-5.0	250.0	1.0	2.5	1.0	5.0	-4.0	-0.05	-200.0	NA	-20.0	1.8	1.9
06460R	8.0	150.0	11.0	26.0	8.0	5.0	-4.0	1.00	-200.0	NA	130.0	0.3	14.6
06461R	-5.0	230.0	3.0	1.5	0.8	5.0	-4.0	2.30	-200.0	NA	380.0	0.2	3.8
06462R	-5.0	240.0	8.0	9.5	1.1	3.0	-4.0	1.10	-200.0	NA	420.0	0.9	9.6
06463R	-5.0	210.0	3.0	-0.5	0.4	3.0	-4.0	1.90	-200.0	NA	650.0	0.2	3.3
06464R	17.0	130.0	6.0	6.0	11.5	7.0	-4.0	1.00	-200.0	NA	170.0	0.3	12.1
06465R	22.0	70.0	19.0	-0.5	12.5	8.0	5.0	0.52	-200.0	NA	310.0	1.8	11.3
06466R	-5.0	120.0	3.0	6.0	4.8	3.0	-4.0	0.85	-200.0	NA	90.0	0.2	2.0
06467R	-5.0	80.0	2.0	12.0	1.5	-1.0	-4.0	-0.05	-200.0	NA	80.0	1.0	1.9
06468R	-5.0	130.0	-1.0	7.0	6.0	4.0	-4.0	-0.05	-200.0	NA	-20.0	3.0	5.6
06469R	8.0	40.0	2.0	68.0	2.4	3.0	-4.0	-0.05	-200.0	NA	130.0	0.9	3.3
06470R	16.0	90.0	1.0	270.0	5.0	6.0	-4.0	-0.05	-200.0	NA	30.0	2.6	5.9

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
06435R	-5.0	-2.0	-2.0	14.0	1.8	-4.0	-70.0	49.0	79.0	7.1	1.3	2.1	0.4
06436R	-5.0	-2.0	-1.0	12.0	2.7	-4.0	120.0	33.0	50.0	4.2	-0.6	1.6	0.3
06440R	-5.0	-2.0	-1.0	11.0	2.1	4.0	-0.5	26.0	41.0	3.6	0.6	1.5	0.3
06441R	-5.0	200.0	-1.0	2.7	2.4	-4.0	1300.0	6.0	18.0	0.9	0.8	0.6	0.1
06442R	-5.0	22.0	5.0	54.0	12.2	-4.0	-50.0	12.0	44.0	5.4	-0.5	11.3	1.7
06443R	-5.0	44.0	6.0	57.0	15.5	6.0	-50.0	11.0	51.0	4.8	-0.4	11.0	1.7
06444R	-5.0	30.0	6.0	55.0	10.9	-4.0	-60.0	12.0	46.0	6.3	-0.5	11.7	1.8
06445R	-5.0	22.0	5.0	59.0	11.0	-4.0	-70.0	21.0	61.0	8.8	-0.6	12.7	2.0
06446R	-5.0	100.0	-1.0	51.0	6.3	9.0	350.0	110.0	202.0	14.4	-0.8	5.7	0.7
06449R	-14.0	4000.0	-2.0	25.0	16.4	33.0	1800.0	101.0	167.0	16.3	2.4	14.7	1.8
06450R	-5.0	320.0	3.0	55.0	15.2	6.0	250.0	46.0	85.0	11.2	-0.5	10.0	1.5
06452R	-6.0	4300.0	2.0	4.7	28.0	6.0	140.0	8.0	20.0	2.4	-0.4	4.5	0.9
06457R	5.0	34.0	5.0	18.0	9.6	4.0	-70.0	21.0	44.0	5.3	-0.7	4.4	0.7
06459R	-5.0	14.0	-1.0	6.3	1.5	-4.0	50.0	15.0	36.0	2.4	0.9	0.6	0.1
06460R	-5.0	48.0	2.0	17.0	3.8	-4.0	240.0	55.0	105.0	12.4	0.9	5.5	0.8
06461R	-5.0	.4.0	5.0	26.0	8.8	-4.0	120.0	24.0	62.0	7.9	-0.7	9.5	1.5
06462R	-5.0	30.0	-1.0	12.0	5.0	5.0	120.0	42.0	69.0	7.0	0.8	3.2	0.5
06463R	-5.0	-2.0	4.0	24.0	12.3	-4.0	-70.0	22.0	49.0	7.3	-0.6	8.8	1.6
06464R	-5.0	78.0	1.0	7.9	3.5	4.0	240.0	45.0	107.0	10.6	1.3	11.1	1.4
06465R	-5.0	190.0	1.0	9.1	6.2	15.0	330.0	60.0	122.0	8.8	1.9	6.8	0.9
06466R	-5.0	88.0	1.0	7.0	1.0	10.0	130.0	8.0	20.0	2.0	-0.2	1.8	0.3
06467R	-5.0	-2.0	-1.0	3.4	1.8	10.0	-50.0	18.0	28.0	2.4	1.4	1.5	0.2
06468R	-5.0	140.0	1.0	13.0	5.1	4.0	120.0	20.0	34.0	3.1	1.1	1.5	0.2
06469R	-5.0	28.0	1.0	6.3	2.2	-4.0	7200.0	20.0	35.0	2.4	1.4	2.1	0.3
06470R	-5.0	30.0	2.0	11.0	2.8	9.0	7900.0	32.0	62.0	3.4	1.3	2.9	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
06471R	65.6767	146.6090	C-6	10	5	24	SULFIDE-BEARING SKARN	3.0	47.0	-6.0	-100.0	9.1
06472R	65.6280	146.7101	C-6	9	5	9	(COMP) QTZ-CHL GREISEN VN	4.0	-2.0	-5.0	400.0	-0.9
06473R	65.6280	146.7101	C-6	9	5	9	(2 FT CHAN) CHL GREISEN IN GR1	14.0	5.0	-5.0	300.0	-0.8
06474R	65.6280	146.7101	C-6	9	5	9	(1 FT CHAN) MO-BEARING CHL.GREISEN ZONE	3.5	-2.0	-5.0	400.0	1.6
06475R	65.6280	146.7101	C-6	9	5	9	KSPAR-BIO-BERYL PEGMATITE POD	0.5	-2.0	-5.0	-100.0	-0.8
06476R	65.6280	146.7101	C-6	9	5	9	FL-TZ(?)-BEARING APLITE, SOME PEGMATITE	0.5	-2.0	-5.0	100.0	-0.7
06477R	65.6280	146.7101	C-6	9	5	9	BIO-RICH PEGMATITE POD	1.5	-2.0	130.0	200.0	1.8
06478R	65.4115	145.9659	B-4	7	9	30	(COMP) QTZ VN MATERIAL IN QTZ-BIO SCHIST	-0.5	3.0	-5.0	100.0	-0.5
06479R	65.4164	145.9492	B-4	7	9	20	(COMP) QTZ VNS IN BIO-QTZ SCHIST	-0.5	-2.0	-5.0	-100.0	-0.5
06480R	65.4447	145.8972	B-4	7	9	9	(COMP) ALT RHYOLITE DIKE OR PLUG	-0.5	17.0	-5.0	200.0	-1.1
06481R	65.4500	145.8909	B-4	7	9	9	(COMP) PYX HFLS/SKARN WITH PO	2.0	2.0	280.0	100.0	11.0
06482R	65.4500	145.8909	B-4	7	9	9	(COMP) PYX-GAR SKARN WITH SCHEELITE	1.0	3.0	120.0	200.0	15.0
06483R	65.4500	145.8909	B-4	7	9	9	(COMP) GAR-PYX SKARN WITH SCHEELITE	0.5	-2.0	29.0	-200.0	11.0
06484R	65.4500	145.8909	B-4	7	9	9	CSG GAR DOMINANT SKARN WITH QTZ	0.5	3.0	17.0	-100.0	20.0
06485R	65.4500	145.8909	B-4	7	9	9	(COMP) SKARN, MIXED TYPES	1.0	3.0	47.0	100.0	13.0
06486R	65.4500	145.8909	B-4	7	9	9	(COMP) SKARN, MIXED TYPES	-0.5	-2.0	-9.0	-200.0	14.0
06487R	65.4500	145.8909	B-4	7	9	9	(COMP) SKARN, MIXED TYPES	1.0	5.0	54.0	100.0	14.0
06488R	65.4500	145.8909	B-4	7	9	9	(COMP) SKARN, MIXED TYPES	0.5	-2.0	-7.0	100.0	14.0
06489R	65.4499	145.8906	B-4	7	9	9	(COMP) SKARN, MIXED TYPES	1.0	-2.0	48.0	-100.0	17.0
06593R	65.4500	145.8909	B-4	7	9	9	(COMP) RHYOLITE FLOAT/BIO HFLS CLAST	-0.5	12.0	-9.0	300.0	11.0
06594R	65.4500	145.8909	B-4	7	9	9	(COMP) QTZ VN/BRECCIA NEAR RHYOLITE	-0.5	8.0	-5.0	100.0	-0.5
06595R	65.4500	145.8909	B-4	7	9	9	(COMP) SKARN, MIXED TYPES	-0.5	4.0	280.0	-200.0	13.0
06596R	65.4500	145.8909	B-4	7	9	9	(COMP) SKARN, MIXED TYPES	-0.5	-2.0	-9.0	-100.0	18.0
06597R	65.4499	145.8906	B-4	7	9	9	(COMP) ALT RHYOLITE PLUG	-0.5	13.0	9.0	100.0	-1.0
06598R	65.4465	145.8828	B-4	7	9	10	(COMP) MASSIVE GAR-PYX SKARN	3.0	9.0	420.0	-200.0	13.0

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
06471R	17.0	40.0	2.0	53.0	9.7	12.0	6.0	2.50	-300.0	NA	-60.0	1.3	3.0
06472R	-5.0	190.0	23.0	11.0	5.5	7.0	4.0	0.11	-200.0	NA	1400.0	0.7	14.0
06473R	-5.0	180.0	16.0	71.0	5.5	5.0	21.0	0.14	-200.0	NA	1000.0	0.6	7.9
06474R	-5.0	200.0	49.0	6.0	5.2	7.0	410.0	0.28	-200.0	NA	1500.0	0.8	9.7
06475R	-5.0	70.0	42.0	5.5	1.9	-1.0	5.0	0.79	-200.0	NA	750.0	0.6	13.8
06476R	-5.0	60.0	16.0	4.0	1.3	5.0	-4.0	0.71	-200.0	NA	410.0	0.2	2.9
06477R	-5.0	140.0	59.0	4.5	6.9	3.0	59.0	1.00	-200.0	NA	1900.0	1.3	15.4
06478R	-5.0	350.0	-1.0	0.5	0.4	1.0	-4.0	0.08	-200.0	NA	-20.0	0.4	0.5
06479R	-5.0	310.0	-1.0	2.0	0.5	-1.0	-4.0	0.12	-200.0	NA	-20.0	0.3	0.7
06480R	-5.0	140.0	10.0	0.5	0.9	5.0	-4.0	0.92	-200.0	NA	950.0	1.2	1.3
06481R	18.0	130.0	9.0	310.0	11.9	4.0	6.0	0.14	-200.0	NA	-30.0	1.8	6.4
06482R	15.0	190.0	3.0	40.0	10.5	-1.0	20.0	0.07	-200.0	NA	-20.0	0.9	3.2
06483R	12.0	220.0	1.0	39.0	7.2	-1.0	20.0	-0.05	-200.0	NA	-20.0	0.4	2.7
06484R	12.0	190.0	1.0	12.0	7.4	3.0	-4.0	0.07	-200.0	NA	-20.0	0.6	10.3
06485R	14.0	140.0	2.0	32.0	9.3	-1.0	-4.0	-0.05	-200.0	NA	-20.0	0.9	4.5
06486R	11.0	190.0	1.0	14.0	8.4	-1.0	11.0	-0.05	-200.0	NA	-20.0	0.3	4.1
06487R	14.0	130.0	5.0	50.0	9.9	-1.0	45.0	-0.05	-200.0	NA	-20.0	0.8	4.7
06488R	16.0	140.0	2.0	82.0	11.9	-1.0	4.0	-0.05	-200.0	NA	-20.0	0.2	4.2
06489R	11.0	130.0	1.0	170.0	10.7	4.0	18.0	-0.05	200.0	NA	-20.0	0.5	4.2
06593R	20.0	90.0	16.0	170.0	5.4	6.0	-4.0	0.98	-200.0	NA	90.0	0.3	23.2
06594R	-5.0	10.0	1.0	26.0	0.7	-1.0	-4.0	-0.05	-200.0	NA	-20.0	3.6	1.0
06595R	16.0	30.0	2.0	130.0	11.5	-1.0	-4.0	-0.05	-200.0	NA	-20.0	0.9	5.9
06596R	16.0	40.0	5.0	120.0	9.4	-1.0	10.0	-0.05	-200.0	NA	-30.0	1.2	9.0
06597R	-5.0	10.0	14.0	2.0	0.8	5.0	-4.0	0.08	-200.0	NA	1100.0	1.4	1.9
06598R	18.0	20.0	2.0	28.0	11.4	-1.0	8.0	-0.05	-200.0	NA	-30.0	0.6	3.4

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
06471R	-5.0	150.0	3.0	14.0	2.7	14.0	2100.0	17.0	40.0	2.3	1.3	2.6	0.3
06472R	-5.0	310.0	3.0	62.0	35.1	6.0	310.0	44.0	100.0	12.5	0.7	15.7	2.4
06473R	-5.0	690.0	2.0	49.0	49.0	4.0	1000.0	44.0	93.0	11.3	-0.6	13.6	2.3
06474R	-6.0	210.0	5.0	62.0	27.4	-4.0	490.0	50.0	109.0	14.0	-0.7	16.3	2.3
06475R	6.0	170.0	2.0	24.0	4.1	110.0	90.0	21.0	39.0	3.2	-0.6	3.0	0.4
06476R	36.0	46.0	1.0	38.0	8.1	18.0	70.0	23.0	46.0	5.6	-0.5	5.2	0.7
06477R	-9.0	46.0	15.0	41.0	20.8	580.0	160.0	56.0	134.0	23.2	-0.5	15.4	2.4
06478R	-5.0	-2.0	-1.0	1.6	-0.5	-4.0	-50.0	3.0	5.0	0.6	-0.2	-0.2	-0.1
06479R	-5.0	-2.0	1.0	0.8	0.7	-4.0	-50.0	3.0	4.0	0.7	0.2	1.6	0.2
06480R	-5.0	52.0	5.0	42.0	20.8	4.0	100.0	21.0	47.0	6.9	0.5	8.4	1.4
06481R	-6.0	110.0	1.0	11.0	3.2	170.0	230.0	32.0	54.0	4.6	1.6	1.3	0.2
06482R	-10.0	110.0	-1.0	3.3	1.2	2300.0	240.0	9.0	28.0	2.5	1.1	2.1	0.3
06483R	-10.0	94.0	-1.0	2.9	1.7	3200.0	200.0	7.0	29.0	2.0	1.1	1.0	0.2
06484R	-22.0	270.0	1.0	9.8	2.1	92.0	240.0	40.0	54.0	5.1	1.1	2.4	0.4
06485R	-6.0	140.0	-1.0	4.9	1.1	950.0	220.0	15.0	19.0	-0.1	1.0	1.6	0.2
06486R	-8.0	92.0	-1.0	4.5	1.3	2000.0	200.0	12.0	36.0	2.3	0.7	1.1	-0.1
06487R	-6.0	190.0	-1.0	6.8	1.1	850.0	160.0	10.0	21.0	3.3	1.3	1.5	0.2
06488R	-6.0	150.0	1.0	5.8	1.2	710.0	310.0	12.0	25.0	1.9	0.4	0.7	0.1
06489R	-6.0	220.0	-1.0	6.1	2.6	540.0	250.0	19.0	36.0	3.5	1.3	1.3	0.3
06593R	-5.0	86.0	-1.0	17.0	3.6	6.0	190.0	53.0	93.0	9.5	1.8	4.0	0.6
06594R	-5.0	12.0	-1.0	1.4	-0.5	5.0	27.0	4.0	8.0	0.8	0.4	0.3	-0.1
06595R	16.0	120.0	-1.0	6.8	1.3	700.0	270.0	21.0	32.0	2.4	0.4	1.3	0.2
06596R	-8.0	230.0	1.0	11.0	2.4	890.0	250.0	38.0	71.0	5.1	1.0	1.8	0.3
06597R	-5.0	64.0	5.0	40.0	15.2	7.0	45.0	20.0	52.0	8.0	-0.3	11.3	1.7
06598R	-6.0	120.0	-1.0	4.1	2.5	870.0	310.0	11.0	26.0	0.9	0.7	0.9	0.2

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
06599R	65.4326	146.5958	B-6	7	6	18	RUSTY QTZ VNS IN QTZT HFLS	-0.5	2.0	-5.0	200.0	-0.8
06600R	65.6359	146.7055	C-6	9	5	4	GREISEN FLOAT IN GR1 AND HFLS	9.5	7.0	-5.0	300.0	-1.1
06601R	65.6124	146.7916	C-6	9	5	18	RUSTY GREISEN IN CONTACT OF GR1 AND GR2	1.0	2.0	-5.0	200.0	-0.6
06602R	65.6148	146.7857	C-6	9	5	7	GREISEN FLOAT IN GR2 WITH FL	3.0	8.0	-5.0	-100.0	-0.9
06603R	65.4910	146.2725	B-5	8	7	27	BULL QTZ IN META-GRIT FLOAT	-0.5	-2.0	-5.0	-100.0	-0.5
06604R	65.4570	145.8815	B-4	7	9	3	RUSTY QTZ FLOAT WITH POSSIBLE SB-STAIN	-0.5	2.0	5.0	-100.0	-0.5
06605R	65.5587	146.4323	C-5	9	6	35	RUSTY BRECCIATED FELSIC PORPHYRITIC RK	5.5	15.0	5.0	300.0	-0.6
06606R	65.5587	146.4323	C-5	9	6	35	RUSTY BRECCIATED FELSIC PORPHYTITIC RK	0.5	10.0	9.0	200.0	-0.5
06611R	65.4291	146.1658	B-5	9	7	18	RUSTY QTZ MATERIAL FROM FROST BOIL	1.0	2.0	-5.0	100.0	-0.6
06612R	65.4488	146.0730	B-5	7	8	10	DARK GRAY PHYLLITE WITH RUSTY QTZ AND PY	0.5	-2.0	-5.0	-100.0	-0.5
06616R	65.4420	146.0730	B-5	7	8	10	DISCORDENT RUSTY QTZ VN IN BLACK SCHIST	-0.5	8.0	-5.0	100.0	-0.5
06617R	65.4438	146.0743	B-5	7	8	10	CONCORDEND RUSTY QTZ VN IN BLACK SCHIST	-0.5	7.0	-8.0	200.0	-1.6
06618R	65.4470	146.0826	B-5	7	8	10	CONCORDENT RUSTY QTZ VN IN GRAPH SCHIST	-0.5	-2.0	-5.0	100.0	-0.6
06619R	65.4474	146.0753	B-5	7	8	10	SMALL CONCORDENT QTZ VN IN BLACK SCHIST	-0.5	-2.0	-8.0	600.0	-1.5
06620R	65.4474	146.0753	B-5	7	8	10	BEDDED RUSTY BLACK QTZT IN MASSIVE QTZT	-0.5	-2.0	-8.0	700.0	-1.4
06621R	65.4538	146.0654	B-5	7	8	10	INTERBEDDED QTZT/GRAPH SCHIST/MICA QTZT	-0.5	21.0	-10.0	1000.0	-1.8
06622R	65.4590	146.0641	B-5	7	8	3	MINERALIZED WHITE SCHIST	-0.5	7.0	-6.0	400.0	-1.1
06623R	65.4590	146.0641	B-5	7	8	3	MINERALIZED WHITE SCHIST	-0.5	6.0	-8.0	800.0	-1.5
06624R	65.4589	146.0645	B-5	7	8	3	SULFIDE-RICH WHITE QTZT/SCHIST	-0.5	3.0	-5.0	-100.0	1.0
06625R	65.4589	146.0645	B-5	7	8	3	CONCORDENT QTZ VN IN WHITE SCHIST	-0.5	13.0	7.0	200.0	-0.8
06626R	65.4566	146.0603	B-5	7	8	3	RUSTY VUGGY QTZ-CARB VNS	-0.5	12.0	7.0	100.0	1.7
06627R	65.4590	146.0641	B-5	7	8	3	RUSTY SULFUREOUS BLACK SCHIST AND QTZT	-0.5	4.0	-10.0	800.0	-2.0
06628R	65.4417	146.0727	B-5	7	8	10	SULFIDE-BEARING LAMINATED WHITE QTZT	-0.5	-2.0	8.0	200.0	-0.8
06629R	65.4417	146.0727	B-5	7	8	10	QTZ VN WITH PY, CPY, AND ASP	1.5	-2.0	-5.0	-100.0	-0.5
14951R	65.5945	146.7510	C-6	9	5	20	(COMP) CHL ALT GR1	1.5	7.0	-5.0	200.0	-0.8

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
06599R	-5.0	10.0	2.0	12.0	0.9	2.0	-4.0	0.36	-200.0	NA	-20.0	-0.2	2.2
06600R	-5.0	-10.0	9.0	400.0	8.5	7.0	17.0	-0.05	-200.0	NA	770.0	0.6	5.2
06601R	-5.0	-10.0	4.0	13.0	6.6	6.0	4.0	-0.05	-200.0	NA	420.0	0.5	6.6
06602R	5.0	-10.0	3.0	46.0	8.5	7.0	17.0	-0.05	-200.0	NA	390.0	1.0	4.4
06603R	-5.0	-10.0	-1.0	13.0	0.2	-1.0	-4.0	-0.05	-200.0	NA	-20.0	-0.2	0.2
06604R	-5.0	-10.0	-1.0	15.0	0.3	-1.0	-4.0	-0.05	-200.0	NA	-20.0	-0.2	0.4
06605R	-5.0	-10.0	15.0	-0.5	0.9	2.0	130.0	0.94	-200.0	NA	320.0	1.8	2.8
06606R	-5.0	-10.0	28.0	-0.5	0.4	1.0	-4.0	0.22	-200.0	NA	190.0	1.6	1.3
06611R	6.0	20.0	-1.0	29.0	1.8	4.0	-4.0	0.16	-200.0	28.0	50.0	0.7	2.8
06612R	-5.0	10.0	-1.0	5.0	0.3	1.0	-4.0	0.19	-200.0	-2.0	-20.0	0.2	0.5
06616R	-5.0	10.0	-1.0	19.0	1.0	1.0	-4.0	-0.05	-200.0	26.0	-20.0	2.3	1.4
06617R	10.0	30.0	-1.0	32.0	2.6	2.0	-4.0	4.00	-200.0	24.0	110.0	0.8	4.7
06618R	6.0	20.0	-1.0	31.0	2.0	1.0	-4.0	0.06	-200.0	4.0	30.0	0.4	2.9
06619R	10.0	80.0	4.0	25.0	4.4	4.0	5.0	0.12	-200.0	34.0	160.0	0.6	14.0
06620R	7.0	80.0	4.0	35.0	4.1	5.0	-4.0	0.20	-200.0	12.0	210.0	0.8	16.4
06621R	13.0	100.0	5.0	40.0	3.8	7.0	-5.0	0.22	-300.0	32.0	270.0	4.0	19.9
06622R	9.0	50.0	4.0	59.0	4.1	4.0	-4.0	0.14	-200.0	12.0	90.0	3.9	9.3
06623R	12.0	60.0	4.0	65.0	3.6	6.0	-4.0	0.62	-200.0	10.0	190.0	4.2	13.9
06624R	-5.0	10.0	1.0	8.5	0.8	1.0	-4.0	-0.05	-200.0	4.0	-20.0	5.0	1.6
06625R	-5.0	20.0	2.0	16.0	2.4	5.0	-4.0	-0.05	-200.0	4.0	20.0	4.4	2.0
06626R	-5.0	10.0	1.0	20.0	1.5	2.0	-4.0	-0.05	-200.0	4.0	-20.0	3.5	1.8
06627R	16.0	90.0	3.0	43.0	5.0	6.0	6.0	0.67	-300.0	10.0	180.0	2.2	17.3
06628R	-5.0	20.0	-1.0	260.0	0.5	3.0	-4.0	0.55	-200.0	6.0	30.0	0.2	1.4
06629R	-5.0	10.0	-1.0	1500.0	0.3	1.0	-4.0	-0.05	-200.0	40.0	-20.0	-0.2	0.1
14951R	-5.0	-10.0	4.0	24.0	9.5	5.0	13.0	0.06	-200.0	NA	200.0	1.6	4.6

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
06599R	-5.0	8.0	-1.0	4.2	1.1	-4.0	50.0	8.0	16.0	1.2	0.5	0.5	0.1
06600R	-5.0	240.0	1.0	68.0	32.7	13.0	630.0	110.0	186.0	9.5	-0.8	6.2	1.1
06601R	-5.0	210.0	2.0	59.0	20.1	7.0	420.0	35.0	76.0	8.1	0.5	11.6	1.6
06602R	-5.0	260.0	1.0	63.0	21.4	9.0	400.0	84.0	148.0	9.1	-0.6	6.5	0.9
06603R	-5.0	-2.0	-1.0	0.7	-0.5	-4.0	-50.0	1.0	-3.0	0.1	-0.2	-0.2	-0.1
06604R	-5.0	-2.0	-1.0	0.5	-0.5	9.0	-50.0	1.0	-3.0	0.1	-0.2	-0.2	-0.1
06605R	-5.0	12.0	3.0	11.0	13.5	11.0	-50.0	14.0	21.0	1.3	0.6	1.3	0.3
06606R	-5.0	4.0	1.0	8.5	3.8	-4.0	-50.0	11.0	16.0	1.0	0.3	0.8	0.1
06611R	-5.0	8.0	-1.0	4.3	1.0	-4.0	-50.0	7.0	12.0	1.7	0.3	0.6	0.1
06612R	-5.0	-2.0	-1.0	1.6	-0.5	-4.0	-50.0	1.0	-3.0	0.2	-0.2	-0.2	-0.1
06616R	-5.0	-2.0	-1.0	1.8	0.8	-4.0	-50.0	3.0	6.0	0.5	0.2	0.3	-0.1
06617R	-5.0	4.0	-2.0	9.9	2.1	-4.0	-80.0	16.0	27.0	2.7	0.6	1.1	0.2
06618R	-5.0	2.0	-1.0	2.8	-0.5	-4.0	60.0	9.0	16.0	1.5	0.2	1.1	0.1
06619R	-5.0	-2.0	1.0	12.0	2.2	-4.0	130.0	46.0	88.0	7.7	1.5	2.4	0.4
06620R	9.0	6.0	1.0	12.0	2.9	-4.0	80.0	42.0	79.0	7.4	1.6	2.6	0.5
06621R	-6.0	-2.0	1.0	13.0	3.0	7.0	110.0	57.0	100.0	8.0	1.0	2.2	0.5
06622R	-5.0	-2.0	-1.0	9.0	2.0	-4.0	180.0	26.0	45.0	4.2	0.8	2.0	0.3
06623R	-5.0	-2.0	-1.0	9.9	2.7	-4.0	70.0	42.0	69.0	6.4	1.7	2.3	0.4
06624R	-5.0	-2.0	-1.0	1.9	0.6	-4.0	-50.0	3.0	5.0	0.6	-0.2	0.3	-0.1
06625R	-5.0	-2.0	-1.0	5.3	1.4	-4.0	-50.0	11.0	16.0	1.7	0.7	0.7	0.1
06626R	-5.0	-2.0	-1.0	1.6	-0.5	-4.0	-50.0	4.0	7.0	1.0	0.3	0.7	0.1
06627R	-8.0	-2.0	3.0	15.0	2.5	6.0	-50.0	55.0	105.0	8.3	1.6	3.0	0.4
06628R	-5.0	-2.0	-1.0	3.4	0.8	-4.0	-50.0	7.0	14.0	1.2	-0.3	0.4	0.1
06629R	-5.0	-2.0	-1.0	-0.5	-0.5	-4.0	-50.0	-1.0	-3.0	0.1	0.2	-0.2	-0.1
14951R	13.0	100.0	1.0	34.0	7.8	11.0	530.0	66.0	121.0	7.7	-0.6	5.2	0.7

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
15401R	65.5922	146.7513	C-6	9	5	20	(COMP) QTZT HFLS	-0.5	6.0	-5.0	400.0	-1.0
15403R	65.4117	145.9661	B-4	7	9	30	(COMP) QTZ VN IN QTZ-MUSC SCHIST	-0.5	8.0	9.0	-100.0	-0.5
15404R	65.4136	145.9612	B-4	7	9	19	(COMP) BULL QTZ IN QTZ-MUSC-BIO SCHIST	-0.5	-2.0	-5.0	100.0	-0.5
15405R	65.4441	145.9164	B-4	7	9	9	QTZ-TM VN(?) COBBLE	-0.5	6.0	-5.0	200.0	-1.0
15406R	65.4415	145.9130	B-4	7	9	9	BULL QTZ VN	-0.5	7.0	-5.0	100.0	-0.5
15407R	65.4482	145.9198	B-4	7	9	9	(COMP) BULL QTZ VN IN SCHIST, FLOAT	-0.5	-2.0	-5.0	-100.0	-0.5
15408R	65.4482	145.9198	B-4	7	9	9	(COMP) QTZ-TM VN FLOAT	1.0	NA	NA	NA	NA
15409R	65.4482	145.9198	B-4	7	9	9	QTZ VN/SCHIST(?) COBBLE	-0.5	100.0	110.0	100.0	-0.9
15410R	65.4451	145.9083	B-4	7	9	9	QTZ-MUSC SCHIST WITH DISSIMETED SULFIDES	1.0	50.0	110.0	-100.0	-0.5
15427R	65.4549	146.5082	B-6	7	6	9	(COMP) BRECCIATED AND SIL GR1	3.0	130.0	9.0	200.0	-1.2
15428R	65.4549	146.5082	B-6	7	6	9	(COMP) LIM-STAINED AND SIL GR1	3.0	100.0	-6.0	200.0	-1.0
15429R	65.4549	146.5082	B-6	7	6	9	(COMP) CHALCEDONY VN, FEOX, AND SIL GR1	11.0	540.0	11.0	-200.0	-0.8
15430R	65.4549	146.5082	B-6	7	6	9	(COMP) CHALCEDONY, FEOX, AND SIL GR1	4.0	470.0	-8.0	100.0	-0.8
15431R	65.4549	146.5082	B-6	7	6	9	(COMP) CHALCEDONY AND SIL GR1	13.0	280.0	14.0	200.0	-0.9
15432R	65.4549	146.5082	B-6	7	6	9	(COMP) CHALCEDONY AND SIL GR1 FROM PIT	8.0	89.0	17.0	200.0	-1.0
15433R	65.4549	146.5082	B-6	7	6	9	(COMP) SIL GR1 AND FELSIC DIKE	9.0	60.0	57.0	-100.0	-0.8
15434R	65.4549	146.5082	B-6	7	6	9	(COMP) SIL FELSITE AND SIL GR1	4.0	65.0	41.0	100.0	-0.9
15435R	65.4549	146.5082	B-6	7	6	9	(COMP) FELSITE DIKE	8.5	120.0	32.0	100.0	-0.8
15436R	65.4549	146.5082	B-6	7	6	9	(COMP) ALT AND SIL FELSITE	9.5	57.0	31.0	100.0	-0.9
15437R	65.4549	146.5082	B-6	7	6	9	(COMP) FRESH AND ALT FELSITE	1.5	71.0	59.0	100.0	-0.9
15438R	65.4549	146.5082	B-6	7	6	4	(COMP) LIM-STAINED QTZT HFLS WITH PY	0.5	2.0	-9.0	700.0	4.9
15442R	65.4474	146.4153	B-5	7	6	12	(COMP) CLAY-ALT GR2 BRECCIA	0.5	47.0	-5.0	100.0	2.7
15443R	65.4474	146.4153	B-5	7	6	12	APHANITIC FELSIC PORPHYRY	0.5	-2.0	-5.0	200.0	-0.8
15444R	65.4495	146.4159	B-5	7	6	12	(COMP) FELSITE BRECCIA WITH QTZ AND FL	-0.5	4.0	-6.0	-100.0	-1.6
15445R	65.4495	146.4159	B-5	7	6	12	FELSIC DIKE	1.0	3.0	-8.0	-100.0	-2.1

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
15401R	-5.0	30.0	3.0	13.0	1.7	3.0	-4.0	0.37	-200.0	NA	160.0	0.4	5.8
15403R	-5.0	310.0	-1.0	2.5	0.4	-1.0	-4.0	-0.05	-200.0	NA	-20.0	1.0	0.7
15404R	-5.0	260.0	1.0	7.5	1.2	1.0	-4.0	0.06	-200.0	NA	20.0	0.5	1.3
15405R	7.0	140.0	3.0	23.0	2.3	2.0	-4.0	0.40	-200.0	NA	100.0	0.4	8.6
15406R	-5.0	240.0	2.0	11.0	0.6	-1.0	-4.0	0.06	-200.0	NA	20.0	0.5	1.6
15407R	-5.0	-10.0	-1.0	18.0	0.2	-1.0	-4.0	-0.05	-200.0	NA	-20.0	-0.2	0.5
15408R	NA	NA	NA	200.0	NA	NA	NA	NA	NA	NA	NA	NA	NA
15409R	7.0	160.0	3.0	28.0	2.4	-1.0	6.0	0.35	-200.0	NA	-20.0	0.5	13.1
15410R	-5.0	290.0	-1.0	530.0	0.9	-1.0	-4.0	-0.05	-200.0	NA	-20.0	2.0	1.6
15427R	-5.0	10.0	7.0	5.0	1.1	3.0	-4.0	0.10	-200.0	NA	310.0	15.0	3.1
15428R	-5.0	10.0	7.0	4.0	0.5	2.0	7.0	0.06	-200.0	NA	300.0	18.0	2.8
15429R	-5.0	-10.0	5.0	10.0	0.8	1.0	-4.0	-0.05	-200.0	NA	90.0	56.0	1.6
15430R	-5.0	-10.0	7.0	6.5	1.0	1.0	4.0	-0.05	-200.0	NA	100.0	50.0	1.9
15431R	-5.0	10.0	6.0	7.0	1.2	2.0	-4.0	-0.05	-200.0	NA	110.0	37.0	3.0
15432R	-5.0	10.0	7.0	7.5	1.0	2.0	-4.0	-0.05	-200.0	NA	160.0	70.0	3.2
15433R	-5.0	10.0	8.0	4.0	0.7	2.0	-4.0	-0.05	-200.0	NA	170.0	53.0	2.4
15434R	-5.0	10.0	13.0	5.0	0.8	2.0	-4.0	-0.05	-200.0	NA	150.0	9.6	2.4
15435R	-5.0	20.0	11.0	9.0	1.4	1.0	-4.0	-0.05	-200.0	NA	200.0	14.0	3.5
15436R	-5.0	20.0	10.0	8.0	1.7	2.0	-4.0	-0.05	-200.0	NA	240.0	14.0	3.4
15437R	-5.0	20.0	11.0	13.0	1.7	3.0	4.0	0.05	-200.0	NA	190.0	7.4	3.4
15438R	16.0	80.0	4.0	91.0	4.4	4.0	-4.0	0.98	-300.0	NA	180.0	6.4	15.7
15442R	-5.0	10.0	7.0	17.0	0.7	1.0	-4.0	0.08	-200.0	NA	440.0	1.2	1.9
15443R	-5.0	-10.0	2.0	1.0	0.5	2.0	-4.0	2.90	-200.0	NA	100.0	0.4	2.8
15444R	-5.0	-10.0	3.0	9.5	1.1	2.0	-4.0	2.40	-200.0	NA	110.0	1.0	4.2
15445R	-5.0	-10.0	2.0	13.0	0.4	2.0	-4.0	4.30	-300.0	NA	-70.0	0.2	2.5

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
15401R	-5.0	10.0	-1.0	6.6	1.6	6.0	-31.0	17.0	27.0	2.6	0.6	0.9	0.2
15403R	-5.0	-2.0	-1.0	1.1	-0.5	-4.0	-50.0	3.0	4.0	0.5	-0.2	0.2	-0.1
15404R	-5.0	4.0	2.0	2.0	0.6	-4.0	-50.0	9.0	13.0	1.7	0.9	2.1	0.3
15405R	-5.0	28.0	-1.0	11.0	1.7	6.0	70.0	28.0	54.0	5.6	0.6	1.4	0.3
15406R	-5.0	-2.0	-1.0	0.8	-0.5	-4.0	-50.0	2.0	-3.0	0.4	-0.2	0.3	-0.1
15407R	-5.0	-2.0	-1.0	-0.5	-0.5	-4.0	-0.5	-1.0	-3.0	0.1	-0.2	-0.2	-0.1
15408R	NA	70.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15409R	-5.0	4.0	-1.0	6.0	1.8	29.0	50.0	18.0	37.0	4.1	0.5	1.3	0.2
15410R	-5.0	48.0	-1.0	0.6	-0.5	170.0	-50.0	1.0	-3.0	0.3	0.2	0.3	-0.1
15427R	-5.0	14.0	-1.0	15.0	5.4	5.0	59.0	22.0	40.0	4.0	0.8	2.3	0.3
15428R	-5.0	12.0	-1.0	12.0	6.1	4.0	47.0	22.0	56.0	3.9	-0.3	2.1	0.4
15429R	-5.0	-2.0	1.0	6.2	5.5	-4.0	-19.0	11.0	20.0	1.9	-0.3	1.2	0.1
15430R	-5.0	-2.0	-1.0	5.8	3.5	-4.0	-19.0	11.0	16.0	1.8	-0.4	0.9	0.1
15431R	-5.0	-2.0	-1.0	6.6	1.7	-4.0	-21.0	16.0	25.0	2.2	0.5	0.7	0.1
15432R	-5.0	-2.0	-1.0	5.7	1.9	5.0	25.0	13.0	24.0	2.1	-0.4	0.6	0.1
15433R	-5.0	8.0	1.0	6.4	3.3	9.0	-24.0	11.0	21.0	2.0	-0.3	1.1	0.1
15434R	-5.0	10.0	-1.0	8.6	3.8	-4.0	-20.0	13.0	24.0	2.2	-0.4	1.3	0.2
15435R	-6.0	12.0	-1.0	-0.5	4.9	-4.0	23.0	14.0	28.0	2.6	0.6	1.3	0.2
15436R	-5.0	10.0	-1.0	7.3	3.3	-4.0	-23.0	15.0	22.0	2.6	-0.3	1.2	0.2
15437R	-5.0	8.0	-1.0	6.9	2.8	-4.0	-20.0	15.0	32.0	2.6	0.4	1.5	0.2
15438R	-5.0	8.0	-2.0	19.0	4.3	-4.0	70.0	54.0	98.0	9.2	1.2	3.6	0.6
15442R	-5.0	24.0	2.0	7.7	31.4	-4.0	35.0	7.0	18.0	2.7	-0.3	3.0	0.8
15443R	-5.0	14.0	1.0	9.5	11.1	-4.0	-50.0	5.0	14.0	1.2	-0.6	2.7	0.4
15444R	-5.0	24.0	5.0	8.6	20.6	-4.0	-80.0	8.0	17.0	2.6	-0.6	2.8	0.6
15445R	-5.0	64.0	4.0	12.0	18.8	5.0	-110.0	12.0	30.0	3.8	-0.8	3.3	0.8

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
15447R	65.4496	146.4275	B-5	7	6	12	CHL GREISEN VLTS IN GR1 FLOAT	-0.5	960.0	-11.0	100.0	-1.3
15463R	65.4703	146.4554	B-5	8	6	35	APLITE WITH TM AND MUSC	-0.5	25.0	-6.0	100.0	-1.2
15464R	65.4697	146.4622	B-5	7	6	2	(COMP) PERVASIVELY ALT GR2	-0.5	5.0	-7.0	300.0	-1.7
15465R	65.4712	146.4688	B-5	8	6	35	RECRYSTALLIZED COUNTRY RK IN GR2 DIKE	1.0	13.0	-7.0	300.0	-1.5
15466R	65.4713	146.4682	B-5	8	6	35	TM-RICH GR2 DIKE	-0.5	2.0	-7.0	200.0	-1.6
15471R	65.4259	146.4249	B-5	7	6	24	ALT ORANGE-WEATHERED FELSITE	1.0	11.0	-7.0	200.0	-1.8
15472R	65.5924	146.7874	C-6	9	5	19	(COMP) GR1 WITH INTENSE FE/MNOX-STAIN	15.0	560.0	-10.0	400.0	-1.7
15473R	65.6447	146.8368	C-6	10	4	36	GREENSTONE OR METAGRAYWACKE WITH PY	-0.5	-2.0	-10.0	300.0	5.9
15475R	65.4223	146.4094	B-5	7	6	24	(COMP) TM VN/BRECCIA IN QTZT	-0.5	5.0	-7.0	400.0	1.7
15476R	65.4276	146.4164	B-5	7	6	13	TM VN/BRECCIA IN QTZ-MICA SCHIST	-0.5	2.0	-5.0	-100.0	-0.7
15477R	65.4291	146.4216	B-5	7	6	13	(COMP) MNOX-STAINED GR2 TALUS	1.0	-2.0	-7.0	300.0	-1.7
15478R	65.4304	146.4181	B-5	7	6	13	(COMP) TM VNS IN HFLS	-0.5	26.0	9.0	300.0	-1.4
15479R	65.4608	146.4755	B-5	7	6	3	(COMP) TM GREISEN VN IN GR1	-0.5	-2.0	-7.0	200.0	-1.6
15480R	65.4594	145.8656	B-4	7	9	3	(COMP) CALC-SIL SKARN	0.5	3.0	-5.0	200.0	8.9
15481R	65.4646	145.8779	B-4	7	9	3	(COMP) TM AND QTZ IN QTZ-BIO SCHIST	1.5	38.0	170.0	100.0	-0.5
15482R	65.4730	145.8805	B-4	8	9	34	(COMP) RHYOLITE CHIPS	1.0	9.0	-5.0	100.0	-0.9
15483R	65.5628	146.3704	C-5	9	7	31	FE-WEATHERING GR2 GREISEN FLOAT	-0.5	6.0	-6.0	800.0	-0.8
15484R	65.5636	146.3566	C-5	9	7	31	GREISEN VNS WITH SULFIDES IN QTZ SCHIST	2.0	290.0	6.0	-100.0	-0.5
15485R	65.4422	145.8474	B-4	7	9	11	QTZ-FE VNS IN TALUS	-0.5	2.0	-5.0	200.0	0.6
15486R	65.4719	146.4731	B-5	8	6	34	QTZ PORPHYRY WITH TM CLOTS	-0.5	6.0	-5.0	200.0	-0.8
15489R	65.4067	146.2780	B-5	7	7	27	FE-STAINED BIO-HBL GR2	-0.5	1100.0	-14.0	800.0	-1.5
15500R	65.4475	146.0747	B-5	7	8	10	(CHAN) FELSIC SCHIST WITH .1% SULFIDE	-0.5	21.0	-5.0	100.0	-0.8
15501R	65.4474	146.0753	B-5	7	8	10	(CHAN) FELSIC SCHIST AND QTZ-BIO SCHIST	-0.5	51.0	14.0	100.0	-0.8
15502R	65.4474	146.0753	B-5	7	8	10	(CHAN) GRAPH SCHIST WITH 2% PY	-0.5	28.0	-9.0	600.0	-1.4
15503R	65.4474	146.0753	B-5	7	8	10	(CHAN) GRAPH SCHIST WITH 2% PY	-0.5	25.0	-8.0	500.0	-1.3

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
15447R	-5.0	-10.0	24.0	3.0	1.0	-1.0	-4.0	1.40	-200.0	NA	700.0	0.4	2.8
15463R	-5.0	-10.0	10.0	1.0	0.8	-1.0	-4.0	1.50	-200.0	NA	500.0	-0.2	3.5
15464R	-5.0	-10.0	10.0	1.5	0.8	3.0	-4.0	2.00	-200.0	NA	730.0	-0.2	3.6
15465R	6.0	50.0	13.0	260.0	3.7	4.0	-4.0	1.10	-200.0	NA	500.0	0.8	10.6
15466R	10.0	-10.0	15.0	14.0	1.0	3.0	-4.0	2.70	-200.0	NA	700.0	-0.2	3.4
15471R	-5.0	-10.0	3.0	4.5	1.0	3.0	-4.0	3.20	-200.0	NA	380.0	-0.2	3.3
15472R	-5.0	-10.0	5.0	1000.0	6.1	-1.0	-4.0	0.16	-200.0	NA	270.0	36.0	4.3
15473R	35.0	550.0	-1.0	94.0	6.3	3.0	-4.0	2.30	-300.0	NA	-50.0	0.4	39.7
15475R	12.0	50.0	14.0	19.0	3.3	3.0	-4.0	1.30	-200.0	NA	110.0	0.4	10.6
15476R	-5.0	40.0	2.0	22.0	2.2	3.0	-4.0	0.47	-200.0	NA	40.0	0.2	9.1
15477R	-5.0	10.0	3.0	1.5	1.2	3.0	-4.0	2.00	-200.0	NA	400.0	0.3	3.0
15478R	6.0	50.0	5.0	22.0	2.9	3.0	-4.0	1.10	-200.0	NA	120.0	-0.2	9.2
15479R	-5.0	10.0	10.0	5.5	1.0	2.0	-4.0	1.90	-200.0	NA	440.0	-0.2	5.0
15480R	15.0	40.0	2.0	150.0	8.5	-1.0	-4.0	0.14	-200.0	NA	-20.0	0.7	8.0
15481R	5.0	30.0	1.0	60.0	1.6	-1.0	-4.0	0.25	-200.0	NA	40.0	0.7	7.2
15482R	-5.0	-10.0	9.0	14.0	0.6	5.0	-4.0	2.40	-200.0	NA	550.0	0.4	1.0
15483R	9.0	70.0	11.0	44.0	2.8	4.0	-4.0	0.14	-200.0	NA	220.0	0.4	16.2
15484R	-5.0	10.0	4.0	130.0	2.8	3.0	-4.0	0.17	-200.0	NA	60.0	1.6	2.0
15485R	-5.0	10.0	1.0	9.5	1.4	3.0	-4.0	0.09	-200.0	NA	20.0	0.2	2.2
15486R	-5.0	-10.0	12.0	6.0	0.9	2.0	-4.0	2.10	-200.0	NA	410.0	0.2	3.0
15489R	-5.0	10.0	3.0	11.0	2.1	4.0	-6.0	0.18	200.0	30.0	120.0	16.0	6.1
15500R	-5.0	20.0	1.0	9.5	0.7	3.0	-4.0	0.12	-200.0	6.0	40.0	1.9	2.5
15501R	-5.0	30.0	1.0	10.0	0.8	3.0	-4.0	0.11	-200.0	6.0	40.0	2.1	2.8
15502R	20.0	80.0	4.0	65.0	3.8	5.0	5.0	0.32	-200.0	14.0	150.0	1.2	13.8
15503R	12.0	70.0	4.0	49.0	3.1	4.0	-4.0	0.30	200.0	8.0	150.0	1.5	12.4

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
15447R	-11.0	1200.0	5.0	15.0	27.5	370.0	-70.0	16.0	39.0	4.7	-0.5	4.1	0.8
15463R	-5.0	94.0	16.0	8.9	9.9	76.0	-70.0	4.0	11.0	1.6	-0.5	0.7	0.2
15464R	10.0	62.0	6.0	22.0	17.5	5.0	-80.0	20.0	46.0	6.8	-0.6	6.8	1.2
15465R	-7.0	190.0	7.0	18.0	13.8	16.0	260.0	39.0	62.0	6.8	0.6	3.0	0.7
15466R	-5.0	36.0	4.0	16.0	17.5	-4.0	-90.0	13.0	27.0	4.1	-0.7	4.5	0.9
15471R	-5.0	30.0	5.0	19.0	13.6	-4.0	-90.0	21.0	45.0	4.3	-0.7	3.2	0.6
15472R	-6.0	150.0	-1.0	31.0	67.0	51.0	3100.0	83.0	121.0	21.8	1.0	14.1	2.8
15473R	-5.0	-2.0	-2.0	1.5	-0.9	-5.0	170.0	18.0	34.0	4.3	1.0	1.5	0.2
15475R	-5.0	330.0	-1.0	12.0	1.8	7.0	80.0	23.0	51.0	3.8	0.7	2.0	0.3
15476R	-5.0	190.0	1.0	8.3	2.5	5.0	80.0	5.0	9.0	1.2	-0.3	1.4	0.2
15477R	-5.0	22.0	5.0	19.0	17.0	6.0	-70.0	27.0	50.0	5.2	0.8	2.6	0.5
15478R	-6.0	320.0	-1.0	11.0	2.4	4.0	-60.0	26.0	52.0	4.2	0.7	1.2	0.3
15479R	-7.0	84.0	3.0	16.0	4.3	4.0	-70.0	29.0	57.0	6.1	1.0	2.3	0.4
15480R	-5.0	320.0	1.0	8.6	2.1	580.0	150.0	36.0	49.0	3.2	0.8	1.3	0.2
15481R	-5.0	18.0	-1.0	4.6	1.6	100.0	-50.0	15.0	27.0	2.0	0.7	0.9	0.1
15482R	-5.0	110.0	4.0	24.0	9.0	-4.0	-50.0	9.0	34.0	3.6	-0.6	10.0	1.3
15483R	32.0	14.0	-1.0	18.0	7.7	25.0	60.0	65.0	99.0	6.7	1.5	2.8	0.4
15484R	-5.0	16.0	-1.0	4.4	1.1	270.0	-50.0	7.0	12.0	0.8	-0.2	0.4	0.1
15485R	-5.0	14.0	-1.0	4.7	1.0	-4.0	-50.0	14.0	26.0	1.6	0.4	0.8	0.1
15486R	5.0	-2.0	3.0	13.0	7.7	6.0	-50.0	14.0	29.0	2.4	-0.6	3.6	0.5
15489R	-6.0	-2.0	-1.0	15.0	3.4	-4.0	60.0	43.0	68.0	6.1	1.5	1.2	0.2
15500R	-5.0	-2.0	-1.0	4.3	1.2	-4.0	-50.0	11.0	23.0	1.8	0.7	0.8	0.1
15501R	-5.0	-2.0	-1.0	4.0	1.7	-4.0	-50.0	12.0	21.0	1.8	0.9	0.6	0.1
15502R	-5.0	4.0	-1.0	6.8	2.4	-5.0	-50.0	31.0	51.0	5.1	1.0	1.7	0.2
15503R	-6.0	-2.0	-1.0	6.5	2.2	-5.0	70.0	26.0	45.0	4.5	0.9	1.4	0.3

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
15504R	65.4474	146.0753	B-5	7	8	10	(CHAN) SCHIST	-0.5	7.0	-5.0	300.0	-0.8
15505R	65.4474	146.0753	B-5	7	8	10	(CHAN) TALC SCHIST WITH 1% FEOX	-0.5	38.0	-10.0	700.0	4.7
15506R	65.4474	146.0753	B-5	7	8	10	(CHAN) FELSIC SCHIST AND TALC SCHIST	-0.5	17.0	-7.0	400.0	-1.3
15520R	65.5917	146.9244	C-6	9	4	21	ALT GR2 AND POSSIBLE QTZT BRECCIA	0.5	10.0	-5.0	200.0	-0.8
15521R	65.5917	146.9244	C-6	9	4	21	QTZT HFLS	2.5	11.0	-5.0	200.0	-0.5
15522R	65.5917	146.9244	C-6	9	4	21	(COMP) QTZ-FL VNS IN GR2	1.0	2.0	-5.0	200.0	-0.6
15523R	65.5917	146.9241	C-6	9	4	21	(COMP) FE-STAINED HFLS ADJACENT PLUTON	-0.5	16.0	-5.0	900.0	-0.7
15524R	65.5917	146.9241	C-6	9	4	21	(COMP) FE-STAINED HFLS ADJACENT PLUTON	-0.5	6.0	-5.0	600.0	-0.7
15525R	65.5917	146.9244	C-6	9	4	21	(COMP) FE-STAINED HFLS ADJACENT PLUTON	-0.5	4.0	-5.0	900.0	0.9
15526R	65.5917	146.9241	C-6	9	4	21	(COMP) FE-STAINED HFLS ADJACENT PLUTON	-0.5	9.0	-5.0	1100.0	-0.8
15527R	65.5917	146.9241	C-6	9	4	21	(COMP) FE-STAINED HFLS ADJACENT PLUTON	-0.5	3.0	-5.0	900.0	-0.8
15528R	65.5917	146.9244	C-6	9	4	21	(COMP) FE-STAINED HFLS ADJACENT PLUTON	-0.5	4.0	-5.0	200.0	-0.6
15529R	65.5917	146.9244	C-6	9	4	21	CHL-QTZ-FL GREISEN VNS IN GR1	1.0	13.0	6.0	200.0	-0.7
15530R	65.5917	146.9244	C-6	9	4	21	CHL-QTZ-FL GREISEN VNS IN GR1	1.0	-2.0	-5.0	300.0	-0.8
15531R	65.5917	146.9244	C-6	9	4	21	CHL-QTZ-FL GREISEN VNS IN GR1	0.5	30.0	9.0	300.0	-0.7
15532R	65.5917	146.9244	C-6	9	4	21	CHL-QTZ-FL GREISEN VNS IN GR1	1.0	11.0	5.0	300.0	1.1
15559R	65.4465	145.8831	B-4	7	9	10	(COMP) DARK LAYERED GAR-PYX RK	1.0	5.0	30.0	100.0	8.5
15562R	65.6247	146.6589	C-6	9	5	11	CHL-AMPH ALT PYX-GAR SKARN/HFLS	0.5	3.0	-5.0	100.0	9.9
15563R	65.6247	146.6589	C-6	9	5	11	(COMP) LAYERED PYX-GAR HFLS WITH CHL VLT	-0.5	-2.0	-5.0	800.0	14.0
15564R	65.6281	146.7108	C-6	9	5	9	(COMP) QTZ VN WITH VERY CSG CHL	-0.5	-2.0	-6.0	700.0	-1.1
15565R	65.6281	146.7108	C-6	9	5	9	(COMP) CHL VLTS IN WALL RK	-0.5	-2.0	-6.0	200.0	-1.1
15566R	65.6281	146.7108	C-6	9	5	9	(COMP) QTZ-CHL GREISEN ZONE	2.0	-2.0	-9.0	-400.0	-1.3
15567R	65.6281	146.7108	C-6	9	5	9	(COMP) QTZ-CHL GREISEN ZONE	0.5	-2.0	-5.0	100.0	-0.9
15568R	65.6281	146.7108	C-6	9	5	9	(COMP) NORTH-DIPPING EARLY VN	1.0	3.0	-6.0	400.0	-1.1
15569R	65.6281	146.7108	C-6	9	5	9	(COMP) SOUTH-DIPPING LATE VN WITH MUSC	12.0	-2.0	-6.0	400.0	2.6

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
15504R	5.0	20.0	-1.0	12.0	0.9	3.0	-4.0	-0.05	-200.0	6.0	-20.0	0.9	2.6
15505R	25.0	50.0	3.0	71.0	3.4	4.0	19.0	0.25	-200.0	24.0	150.0	1.8	11.8
15506R	9.0	50.0	2.0	28.0	1.9	4.0	-4.0	0.09	-200.0	10.0	80.0	1.2	6.6
15520R	-5.0	-10.0	2.0	8.5	0.8	2.0	-4.0	1.50	-200.0	NA	380.0	1.5	2.9
15521R	6.0	20.0	5.0	44.0	4.4	4.0	-4.0	0.34	-200.0	NA	110.0	5.9	4.2
15522R	-5.0	-10.0	-1.0	8.5	0.2	2.0	-4.0	1.10	-200.0	NA	160.0	2.1	1.2
15523R	9.0	80.0	19.0	57.0	4.0	4.0	5.0	0.33	-200.0	NA	320.0	1.4	16.4
15524R	8.0	50.0	9.0	46.0	3.9	5.0	6.0	0.62	-200.0	NA	290.0	0.3	10.3
15525R	9.0	80.0	13.0	22.0	3.9	4.0	-4.0	0.51	200.0	NA	360.0	0.7	16.5
15526R	10.0	80.0	12.0	25.0	3.9	3.0	-4.0	0.47	-200.0	NA	380.0	1.2	17.0
15527R	11.0	70.0	7.0	21.0	3.8	3.0	-4.0	0.43	-200.0	NA	350.0	1.4	16.3
15528R	9.0	40.0	4.0	19.0	2.5	4.0	-4.0	0.57	-200.0	NA	200.0	0.5	6.7
15529R	-5.0	-10.0	4.0	0.5	4.1	4.0	-4.0	0.25	-200.0	NA	240.0	1.3	5.7
15530R	-5.0	-10.0	6.0	-0.5	4.3	4.0	5.0	0.16	-200.0	NA	370.0	1.0	5.1
15531R	5.0	-10.0	5.0	3.5	3.8	2.0	-4.0	0.12	-200.0	NA	250.0	3.4	5.1
15532R	5.0	-10.0	8.0	-0.5	4.0	4.0	-4.0	0.26	-200.0	NA	420.0	1.9	4.6
15559R	13.0	20.0	1.0	31.0	7.9	-1.0	-4.0	0.07	-200.0	NA	-20.0	0.9	5.7
15562R	14.0	40.0	3.0	0.5	8.6	2.0	-4.0	0.06	-200.0	NA	30.0	0.7	7.4
15563R	8.0	50.0	37.0	5.5	3.0	3.0	-4.0	0.56	-200.0	NA	30.0	1.9	9.0
15564R	-5.0	-10.0	3.0	1.0	1.2	4.0	-4.0	1.50	-200.0	NA	400.0	0.2	6.5
15565R	-5.0	-10.0	10.0	1.0	1.5	6.0	-4.0	2.10	-200.0	NA	800.0	-0.2	1.5
15566R	-5.0	-10.0	104.0	100.0	18.3	14.0	14.0	0.28	-300.0	NA	3700.0	1.8	30.9
15567R	-5.0	10.0	28.0	27.0	7.0	7.0	9.0	-0.05	-200.0	NA	1200.0	0.6	6.4
15568R	-5.0	10.0	22.0	30.0	3.6	6.0	-4.0	2.30	-200.0	NA	1100.0	0.3	10.4
15569R	-5.0	-10.0	3.0	62.0	1.2	-1.0	-4.0	2.80	-200.0	NA	480.0	0.2	5.0

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
15504R	-5.0	-2.0	-1.0	5.3	0.9	-4.0	-50.0	13.0	23.0	2.1	-0.3	0.9	0.1
15505R	-6.0	-2.0	-1.0	12.0	8.9	-5.0	120.0	44.0	88.0	7.4	1.8	3.5	0.5
15506R	-6.0	-2.0	1.0	8.3	2.5	-4.0	80.0	23.0	39.0	3.7	0.8	1.1	0.2
15520R	5.0	-2.0	1.0	19.0	13.1	-4.0	-50.0	19.0	52.0	5.4	-0.5	8.7	1.2
15521R	-5.0	28.0	-1.0	6.3	8.3	11.0	370.0	19.0	34.0	2.1	0.8	2.1	0.3
15522R	-5.0	-2.0	1.0	11.0	8.0	-4.0	-50.0	11.0	31.0	3.6	-0.4	6.6	0.9
15523R	-5.0	14.0	-1.0	17.0	4.4	4.0	70.0	58.0	99.0	5.8	1.3	2.9	0.3
15524R	-5.0	26.0	-1.0	12.0	3.1	5.0	60.0	39.0	67.0	4.3	1.1	2.5	0.3
15525R	-5.0	30.0	1.0	17.0	3.7	-4.0	90.0	61.0	96.0	6.0	1.4	2.5	0.4
15526R	-5.0	-2.0	-1.0	17.0	4.1	4.0	60.0	61.0	104.0	6.5	1.6	3.1	0.4
15527R	-5.0	36.0	-1.0	17.0	5.1	9.0	50.0	62.0	104.0	6.1	1.5	2.9	0.4
15528R	-5.0	22.0	-1.0	8.9	1.6	5.0	-50.0	23.0	44.0	2.4	0.8	1.5	0.2
15529R	-5.0	88.0	1.0	31.0	13.6	6.0	110.0	62.0	129.0	8.8	0.7	7.9	1.0
15530R	-5.0	86.0	1.0	27.0	11.6	7.0	180.0	53.0	123.0	8.9	-0.5	11.2	1.4
15531R	-5.0	40.0	-1.0	20.0	14.8	-4.0	110.0	46.0	74.0	6.3	-0.5	4.2	0.6
15532R	-5.0	110.0	1.0	29.0	13.2	5.0	100.0	60.0	129.0	9.6	-0.6	10.8	1.4
15559R	-5.0	210.0	1.0	6.1	1.6	540.0	190.0	18.0	32.0	2.1	1.2	1.5	0.2
15562R	-5.0	56.0	-1.0	2.4	1.5	-4.0	240.0	26.0	43.0	2.9	1.3	3.2	0.3
15563R	-5.0	68.0	-1.0	8.9	3.3	-4.0	150.0	46.0	71.0	3.7	1.4	1.8	0.2
15564R	-6.0	56.0	11.0	39.0	24.9	4.0	140.0	75.0	202.0	26.1	-0.8	27.6	3.4
15565R	220.0	26.0	2.0	59.0	10.8	99.0	-50.0	48.0	99.0	8.0	-0.8	9.4	1.2
15566R	-6.0	110.0	20.0	150.0	26.5	11.0	830.0	94.0	174.0	11.0	-0.8	5.8	1.0
15567R	-5.0	130.0	4.0	78.0	13.5	6.0	330.0	73.0	139.0	9.0	-0.6	8.2	1.1
15568R	-5.0	92.0	5.0	61.0	21.6	-4.0	380.0	42.0	93.0	9.2	-0.7	10.8	1.5
15569R	6.0	48.0	2.0	38.0	25.8	-4.0	140.0	31.0	73.0	8.8	-0.8	11.4	1.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
15570R	65.6281	146.7108	C-6	9	5	9	(COMP) QTZ-CHL-TZ(?) GREISEN ZONE	2.0	-2.0	11.0	200.0	-0.9
15571R	65.6280	146.7106	C-6	9	5	9	ALT DIKE	-0.5	-2.0	-7.0	400.0	6.6
15572R	65.6280	146.7106	C-6	9	5	9	2 INTERSECTING CHL-QTZ GREISEN VNS	2.5	-2.0	-5.0	300.0	1.0
15573R	65.6280	146.7106	C-6	9	5	9	(COMP) GREISEN VN/RESAMPLING OF USBM 108	4.5	-2.0	-5.0	400.0	-0.7
15594R	65.6281	146.7108	C-6	9	5	9	QTZ-CHL ALT VN, RESAMPLING OF USBM 183	5.0	3.0	-5.0	200.0	-1.1
15595R	65.6281	146.7108	C-6	9	5	9	CHL-QTZ-TZ(?) VN, RESAMPLING OF USBM 164	4.5	-2.0	-5.0	300.0	-0.8
15596R	65.6281	146.7108	C-6	9	5	9	GREISEN VN, RESAMPLING OF USBM 151	8.0	2.0	-5.0	200.0	-0.8
15597R	65.6281	146.7108	C-6	9	5	9	20% QTZ-SER VN WITH SULFIDES, 80% WALLRK	0.5	550.0	-6.0	-100.0	-0.8
15598R	65.6280	146.7106	C-6	9	5	9	ALT MAFIC DIKE	-0.5	-2.0	-6.0	400.0	5.3
15599R	65.6281	146.7108	C-6	9	5	9	2 INCH WIDE QTZ-TM-CHL VN	2.5	-2.0	8.0	100.0	-1.0
15600R	65.5917	146.9244	C-6	9	4	21	CHL GREISEN FLOAT	3.5	13.0	-6.0	400.0	-0.8
15601R	65.5917	146.9241	C-6	9	4	21	1 FT BY 10 FT ZONE OF HFLS WITH PY VLTS	-0.5	11.0	-7.0	800.0	-1.1
15602R	65.5917	146.9241	C-6	9	4	21	1-2 INCH WIDE CHL GREISEN VN	4.0	2.0	-6.0	-100.0	1.5
15603R	65.5917	146.9241	C-6	9	4	21	3-4 INCH BY 30 FT GREISEN VN	14.0	6.0	-10.0	600.0	-0.9
15604R	65.5917	146.9241	C-6	9	4	21	3-4 INCH BY 10 FT GREISEN VN	3.0	14.0	-6.0	300.0	-0.8
15605R	65.5917	146.9241	C-6	9	5	21	18 INCH WIDE CHL GREISEN VN	4.0	9.0	-6.0	400.0	-0.9
15606R	65.5917	146.9241	C-6	9	4	21	(CHAN) 8 INCH WIDE GREISEN VN	2.5	-2.0	11.0	200.0	-0.9
15607R	65.5917	146.9244	C-6	9	4	21	6-8 INCH WIDE GREISEN VN	15.0	11.0	-5.0	100.0	-0.6
15608R	65.4343	146.4971	B-5	7	6	15	QTZ-FL(?)-FEOX VN IN GR2	1.5	12.0	-7.0	100.0	-1.1
15609R	65.4343	146.4971	B-5	7	6	15	QTZ-FEOX VN IN GR2	-0.5	10.0	-6.0	300.0	-1.0
15610R	65.4343	146.4971	B-5	7	6	15	TM APLITE WITH SER VLTS	1.0	7.0	-6.0	100.0	-1.0
15612R	65.4344	146.4981	B-5	7	6	15	BLACK VN FLOAT	1.0	22.0	-5.0	100.0	-1.0
15613R	65.4344	146.4981	B-5	7	6	15	GREEN MICRO-XLN QTZ BRECCIA/GR CLAST	1.0	9.0	5.0	-100.0	-0.5
15625R	65.5917	146.9244	C-6	9	4	21	MN-STAINED HFLS BRECCIA	-0.5	24.0	53.0	800.0	-0.8
15626R	65.5917	146.9241	C-6	9	4	21	FE-STAINED GR1 BRECCIA/MICRO-XLN MATRIX	1.5	39.0	29.0	300.0	-0.5

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
15570R	-5.0	-10.0	37.0	15.0	5.0	8.0	63.0	0.19	-200.0	NA	1200.0	0.6	9.0
15571R	37.0	480.0	30.0	10.0	6.4	2.0	-4.0	2.30	-200.0	NA	90.0	0.3	33.6
15572R	-5.0	10.0	9.0	7.0	4.1	6.0	15.0	0.40	-200.0	NA	650.0	0.3	10.8
15573R	-5.0	-10.0	22.0	31.0	6.0	6.0	43.0	0.08	-200.0	NA	1200.0	0.6	10.0
15594R	-5.0	-10.0	8.0	39.0	3.5	6.0	16.0	1.10	-200.0	NA	830.0	0.2	4.4
15595R	-5.0	-10.0	24.0	17.0	4.8	6.0	47.0	0.78	200.0	NA	1100.0	0.4	9.7
15596R	-5.0	-10.0	11.0	82.0	5.7	5.0	29.0	0.23	-200.0	NA	890.0	0.5	8.3
15597R	-5.0	-10.0	18.0	86.0	2.1	6.0	13.0	1.80	-200.0	NA	970.0	0.3	8.2
15598R	33.0	400.0	25.0	15.0	5.8	2.0	-4.0	1.80	-200.0	NA	140.0	0.4	28.7
15599R	-5.0	-10.0	6.0	1.0	2.4	6.0	8.0	1.50	-200.0	NA	480.0	-0.2	3.1
15600R	-5.0	10.0	3.0	43.0	7.5	4.0	15.0	0.15	-200.0	NA	230.0	5.7	10.5
15601R	10.0	110.0	8.0	37.0	4.7	6.0	-4.0	0.59	-200.0	NA	410.0	2.7	20.9
15602R	-5.0	-10.0	7.0	1.0	6.8	6.0	-4.0	0.05	-200.0	NA	630.0	1.8	9.1
15603R	10.0	-10.0	5.0	18.0	10.4	5.0	-4.0	0.22	-300.0	NA	190.0	1.8	8.6
15604R	-5.0	-10.0	4.0	33.0	5.5	4.0	-4.0	0.09	-200.0	NA	300.0	4.4	5.6
15605R	8.0	-10.0	3.0	5.0	18.4	5.0	8.0	0.05	-200.0	NA	210.0	2.7	8.6
15606R	12.0	10.0	3.0	7.0	11.3	4.0	-4.0	0.22	-200.0	NA	120.0	1.1	6.2
15607R	9.0	-10.0	2.0	31.0	7.0	3.0	5.0	0.15	-200.0	NA	100.0	1.9	7.4
15608R	-5.0	-10.0	10.0	14.0	0.6	-1.0	-4.0	2.30	-200.0	NA	510.0	1.3	2.9
15609R	-5.0	-10.0	12.0	1.0	0.5	3.0	-4.0	2.70	-200.0	NA	600.0	0.5	3.3
15610R	-5.0	-10.0	31.0	1.0	0.6	-1.0	-4.0	3.10	-200.0	NA	660.0	0.6	2.6
15612R	-5.0	-10.0	29.0	1.0	1.2	3.0	-4.0	2.20	-200.0	NA	720.0	0.6	3.6
15613R	-5.0	-10.0	17.0	10.0	0.4	1.0	-4.0	0.08	-84.0	NA	470.0	2.1	2.4
15625R	14.0	90.0	20.0	24.0	4.3	5.0	10.0	0.13	-200.0	NA	500.0	5.7	22.0
15626R	-5.0	10.0	5.0	3.5	2.4	1.0	-4.0	0.09	-200.0	NA	120.0	24.0	3.9

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
15570R	-5.0	130.0	4.0	59.0	23.7	120.0	200.0	59.0	116.0	11.3	-0.4	11.8	1.5
15571R	-5.0	-2.0	-1.0	0.8	-0.8	-4.0	70.0	8.0	23.0	2.8	1.0	2.5	0.3
15572R	-5.0	370.0	3.0	56.0	18.8	4.0	490.0	40.0	85.0	10.5	-0.5	13.0	1.6
15573R	-5.0	270.0	2.0	62.0	32.4	-4.0	500.0	45.0	101.0	12.6	-0.5	16.7	2.3
15594R	12.0	44.0	-1.0	61.0	21.7	10.0	240.0	68.0	121.0	8.6	-0.7	7.3	1.0
15595R	-5.0	490.0	5.0	50.0	24.6	8.0	210.0	41.0	77.0	10.1	-0.6	12.5	1.7
15596R	-5.0	220.0	3.0	58.0	32.4	4.0	570.0	42.0	87.0	10.5	-0.5	13.4	1.9
15597R	-6.0	440.0	2.0	72.0	31.8	5.0	50.0	64.0	125.0	13.8	-0.5	12.3	1.7
15598R	-5.0	-2.0	-1.0	6.6	2.1	-4.0	120.0	15.0	30.0	3.6	0.9	3.2	0.4
15599R	5.0	-2.0	1.0	55.0	9.8	8.0	-50.0	60.0	122.0	7.6	-0.7	4.2	0.6
15600R	-5.0	420.0	1.0	33.0	26.5	8.0	1100.0	74.0	136.0	11.3	0.9	9.9	1.3
15601R	-5.0	10.0	-1.0	23.0	4.8	-4.0	170.0	77.0	113.0	7.6	1.4	3.3	0.4
15602R	-5.0	36.0	2.0	33.0	20.2	5.0	90.0	94.0	171.0	12.7	1.1	11.6	1.5
15603R	-9.0	90.0	3.0	28.0	27.9	-4.0	700.0	91.0	279.0	54.9	2.9	60.0	7.0
15604R	-5.0	140.0	1.0	25.0	25.8	-4.0	1300.0	50.0	108.0	9.3	-0.4	8.4	1.3
15605R	7.0	900.0	-1.0	46.0	32.9	11.0	530.0	74.0	155.0	12.0	0.9	12.8	1.8
15606R	-5.0	190.0	1.0	32.0	14.6	6.0	570.0	61.0	100.0	7.8	0.7	11.8	1.6
15607R	-5.0	88.0	2.0	26.0	30.3	-4.0	2500.0	50.0	101.0	7.0	-0.5	5.0	0.9
15608R	-5.0	76.0	5.0	14.0	11.4	14.0	-60.0	18.0	36.0	3.3	1.1	4.8	0.7
15609R	-5.0	150.0	3.0	16.0	14.6	-4.0	70.0	20.0	42.0	3.6	-0.7	5.1	0.8
15610R	-5.0	210.0	9.0	11.0	9.4	17.0	-60.0	6.0	12.0	1.4	-0.7	2.5	0.4
15612R	6.0	52.0	3.0	15.0	20.2	8.0	-50.0	22.0	46.0	4.1	-0.7	4.9	0.8
15613R	-5.0	76.0	3.0	7.2	6.8	-4.0	70.0	4.0	9.0	1.0	0.3	1.5	0.2
15625R	-5.0	36.0	-1.0	20.0	25.4	7.0	60.0	69.0	115.0	7.2	0.9	2.9	0.4
15626R	-5.0	60.0	-1.0	6.3	38.8	4.0	-50.0	12.0	18.0	1.6	0.7	1.6	0.2

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
15627R	65.5917	146.9244	C-6	9	4	21	IGNEOUS GR1 BRECCIA	-0.5	2.0	58.0	200.0	-0.6
15628R	65.5917	146.9244	C-6	9	4	21	HEM-CEMENETED BRECCIA WITH FELD CLAST	3.0	200.0	62.0	500.0	4.7
15629R	65.5917	146.9244	C-6	9	4	21	FE-STAINED GREISEN VNS	1.0	19.0	35.0	200.0	-0.8
15630R	65.5917	146.9244	C-6	9	4	21	RHYOLITE PORPHYRY WITH FL AND RARE BN	-0.5	12.0	12.0	200.0	-0.5
15640R	65.5818	146.9332	C-6	9	4	28	QTZT WITH PY	-0.5	35.0	16.0	200.0	-0.8
15641R	65.6727	146.6076	C-6	10	5	24	SULFIDE-BEARING HFLS OR DIKE	5.0	6.0	-8.0	400.0	-1.3
15655R	65.6601	146.6331	C-6	10	5	26	MN-STAINED AND FRACTURED GR1	1.5	11.0	-11.0	300.0	-2.0
15656R	65.6601	146.6331	C-6	10	5	26	EXTREMELY CHL ALT GR1	-0.5	-2.0	-9.0	300.0	-1.4
15657R	65.6597	146.6419	C-6	10	5	26	GOSSANOUS MN-STAINED FL FLOAT	1.5	-2.0	-9.0	1400.0	3.6
15658R	65.6638	146.6408	C-6	10	5	26	CHL ALT GR1	1.5	4.0	-8.0	300.0	-1.5
15659R	65.6636	146.6292	C-6	10	5	25	CHL ALT GR1 WITH 1-2% FL	1.5	-2.0	-12.0	500.0	4.2
15660R	65.6662	146.6080	C-6	10	5	25	HAIRLINE GREISEN VNS IN GR1	1.5	-2.0	10.0	400.0	-1.5
15661R	65.6662	146.6080	C-6	10	5	25	CHL GREISEN VLTS WITH MNOX SELVAGES	1.5	-2.0	-7.0	600.0	-1.4
15662R	65.6662	146.6080	C-6	10	5	25	LIM-MNOX GOSSAN	7.0	-2.0	-6.0	400.0	-0.9
15663R	65.6662	146.6080	C-6	10	5	25	CLAY-ALT FEOX COATED DIKE IN GR1	1.0	-2.0	-7.0	400.0	-1.5
15664R	65.6662	146.6080	C-6	10	5	25	SHEARED CHL-MNOX ALT GR1	4.0	2.0	-7.0	300.0	-1.4
15665R	65.6662	146.6080	C-6	10	5	25	(COMP) MNOX-CLAY-ALT GR1 WITH CHL AND GN	1.0	-2.0	-9.0	300.0	-1.7
15666R	65.6637	146.6123	C-6	10	5	25	MN-STAINED FNG PORPHYRY	0.5	-2.0	-7.0	400.0	-1.3
15667R	65.6661	146.6077	C-6	10	5	25	(COMP) CHL ALT GR1	6.0	-2.0	-8.0	400.0	-1.5
15692R	65.6636	146.6292	C-6	10	5	25	WEAKLY CLAY-ALT GR1	-0.5	-2.0	-8.0	400.0	-1.5
15694R	65.6636	146.6292	C-6	10	5	25	(COMP) CHL GREISEN IN GR1 TALUS	0.5	-2.0	-9.0	300.0	-1.6
15697R	65.6637	146.6123	C-6	10	5	25	(COMP) MNOX COATED FELSITE AND ALT GR1	1.0	-2.0	-8.0	400.0	-1.5
15698R	65.6637	146.6123	C-6	10	5	25	INTENSELY MNOX ALT GR1	0.5	-2.0	-8.0	300.0	-1.6
15699R	65.6706	146.6321	C-6	10	5	26	MNOX-CHL-ALT GR1	0.5	31.0	12.0	300.0	-1.1
15701R	65.6705	146.6329	C-6	10	5	26	WEAK CHL GREISEN IN GR1 AND GR2	1.0	6.0	-6.0	400.0	-1.1

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
15627R	-5.0	-10.0	3.0	-0.5	0.7	2.0	8.0	0.71	-200.0	NA	250.0	1.0	3.8
15628R	-5.0	-10.0	3.0	10.0	9.5	-1.0	39.0	-0.05	-200.0	NA	30.0	88.0	1.2
15629R	5.0	-10.0	5.0	7.5	5.1	5.0	-4.0	0.10	-200.0	NA	380.0	2.1	5.7
15630R	-5.0	-10.0	12.0	0.5	0.9	2.0	-4.0	0.07	-200.0	NA	290.0	7.9	6.1
15640R	15.0	10.0	1.0	15.0	6.9	6.0	-6.0	0.66	-200.0	NA	-30.0	3.2	3.6
15641R	-5.0	10.0	3.0	27.0	18.0	-1.0	-4.0	-0.05	-200.0	1900.0	60.0	2.0	4.3
15655R	5.0	10.0	-2.0	8.5	12.9	9.0	-4.0	6.20	-300.0	NA	-70.0	-0.3	6.3
15656R	5.0	10.0	2.0	-0.5	8.9	7.0	-4.0	2.90	-300.0	NA	-60.0	0.3	10.4
15657R	5.0	-10.0	6.0	0.5	2.1	7.0	-4.0	2.70	-300.0	NA	1000.0	0.9	5.5
15658R	-5.0	-10.0	3.0	10.0	11.7	7.0	-4.0	1.80	-200.0	NA	120.0	2.7	6.2
15659R	-5.0	10.0	-2.0	-0.5	1.6	11.0	-4.0	5.10	-300.0	NA	630.0	-0.3	7.7
15660R	-5.0	-10.0	3.0	1.0	2.7	7.0	-4.0	2.00	-200.0	NA	510.0	0.3	6.3
15661R	-5.0	-10.0	7.0	1.0	1.6	7.0	7.0	2.00	-200.0	NA	520.0	-0.2	4.9
15662R	-5.0	-10.0	7.0	7.0	3.9	1.0	-4.0	0.09	-200.0	NA	50.0	1.1	2.0
15663R	-5.0	-10.0	5.0	5.0	2.6	6.0	11.0	1.90	-200.0	NA	480.0	0.3	4.3
15664R	-5.0	-10.0	4.0	15.0	5.9	6.0	16.0	0.06	-200.0	NA	470.0	0.7	6.4
15665R	-5.0	-10.0	3.0	3.0	2.4	13.0	9.0	2.40	-200.0	NA	510.0	-0.2	6.1
15666R	-5.0	-10.0	4.0	1.0	1.1	11.0	-4.0	2.70	-200.0	NA	510.0	0.3	3.9
15667R	-5.0	-10.0	4.0	33.0	5.7	5.0	21.0	0.71	-200.0	NA	520.0	0.5	6.4
15692R	-5.0	-10.0	5.0	-0.5	1.3	7.0	4.0	2.10	-200.0	NA	630.0	0.4	5.0
15694R	-5.0	-10.0	3.0	1.5	9.9	7.0	5.0	2.90	-300.0	NA	370.0	0.4	4.3
15697R	-5.0	-10.0	5.0	1.0	1.3	5.0	-4.0	2.50	-200.0	NA	280.0	-0.2	3.4
15698R	-5.0	10.0	3.0	1.0	1.9	7.0	-4.0	2.20	-200.0	NA	490.0	-0.2	5.0
15699R	-5.0	20.0	8.0	9.0	2.0	4.0	12.0	2.00	-200.0	NA	540.0	-0.2	6.6
15701R	-5.0	-10.0	5.0	2.0	1.3	6.0	-4.0	2.20	-200.0	NA	630.0	0.2	4.8

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
15627R	-5.0	-2.0	-1.0	20.0	12.3	-4.0	-50.0	31.0	79.0	4.8	-0.3	5.3	0.8
15628R	-5.0	-2.0	-1.0	6.6	144.0	22.0	50.0	20.0	28.0	5.0	0.9	11.0	1.7
15629R	-5.0	390.0	1.0	32.0	19.8	6.0	200.0	43.0	103.0	5.9	-0.5	5.6	0.8
15630R	-5.0	26.0	-1.0	12.0	7.0	-4.0	-50.0	14.0	23.0	2.0	-0.3	1.5	0.2
15640R	-5.0	2.0	-1.0	7.2	2.1	-4.0	60.0	17.0	39.0	1.9	0.8	1.2	0.2
15641R	-5.0	140.0	2.0	9.8	9.5	-4.0	1200.0	41.0	100.0	20.7	-0.5	16.2	2.2
15655R	-7.0	70.0	-2.0	100.0	18.4	9.0	1100.0	89.0	144.0	9.7	-1.3	6.8	1.0
15656R	-6.0	92.0	3.0	61.0	7.7	5.0	510.0	56.0	115.0	6.2	-1.0	7.5	1.0
15657R	-7.0	4.0	-1.0	72.0	18.4	5.0	430.0	83.0	186.0	10.4	-1.1	11.0	1.4
15658R	-6.0	300.0	1.0	61.0	8.9	-4.0	330.0	80.0	156.0	9.4	-0.9	7.1	0.9
15659R	-8.0	2.0	-2.0	120.0	10.0	-4.0	420.0	156.0	272.0	19.8	-1.5	15.7	2.0
15660R	-6.0	42.0	2.0	74.0	11.3	6.0	730.0	99.0	164.0	10.6	-1.0	7.5	1.0
15661R	-6.0	10.0	-1.0	65.0	24.6	-4.0	1000.0	80.0	156.0	9.0	-0.9	8.1	1.2
15662R	-6.0	6.0	1.0	11.0	204.0	4.0	8000.0	59.0	68.0	4.7	-0.6	11.4	1.7
15663R	8.0	190.0	4.0	55.0	13.4	-4.0	1600.0	76.0	143.0	10.2	-1.0	11.4	1.5
15664R	-6.0	200.0	-1.0	60.0	12.9	7.0	1000.0	102.0	178.0	12.2	1.0	8.5	1.1
15665R	-6.0	16.0	-1.0	73.0	5.9	-4.0	880.0	127.0	239.0	13.0	-1.2	8.0	0.9
15666R	-5.0	4.0	-1.0	70.0	18.7	-4.0	510.0	36.0	71.0	6.1	-0.8	7.2	1.1
15667R	-6.0	370.0	-1.0	67.0	16.5	-4.0	1700.0	96.0	166.0	11.1	-0.9	8.6	1.1
15692R	-6.0	-2.0	2.0	70.0	6.6	-4.0	220.0	89.0	162.0	11.3	-1.0	8.4	1.0
15694R	-6.0	86.0	3.0	84.0	13.7	10.0	1200.0	96.0	185.0	18.4	-1.1	20.2	2.5
15697R	-6.0	10.0	-1.0	54.0	10.6	6.0	850.0	75.0	127.0	8.8	-1.1	6.7	0.8
15698R	-6.0	18.0	3.0	66.0	13.8	4.0	360.0	93.0	161.0	10.7	-1.1	7.8	1.1
15699R	7.0	66.0	3.0	33.0	10.0	5.0	140.0	29.0	72.0	7.1	-0.8	13.2	1.7
15701R	-5.0	96.0	3.0	33.0	19.6	-4.0	240.0	30.0	113.0	9.7	-0.7	20.2	2.6

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
15702R	65.6705	146.6329	C-6	10	5	26	MN-STAINED GR1 WITH CHL GREISEN	2.0	53.0	-8.0	500.0	-1.4
15703R	65.6667	146.6171	C-6	10	5	25	FNG PORPHYRY DIKE FLOAT	-0.5	-2.0	-6.0	300.0	-1.1
15705R	65.6662	146.6080	C-6	10	5	25	MN-STAINED GR2	-0.5	-2.0	-7.0	400.0	-1.1
15706R	65.6662	146.6080	C-6	10	5	25	RHYOLITE PORPHYRY WITH MNOX	0.5	-2.0	-7.0	300.0	-1.2
15708R	65.6660	146.6083	C-6	10	5	25	MNOX COATED JOINTS IN GR1	1.0	-2.0	-7.0	500.0	-1.3
15709R	65.4752	145.8815	B-4	8	9	34	RHYOLITE DIKE WITH TRACE FL	-0.5	-2.0	-6.0	-100.0	-0.9
15710R	65.4260	146.5653	B-6	7	6	20	RHYOLITE PORPHYRY WITH QTZ AND FL	-0.5	5.0	-5.0	-100.0	-0.5
15711R	65.4280	146.5876	B-6	7	6	18	VERY ALT MN-STAINED AND FAULTED GR	0.5	18.0	-7.0	200.0	-1.3
15715R	65.4132	146.4962	B-5	7	6	22	ORANGE-WEATHERING QTZY WITH SULFIDE	-0.5	8.0	-7.0	300.0	4.2
15716R	65.4138	146.5052	B-6	7	6	22	(COMP) SULFIDE-RICH META-IGNEOUS RX	-0.5	7.0	-9.0	500.0	3.7
15718R	65.4056	146.4928	B-5	7	6	27	QTZ VN BOULDER WITH FEOX AND SULFIDES	0.5	5.0	-5.0	100.0	-1.0
15719R	65.4343	146.4971	B-5	7	6	15	QTZ VN FLOAT WITH SER ENVELOPE	1.5	48.0	8.0	400.0	-0.6
15720R	65.5826	146.8926	C-6	9	4	27	CHL GREISEN VN RUBBLE	3.0	11.0	-6.0	400.0	-0.8
15721R	65.5808	146.8907	C-6	9	4	27	CHL GREISEN VN RUBBLE IN GR3	8.5	-2.0	-6.0	200.0	-0.9
15722R	65.5756	146.8967	C-6	9	4	27	CHL-MUSC GREISEN VN RUBBLE IN GR	1.5	-2.0	10.0	-100.0	-0.7
15723R	65.5756	146.8967	C-6	9	4	27	CHL VLTS IN MUSC-CHL GR RUBBLE	-0.5	-2.0	-5.0	100.0	-0.8
15724R	65.5756	146.8967	C-6	9	4	27	25% MUSC AND KSPAR-MUSC VNS, 75% WALLRK	-0.5	-2.0	-5.0	100.0	-0.7
15725R	65.5757	146.8959	C-6	9	4	27	CSG KSPAR-MUSC VN CUT BY CHL GREISEN VLT	-0.5	-2.0	-5.0	-200.0	-0.7
15727R	65.5757	146.8959	C-6	9	4	27	CHL-MUSC GREISEN VNS IN GR, 50% WALLRK	1.0	-2.0	-5.0	200.0	-0.7
15728R	65.5757	146.9049	C-6	9	4	27	QTZ-MUSC VNS IN MUSC GR	-0.5	-2.0	-5.0	-100.0	-0.7
15729R	65.5757	146.9049	C-6	9	4	27	QTZ-FL GREISEN	1.0	-2.0	-5.0	200.0	-0.5
15730R	65.5757	146.9049	C-6	9	4	27	20% VUGGY QTZ-SULFIDE VNS IN HFLS(80%)	2.0	-2.0	-5.0	-100.0	-0.5
15731R	65.6650	146.6678	C-6	10	5	27	QTZ-CHL REPLACEMENT OF MB	1.5	-2.0	-5.0	100.0	1.5
15732R	65.6650	146.6678	C-6	10	5	27	QTZ-CHL-(FL) REPLACEMENT OF MB	-0.5	-2.0	-5.0	100.0	0.8
15733R	65.6746	146.6459	C-6	10	5	23	QTZ-CHL REPLACEMENT OF LS/CALC-SIL HFLS	3.0	14.0	-5.0	400.0	4.5

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
15702R	-5.0	-10.0	4.0	32.0	5.7	5.0	10.0	3.00	-200.0	NA	480.0	0.4	6.6
15703R	-5.0	-10.0	6.0	1.0	1.0	10.0	-4.0	2.10	-200.0	NA	820.0	0.2	5.1
15705R	-5.0	-10.0	4.0	6.0	1.2	6.0	8.0	2.50	-200.0	NA	640.0	0.3	4.9
15706R	-5.0	-10.0	4.0	4.5	0.6	7.0	43.0	2.60	-200.0	NA	700.0	-0.2	5.0
15708R	-5.0	-10.0	12.0	1.0	1.5	6.0	6.0	1.90	-200.0	NA	600.0	0.7	5.1
15709R	-5.0	-10.0	22.0	0.5	0.9	6.0	-4.0	1.30	-200.0	NA	1100.0	0.5	0.9
15710R	-5.0	-10.0	16.0	1.5	0.8	1.0	-4.0	0.06	-200.0	NA	330.0	1.5	2.0
15711R	-5.0	-10.0	3.0	-0.5	0.8	3.0	-4.0	4.50	-200.0	NA	250.0	-0.2	3.7
15715R	9.0	60.0	1.0	87.0	3.2	5.0	-4.0	0.48	-200.0	4.0	50.0	1.3	11.7
15716R	12.0	60.0	5.0	130.0	5.2	5.0	-4.0	0.92	-200.0	16.0	70.0	3.3	12.0
15718R	-5.0	10.0	2.0	32.0	0.7	2.0	-4.0	0.68	-200.0	20.0	30.0	1.2	0.9
15719R	-5.0	-10.0	21.0	1.0	1.7	3.0	-4.0	2.20	-200.0	NA	900.0	2.2	4.9
15720R	-5.0	-10.0	2.0	11.0	7.2	4.0	16.0	0.57	-200.0	NA	380.0	2.1	6.7
15721R	-5.0	-10.0	-1.0	6.5	9.8	4.0	15.0	0.40	-200.0	NA	270.0	4.1	6.4
15722R	-5.0	-10.0	29.0	30.0	5.6	5.0	-4.0	0.05	-200.0	NA	1600.0	2.5	8.2
15723R	-5.0	-10.0	22.0	0.5	1.2	4.0	-4.0	2.50	-200.0	NA	1500.0	0.2	5.8
15724R	-5.0	-10.0	22.0	-0.5	0.9	3.0	-4.0	3.00	-200.0	NA	1400.0	0.4	6.0
15725R	-5.0	-10.0	21.0	-0.5	0.8	4.0	-4.0	2.70	-200.0	NA	1700.0	0.5	5.3
15727R	-5.0	-10.0	13.0	1.0	1.0	3.0	-4.0	1.00	-200.0	NA	1100.0	0.6	5.1
15728R	-5.0	-10.0	33.0	-0.5	1.5	4.0	-4.0	2.20	-200.0	NA	1700.0	0.9	8.8
15729R	-5.0	-10.0	9.0	3.5	0.6	4.0	-4.0	-0.05	-200.0	NA	460.0	0.5	5.8
15730R	5.0	10.0	1.0	60.0	4.3	5.0	-4.0	-0.05	-200.0	NA	50.0	1.4	2.6
15731R	6.0	10.0	1.0	60.0	2.2	3.0	-4.0	1.50	-200.0	NA	-20.0	-0.2	3.0
15732R	9.0	-10.0	2.0	3.0	1.8	-1.0	-4.0	0.12	-200.0	NA	20.0	-0.2	1.8
15733R	28.0	10.0	5.0	73.0	8.1	4.0	6.0	1.90	-200.0	NA	60.0	2.0	9.9

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
15702R	-6.0	100.0	4.0	40.0	36.7	-4.0	870.0	46.0	101.0	10.5	-0.9	14.9	2.3
15703R	-6.0	-2.0	3.0	62.0	10.8	-4.0	-50.0	32.0	76.0	7.2	-0.8	12.0	1.5
15705R	-5.0	6.0	3.0	57.0	10.4	6.0	220.0	23.0	74.0	6.4	-0.7	13.9	1.7
15706R	-5.0	550.0	4.0	54.0	14.1	9.0	130.0	19.0	75.0	8.0	-0.7	18.5	2.4
15708R	-5.0	4.0	2.0	64.0	13.7	-4.0	70.0	66.0	164.0	11.6	-0.8	12.0	1.5
15709R	-5.0	34.0	5.0	42.0	16.1	5.0	-50.0	18.0	41.0	4.4	-0.6	9.8	1.3
15710R	-5.0	22.0	1.0	6.8	11.8	-4.0	-50.0	8.0	15.0	1.4	-0.3	2.3	0.4
15711R	-5.0	72.0	5.0	17.0	20.1	-4.0	-70.0	19.0	35.0	3.2	-0.9	4.8	0.7
15715R	-5.0	56.0	-1.0	8.3	3.1	-4.0	90.0	28.0	48.0	4.7	1.0	2.1	0.3
15716R	-5.0	20.0	-1.0	11.0	3.0	-4.0	70.0	36.0	63.0	9.8	2.8	2.9	0.4
15718R	-5.0	230.0	-1.0	3.7	1.1	4.0	90.0	8.0	13.0	1.2	0.8	0.4	0.1
15719R	-5.0	290.0	2.0	13.0	70.5	-4.0	130.0	23.0	30.0	2.4	-0.3	4.7	0.6
15720R	-5.0	70.0	2.0	33.0	24.7	-4.0	690.0	23.0	49.0	7.5	0.7	12.2	1.7
15721R	-5.0	34.0	3.0	36.0	24.3	-4.0	220.0	37.0	72.0	7.1	-0.5	10.9	1.5
15722R	-7.0	110.0	22.0	18.0	17.4	130.0	220.0	24.0	86.0	12.7	-0.5	28.0	3.7
15723R	-5.0	40.0	11.0	11.0	7.2	11.0	-50.0	16.0	56.0	7.0	-0.5	12.5	1.6
15724R	-5.0	6.0	12.0	4.9	5.6	14.0	-50.0	8.0	26.0	2.8	-0.5	5.7	0.8
15725R	-5.0	4.0	18.0	7.2	4.6	20.0	80.0	4.0	7.0	0.8	-0.5	1.2	0.2
15727R	-5.0	120.0	9.0	13.0	6.2	6.0	50.0	22.0	82.0	10.9	-0.4	18.5	2.3
15728R	-5.0	8.0	16.0	9.9	3.7	11.0	-50.0	14.0	48.0	5.4	-0.5	8.9	1.1
15729R	-5.0	92.0	19.0	16.0	9.8	9.0	-50.0	34.0	104.0	12.7	-0.3	14.9	1.9
15730R	-5.0	60.0	-1.0	6.0	1.4	8.0	220.0	14.0	28.0	1.6	0.4	1.0	0.1
15731R	-5.0	6.0	-1.0	2.6	0.5	-4.0	1000.0	12.0	22.0	1.5	0.6	1.1	0.1
15732R	-5.0	-2.0	-1.0	1.5	-0.5	-4.0	100.0	6.0	8.0	0.7	0.3	0.5	-0.1
15733R	-5.0	20.0	1.0	2.6	0.8	4.0	210.0	30.0	51.0	3.5	2.7	1.0	0.1

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
15734R	65.6746	146.6459	C-6	10	5	23	CHL-QTZ REPLACEMENT OF CALC-SIL HFLS/MB	1.5	-2.0	-5.0	600.0	1.6
15735R	65.4451	145.9083	B-4	7	9	9	QTZ-FEOX-PY VNS IN PELITIC SCHIST	-0.5	38.0	5.0	100.0	-0.5
16351R	65.6802	146.6483	C-6	10	5	23	MAGNETITE-GAR SKARN(?) FLOAT	-0.5	2.0	-8.0	-100.0	1.9
16362R	65.5773	146.8898	C-6	9	4	27		-0.5	5.0	-9.0	200.0	-1.9
16363R	65.5773	146.8898	C-6	9	4	27	(COMP) TM(?)-CHL-QTZ GREISEN VNS IN HFLS	1.0	170.0	-5.0	400.0	-0.6
16364R	65.5774	146.8892	C-6	9	4	27	(COMP) QTZT HFLS WITH TM/QTZ-CHL VNS	-0.5	5.0	-5.0	200.0	-0.6
16365R	65.5757	146.8942	C-6	9	4	27	(COMP) HFLS NEAR GR CONTACT	-0.5	9.0	-5.0	500.0	-0.7
16366R	65.5757	146.8942	C-6	9	4	27	LIM-STAINED BIO GR WITH TZ AND GAR(?)	-0.5	25.0	-6.0	1000.0	1.0
16367R	65.5757	146.8942	C-6	9	4	27	CHL GREISEN VLTS IN BIO GR WITH TZ(?)	-0.5	16.0	-5.0	300.0	-0.8
16368R	65.5757	146.8942	C-6	9	4	27	(COMP) FEOX GOSSAN IN CHL ALT GR	-0.5	3.0	-5.0	-100.0	-0.7
16369R	65.5757	146.8942	C-6	9	4	27	(COMP) GREISEN VNS IN GR WITH TM-FEOX	-0.5	-2.0	-5.0	300.0	-0.7
16370R	65.5757	146.8942	C-6	9	4	27	(COMP) CHL-MUSC GREISEN VNS IN BIO GR	-0.5	74.0	-5.0	200.0	0.7
16371R	65.5757	146.8942	C-6	9	4	27	(COMP) QTZT HFLS, DARK VLTS, AND SULFIDE	-0.5	140.0	-5.0	800.0	-0.7
16372R	65.5757	146.8942	C-6	9	4	27	(COMP) 4 CHL GREISEN VNS	-0.5	-2.0	-5.0	200.0	-0.6
16373R	65.5776	146.8959	C-6	9	4	27	(COMP) GREISEN VLTS IN HFLS	-0.5	11.0	5.0	300.0	0.7
16374R	65.5776	146.8959	C-6	9	4	27	(COMP) HFLS WITH GREISEN VNS	0.5	9.0	-5.0	300.0	-0.5
16375R	65.5776	146.8959	C-6	9	4	27	QTZ-KSPAR(?)-TZ(?)-CHL PEGMATITE BOULDER	-0.5	2.0	-5.0	400.0	-0.8
16376R	65.5778	146.8963	C-6	9	4	27	WEAK CHL GREISEN IN BIO GR RUBBLE	1.0	-2.0	-5.0	300.0	1.3
16377R	65.5776	146.8959	C-6	9	4	27	CHL GREISEN VN IN QTZT HFLS	1.5	-2.0	-5.0	300.0	-0.6
16378R	65.5779	146.9012	C-6	9	4	27	(COMP) FE-STAINED CHL-TM GREISEN FLOAT	0.5	-2.0	-5.0	300.0	-0.5
16379R	65.5779	146.9012	C-6	9	4	27	CHL-MUSC GREISEN IN BIO GR	1.5	-2.0	-5.0	300.0	0.9
16380R	65.5758	146.8970	C-6	9	4	27	(COMP) CHL-MUSC GREISEN VN IN BIO GR	2.0	-2.0	-5.0	300.0	0.9
16382R	65.5917	146.9244	C-6	9	4	21	(COMP) RYOLITE PORPHYRY PIPE/GR1 CLAST	-0.5	-2.0	-5.0	200.0	-0.5
16383R	65.5917	146.9244	C-6	9	4	21	(COMP) CHL-PY GREISEN ALT GR1 CUT BY GRZ	7.5	35.0	11.0	200.0	-0.7
16384R	65.5917	146.9244	C-6	9	4	21	(COMP) QTZ-CHL-FL STOCKWORK IN GR1	-0.5	5.0	-5.0	400.0	-0.7

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
15734R	27.0	210.0	2.0	920.0	4.2	1.0	-4.0	0.20	-200.0	NA	60.0	2.4	10.0
15735R	7.0	40.0	9.0	98.0	2.9	3.0	-4.0	0.16	-200.0	NA	40.0	0.5	6.7
16351R	13.0	10.0	11.0	1.5	42.2	1.0	-4.0	-0.05	-300.0	54.0	-50.0	1.1	1.0
16362R	16.0	10.0	2.0	0.5	42.7	-1.0	5.0	0.11	400.0	-2.0	-50.0	1.5	1.5
16363R	5.0	40.0	60.0	20.0	3.9	3.0	-4.0	0.42	-200.0	NA	2400.0	1.1	16.5
16364R	-5.0	30.0	32.0	13.0	2.3	5.0	-4.0	0.77	-200.0	NA	1000.0	0.5	8.4
16365R	5.0	60.0	48.0	31.0	3.7	9.0	27.0	0.70	200.0	NA	1300.0	0.9	15.8
16366R	-5.0	100.0	31.0	32.0	3.0	6.0	-4.0	0.84	-200.0	NA	1000.0	0.7	20.7
16367R	-5.0	-10.0	24.0	2.0	1.2	6.0	-4.0	2.80	-200.0	NA	1400.0	0.6	7.3
16368R	-5.0	-10.0	12.0	150.0	3.7	5.0	-4.0	-0.05	-200.0	NA	550.0	0.2	4.3
16369R	-5.0	-10.0	58.0	34.0	3.9	9.0	-4.0	0.73	-200.0	NA	2200.0	1.0	11.0
16370R	-5.0	-10.0	45.0	8.5	3.7	6.0	-4.0	0.15	-200.0	NA	2000.0	0.8	9.7
16371R	6.0	60.0	40.0	56.0	3.1	4.0	11.0	0.40	-200.0	NA	770.0	0.9	13.4
16372R	-5.0	-10.0	40.0	1.0	2.8	-1.0	-4.0	1.00	-200.0	NA	1800.0	0.5	8.2
16373R	6.0	40.0	30.0	22.0	3.0	5.0	-4.0	0.47	-200.0	NA	760.0	0.6	9.3
16374R	-5.0	40.0	29.0	14.0	2.7	5.0	-4.0	0.31	-200.0	NA	830.0	0.6	9.0
16375R	-5.0	-10.0	21.0	1.0	1.1	7.0	-4.0	2.30	-200.0	NA	1100.0	0.5	7.2
16376R	-5.0	-10.0	25.0	10.0	2.4	5.0	-4.0	1.00	-200.0	NA	1300.0	1.0	7.3
16377R	-5.0	20.0	23.0	30.0	3.0	4.0	6.0	-0.05	-200.0	NA	1000.0	1.2	5.3
16378R	-5.0	-10.0	8.0	56.0	4.9	3.0	-4.0	-0.05	-200.0	NA	570.0	3.9	5.2
16379R	-5.0	-10.0	13.0	8.0	2.1	3.0	-4.0	0.11	-200.0	NA	1100.0	2.2	6.3
16380R	-5.0	-10.0	15.0	25.0	4.4	3.0	-4.0	0.25	-200.0	NA	1000.0	4.0	5.6
16382R	-5.0	-10.0	2.0	1.0	0.3	2.0	-4.0	0.94	-200.0	NA	240.0	1.4	1.4
16383R	5.0	-10.0	3.0	36.0	7.1	3.0	-4.0	0.14	-200.0	NA	180.0	3.4	6.3
16384R	-5.0	-10.0	-1.0	1.0	1.3	2.0	-4.0	0.80	-200.0	NA	310.0	1.9	3.1

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
15734R	-5.0	2.0	-1.0	0.7	-0.5	-4.0	160.0	9.0	16.0	1.6	0.8	0.9	0.1
15735R	-5.0	12.0	-1.0	3.3	0.9	-4.0	-50.0	10.0	19.0	1.5	0.7	0.9	0.1
16351R	-5.0	62.0	-1.0	1.5	2.0	9.0	390.0	3.0	4.0	0.2	-0.2	-0.5	-0.1
16362R	-5.0	70.0	-1.0	8.9	14.3	9.0	610.0	96.0	156.0	3.3	1.1	0.3	0.1
16363R	-5.0	40.0	17.0	13.0	2.1	14.0	60.0	30.0	57.0	5.1	0.6	4.9	0.7
16364R	-5.0	20.0	9.0	9.1	2.0	49.0	60.0	20.0	31.0	2.3	0.5	1.4	0.2
16365R	8.0	30.0	4.0	23.0	14.4	22.0	-50.0	39.0	82.0	6.5	0.6	17.5	2.3
16366R	-5.0	22.0	-1.0	20.0	5.0	23.0	-50.0	72.0	118.0	8.0	2.4	3.1	0.5
16367R	8.0	14.0	19.0	13.0	6.6	24.0	-50.0	23.0	81.0	10.5	-0.5	15.8	2.0
16368R	36.0	140.0	9.0	24.0	4.7	28.0	-50.0	45.0	118.0	12.3	-0.4	10.7	1.3
16369R	56.0	32.0	19.0	25.0	30.4	130.0	60.0	36.0	104.0	13.0	-0.4	27.0	3.7
16370R	5.0	38.0	13.0	15.0	15.8	180.0	50.0	25.0	84.0	10.8	-0.3	17.7	2.4
16371R	110.0	14.0	-1.0	15.0	3.7	55.0	-50.0	49.0	95.0	5.2	1.4	2.1	0.3
16372R	6.0	22.0	14.0	14.0	12.3	290.0	-50.0	25.0	81.0	10.4	-0.4	14.9	2.0
16373R	-5.0	16.0	-1.0	11.0	2.4	13.0	-50.0	31.0	50.0	3.6	-0.2	2.1	0.3
16374R	-5.0	30.0	2.0	11.0	2.4	10.0	70.0	27.0	47.0	3.0	0.8	1.6	0.2
16375R	-5.0	2.0	8.0	27.0	25.4	12.0	-50.0	38.0	97.0	16.5	-0.6	21.1	2.8
16376R	-5.0	88.0	7.0	34.0	18.8	6.0	140.0	57.0	180.0	23.6	-0.6	30.8	3.9
16377R	-5.0	110.0	3.0	17.0	10.7	34.0	160.0	32.0	82.0	11.2	1.0	18.8	2.3
16378R	-5.0	220.0	8.0	15.0	17.4	4.0	220.0	24.0	86.0	10.6	-0.3	22.2	2.9
16379R	-5.0	82.0	11.0	15.0	15.3	4.0	60.0	32.0	125.0	15.7	-0.4	29.8	3.9
16380R	-5.0	130.0	12.0	14.0	14.6	5.0	160.0	33.0	118.0	16.6	-0.4	29.6	3.7
16382R	38.0	-2.0	-1.0	16.0	6.4	-4.0	-50.0	17.0	38.0	3.6	-0.4	4.7	0.6
16383R	-6.0	1000.0	1.0	26.0	16.4	5.0	400.0	56.0	99.0	7.2	0.6	5.3	0.8
16384R	-5.0	4.0	1.0	18.0	8.1	-4.0	50.0	38.0	75.0	5.3	-0.4	3.1	0.5

Station	Lat.	Long.	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
16385R	65.5917	146.9241	C-6	9	4	21	(COMP) CHL-MUSC GREISEN VN	4.5	15.0	-5.0	200.0	-0.8
16386R	65.5917	146.9241	C-6	9	4	21	(COMP) FE-STAINED PY-BEARING CHL ALT GR1	9.5	22.0	-5.0	200.0	-0.5
16387R	65.5917	146.9244	C-6	9	4	21	(COMP) MUSC GREISEN VNS/FE-STAINED VNS	0.5	9.0	9.0	300.0	-0.8
16388R	65.5917	146.9241	C-6	9	4	21	(COMP) LIM-STAINED CHL GREISEN VNS	4.0	73.0	12.0	300.0	-0.7
16389R	65.5917	146.9244	C-6	9	4	21	(COMP) LIM-STAINED GR1 WITH CHL GREISEN	2.0	-2.0	-5.0	300.0	-0.8
16390R	65.4059	146.4539	B-5	7	6	26	QTZT HFLS WITH SULFIDES AND SKARN/HFLS	-0.5	64.0	-5.0	600.0	5.8
16391R	65.4954	146.5394	B-6	8	6	28	BIO QTZT HFLS/SCHIST WITH PO AND PY	1.0	40.0	-10.0	700.0	4.2
16441R	65.6330	146.6863	C-6	9	5	3	3-5 INCH WIDE CHL GREISEN VN	2.0	-2.0	-8.0	200.0	-1.9
16442R	65.6465	146.7097	C-6	10	5	33	CHL ALT RHYOLITE PORPHYRY	-0.5	4.0	-9.0	300.0	-2.1
16501R	65.5920	146.9239	C-6	9	4	21	(COMP) PY-BEARING CHL GREISEN SELVAGES	27.0	120.0	25.0	300.0	-1.5
16510R	65.4268	146.0150	B-5	7	8	13	GRAPH-MICA SCHIST WITH PY AND LIM-STAIN	-0.5	30.0	-7.0	300.0	-1.0
16515R	65.3858	146.4759	B-5	7	6	34	(COMP) FAULT BRECCIA WITH QTZ MATRIX	2.0	43.0	16.0	600.0	-1.0
16516R	65.3840	146.4779	B-5	7	6	34	(COMP) QTZ CEMENTED QTZT BRECCIA	-0.5	8.0	-5.0	100.0	0.8
16517R	65.3840	146.4779	B-5	7	6	34	(COMP) BRECCIA BOULDER WITH FL AND LIM	-0.5	6.0	-5.0	100.0	9.2
16518R	65.3825	146.4810	B-5	6	6	3	(COMP) COCKSCOMB QTZ AND QTZ FRAGMENTS	-0.5	20.0	-6.0	300.0	-0.8
16701R	65.5764	146.8808	C-6	9	4	27	CHL GREISEN IN GR1 RUBBLE	5.5	11.0	-8.0	300.0	1.9
16702R	65.6330	146.6863	C-6	9	5	3	3-5 INCH WIDE CHL GREISEN VN	6.5	-2.0	-10.0	200.0	-1.8
16703R	65.5764	146.8808	C-6	9	4	27	CHL ALT GR1 WITH CHL GREISEN VNS	-0.5	-2.0	-10.0	500.0	-1.4
16704R	65.5764	146.8808	C-6	9	4	27	CHL-MUSC ALT GR1 WITH CHL GREISEN VNS	1.0	44.0	-8.0	400.0	-1.0
19002R	65.5850	146.4413	C-5	9	6	26	FE/MN-STAINED MICACEOUS QTZT	-0.5	13.0	-7.0	800.0	-1.3
19003R	65.4483	145.9204	B-4	7	9	9	CHL-BIO-QTZ, BIO-TM, AND QTZ-TM SCHIST	3.6	20000.0	9400.0	600.0	-2.8
19004R	65.4274	145.9249	B-4	7	9	17	CALC-SIL SCHIST WITH SULFIDES	-0.5	5600.0	1300.0	-500.0	2.5
19005R	65.4309	145.9499	B-4	7	9	17	(COMP) CALC-SIL SKARNOID WITH FEOX	-0.5	45.0	9.0	200.0	-0.8
19006R	65.4318	145.9543	B-4	7	9	17	FE-STAINED HFLS PELITIC SCHIST	0.5	13.0	9.0	300.0	-1.0

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
16385R	7.0	-10.0	-1.0	25.0	6.8	3.0	4.0	0.17	-200.0	NA	150.0	1.5	8.3
16386R	-5.0	-10.0	-1.0	42.0	5.1	2.0	5.0	0.45	-200.0	NA	80.0	1.3	8.4
16387R	-5.0	-10.0	4.0	7.5	3.9	4.0	5.0	0.42	-2.0	NA	360.0	2.0	5.0
16388R	5.0	-10.0	4.0	93.0	11.2	3.0	7.0	0.14	-200.0	NA	270.0	4.4	6.5
16389R	5.0	-10.0	4.0	9.0	4.5	4.0	-4.0	0.84	-200.0	NA	350.0	0.7	4.8
16390R	12.0	40.0	10.0	73.0	3.0	6.0	-4.0	0.69	-200.0	NA	160.0	0.3	10.2
16391R	8.0	70.0	4.0	36.0	2.8	5.0	6.0	1.10	-200.0	22.0	160.0	3.1	10.3
16441R	-5.0	10.0	7.0	64.0	8.5	5.0	17.0	-0.05	300.0	120.0	620.0	-0.2	4.0
16442R	-5.0	10.0	5.0	2.5	1.2	4.0	-4.0	1.40	-200.0	14.0	630.0	0.5	5.4
16501R	13.0	10.0	5.0	170.0	10.4	4.0	-4.0	0.10	400.0	100.0	240.0	4.0	4.8
16510R	9.0	60.0	5.0	29.0	2.7	4.0	-4.0	0.12	-200.0	6.0	150.0	0.4	11.9
16515R	11.0	20.0	7.0	35.0	1.5	3.0	-4.0	0.05	-200.0	150.0	220.0	1.0	3.9
16516R	6.0	10.0	4.0	14.0	0.4	1.0	-4.0	-0.05	-200.0	10.0	70.0	0.9	2.0
16517R	-5.0	10.0	4.0	18.0	0.5	3.0	-4.0	-0.05	-200.0	4.0	80.0	1.0	1.5
16518R	-5.0	20.0	8.0	14.0	1.9	2.0	-4.0	-0.05	-200.0	8.0	130.0	0.8	4.3
16701R	6.0	10.0	11.0	92.0	5.0	4.0	-4.0	-0.05	-200.0	130.0	820.0	1.2	7.4
16702R	-5.0	10.0	6.0	320.0	14.7	4.0	-4.0	-0.05	-300.0	1300.0	540.0	-0.2	4.3
16703R	7.0	20.0	28.0	170.0	4.8	8.0	-4.0	0.05	-200.0	34.0	1400.0	0.9	9.5
16704R	-5.0	-10.0	20.0	35.0	4.5	4.0	-4.0	-0.05	-200.0	140.0	1200.0	1.3	5.5
19002R	8.0	70.0	6.0	22.0	2.6	10.0	-4.0	0.65	-200.0	14.0	120.0	1.2	11.3
19003R	23.0	70.0	9.0	210.0	4.8	3.0	-24.0	0.44	-600.0	18.0	-90.0	41.0	15.2
19004R	17.0	90.0	2.0	210.0	4.0	4.0	-9.0	0.43	-300.0	8.0	60.0	16.0	12.7
19005R	6.0	30.0	2.0	17.0	1.5	3.0	-4.0	-0.05	-200.0	6.0	90.0	1.3	5.6
19006R	17.0	70.0	4.0	110.0	6.2	4.0	-4.0	0.49	-200.0	-2.0	60.0	-0.2	15.6

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
16385R	12.0	1100.0	-1.0	23.0	33.5	5.0	990.0	63.0	111.0	9.3	0.6	7.4	1.2
16386R	5.0	1400.0	-1.0	19.0	10.5	4.0	600.0	23.0	41.0	3.8	0.4	4.9	0.7
16387R	-5.0	160.0	1.0	26.0	19.8	8.0	520.0	65.0	104.0	8.5	-0.4	6.0	0.8
16388R	5.0	110.0	-1.0	30.0	52.4	10.0	2300.0	87.0	105.0	11.5	1.0	8.8	1.3
16389R	-5.0	98.0	1.0	30.0	24.9	9.0	220.0	77.0	102.0	10.9	0.7	10.6	1.4
16390R	-5.0	66.0	-1.0	11.0	3.5	-4.0	150.0	36.0	64.0	3.9	1.0	2.1	0.3
16391R	-5.0	8.0	-1.0	13.0	4.5	-5.0	140.0	43.0	69.0	6.5	1.0	1.9	0.3
16441R	-5.0	2000.0	3.0	55.0	12.4	8.0	550.0	83.0	147.0	13.5	-0.6	5.9	0.9
16442R	-6.0	24.0	2.0	57.0	14.4	-4.0	100.0	70.0	135.0	13.6	-0.7	9.8	1.5
16501R	-6.0	2200.0	2.0	25.0	40.9	8.0	4700.0	60.0	115.0	12.2	0.5	8.9	1.8
16510R	-5.0	14.0	-1.0	8.0	1.9	9.0	130.0	11.0	40.0	1.7	0.5	1.5	0.3
16515R	5.0	14.0	-1.0	8.6	3.6	-4.0	110.0	24.0	38.0	3.0	0.5	0.6	0.2
16516R	-5.0	4.0	-1.0	2.7	-0.6	-4.0	-50.0	12.0	21.0	1.0	0.3	0.4	-0.1
16517R	-5.0	-2.0	-1.0	2.3	1.3	-4.0	-50.0	7.0	14.0	2.5	1.3	1.8	0.2
16518R	-5.0	4.0	-1.0	4.1	2.7	-4.0	-50.0	9.0	12.0	1.4	0.6	0.6	0.1
16701R	-9.0	16000.0	7.0	23.0	21.5	6.0	130.0	37.0	106.0	18.0	-0.5	21.4	3.5
16702R	-8.0	450.0	-1.0	42.0	12.8	12.0	1900.0	65.0	118.0	10.4	-0.6	5.5	0.8
16703R	-6.0	160.0	32.0	31.0	30.2	38.0	230.0	30.0	93.0	19.0	-0.4	34.7	5.3
16704R	-9.0	18000.0	8.0	17.0	15.4	36.0	210.0	19.0	79.0	13.5	0.4	33.3	5.0
19002R	-5.0	6.0	1.0	18.0	4.0	-4.0	70.0	53.0	88.0	8.0	1.1	3.3	0.5
19003R	-25.0	38.0	-3.0	4.5	-7.8	26.0	210.0	14.0	30.0	2.7	-1.1	4.2	0.2
19004R	-10.0	64.0	-1.0	4.4	-2.8	-6.0	150.0	15.0	23.0	3.0	0.8	2.3	0.3
19005R	-5.0	10.0	-1.0	9.0	2.3	4.0	60.0	11.0	20.0	1.9	0.4	1.4	0.2
19006R	-5.0	2.0	-1.0	5.4	1.3	-5.0	130.0	18.0	34.0	4.2	1.1	1.5	0.2

APPENDIX E

SOIL ANALYSES FOR THE LIME PEAK - MT. PRINDLE AREA EAST CENTRAL, ALASKA

compiled by T.B. Weglarz

APPENDIX E

SOIL ANALYSES FOR THE LIME PEAK - MT PRINDLE AREA EAST CENTRAL, ALASKA

This Appendix contains analytical data sets on 49 soil samples developed for the Lime Peak - Mt. Prindle Area mineral assessment conducted by the Alaska Division of Geological and Geophysical Surveys, 1986-87. Data for samples are arranged in 2-page sets. Page one of each set includes the following identification information for each sample: Station numbers that correspond to sample locations shown on Plate 5-1: Circle Quadrangle 15-minute map designation (Quad.); Township (T.); Range (R.); and Section (Sec.), for use in locating sample points or data of particular interest. The Station number is repeated on each of the two pages required to display the entire set of analyses for each sample. All analyses are reported in parts per million (ppm) unless indicated otherwise in the column headings. Negative numbers in the analytical data columns indicate that the element in question was not detected at a concentration equal to the absolute value of the negative value reported.

Soil material analyzed was comprised of the -80 mesh fraction of clastic material collected from the "C" horizon of poorly developed residual soils. All samples were analyzed for 30 elements. Instrumental neutron activation analytical methods were used to determine concentration levels of: As, Au, Ba, Ca, Co, Cr, Cs, Cu, Fe, Hf, Mo, Na, Ni, Pb, Rb, Sc Se, Ta, Th, U, W, La, Ce, Sm, Eu, Yb, and Lu. A hot LeFort aqua regia digestion followed by atomic absorbtion analysis of the resulting solution was used to quantify concentrations of Cu, Pb, Zn, and Ag. Analytical work was conducted by Nuclear Activation Services, Ltd.,Hamilton, Ontario, Canada under State contract CC10-7-0006.

Appendix E Elemental analyses of soil samples collected in the Lime Peak - Mt. Prindle area of the Circle Quadrangle, Alaska. Analyses are reported in parts per million (ppm) unless indicated otherwise. Negative numbers indicate that the element was not detected at a concentration level equal to the absolute value of the negative number reported.

Station	Quad.	T.	R.	Sec.	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni
00665L	C-6	9	5	20	-0.5	33.0	-7.0	700.0	-1.6	9.0	80.0	6.0	25.0	3.5	9.0	-4.0	1.3	-200.0
00671L	C-6	9	5	20	-0.5	27.0	-7.0	600.0	-1.5	10.0	80.0	5.0	28.0	3.5	7.0	8.0	1.3	-200.0
00672L	C-6	9	5	20	-0.5	30.0	-7.0	800.0	-1.6	11.0	70.0	6.0	26.0	3.5	8.0	-4.0	1.4	-200.0
00673L	C-6	9	5	20	-0.5	23.0	-5.0	800.0	-1.6	14.0	80.0	5.0	29.0	3.5	10.0	-4.0	1.3	-200.0
04328L	C-6	9	5	20	-0.5	23.0	-7.0	700.0	2.1	12.0	80.0	5.0	27.0	3.6	9.0	9.0	1.2	-200.0
04329L	C-6	9	5	20	-0.5	18.0	14.0	500.0	-2.6	7.0	50.0	7.0	20.0	2.7	13.0	-4.0	1.5	-400.0
04330L	C-6	9	5	20	-0.5	15.0	-7.0	800.0	-1.7	12.0	80.0	4.0	25.0	4.0	10.0	-4.0	1.4	-300.0
04331L	C-6	9	5	20	-0.5	14.0	-10.0	900.0	-2.4	9.0	70.0	6.0	30.0	2.8	10.0	6.0	1.2	-300.0
04332L	C-6	9	5	20	-0.5	12.0	-11.0	800.0	-2.4	8.0	40.0	7.0	22.0	2.5	7.0	-4.0	1.3	-300.0
04333L	C-6	9	5	20	-0.5	16.0	-10.0	700.0	-2.4	11.0	60.0	5.0	31.0	2.9	11.0	-4.0	1.3	-300.0
04334L	C-6	9	5	20	-0.5	18.0	-7.0	800.0	-1.4	12.0	80.0	5.0	31.0	3.9	9.0	-4.0	1.3	-200.0
04335L	C-6	9	5	20	-0.5	17.0	11.0	600.0	-1.6	13.0	60.0	6.0	25.0	3.6	10.0	-4.0	1.2	-200.0
04336L	C-6	9	5	20	-0.5	19.0	-6.0	700.0	-1.3	12.0	90.0	4.0	31.0	4.0	8.0	-4.0	1.2	-200.0
04337L	C-6	9	5	20	-0.5	19.0	-7.0	700.0	1.8	13.0	100.0	4.0	36.0	3.9	9.0	-4.0	1.3	-200.0
04416L	B-6	7	6	9	-0.5	79.0	9.0	600.0	-1.2	10.0	70.0	17.0	19.0	3.3	7.0	-4.0	0.9	-200.0
04417L	B-6	7	6	9	0.5	220.0	14.0	600.0	-0.9	6.0	50.0	26.0	12.0	3.3	10.0	-4.0	0.7	-200.0
04418L	B-6	7	6	9	1.0	320.0	14.0	400.0	-1.2	-5.0	10.0	45.0	9.0	3.7	8.0	-4.0	0.1	200.0
04419L	B-6	7	6	9	0.5	200.0	15.0	200.0	1.5	-5.0	10.0	37.0	6.0	2.9	8.0	-4.0	0.1	-200.0
04420L	B-6	7	6	9	-0.5	180.0	9.0	300.0	-1.3	-5.0	10.0	35.0	5.0	2.0	9.0	-4.0	0.2	200.0
04421L	B-6	7	6	9	-0.5	160.0	20.0	400.0	-1.2	-5.0	10.0	32.0	6.0	2.9	7.0	-4.0	0.1	300.0

Appendix E (continued)

Station	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
00665L	160.0	220.0	0.8	13.2	-6.0	-1.0	35.0	6.3	-4.0	160.0	84.0	151.0	9.4	2.0	5.7	0.9
00671L	94.0	140.0	0.9	13.1	-5.0	-1.0	30.0	5.7	-4.0	150.0	69.0	146.0	7.8	-1.0	5.1	0.7
00672L	400.0	290.0	0.9	13.1	-5.0	-1.0	43.0	8.6	-4.0	250.0	95.0	172.0	10.5	-1.1	7.8	1.0
00673L	220.0	320.0	1.0	13.2	-5.0	-1.0	39.0	9.7	-4.0	250.0	96.0	174.0	11.4	1.9	7.9	1.1
04328L	120.0	260.0	0.9	13.1	-5.0	-1.0	54.0	10.4	4.0	240.0	90.0	195.0	10.4	1.3	7.5	1.1
04329L	410.0	390.0	0.8	11.2	-8.0	-2.0	63.0	18.9	5.0	360.0	138.0	220.0	14.6	-1.9	12.2	1.6
04330L	100.0	310.0	1.0	15.0	-5.0	-1.0	43.0	9.2	-4.0	190.0	96.0	197.0	11.4	1.4	7.9	1.0
04331L	260.0	330.0	0.5	11.9	-7.0	-2.0	45.0	10.4	-4.0	260.0	118.0	202.0	13.6	-1.7	9.9	1.5
04332L	150.0	360.0	0.7	10.8	-6.0	-2.0	51.0	10.8	7.0	310.0	121.0	207.0	13.6	-1.7	11.1	1.6
04333L	100.0	300.0	0.7	12.1	-49.0	3.0	45.0	9.5	5.0	210.0	106.0	173.0	11.2	1.9	6.9	1.1
04334L	58.0	190.0	0.9	14.5	-5.0	-1.0	36.0	7.3	-4.0	190.0	67.0	138.0	8.3	1.4	5.1	0.7
04335L	78.0	260.0	0.8	12.0	-6.0	-1.0	63.0	10.8	4.0	220.0	92.0	184.0	10.1	-1.1	6.5	0.9
04336L	72.0	190.0	1.0	14.0	-5.0	-1.0	30.0	7.3	-4.0	180.0	66.0	129.0	7.7	1.7	4.3	0.6
04337L	66.0	250.0	0.9	15.1	-5.0	2.0	31.0	8.2	4.0	170.0	70.0	135.0	8.4	-1.0	4.1	0.6
04416L	14.0	370.0	5.1	11.3	-5.0	-1.0	25.0	10.6	8.0	45.0	49.0	107.0	6.2	-0.8	4.5	0.8
04417L	20.0	500.0	11.0	10.4	51.0	3.0	47.0	18.0	21.0	28.0	84.0	164.0	11.2	1.1	9.0	1.3
04418L	30.0	710.0	17.0	8.3	-6.0	4.0	46.0	20.9	29.0	14.0	70.0	137.0	9.9	-0.9	8.7	1.3
04419L	26.0	640.0	14.0	7.5	-6.0	3.0	43.0	18.4	40.0	8.0	70.0	128.0	9.8	-0.8	8.4	1.3
04420L	12.0	820.0	11.0	7.7	10.0	3.0	54.0	17.7	43.0	5.0	81.0	162.0	11.4	-0.8	10.3	1.5
04421L	24.0	750.0	14.0	7.5	-5.0	2.0	44.0	13.3	37.0	4.0	64.0	123.0	8.5	-0.8	7.6	1.1

Station	Quad.	T.	R.	Sec.	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni
04422L	B-6	7	6	9	-0.5	170.0	9.0	400.0	-1.1	-5.0	-10.0	28.0	2.5	2.4	8.0	-4.0	0.2	-200.0
04423L	B-6	7	6	9	-0.5	62.0	6.0	300.0	-1.2	-5.0	-10.0	27.0	3.5	2.7	7.0	-4.0	0.2	-200.0
04424L	B-6	7	6	9	-0.5	43.0	-5.0	500.0	1.7	-5.0	20.0	38.0	5.0	1.8	7.0	-4.0	0.4	-200.0
04425L	B-6	7	6	9	-0.5	12.0	-6.0	600.0	-1.4	7.0	50.0	31.0	13.0	3.0	7.0	-4.0	1.2	-200.0
04432L	C-6	9	4	14	-0.5	7.0	-10.0	500.0	-3.1	-5.0	-10.0	14.0	5.0	3.3	15.0	-4.0	0.8	-300.0
05933L	C-6	9	4	20	-0.5	39.0	11.0	800.0	-2.1	10.0	80.0	6.0	17.0	2.9	11.0	-4.0	1.6	-300.0
05934L	C-6	9	4	20	-0.5	22.0	-7.0	800.0	-1.4	20.0	100.0	3.0	14.0	4.2	8.0	-4.0	1.5	-200.0
05935L	C-6	9	4	20	-0.5	21.0	8.0	800.0	-1.4	15.0	90.0	5.0	30.0	3.9	7.0	-4.0	1.4	-200.0
05936L	C-6	9	4	20	-0.5	33.0	-7.0	500.0	-1.5	11.0	70.0	5.0	24.0	3.5	10.0	4.0	1.4	-200.0
05937L	C-6	9	4	20	-0.5	18.0	-5.0	900.0	-1.1	17.0	110.0	4.0	23.0	4.2	8.0	-4.0	1.6	-200.0
05938L	C-6	9	4	20	-0.5	30.0	-10.0	800.0	-2.3	14.0	60.0	6.0	24.0	3.1	11.0	-4.0	1.4	-300.0
05939L	C-6	9	4	20	-0.5	53.0	-11.0	1100.0	-2.5	12.0	80.0	7.0	22.0	3.2	14.0	-4.0	1.4	-300.0
05940L	C-6	9	4	20	-0.5	16.0	8.0	800.0	-1.5	18.0	100.0	4.0	25.0	3.9	8.0	4.0	1.6	-200.0
05941L	C-6	9	4	20	-0.5	27.0	6.0	700.0	-1.5	8.0	70.0	5.0	13.0	3.6	11.0	9.0	1.5	-200.0
05942L	C-6	9	4	20	-0.5	31.0	-6.0	700.0	-1.3	9.0	90.0	5.0	29.0	4.0	8.0	-4.0	1.4	-200.0
05943L	C-6	9	5	20	-0.5	32.0	-8.0	500.0	-2.1	9.0	70.0	3.0	28.0	3.3	6.0	-4.0	1.2	-300.0
05944L	C-6	9	5	20	-0.5	26.0	-8.0	700.0	2.9	11.0	90.0	3.0	29.0	3.4	5.0	-4.0	1.2	-300.0
05945L	C-6	9	5	20	-0.5	32.0	9.0	500.0	-2.3	9.0	60.0	6.0	21.0	3.3	7.0	-4.0	1.2	-300.0
05946L	C-6	9	5	20	-0.5	13.0	-8.0	700.0	-2.1	7.0	70.0	3.0	19.0	2.8	8.0	-4.0	1.4	-300.0
05947L	C-6	9	5	20	-0.5	14.0	-7.0	600.0	-1.8	10.0	80.0	2.0	22.0	3.2	6.0	-4.0	1.2	-300.0
05948L	C-6	9	5	20	-0.5	11.0	8.0	700.0	-2.0	11.0	80.0	3.0	28.0	3.3	5.0	-4.0	1.2	-200.0
05949L	C-6	9	5	20	-0.5	14.0	-7.0	700.0	-1.8	10.0	70.0	2.0	28.0	3.2	4.0	-4.0	1.1	-300.0
05950L	C-6	9	5	20	-0.5	18.0	10.0	800.0	-1.9	11.0	70.0	3.0	26.0	3.3	6.0	-4.0	1.2	-300.0
06431L	C-6	9	5	20	-0.5	23.0	-8.0	700.0	-2.0	9.0	70.0	3.0	23.0	3.0	7.0	-4.0	1.2	-300.0
06432L	C-6	9	5	20	-0.5	32.0	-9.0	600.0	-2.3	10.0	60.0	4.0	29.0	3.2	7.0	-4.0	1.0	-300.0

Station	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
04422L	22.0	690.0	9.5	6.5	210.0	3.0	44.0	11.1	48.0	3.0	66.0	141.0	9.0	-0.7	8.3	1.0
04423L	22.0	700.0	8.9	6.7	-5.0	3.0	45.0	11.5	47.0	4.0	70.0	132.0	9.3	1.0	8.8	1.2
04424L	24.0	710.0	1.7	7.7	-5.0	4.0	36.0	16.4	44.0	19.0	57.0	110.0	8.1	-0.8	7.4	1.1
04425L	20.0	420.0	0.9	11.7	-5.0	2.0	33.0	16.9	7.0	74.0	59.0	118.0	8.1	-1.0	7.4	1.1
04432L	50.0	530.0	0.6	12.6	-5.0	4.0	160.0	75.1	18.0	71.0	243.0	419.0	40.4	-1.1	22.7	4.0
05933L	120.0	330.0	0.6	11.5	-6.0	-2.0	45.0	9.7	4.0	190.0	72.0	122.0	8.3	-1.4	7.9	1.2
05934L	100.0	110.0	1.1	16.4	-8.0	-1.0	25.0	9.6	-4.0	180.0	60.0	118.0	10.2	2.2	6.4	0.9
05935L	62.0	100.0	1.3	15.3	-5.0	2.0	25.0	8.7	-4.0	110.0	56.0	126.0	9.5	1.8	6.2	0.9
05936L	120.0	280.0	1.0	13.1	-5.0	2.0	49.0	11.5	-4.0	180.0	80.0	181.0	11.1	1.2	7.8	1.1
05937L	64.0	160.0	0.9	16.0	-5.0	-1.0	27.0	7.2	-4.0	99.0	74.0	137.0	9.2	2.2	5.7	0.9
05938L	120.0	340.0	1.1	13.7	-7.0	-2.0	39.0	10.5	5.0	160.0	90.0	157.0	11.2	-1.6	7.4	1.1
05939L	110.0	320.0	1.1	14.4	-7.0	-2.0	50.0	10.9	-4.0	160.0	109.0	193.0	15.3	1.8	10.1	1.4
05940L	46.0	140.0	1.0	16.6	-5.0	-1.0	20.0	7.1	-4.0	83.0	63.0	122.0	8.2	1.5	4.7	0.7
05941L	78.0	290.0	0.8	13.6	-5.0	-1.0	44.0	9.4	5.0	110.0	74.0	137.0	8.9	1.3	7.8	1.1
05942L	110.0	130.0	1.1	14.5	-6.0	-1.0	26.0	7.6	-4.0	130.0	64.0	114.0	7.8	-0.2	5.1	0.8
05943L	120.0	300.0	0.7	12.3	-5.0	-2.0	47.0	11.9	5.0	200.0	72.0	152.0	14.4	2.0	6.9	1.1
05944L	76.0	130.0	0.9	14.6	-5.0	-2.0	28.0	10.4	-4.0	150.0	74.0	135.0	15.7	1.5	6.2	1.0
05945L	96.0	310.0	0.8	11.6	-5.0	3.0	54.0	10.7	5.0	190.0	82.0	151.0	14.7	1.7	7.9	1.3
05946L	44.0	150.0	0.6	12.0	-5.0	-2.0	29.0	6.8	4.0	180.0	67.0	112.0	13.4	1.0	6.2	1.1
05947L	50.0	130.0	1.0	11.9	6.0	-2.0	20.0	5.6	4.0	100.0	53.0	88.0	9.3	-0.8	3.4	0.6
05948L	36.0	110.0	0.9	13.5	-5.0	-2.0	14.0	5.2	-4.0	85.0	53.0	83.0	9.2	-0.9	2.9	0.5
05949L	46.0	90.0	0.8	12.1	-5.0	-2.0	20.0	6.0	-4.0	120.0	48.0	83.0	9.3	1.3	3.8	0.6
05950L	48.0	120.0	0.9	12.8	-5.0	-2.0	26.0	5.6	-4.0	120.0	58.0	121.0	10.8	1.2	4.7	0.8
06431L	70.0	260.0	0.8	11.3	-5.0	-2.0	31.0	6.3	-4.0	140.0	58.0	106.0	10.1	-0.9	5.7	0.9
06432L	220.0	290.0	0.8	11.1	-5.0	-2.0	45.0	10.0	-4.0	270.0	98.0	195.0	18.5	2.6	7.3	1.3

Station	Quad.	T.	R.	Sec.	Ag	As	Au(ppb)	Ba	Ca(%)	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni
06632L	C-6	9	5	20	-0.5	20.0	-8.0	600.0	-2.0	9.0	50.0	3.0	44.0	2.9	6.0	-4.0	1.0	-300.0
06633L	C-6	9	5	20	-0.5	24.0	14.0	700.0	-2.0	11.0	60.0	2.0	42.0	3.1	6.0	-4.0	1.1	-300.0
06634L	C-6	9	5	20	-0.5	22.0	-8.0	600.0	-2.0	8.0	70.0	4.0	51.0	2.8	7.0	-4.0	1.0	500.0
15487L	B-4	7	9	12	-0.5	-2.0	-9.0	900.0	-2.0	7.0	150.0	5.0	31.0	6.3	8.0	-4.0	0.2	-300.0

Station	Pb	Rb	Sb	Sc	Se	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
06632L	130.0	180.0	0.7	11.6	-5.0	-2.0	30.0	6.6	-4.0	240.0	74.0	129.0	12.7	1.1	4.1	0.8
06633L	72.0	130.0	0.9	12.6	-9.0	-2.0	21.0	7.1	-4.0	180.0	60.0	107.0	10.8	1.0	3.5	0.6
06634L	98.0	230.0	1.0	10.8	-5.0	-2.0	28.0	8.3	-4.0	280.0	60.0	116.0	10.2	-0.9	4.2	0.7
15487L	4.0	300.0	-0.2	32.6	-6.0	-2.0	16.0	2.1	4.0	38.0	56.0	102.0	11.0	1.4	4.2	0.7

APPENDIX F

TRACE ELEMENT GEOCHEMISTRY FOR ROCK SAMPLES COLLECTED FROM SELECTED AREAS DURING 1987 FOLLOW-UP INVESTIGATIONS, LIME PEAK-MT. PRINDLE AREA, ALASKA

compiled by M.D. Albanese and M.A. Wiltse

APPENDIX F

TRACE ELEMENT GEOCHEMISTRY FOR ROCK SAMPLES COLLECTED FROM SELECTED AREAS DURING 1987 FOLLOW-UP INVESTIGATIONS, LIME PEAK-MT. PRINDLE AREA, ALASKA

This appendix contains analytical data sets obtained from 373 rock grab and chip samples collected from selected areas in the Lime Peak - Mt Prindle area mineral assessment during 1987 follow-up investigations by the Alask Division of Geological and Geophysical Surveys. An index map showing the locations of these selected areas is shown on figure 6.1 (this report).

Data for a single sample are arranged in 3-page sets. Page one of each set includes the following identification information for each sample: Station numbers; Prospect names that correspond to those shown on figure 6.1; Circle Quadrangle 15-minute map designations (Quad.); Township (T.); Range (R.); and Section (Sec.). Page one of the three-page sets also contains a brief discription of the sample. The station number is repeated on each of the pages required to display the entire set of analyses for each sample. All analyses are reported in parts per million (ppm) unless otherwise indicated in the column heading. Negative numbers in the analytical data columns indicate that the element in question was not detected at a concentration equal to the absolute value of the negative value reported. Those elements that were not determined for specific samples are indicated as not analyzed (NA).

Grab samples consisted of single rock specimens weighing from 1/4 to one or two pounds; composite samples consisted of multiple rock fragments of variable size collected within a limited area (a few hundred square feet); and chip samples (designated "chan" in the discriptions) were comprised of systematically collected 1/2 inch to 1 inch rock chips taken in single or multiple rows across the strike of veins or outcropping rock strata. The composite and chip samples normally had an estimated weight of at least 10 pounds.

All samples were analyzed for 31 elements. Instrumental neutron activation analytical methods were used to determine concentration levels of As, Au, Ba, Ca, Co, Cr, Cs, Fe, Hf, Mo, Na, Ni, Rb, Sb, Sc, Se, Ta, Th, U, W, La, Ce, Sm, Eu, Yb, and Lu. A hot LeFort aqua regia digestion followed by atomic absorbtion analysis of the resulting solution was used to quantify concentrations of Cu, Pb, Zn, and Ag. Sn concentrations were determined by X-ray fluorescence analysis of pressed powder pellets. Analytical work was conducted by Nuclear Activation Services, Ltd., Hamilton, Ontario, Canada under State contract CC-10-7-0006.

Abbreviations used in the sample descriptions are shown in appendix D.

Elemental analyses of rock grab and composite chip samples collected in the Lime Peak - Mt. Prindle area of the Circle Quadrangle, Alaska in 1987. Analyses are reported in parts per million (ppm) unless indicated otherwise. Negative numbers indicate that the element was not detected at a concentration level equal to the absolute value of the negative number reported. NA = not analyzed.

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
19007R	South Lime Peak	C-6	9N	5E	19	mgr chl bio gr, minor magnetite	2.5	25.0	-6.0	100.0	-1.7
19008R	South Lime Peak	C-6	9N	5E	19	clay alt cgr seriate gr, slightly mag	-0.5	-2.0	9.0	300.0	-1.8
19009R	South Lime Peak	C-6	9N	5E	19	chl alt mgr equig gr	2.5	44.0	-7.0	100.0	-1.8
19010R	South Lime Peak	C-6	9N	5E	19	cgr seriate gr w/ minor fgr equig gr	5.0	12.0	-10.0	300.0	-2.9
30001R	South Lime Peak	C-6	9N	5E	19	FeOx chl alt fgr equig gr	-0.5	-2.0	-5.0	200.0	-1.0
30002R	South Lime Peak	C-6	9N	5E	19	limonitic stained fgr porphyritic gr	-0.5	-2.0	-7.0	100.0	-1.8
30003R	South Lime Peak	C-6	9N	5E	19	hem + chl alt fgr equig gr	1.5	35.0	-5.0	100.0	-1.2
30004R	South Lime Peak	C-6	9N	5E	19	chl cgr seriate gr	1.5	580.0	-6.0	200.0	-1.3
30005R	South Lime Peak	C-6	9N	5E	19	hem-wx alt fgr equig gr	-0.5	23.0	-5.0	100.0	-1.4
30006R	South Lime Peak	C-6	9N	5E	19	dark green aphanitic cobble in float	-0.5	5.0	-5.0	200.0	-0.9
30007R	South Lime Peak	C-6	9N	5E	19	chl alt fgr porph gr w/ orange-brown wx	1.5	160.0	10.0	200.0	-1.6
30008R	South Lime Peak	C-6	9N	5E	19	fgr equig gr, fgr porph gr, + rhy porph	-0.5	7.0	-7.0	200.0	-1.6
30009R	South Lime Peak	C-6	9N	5E	19	comp smpl of wx fgr equig gr	-0.5	4.0	-5.0	100.0	-1.3
30010R	South Lime Peak	C-6	9N	5E	19	comp smpl of greisen vnlt in gr contact	-0.5	10.0	9.0	-100.0	-1.4
30011R	South Lime Peak	C-6	9N	5E	19	light tan wx vnlts in fgr equig gr	1.0	63.0	-6.0	-100.0	-1.3
30012R	South Lime Peak	C-6	9N	5E	19	comp smpl of fgr equig gr	2.0	9.0	-5.0	100.0	-1.1
30014R	South Lime Peak	C-6	9N	5E	20	fgr equig to porph bio gr	-0.5	2.0	-7.0	200.0	1.7
30015R	South Lime Peak	C-6	9N	5E	17	rhy porph assoc w/ fgr equig to porph gr	0.5	4.0	-5.0	400.0	-1.0
30016R	South Lime Peak	C-6	9N	5E	17	mgr equig bio gr w/ chl?-bio? vnlts	-0.5	2.0	-5.0	300.0	-1.1
30017R	South Lime Peak	C-6	9N	5E	16	fgr equig to porph gr	-0.5	3.0	-5.0	300.0	-1.2

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
19007R	-5.0	120.0	7.0	75.0	4.6	7.0	10.0	-0.1	-200.0	1400.0	670.0	1.4	6.5
19008R	-5.0	130.0	2.0	4.0	1.5	4.0	-4.0	1.7	-200.0	22.0	380.0	0.3	4.5
19009R	-5.0	450.0	7.0	180.0	3.3	7.0	10.0	0.1	200.0	640.0	1100.0	0.5	5.9
19010R	5.0	80.0	5.0	55.0	5.0	12.0	5.0	0.4	-200.0	150.0	590.0	1.1	8.9
30001R	-5.0	80.0	5.0	16.0	4.6	6.0	17.0	-0.1	-200.0	260.0	680.0	0.3	6.3
30002R	-5.0	100.0	2.0	3.5	1.3	6.0	-4.0	1.6	-200.0	54.0	420.0	0.6	5.0
30003R	-5.0	100.0	5.0	21.0	3.3	4.0	14.0	0.5	-200.0	66.0	540.0	2.9	4.5
30004R	-5.0	110.0	6.0	180.0	4.2	4.0	20.0	0.1	200.0	500.0	510.0	3.8	4.5
30005R	-5.0	90.0	6.0	7.0	1.2	5.0	9.0	1.5	-200.0	24.0	590.0	0.8	4.9
30006R	-5.0	80.0	5.0	94.0	7.0	5.0	7.0	-0.1	-200.0	24.0	690.0	1.1	5.3
30007R	-5.0	80.0	3.0	42.0	5.3	4.0	7.0	-0.1	-200.0	580.0	450.0	0.9	4.6
30008R	-5.0	90.0	4.0	5.5	1.0	5.0	7.0	1.4	-200.0	24.0	490.0	0.7	3.8
30009R	-5.0	90.0	7.0	4.0	0.9	5.0	6.0	2.1	-200.0	18.0	700.0	0.4	2.0
30010R	-5.0	110.0	3.0	8.0	1.2	5.0	4.0	1.7	-200.0	20.0	560.0	0.5	4.9
30011R	-5.0	100.0	4.0	37.0	1.4	5.0	11.0	1.8	200.0	26.0	580.0	1.1	5.7
30012R	-5.0	80.0	6.0	72.0	3.6	6.0	11.0	0.8	-200.0	1500.0	600.0	1.5	2.2
30014R	-5.0	100.0	13.0	2.0	0.9	5.0	-4.0	2.2	-200.0	24.0	710.0	0.8	5.2
30015R	-5.0	100.0	13.0	8.0	2.2	5.0	-4.0	0.5	-200.0	410.0	1300.0	0.6	6.7
30016R	-5.0	140.0	10.0	3.5	0.7	5.0	-4.0	1.7	-200.0	8.0	560.0	0.3	5.4
30017R	-5.0	120.0	19.0	1.5	0.8	5.0	-4.0	2.0	-200.0	16.0	890.0	0.3	5.5

Appendix F (continued)

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
19007R	-5.0	47.0	-1.0	43.0	9.7	8.0	550.0	130.0	207.0	12.6	-0.7	5.7	0.9
19008R	-5.0	4.0	-1.0	45.0	4.1	-4.0	61.0	108.0	175.0	8.9	-0.9	2.8	0.4
19009R	-5.0	45.0	-1.0	50.0	10.0	17.0	260.0	165.0	217.0	13.8	-0.8	8.5	1.3
19010R	-6.0	48.0	2.0	77.0	10.0	12.0	350.0	352.0	511.0	24.6	2.0	8.3	1.2
30001R	-5.0	100.0	4.0	61.0	21.6	4.0	230.0	67.0	92.0	11.0	-0.4	13.4	2.4
30002R	-5.0	4.0	2.0	57.0	9.9	-4.0	57.0	99.0	153.0	10.9	-0.8	8.0	1.2
30003R	-5.0	45.0	3.0	52.0	9.9	-4.0	110.0	48.0	86.0	10.3	-0.5	10.6	1.7
30004R	-5.0	210.0	2.0	43.0	22.2	10.0	460.0	72.0	132.0	10.9	0.6	8.4	1.7
30005R	-5.0	8.0	2.0	49.0	8.6	7.0	110.0	53.0	86.0	8.1	-0.7	6.4	1.0
30006R	5.0	61.0	8.0	35.0	15.9	9.0	190.0	37.0	89.0	14.5	0.5	21.7	4.2
30007R	8.0	54.0	-1.0	47.0	8.0	6.0	360.0	113.0	175.0	11.2	-0.7	5.4	0.9
30008R	-5.0	6.0	-1.0	52.0	10.5	-4.0	180.0	78.0	125.0	10.0	-0.7	8.0	1.4
30009R	5.0	7.0	3.0	43.0	11.1	-4.0	57.0	17.0	42.0	6.3	-0.6	9.2	1.7
30010R	-5.0	4.0	3.0	48.0	9.0	-4.0	110.0	42.0	78.0	8.2	-0.6	8.8	1.5
30011R	-5.0	15.0	2.0	46.0	12.8	16.0	140.0	35.0	70.0	9.7	-0.6	12.1	1.9
30012R	-5.0	23.0	3.0	50.0	13.8	4.0	540.0	33.0	66.0	7.5	-0.5	9.5	1.7
30014R	-5.0	7.0	3.0	44.0	9.4	7.0	34.0	28.0	67.0	8.5	-0.6	12.9	2.2
30015R	-5.0	21.0	11.0	49.0	19.8	4.0	210.0	34.0	98.0	11.2	-0.4	14.9	2.4
30016R	-7.0	3.0	12.0	18.0	24.2	8.0	14.0	27.0	74.0	6.7	-0.5	13.6	2.3
30017R	6.0	8.0	12.0	43.0	10.6	6.0	19.0	26.0	71.0	7.4	-0.5	12.7	1.9

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30018R	South Lime Peak	C-6	9N	5E	20	fgr equig gr dike in qtzt	-0.5	-2.0	-5.0	300.0	-0.9
30019R	South Lime Peak	C-6	9N	5E	19	bull qzt in qtzt hfls	-0.5	2.0	-5.0	100.0	-0.5
30020R	South Lime Peak	C-6	9N	5E	30	bull qtz w/ large feld in creek float	-0.5	-2.0	-5.0	-200.0	-0.8
30021R	Pinnell Trail Sb	C-6	8N	10E	33	chl schist w/ qtz bands	-0.5	5.0	-6.0	900.0	-1.5
30022R	South Lime Peak	C-6	9N	5E	19	dark green chl- qtz rich rock	-0.5	-2.0	-5.0	400.0	-1.2
30023R	South Lime Peak	C-6	9N	5E	19	py-bearing breccia(?) in bio-chl gr	17.0	76.0	-5.0	200.0	-1.3
30024R	South Lime Peak	C-6	9N	5E	19	Mn-rich rk in chl cgr seriate gr	3.0	-2.0	6.0	400.0	-1.5
30025R	South Lime Peak	C-6	9N	5E	17	MnOx in fgr equig to porph gr	0.5	2.0	-5.0	400.0	-1.1
30026R	South Lime Peak	C-6	9N	5E	20	chl rich fgr porph gr in rubble	0.5	4.0	-5.0	300.0	-0.8
30027R	South Lime Peak	C-6	9N	5E	20	chl fgr equig gr	0.5	5.0	-5.0	300.0	-0.9
30028R	South Lime Peak	C-6	9N	5E	20	fgr equig gr radiating fiberous crystals	0.5	2.0	-5.0	200.0	-1.2
30029R	South Lime Peak	C-6	9N	5E	18	fgr-mgr seriate gr w/ coarse k-spar	-0.5	-2.0	-5.0	200.0	-1.4
30030R	South Lime Peak	C-6	9N	5E	17	FeOx + MnOx in fgr porph gr w/ chl(?)	4.0	32.0	-5.0	400.0	1.1
30031R	South Lime Peak	C-6	9N	5E	17	cgs seriate and fgr porph gr w/ MnOx	0.5	2.0	-5.0	400.0	-1.1
30032R	South Lime Peak	C-6	9N	5E	17	cgs seriate gr w/ minor fgr equig gr	1.5	1000.0	-8.0	300.0	-1.5
30033R	South Lime Peak	C-6	9N	5E	17	seriate cgr gr w/ minor MnOx	1.5	6.0	-5.0	300.0	-1.3
30034R	South Lime Peak	C-6	9N	5E	17	seriate cgr gr	-0.5	6.0	-7.0	500.0	-1.8
30035R	South Lime Peak	C-6	9N	5E	20	greenish gray csg-fgr hfls	-0.5	4.0	-5.0	100.0	-0.8
30036R	South Lime Peak	C-6	9N	5E	20	cgs seriate hfls contact	-0.5	7.0	-5.0	100.0	-0.5
30037R	South Lime Peak	C-6	9N	5E	19	tm-bearing cgs seriate gr near qtzt hfls	0.5	9.0	20.0	200.0	-1.1

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30018R	-5.0	100.0	15.0	2.0	0.9	5.0	-4.0	1.5	-200.0	24.0	940.0	0.6	1.8
30019R	-5.0	230.0	2.0	5.5	0.8	2.0	-4.0	0.1	-200.0	6.0	60.0	0.2	1.2
30020R	-5.0	220.0	1.0	2.5	0.3	1.0	-4.0	0.8	-200.0	-2.0	80.0	0.4	0.7
30021R	18.0	100.0	3.0	13.0	5.2	5.0	-4.0	2.5	-200.0	-2.0	80.0	2.0	16.0
30022R	-5.0	100.0	9.0	15.0	2.5	3.0	-4.0	0.9	-200.0	110.0	920.0	0.9	5.7
30023R	-5.0	150.0	5.0	490.0	4.5	4.0	-4.0	0.1	-200.0	520.0	460.0	4.1	3.9
30024R	-5.0	100.0	6.0	25.0	1.7	5.0	4.0	0.7	200.0	220.0	740.0	0.4	4.5
30025R	-5.0	120.0	16.0	14.0	1.1	4.0	-4.0	1.4	-200.0	46.0	1000.0	1.4	5.7
30026R	-5.0	100.0	6.0	35.0	5.3	4.0	4.0	-0.1	-200.0	28.0	810.0	0.4	5.8
30027R	-5.0	100.0	10.0	6.5	4.3	5.0	-4.0	-0.1	-200.0	66.0	880.0	0.9	6.8
30028R	-5.0	100.0	15.0	2.0	1.1	4.0	-4.0	1.7	-200.0	18.0	970.0	0.8	5.6
30029R	-5.0	120.0	7.0	2.5	1.3	5.0	-4.0	1.3	-200.0	16.0	730.0	0.4	4.6
30030R	-5.0	100.0	30.0	140.0	3.1	4.0	-4.0	0.2	-200.0	1800.0	1100.0	1.6	4.4
30031R	-5.0	120.0	10.0	9.0	1.1	5.0	-4.0	1.2	-200.0	210.0	1100.0	0.2	5.4
30032R	-5.0	120.0	6.0	490.0	4.1	4.0	-4.0	0.7	-200.0	120.0	540.0	1.5	4.8
30033R	-5.0	80.0	3.0	70.0	1.2	3.0	-4.0	0.1	-200.0	640.0	600.0	0.2	2.9
30034R	-5.0	110.0	2.0	4.5	1.3	5.0	-4.0	1.9	-200.0	10.0	460.0	0.5	3.9
30035R	-5.0	210.0	1.0	4.5	0.6	2.0	-4.0	0.8	-200.0	12.0	-30.0	0.2	1.1
30036R	-5.0	200.0	2.0	23.0	1.3	3.0	-4.0	0.2	-200.0	10.0	80.0	0.3	1.6
30037R	-5.0	170.0	5.0	12.0	2.8	4.0	-4.0	0.8	-200.0	290.0	270.0	2.4	3.1

Appendix F (continued)

Station	Sc	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30018R	-5.0	10.0	10.0	48.0	11.0	-4.0	25.0	6.0	31.0	2.5	-0.4	7.9	1.4
30019R	-5.0	4.0	6.0	4.0	1.2	-4.0	17.0	10.0	18.0	1.3	-0.2	0.6	0.1
30020R	-5.0	3.0	8.0	6.4	3.3	-4.0	10.0	9.0	23.0	2.2	-0.3	2.8	0.5
30021R	-5.0	5.0	7.0	17.0	3.1	-4.0	110.0	51.0	95.0	7.0	1.6	2.4	0.5
30022R	-5.0	24.0	7.0	49.0	13.2	7.0	180.0	55.0	115.0	10.2	-0.5	8.3	1.4
30023R	-5.0	200.0	6.0	38.0	7.1	15.0	200.0	117.0	218.0	12.6	-0.6	3.7	0.5
30024R	-5.0	8.0	7.0	100.0	13.9	5.0	82.0	127.0	230.0	15.9	-0.7	6.0	1.0
30025R	6.0	9.0	9.0	59.0	24.1	4.0	81.0	39.0	90.0	10.4	-0.5	11.1	1.9
30026R	-5.0	98.0	10.0	56.0	15.4	6.0	150.0	44.0	108.0	12.4	0.5	12.4	2.0
30027R	-5.0	44.0	10.0	69.0	28.4	5.0	180.0	49.0	116.0	12.8	0.5	12.4	2.3
30028R	-6.0	8.0	9.0	62.0	19.2	-4.0	85.0	42.0	98.0	11.3	-0.5	10.5	1.8
30029R	-5.0	5.0	8.0	65.0	15.8	-4.0	64.0	86.0	166.0	13.0	-0.6	7.2	1.2
30030R	14.0	69.0	9.0	29.0	46.6	6.0	590.0	45.0	96.0	9.6	0.4	10.6	2.1
30031R	-6.0	10.0	10.0	50.0	16.6	4.0	210.0	33.0	81.0	10.5	-0.4	12.9	1.9
30032R	-14.0	26.0	1.0	59.0	18.7	6.0	110.0	69.0	119.0	9.9	-0.8	5.0	1.2
30033R	-6.0	14.0	-1.0	29.0	7.4	6.0	540.0	85.0	131.0	7.0	0.7	2.5	0.4
30034R	-5.0	4.0	-1.0	42.0	4.3	-4.0	34.0	118.0	207.0	9.8	1.3	3.4	0.6
30035R	-5.0	2.0	-1.0	2.7	0.7	-4.0	19.0	10.0	17.0	1.4	-0.4	0.6	0.1
30036R	-5.0	58.0	-1.0	3.6	1.1	-4.0	230.0	7.0	14.0	1.0	-0.3	0.6	0.1
30037R	-5.0	76.0	-1.0	19.0	11.0	4.0	220.0	46.0	96.0	5.6	-0.7	3.0	0.6

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Be	Ca(%)
30038R	South Lime Peak	C-6	9N	5E	30	seriate cgr gr	1.0	7.0	-6.0	100.0	-1.4
30039R	Pinnell Trail Sb	B-4	8N	10E	29	FeOx wx in qtz vns	-0.5	4.0	-5.0	200.0	-0.5
30040R	Pinnell Trail Sb	B-4	8N	10E	32	qtz vn in pelitic schists + qtzt	-0.5	61.0	21.0	-100.0	-0.5
30041R	Pinnell Trail Sb	B-4	8N	10E	31	white qtz vn + bull qtz	-0.5	3.0	-5.0	-100.0	-0.5
30042R	Pinnell Trail Sb	B-4	8N	10E	28	chl-musc-qtz schist w/ tm	-0.5	4.0	-5.0	400.0	-1.0
30043R	Pinnell Trail Sb	B-4	8N	10E	29	gar bearing musc qtzt	-0.5	10.0	-5.0	100.0	5.0
30044R	Pinnell Trail Sb	B-4	8N	10E	29	gar-chl-musc-qtz schist	-0.5	21.0	8.0	400.0	2.1
30045R	Pinnell Trail Sb	B-4	8N	10E	32	pelitic qtz schist	-0.5	3.0	-5.0	200.0	-0.7
30046R	Pinnell Trail Sb	B-4	8N	10E	29	pelitic qtzt + qtz-eye qtzt	-0.5	7.0	-5.0	500.0	-1.1
30047R	Pinnell Trail Sb	B-4	8N	10E	31	chl pelitic schist w/gar	-0.5	9.0	-5.0	200.0	-1.0
30048R	Pinnell Trail Sb	B-4	7N	10E	6	gar-bearing chl schist	-0.5	4.0	-5.0	100.0	9.8
30049R	Pinnell Trail Sb	B-4	7N	10E	6	gar-bearing chl schist	-0.5	3.0	-6.0	400.0	-1.0
30050R	Pinnell Trail Sb	B-4	7N	10E	6	gar-bearing chl schist	-0.5	4.0	-5.0	300.0	1.6
30051R	Pinnell Trail Sb	B-4	8N	10E	26	chl-gar-musc qtz schist	-0.5	2.0	-7.0	300.0	-1.0
30052R	Pinnell Trail Sb	B-4	8N	10E	27	gar chl schist	-0.5	5.0	7.0	300.0	-0.9
30053R	Pinnell Trail Sb	B-4	8N	10E	27	chl schist within musc chl qtz schist	-0.5	3.0	-6.0	500.0	-1.1
30054R	Pinnell Trail Sb	B-4	8N	10E	27	bio chl gar sch + tm chl musc qtz schist	-0.5	3.0	-5.0	500.0	-1.0
30055R	Pinnell Trail Sb	B-4	8N	10E	27	chl sch w/ minor carb	-0.5	18.0	7.0	700.0	-1.1
30056R	Pinnell Trail Sb	B-4	8N	10E	27	chl qtz schist	-0.5	10.0	-5.0	500.0	-1.0
30057R	Pinnell Trail Sb	B-4	8N	10E	35	chl schist w/ chl-qtz schist	-0.5	54.0	6.0	800.0	-1.0

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30038R	-5.0	120.0	2.0	11.0	5.3	4.0	-4.0	1.1	-200.0	130.0	470.0	1.8	5.0
30039R	-5.0	100.0	-1.0	4.5	0.4	1.0	-4.0	-0.1	-200.0	4.0	-20.0	0.7	0.6
30040R	-5.0	210.0	-1.0	8.5	0.6	1.0	-4.0	0.1	-200.0	24.0	20.0	6.1	0.5
30041R	-5.0	250.0	-1.0	3.0	0.2	-1.0	-4.0	-0.1	-200.0	-2.0	-20.0	1.8	0.1
30042R	-5.0	190.0	1.0	9.0	1.9	7.0	-4.0	0.9	-200.0	16.0	100.0	0.4	5.8
30043R	9.0	180.0	1.0	23.0	3.3	4.0	-4.0	0.7	-200.0	10.0	40.0	0.4	14.3
30044R	17.0	200.0	-1.0	43.0	4.9	4.0	-4.0	0.5	-200.0	8.0	100.0	0.7	21.7
30045R	6.0	200.0	1.0	15.0	2.2	4.0	-4.0	0.5	-200.0	-2.0	40.0	3.3	7.4
30046R	7.0	160.0	2.0	9.0	2.7	5.0	-4.0	0.9	-200.0	-2.0	100.0	0.6	9.0
30047R	7.0	170.0	2.0	15.0	2.7	9.0	-4.0	1.0	-200.0	10.0	40.0	19.0	5.8
30048R	-5.0	100.0	1.0	8.5	0.5	2.0	-4.0	0.3	-200.0	-2.0	160.0	0.3	1.1
30049R	12.0	170.0	1.0	22.0	2.9	7.0	-4.0	1.0	-200.0	-2.0	80.0	1.0	9.0
30050R	17.0	200.0	2.0	58.0	4.0	4.0	4.0	0.6	-200.0	-2.0	100.0	0.6	16.6
30051R	26.0	200.0	3.0	96.0	5.6	4.0	-4.0	1.0	300.0	-2.0	70.0	0.9	22.5
30052R	19.0	220.0	-1.0	47.0	4.5	6.0	-4.0	0.6	200.0	-2.0	50.0	1.8	18.7
30053R	7.0	150.0	3.0	36.0	3.5	3.0	-4.0	0.8	-200.0	-2.0	100.0	1.8	13.0
30054R	8.0	150.0	1.0	10.0	2.7	6.0	-4.0	0.8	-200.0	-2.0	90.0	0.9	7.6
30055R	7.0	150.0	1.0	12.0	3.0	4.0	-4.0	0.3	-200.0	-2.0	170.0	2.3	13.6
30056R	8.0	150.0	2.0	12.0	3.2	4.0	-4.0	0.5	-200.0	-2.0	120.0	2.5	9.0
30057R	-5.0	160.0	4.0	17.0	2.5	4.0	-4.0	0.5	-200.0	-2.0	180.0	5.6	14.8

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30038R	-5.0	11.0	1.0	42.0	11.5	4.0	310.0	65.0	115.0	7.2	-0.8	4.2	0.9
30039R	-5.0	3.0	-1.0	1.9	0.6	-4.0	6.5	5.0	10.0	0.6	-0.2	0.2	0.1
30040R	-5.0	3.0	-1.0	3.2	0.7	4.0	6.0	6.0	11.0	0.7	-0.3	0.2	-0.1
30041R	-5.0	3.0	-1.0	-0.5	-0.5	-4.0	2.0	1.0	3.0	-0.1	-0.2	-0.2	-0.1
30042R	-5.0	3.0	-1.0	11.0	2.3	-4.0	33.0	26.0	47.0	3.0	1.2	1.7	0.3
30043R	-5.0	3.0	-1.0	7.0	1.3	-4.0	25.0	22.0	45.0	3.7	0.9	2.3	0.3
30044R	-5.0	4.0	-1.0	9.2	2.2	-4.0	39.0	32.0	65.0	5.4	1.6	3.5	0.6
30045R	-5.0	3.0	-1.0	5.1	1.1	-4.0	26.0	11.0	24.0	1.4	0.4	1.2	0.2
30046R	-5.0	3.0	-1.0	13.0	1.8	-4.0	47.0	35.0	72.0	4.1	1.3	1.8	0.4
30047R	-5.0	-2.0	-1.0	11.0	2.0	-4.0	51.0	27.0	48.0	3.2	1.1	1.9	0.4
30048R	-5.0	4.0	-1.0	3.4	0.7	-4.0	10.0	9.0	18.0	1.1	0.3	0.5	0.1
30049R	-5.0	4.0	-1.0	13.0	1.6	-4.0	56.0	36.0	67.0	4.1	0.8	2.5	0.5
30050R	-5.0	3.0	-1.0	7.6	0.9	-4.0	51.0	17.0	30.0	2.3	0.8	2.4	0.4
30051R	-5.0	5.0	-1.0	5.5	1.2	-4.0	69.0	18.0	32.0	2.9	0.8	2.6	0.4
30052R	-5.0	4.0	-1.0	6.0	1.5	-4.0	56.0	19.0	36.0	2.8	0.8	1.7	0.4
30053R	-5.0	4.0	-1.0	6.9	1.9	-4.0	61.0	32.0	36.0	1.6	-0.5	1.3	0.2
30054R	-5.0	4.0	-1.0	9.6	1.1	-4.0	49.0	23.0	43.0	3.0	1.1	1.5	0.3
30055R	-5.0	4.0	-1.0	8.4	2.2	-4.0	61.0	45.0	66.0	3.7	0.8	2.5	0.4
30056R	-5.0	4.0	-1.0	10.0	1.1	-4.0	76.0	32.0	52.0	3.5	1.1	1.9	0.3
30057R	-5.0	4.0	-1.0	10.0	2.1	-4.0	47.0	33.0	47.0	3.3	0.9	1.8	0.3

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30058R	Pinnell Trail Sb	B-4	8N	10E	35	chl qtz schist	-0.5	12.0	-6.0	600.0	-1.1
30100R	Pinnell Trail Sb	B-4	8N	10E	33	chl musc qtz pelitic schist	-0.5	8.0	5.0	200.0	-0.9
30101R	Pinnell Trail Sb	B-4	8N	10E	33	limon tan wx greasy musc chl qtz schist	-0.5	4.0	-5.0	800.0	-1.1
30102R	Pinnell Trail Sb	B-4	8N	10E	33	ep, calc,+ qtz coating fractured qtzt	-0.5	11.0	-5.0	100.0	0.9
30103R	Pinnell Trail Sb	B-4	8N	10E	33	chl lithologies from chl schist units	-0.5	4.0	-5.0	200.0	-1.0
30104R	Pinnell Trail Sb	B-4	8N	10E	33	tan-gray wx dark gray ls in float	-0.5	5.0	-5.0	200.0	25.0
30105R	Pinnell Trail Sb	B-4	8N	10E	4	gar musc chl + chl musc calc schist	-0.5	3.0	7.0	100.0	-1.0
30106R	Pinnell Trail Sb	B-4	8N	10E	27	ribbon qtz in chl qtzt	-0.5	2.0	-5.0	100.0	-0.5
30107R	Pinnell Trail Sb	B-4	8N	10E	34	porph chl schist rx + fgr gar chl qtzt	-0.5	5.0	-5.0	900.0	-1.2
30108R	Pinnell Trail Sb	B-4	8N	10E	34	porph chl schist	-0.5	21.0	7.0	700.0	-1.0
30109R	Pinnell Trail Sb	B-4	8N	10E	28	chl musc qtz schist w/ 5% lim	-0.5	3.0	-5.0	300.0	-0.7
30110R	Pinnell Trail Sb	B-4	8N	10E	28	fgr-mgr chl qtzt + chl musc qtz schist	-0.5	4.0	-5.0	400.0	-0.7
30111R	Pinnell Trail Sb	B-4	8N	10E	28	chl musc schist	-0.5	2.0	-5.0	200.0	-0.7
30112R	Pinnell Trail Sb	B-4	8N	10E	28	gar chl musc qtz schist	-0.5	3.0	5.0	700.0	-0.9
30113R	Pinnell Trail Sb	B-4	8N	10E	28	chl musc qtz schist w/ minor gar	-0.5	5.0	-5.0	400.0	-0.9
30114R	Pinnell Trail Sb	B-4	7N	10E	10	porph chl qtz schist w/plag porphs + gar	-0.5	3.0	-5.0	100.0	-0.7
30201R	Upper Preacher Ck	C-5	8N	7E	6	lim qtz vn in hfls	-0.5	18.0	-5.0	100.0	-0.5
30202R	Upper Preacher Ck	C-5	8N	6E	1	lim bio hfls w/ py(?)	0.5	34.0	-5.0	1100.0	-1.1
30203R	Upper Preacher Ck	C-5	8N	6E	1	limon bio hfls	0.5	32.0	-5.0	400.0	-0.9
30204R	Upper Preacher Ck	C-5	8N	7E	6	qtz-tm vnlt in qtzt	-0.5	72.0	-5.0	200.0	-0.8

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30058R	5.0	130.0	2.0	9.0	2.3	7.0	-4.0	0.9	-200.0	-2.0	110.0	0.6	10.0
30100R	11.0	180.0	-1.0	27.0	2.6	3.0	-4.0	0.6	-200.0	-2.0	50.0	0.8	9.5
30101R	-5.0	140.0	3.0	17.0	3.2	5.0	-4.0	0.6	200.0	4.0	180.0	0.6	12.6
30102R	-5.0	200.0	-1.0	4.0	0.6	6.0	-4.0	0.4	-200.0	-2.0	-20.0	0.3	1.5
30103R	19.0	180.0	2.0	46.0	4.0	4.0	-4.0	0.8	-200.0	-2.0	30.0	0.4	15.9
30104R	-5.0	40.0	1.0	2.0	0.8	2.0	-4.0	0.5	-200.0	-2.0	-20.0	4.8	2.2
30105R	28.0	230.0	-1.0	68.0	5.9	3.0	-4.0	1.0	200.0	-2.0	-30.0	-0.2	22.6
30106R	-5.0	200.0	1.0	2.5	0.5	3.0	-4.0	0.1	-200.0	-2.0	30.0	0.4	1.2
30107R	11.0	100.0	2.0	12.0	3.2	5.0	-4.0	1.5	-200.0	-2.0	90.0	2.8	11.1
30108R	12.0	110.0	1.0	26.0	3.7	3.0	-4.0	0.7	-200.0	18.0	120.0	1.5	13.1
30109R	5.0	130.0	1.0	8.0	1.5	6.0	-4.0	0.6	-200.0	-2.0	60.0	0.4	4.8
30110R	7.0	120.0	1.0	12.0	1.6	5.0	-4.0	0.5	-200.0	4.0	70.0	1.4	5.0
30111R	-5.0	120.0	1.0	8.5	1.5	5.0	-4.0	0.5	-200.0	8.0	40.0	0.7	3.5
30112R	8.0	120.0	2.0	13.0	2.7	6.0	-4.0	0.6	-200.0	6.0	150.0	0.6	9.5
30113R	11.0	130.0	2.0	15.0	2.6	6.0	-4.0	0.1	-200.0	4.0	170.0	4.8	10.5
30114R	9.0	100.0	1.0	11.0	2.4	4.0	-4.0	0.6	-200.0	-2.0	130.0	0.5	3.6
30201R	-5.0	190.0	1.0	8.5	0.5	1.0	-4.0	-0.1	-200.0	2.0	-20.0	0.3	0.4
30202R	16.0	120.0	9.0	46.0	3.5	6.0	-4.0	0.7	-200.0	-2.0	350.0	0.4	14.2
30203R	18.0	130.0	34.0	440.0	3.5	5.0	5.0	0.3	-200.0	-2.0	260.0	0.8	10.2
30204R	7.0	120.0	4.0	16.0	2.6	5.0	4.0	0.6	-200.0	-2.0	110.0	0.2	6.5

Appendix F (continued)

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30058R	-5.0	4.0	-1.0	9.5	2.1	-4.0	47.0	33.0	47.0	2.9	1.0	2.0	0.3
30100R	-5.0	3.0	-1.0	4.9	0.9	-4.0	42.0	16.0	28.0	2.1	1.2	1.3	0.2
30101R	-5.0	4.0	1.0	11.0	2.5	-4.0	57.0	39.0	52.0	3.7	0.6	1.9	0.4
30102R	-5.0	3.0	-1.0	6.5	1.0	-4.0	15.0	13.0	20.0	1.4	0.5	0.8	0.1
30103R	-5.0	4.0	1.0	5.0	1.4	-4.0	54.0	17.0	29.0	2.5	1.1	1.7	0.3
30104R	-5.0	3.0	1.0	3.7	0.8	-4.0	10.0	14.0	22.0	1.4	0.9	0.8	0.1
30105R	-5.0	4.0	-1.0	3.8	1.2	-4.0	67.0	12.0	20.0	2.2	1.0	1.7	0.2
30106R	-5.0	3.0	-1.0	3.4	-0.5	-4.0	6.5	5.0	7.0	0.5	-0.2	0.4	0.1
30107R	-5.0	4.0	-1.0	12.0	2.2	-4.0	76.0	38.0	55.0	4.4	1.1	2.3	0.4
30108R	-5.0	4.0	-1.0	12.0	2.5	-4.0	75.0	45.0	76.0	6.2	0.9	3.5	0.6
30109R	-5.0	4.0	1.0	8.3	1.0	-4.0	27.0	13.0	28.0	1.8	-0.3	1.6	0.3
30110R	-5.0	3.0	1.0	6.8	1.3	-4.0	26.0	17.0	28.0	2.3	-0.3	1.4	0.2
30111R	-5.0	3.0	-1.0	6.6	0.9	-4.0	30.0	16.0	27.0	2.0	0.6	1.3	0.2
30112R	-5.0	4.0	-1.0	13.0	1.7	-4.0	46.0	34.0	61.0	3.9	1.2	2.3	0.4
30113R	-5.0	4.0	-1.0	11.0	1.9	-4.0	38.0	38.0	60.0	4.8	1.2	2.1	0.3
30114R	-5.0	4.0	1.0	6.6	1.1	-4.0	59.0	12.0	30.0	1.6	0.4	1.3	0.2
30201R	-5.0	4.0	-1.0	1.0	-0.5	-4.0	9.5	2.0	3.0	0.2	-0.2	0.2	-0.1
30202R	-5.0	9.0	-1.0	15.0	3.6	-4.0	190.0	55.0	96.0	6.2	0.8	2.0	0.4
30203R	-5.0	17.0	-1.0	12.0	3.2	6.0	61.0	38.0	62.0	3.9	1.1	1.9	0.4
30204R	-5.0	9.0	-1.0	9.6	3.0	24.0	46.0	26.0	43.0	3.1	0.5	1.1	0.2

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30205R	Upper Preacher Ck	C-5	8N	7E	6	qtzt w/ lim clots	-0.5	26.0	-5.0	-100.0	-0.5
30206R	Upper Preacher Ck	C-5	8N	7E	6	sheared rusty qtz vn	-0.5	7.0	-5.0	-100.0	-0.5
30207R	Upper Preacher Ck	C-5	8N	7E	6	tm vn in hfls	1.5	65.0	8.0	600.0	1.3
30208R	Upper Preacher Ck	C-5	8N	7E	6	chl-tm-qtz vnlt	-0.5	32.0	-5.0	200.0	-0.7
30209R	Upper Preacher Ck	C-5	9N	6E	36	lim green qtzt	-0.5	7.0	-5.0	600.0	-0.9
30210R	Upper Preacher Ck	C-5	8N	7E	6	yellowish rusty hfls	-0.5	49.0	10.0	1200.0	-1.2
30211R	Upper Preacher Ck	C-5	8N	6E	1	qtz vn float	-0.5	17.0	-5.0	-100.0	-0.5
30212R	Upper Preacher Ck	C-5	8N	6E	1	qtz-tm vn float	1.0	73.0	-5.0	-100.0	-0.6
30213R	Upper Preacher Ck	C-5	8N	6E	1	qtz vn in hfls	-0.5	5.0	-5.0	-100.0	-0.5
30214R	Upper Preacher Ck	C-5	8N	7E	6	qtz vn in hfls	-0.5	80.0	-5.0	100.0	-0.5
30215R	Upper Preacher Ck	C-5	8N	7E	6	qtz-tm-feld vns	-0.5	19.0	-5.0	100.0	-0.5
30216R	Upper Preacher Ck	C-5	9N	7E	31	tourmalinized hfls	-0.5	13.0	-5.0	100.0	-0.7
30217R	Upper Preacher Ck	C-5	9N	7E	31	vuggy lim qtz	-0.5	5.0	-5.0	-100.0	-0.5
30218R	Upper Preacher Ck	C-5	9N	6E	36	qtz vn in TKg2	-10.0	1200.0	36.0	100.0	-0.7
30219R	Upper Preacher Ck	C-5	8N	7E	6	rusty silckensided qtz	-0.5	33.0	-5.0	400.0	-1.1
30220R	Upper Preacher Ck	C-5	8N	6E	1	rusty hornfels	-0.5	6.0	5.0	500.0	-0.7
30221R	Upper Preacher Ck	C-5	8N	6E	1	py in qtzt	-0.5	16.0	-5.0	800.0	-1.1
30222R	Upper Preacher Ck	C-5	8N	6E	1	schistose hfls w/ tm	-0.5	31.0	-5.0	1100.0	1.6
30223R	Upper Preacher Ck	C-5	8N	6E	1	qtz vn w/ lim boxwork	-0.5	67.0	-5.0	700.0	-1.1
30224R	Upper Preacher Ck	C-5	8N	6E	1	qtz w/ lim boxwork	-0.5	11.0	-5.0	-100.0	-0.6

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30205R	5.0	140.0	3.0	37.0	0.8	4.0	-4.0	0.2	-200.0	-2.0	50.0	0.2	1.3
30206R	-5.0	170.0	-1.0	21.0	0.7	-1.0	-4.0	-0.1	-200.0	-2.0	-20.0	0.2	0.3
30207R	7.0	100.0	6.0	10.0	3.3	2.0	77.0	0.5	-200.0	76.0	230.0	0.6	10.9
30208R	5.0	160.0	6.0	55.0	2.2	5.0	-4.0	-0.1	-200.0	6.0	100.0	0.5	6.5
30209R	12.0	100.0	9.0	57.0	4.2	4.0	7.0	0.1	-200.0	-2.0	180.0	0.7	12.3
30210R	-5.0	150.0	7.0	54.0	2.8	5.0	-4.0	0.3	-200.0	4.0	270.0	0.3	19.2
30211R	-5.0	170.0	1.0	18.0	0.5	1.0	-4.0	0.1	-200.0	-2.0	20.0	-0.2	0.5
30212R	-5.0	170.0	1.0	15.0	1.6	-1.0	-4.0	0.2	-200.0	80.0	-20.0	0.3	4.4
30213R	-5.0	170.0	-1.0	4.0	0.4	1.0	-4.0	0.1	-200.0	-2.0	-20.0	0.2	0.6
30214R	-5.0	170.0	4.0	10.0	0.7	1.0	5.0	-0.1	-200.0	120.0	130.0	0.7	1.2
30215R	6.0	160.0	2.0	6.0	0.7	4.0	-4.0	0.5	-200.0	-2.0	40.0	0.2	1.5
30216R	7.0	130.0	1.0	4.5	2.0	4.0	-4.0	0.3	-200.0	12.0	40.0	0.4	4.9
30217R	-5.0	170.0	-1.0	27.0	0.9	-1.0	4.0	-0.1	-200.0	-2.0	-20.0	-0.2	0.4
30218R	-5.0	140.0	5.0	8.0	0.7	2.0	-4.0	-0.1	-200.0	800.0	380.0	7.5	2.4
30219R	17.0	200.0	6.0	42.0	5.8	6.0	-4.0	0.7	-200.0	6.0	140.0	0.8	14.5
30220R	8.0	160.0	5.0	57.0	2.5	3.0	-4.0	0.2	-200.0	-2.0	160.0	0.3	8.0
30221R	33.0	120.0	10.0	79.0	2.5	3.0	-4.0	0.3	-200.0	38.0	320.0	0.9	14.5
30222R	12.0	130.0	16.0	55.0	3.0	5.0	-4.0	0.4	-200.0	-2.0	300.0	0.4	19.3
30223R	6.0	130.0	9.0	21.0	2.9	4.0	-4.0	0.5	200.0	-2.0	190.0	0.5	13.9
30224R	-5.0	190.0	1.0	6.0	0.6	3.0	-4.0	0.6	-200.0	-2.0	-20.0	0.4	1.2

Appendix F (continued)

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30205R	-5.0	4.0	-1.0	4.1	1.0	4.0	27.0	9.0	18.0	1.0	0.4	0.6	0.1
30206R	-5.0	-2.0	-1.0	-0.5	-0.5	-4.0	16.0	1.0	-3.0	0.1	0.2	0.2	-0.1
30207R	-5.0	17.0	-1.0	13.0	2.3	21.0	29.0	49.0	71.0	6.2	1.1	1.9	0.4
30208R	-5.0	6.0	-1.0	9.5	4.2	26.0	60.0	25.0	40.0	2.9	0.7	1.6	0.3
30209R	-5.0	6.0	1.0	14.0	6.2	14.0	100.0	60.0	56.0	4.7	0.9	2.2	0.4
30210R	-5.0	9.0	-1.0	22.0	5.8	22.0	25.0	77.0	110.0	8.3	1.1	3.2	0.6
30211R	-5.0	3.0	-1.0	1.6	0.7	34.0	11.0	3.0	4.0	0.3	0.2	0.2	-0.1
30212R	-5.0	6.0	-1.0	4.9	0.9	87.0	18.0	16.0	22.0	2.0	0.6	0.8	0.1
30213R	-5.0	3.0	-1.0	1.4	0.5	-4.0	9.0	2.0	4.0	0.2	0.2	-0.2	-0.1
30214R	-5.0	4.0	-1.0	2.6	0.5	-4.0	48.0	7.0	17.0	1.0	-0.2	0.3	0.1
30215R	-5.0	3.0	-1.0	4.5	1.1	-4.0	21.0	4.0	7.0	0.5	-0.2	0.5	0.1
30216R	8.0	7.0	-1.0	8.0	1.8	17.0	16.0	21.0	38.0	2.2	0.5	0.8	0.2
30217R	-5.0	3.0	-1.0	-0.5	-0.5	-4.0	3.5	1.0	-3.0	0.1	-0.2	0.3	-0.1
30218R	-5.0	24.0	7.0	15.0	12.8	9.0	19.0	23.0	36.0	3.6	-0.3	4.5	0.9
30219R	-5.0	11.0	2.0	7.2	1.6	-4.0	160.0	39.0	65.0	4.7	1.7	1.8	0.3
30220R	-5.0	6.0	-1.0	7.4	2.4	-4.0	67.0	25.0	37.0	2.9	0.5	1.9	0.3
30221R	-5.0	7.0	-1.0	15.0	3.5	-4.0	70.0	52.0	78.0	6.0	1.5	3.3	0.5
30222R	5.0	7.0	1.0	25.0	5.4	-4.0	61.0	95.0	143.0	10.1	2.0	4.0	0.8
30223R	-5.0	12.0	-1.0	16.0	3.0	11.0	21.0	56.0	84.0	6.4	0.7	2.2	0.4
30224R	-5.0	3.0	-1.0	5.2	0.7	-4.0	11.0	9.0	16.0	1.1	-0.3	0.5	0.1

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30225R	Upper Preacher Ck	C-5	8N	7E	6	blue-gray qtzt	-0.5	2.0	-5.0	-100.0	-0.5
30228R	Upper Preacher Ck	C-5	8N	7E	6	lim hfls	-0.5	8.0	29.0	100.0	-0.6
30229R	Upper Preacher Ck	C-5	8N	7E	6	clayey silt sample	2.5	340.0	9.0	600.0	-1.1
30230R	Quartz Ck	C-5	9N	6E	26	lim qtz vn in TKg2	-0.5	67.0	-5.0	-100.0	-0.5
30231R	Quartz Ck	C-5	9N	6E	25	sheared rusty TKg2	2.5	160.0	-5.0	200.0	-0.8
30232R	Quartz Ck	C-5	9N	6E	25	tm vnlts in TKg2	-0.5	10.0	-5.0	300.0	-1.0
30233R	Upper Bachelor Ck	B-5	7N	8E	23	rusty qtz vn	-0.5	42.0	-5.0	-100.0	-0.5
30234R	Upper Bachelor Ck	B-5	7N	8E	23	rusty white qtzt	1.0	52.0	-5.0	200.0	-0.7
30235R	Upper Bachelor Ck	B-5	7N	8E	23	sulfide-bearing felsic schist	-0.5	9.0	-5.0	100.0	-0.6
30236R	Upper Bachelor Ck	B-5	7N	8E	23	lim felsic schist	-0.5	2100.0	7.0	-100.0	-0.6
30237R	Upper Bachelor Ck	B-5	7N	8E	23	felsic schist w/ py(?)	-0.5	22.0	-5.0	100.0	-0.5
30238R	Upper Bachelor Ck	B-5	7N	8E	26	lim qtz vn	-0.5	140.0	-5.0	300.0	-0.5
30239R	Upper Bachelor Ck	B-5	7N	8E	26	semi-massive sulfide gossan	-0.5	7.0	12.0	300.0	-0.6
30240R	Upper Bachelor Ck	B-5	7N	8E	26	qtz vn w/ lim vugs	-0.5	13.0	-5.0	-100.0	-0.5
30241R	Upper Bachelor Ck	B-5	7N	8E	26	lamin white qtzt w/sulfides	0.5	22.0	-5.0	100.0	-0.5
30242R	Upper Bachelor Ck	B-5	7N	8E	26	asp(?) in lim vn	-0.5	740.0	9.0	-100.0	-0.5
30243R	Upper Bachelor Ck	B-5	7N	8E	26	rusty qtz vn	0.5	57.0	-5.0	100.0	-0.5
30244R	Upper Bachelor Ck	B-5	7N	8E	23	white qtzt	-0.5	56.0	-5.0	100.0	0.7
30245R	Upper Bachelor Ck	B-5	7N	8E	23	py in black qtz schist	-0.5	12.0	28.0	300.0	-0.7
30246R	Upper Bachelor Ck	B-5	7N	8E	23	py in black schist	-0.5	10.0	5.0	500.0	-0.8

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30225R	-5.0	160.0	-1.0	4.5	0.4	-4.0	-4.0	-0.1	-200.0	-2.0	-20.0	0.2	0.5
30228R	13.0	150.0	2.0	67.0	2.0	3.0	-4.0	0.3	-200.0	-2.0	40.0	1.3	2.2
30229R	16.0	80.0	9.0	44.0	3.5	6.0	-4.0	0.6	-200.0	230.0	170.0	3.7	12.5
30230R	-5.0	160.0	3.0	4.0	0.5	-1.0	13.0	-0.1	-200.0	2.0	110.0	1.6	0.7
30231R	-5.0	130.0	5.0	13.0	1.2	1.0	4.0	1.5	-200.0	120.0	330.0	0.3	2.4
30232R	-5.0	90.0	12.0	2.5	0.6	2.0	-4.0	1.9	-200.0	8.0	430.0	0.4	2.4
30233R	-5.0	230.0	1.0	12.0	0.6	-1.0	-4.0	-0.1	-200.0	-2.0	-20.0	0.3	1.2
30234R	-5.0	130.0	8.0	230.0	3.5	5.0	7.0	0.5	-200.0	4.0	170.0	0.6	6.0
30235R	-5.0	160.0	1.0	11.0	1.4	10.0	-4.0	0.5	-200.0	-2.0	50.0	0.4	3.5
30236R	-5.0	140.0	4.0	42.0	1.2	4.0	-4.0	0.1	-200.0	-2.0	40.0	1.0	2.5
30237R	-5.0	170.0	2.0	29.0	0.9	4.0	-4.0	0.1	-200.0	-2.0	80.0	1.1	2.1
30238R	-5.0	190.0	3.0	44.0	1.5	3.0	-4.0	-0.1	-200.0	-2.0	70.0	1.6	5.4
30239R	-5.0	90.0	5.0	360.0	21.7	-1.0	26.0	-0.1	-200.0	-2.0	170.0	0.5	3.4
30240R	-5.0	190.0	1.0	41.0	0.8	-1.0	-4.0	0.1	-200.0	-2.0	20.0	0.4	0.7
30241R	-5.0	150.0	5.0	85.0	1.3	4.0	-4.0	0.1	-200.0	14.0	80.0	1.5	2.3
30242R	-5.0	210.0	1.0	50.0	1.1	-1.0	-4.0	-0.1	-200.0	-2.0	-20.0	0.8	0.8
30243R	-5.0	240.0	-1.0	36.0	0.9	-1.0	-4.0	-0.1	-200.0	2.0	20.0	4.5	1.7
30244R	-5.0	150.0	2.0	13.0	0.8	5.0	-4.0	-0.1	-200.0	-2.0	70.0	3.4	2.4
30245R	11.0	170.0	7.0	200.0	3.1	5.0	-4.0	0.5	-200.0	-2.0	140.0	0.8	10.7
30246R	15.0	160.0	8.0	220.0	3.4	5.0	-4.0	0.6	-200.0	-2.0	140.0	0.8	11.9

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30225R	-5.0	3.0	-1.0	-0.5	-0.5	-4.0	13.0	1.0	4.0	0.2	-0.2	0.2	-0.1
30228R	-5.0	5.0	-1.0	5.0	1.2	37.0	150.0	13.0	23.0	1.6	0.3	0.8	0.1
30229R	-5.0	10.0	1.0	14.0	3.5	5.0	260.0	47.0	78.0	5.8	1.8	2.5	0.6
30230R	-5.0	4.0	-1.0	2.8	5.4	-4.0	8.0	3.0	5.0	0.5	-0.2	0.3	-0.1
30231R	-5.0	11.0	1.0	8.5	14.1	11.0	8.5	10.0	16.0	1.6	-0.4	0.9	-0.1
30232R	-5.0	6.0	3.0	10.0	5.9	7.0	10.0	16.0	24.0	2.2	0.5	1.3	0.3
30233R	-5.0	4.0	-1.0	0.6	-0.5	-4.0	5.5	2.0	3.0	0.2	-0.2	-0.2	-0.1
30234R	-5.0	61.0	-1.0	7.3	2.4	410.0	130.0	16.0	23.0	0.7	-0.3	0.5	-0.1
30235R	-5.0	4.0	-1.0	7.0	1.7	-4.0	28.0	11.0	19.0	1.6	-0.3	1.0	0.2
30236R	-5.0	9.0	-1.0	4.5	1.4	17.0	21.0	10.0	12.0	1.3	0.3	1.2	0.1
30237R	11.0	12.0	-1.0	4.7	0.6	50.0	14.0	12.0	23.0	1.7	0.3	0.5	0.1
30238R	-5.0	6.0	-1.0	5.6	1.1	6.0	30.0	13.0	22.0	1.7	0.6	0.9	0.2
30239R	10.0	90.0	-1.0	4.6	1.3	3100.0	41.0	4.0	5.0	-0.5	-0.2	0.5	-0.1
30240R	-5.0	16.0	-1.0	1.2	-0.5	12.0	9.0	3.0	3.0	0.2	-0.2	0.2	-0.1
30241R	-5.0	11.0	-1.0	4.2	1.2	73.0	26.0	12.0	19.0	1.4	-0.2	0.7	0.1
30242R	-5.0	33.0	-1.0	-0.5	-0.5	-4.0	10.0	2.0	-3.0	0.3	0.2	-0.2	-0.1
30243R	-5.0	3.0	-1.0	0.9	-0.5	-4.0	8.5	4.0	7.0	0.5	0.2	0.2	-0.1
30244R	-5.0	3.0	-1.0	5.7	0.9	-4.0	16.0	16.0	23.0	1.9	0.4	0.9	0.2
30245R	-5.0	4.0	-1.0	6.0	1.6	-4.0	38.0	18.0	29.0	2.4	0.8	1.5	0.3
30246R	-5.0	6.0	-1.0	8.5	2.2	4.0	36.0	25.0	46.0	3.3	0.5	1.9	0.3

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30247R	Upper Bachelor Ck	B-5	7N	8E	23	mineralized black qtzt	1.0	7.0	93.0	400.0	-0.7
30248R	Upper Bachelor Ck	B-5	7N	8E	23	mineralized black qtzt	-0.5	16.0	-5.0	300.0	1.6
30249R	Upper Bachelor Ck	B-5	7N	8E	23	py in felsic schist	-0.5	5.0	20.0	-100.0	1.3
30250R	Upper Bachelor Ck	B-5	7N	8E	23	poly-sulfide in felsic schist	0.5	5.0	11.0	100.0	1.7
30251R	Upper Bachelor Ck	B-5	7N	8E	23	poly-sulfide in felsic schist	-0.5	110.0	6.0	100.0	4.7
30252R	Upper Bachelor Ck	B-5	7N	8E	23	carb-bearing felsic schist	-0.5	3.0	6.0	100.0	3.5
30253R	Upper Bachelor Ck	B-5	7N	8E	23	py + cpy in felsic schist	0.5	4.0	-5.0	-100.0	1.8
30254R	Upper Bachelor Ck	B-5	7N	8E	23	sulfide in gray qtzt	0.5	3.0	-5.0	-100.0	-0.5
30255R	Upper Bachelor Ck	B-5	7N	8E	23	mineralized gray qtzt	4.0	15.0	240.0	100.0	3.0
30256R	Upper Bachelor Ck	B-5	7N	8E	23	mineralized black schist	0.5	13.0	71.0	200.0	2.8
30257R	Upper Bachelor Ck	B-5	7N	8E	23	mineralized gray qtzt	1.0	4.0	-5.0	100.0	1.2
30258R	Upper Bachelor Ck	B-5	7N	8E	23	mineralized schistose qtzt	-0.5	6.0	60.0	100.0	-0.5
30259R	Upper Bachelor Ck	B-5	7N	8E	23	mineralized massive qtzt	0.5	35.0	-5.0	100.0	5.6
30260R	Upper Bachelor Ck	B-5	7N	8E	23	mineralized dark qtzt	1.5	5.0	180.0	-100.0	1.6
30401R	Faith Creek area	B-5	7N	7E	26	py + Mn stain in gray qtzt w/ qtz vnlts	-0.5	500.0	80.0	200.0	-0.7
30402R	Faith Creek area	B-5	7N	8E	30	fe-stained, vuggy meta felsite w/ py	-0.5	14.0	-6.0	200.0	-1.6
30403R	Faith Creek area	B-5	7N	8E	25	calc layer in med gray musc chl qtzt	-0.5	8.0	-6.0	1200.0	-1.3
30404R	Faith Creek area	B-5	7N	8E	25	calc musc chl schist w/ blue qtz eyes	-0.5	4.0	-5.0	100.0	1.5
30405R	Faith Creek area	B-5	7N	8E	21	light gray Mn-stained thinly lamin qtzt	-0.5	23.0	-5.0	100.0	0.6
30406R	Faith Creek area	B-5	7N	8E	20	fine sulfides in Fe-stained white qtzt	-0.5	4.0	-5.0	400.0	-0.6

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30247R	26.0	170.0	7.0	640.0	4.3	5.0	-4.0	0.4	-200.0	-2.0	150.0	0.6	12.0
30248R	16.0	180.0	7.0	120.0	3.1	3.0	-4.0	0.5	-200.0	-2.0	120.0	0.6	12.0
30249R	7.0	170.0	1.0	410.0	2.1	4.0	-4.0	0.1	-200.0	-2.0	30.0	0.5	4.6
30250R	22.0	140.0	1.0	670.0	3.4	2.0	-4.0	0.2	-200.0	-2.0	50.0	0.4	6.3
30251R	15.0	170.0	1.0	450.0	2.7	3.0	-4.0	0.2	-200.0	-2.0	20.0	0.4	7.8
30252R	8.0	130.0	4.0	340.0	2.0	2.0	-4.0	0.1	-200.0	-2.0	30.0	0.6	3.4
30253R	9.0	150.0	2.0	780.0	3.7	2.0	-4.0	0.1	-200.0	-2.0	30.0	0.4	4.5
30254R	47.0	150.0	1.0	1200.0	4.1	2.0	-4.0	0.1	-200.0	-2.0	20.0	-0.2	2.2
30255R	70.0	130.0	2.0	4300.0	9.6	4.0	-4.0	0.1	-200.0	-2.0	40.0	3.7	5.3
30256R	12.0	160.0	1.0	470.0	4.4	5.0	5.0	0.4	-200.0	-2.0	40.0	0.3	12.6
30257R	21.0	170.0	1.0	970.0	3.2	2.0	-4.0	0.2	-200.0	-2.0	30.0	0.5	2.7
30258R	14.0	160.0	2.0	670.0	3.8	3.0	-4.0	0.2	-200.0	-2.0	30.0	0.5	8.1
30259R	10.0	160.0	2.0	450.0	2.7	3.0	-4.0	0.4	-200.0	-2.0	30.0	0.5	12.2
30260R	14.0	160.0	1.0	1600.0	4.3	3.0	-4.0	0.1	-200.0	-2.0	-20.0	0.8	3.7
30401R	-5.0	240.0	2.0	9.0	4.8	3.0	-4.0	-0.1	-200.0	20.0	40.0	8.9	4.3
30402R	-5.0	210.0	-1.0	39.0	2.2	8.0	-4.0	3.5	-200.0	-2.0	-30.0	3.8	4.9
30403R	5.0	150.0	1.0	5.5	2.2	5.0	-4.0	2.3	-200.0	-2.0	100.0	1.4	7.6
30404R	-5.0	190.0	-1.0	5.0	0.9	3.0	-4.0	0.2	-200.0	-2.0	40.0	0.5	1.6
30405R	-5.0	190.0	1.0	6.5	1.2	6.0	-4.0	-0.1	-200.0	4.0	50.0	2.8	2.9
30406R	-5.0	220.0	1.0	5.5	1.2	4.0	-4.0	0.1	-200.0	12.0	40.0	6.2	2.2

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30247R	-5.0	7.0	1.0	5.6	1.0	110.0	37.0	20.0	34.0	2.9	0.5	1.5	0.2
30248R	-5.0	6.0	-1.0	6.7	1.5	-4.0	40.0	19.0	37.0	2.8	0.4	1.6	0.3
30249R	-5.0	8.0	-1.0	5.5	1.5	-4.0	20.0	17.0	29.0	1.9	0.4	1.2	0.2
30250R	-5.0	11.0	-1.0	6.6	1.6	-4.0	32.0	21.0	39.0	3.1	0.6	1.4	0.2
30251R	-5.0	19.0	-1.0	7.5	1.6	-4.0	21.0	21.0	34.0	2.6	1.2	1.6	0.2
30252R	-5.0	9.0	-1.0	4.3	0.9	-4.0	40.0	14.0	26.0	1.9	0.6	1.1	0.2
30253R	-5.0	10.0	-1.0	4.6	1.1	-4.0	32.0	15.0	30.0	2.3	0.6	0.9	0.1
30254R	-5.0	7.0	-1.0	2.9	0.8	4.0	25.0	8.0	17.0	1.0	0.2	0.5	0.1
30255R	6.0	11.0	-1.0	7.7	2.7	-4.0	90.0	24.0	40.0	2.9	1.0	1.5	0.3
30256R	-5.0	15.0	1.0	6.1	1.2	-4.0	25.0	21.0	44.0	3.6	0.6	1.7	0.3
30257R	-5.0	7.0	-1.0	3.5	0.6	-4.0	31.0	12.0	22.0	2.1	0.7	0.8	0.1
30258R	-5.0	15.0	-1.0	4.0	0.8	-4.0	12.0	9.0	20.0	1.6	0.8	1.0	0.2
30259R	8.0	25.0	1.0	9.3	2.4	4.0	33.0	33.0	54.0	4.3	1.5	2.2	0.4
30260R	6.0	9.0	-1.0	4.0	1.0	-4.0	26.0	12.0	22.0	1.8	0.8	0.7	0.1
30401R	-6.0	6.0	-1.0	4.7	1.2	-4.0	7.0	23.0	52.0	3.3	0.5	1.5	0.3
30402R	-5.0	3.0	-1.0	8.5	4.1	4.0	12.0	21.0	35.0	1.5	-0.2	1.2	0.3
30403R	-5.0	4.0	-1.0	9.6	1.2	-4.0	23.0	30.0	54.0	3.5	1.3	2.0	0.3
30404R	-5.0	3.0	-1.0	4.6	0.8	-4.0	20.0	11.0	23.0	1.6	0.4	0.6	0.1
30405R	-5.0	3.0	-1.0	6.6	0.9	-4.0	42.0	15.0	29.0	1.8	0.4	0.9	0.2
30406R	-5.0	3.0	-1.0	6.1	1.1	-4.0	13.0	13.0	26.0	1.5	0.4	0.8	0.1

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30407R	Faith Creek area	B-5	7N	8E	17	felsic white to gray qtzt	-0.5	6.0	-5.0	100.0	-0.7
30408R	Faith Creek area	B-5	7N	7E	34	po-bearing qtz vn in graph schist	-0.5	300.0	80.0	400.0	-1.2
30409R	Faith Creek area	B-5	7N	7E	26	Fe + Mn-stained yellow wx qtz eye qtzt	-0.5	13.0	-5.0	200.0	-0.5
30410R	Faith Creek area	B-5	7N	7E	26	fine sulfides in light gray qtzt	-0.5	5.0	-5.0	300.0	-0.9
30411R	Faith Creek area	B-5	7N	8E	30	meta granidiorite	-0.5	3.0	-5.0	100.0	-0.9
30412R	Faith Creek area	B-5	7N	8E	30	Fe-stained meta felsite, minor carbonate	-0.5	20.0	-5.0	400.0	-0.7
30413R	Faith Creek area	B-5	7N	7E	26	feld + qtz eyes in gray banded qtzt	-0.5	8.0	-5.0	300.0	-0.5
30414R	Faith Creek area	B-5	7N	8E	7	py + cpy in vuggy qtz vn	0.5	3.0	-6.0	200.0	-1.5
30415R	Faith Creek area	B-5	7N	8E	7	qtz vnlts in light gray chl musc qtzt	-0.5	-2.0	-5.0	-100.0	-0.9
30416R	Faith Creek area	B-5	7N	8E	18	white to light gray laminated qtzt	-0.5	2.0	-5.0	-100.0	-0.8
30417R	Faith Creek area	B-5	7N	8E	18	white to light gray laminated qtzt	-0.5	2.0	-5.0	700.0	-1.0
30418R	Faith Creek area	B-5	7N	7E	34	wx sulfide zones in light chl qtz schist	-0.5	3.0	-5.0	700.0	-1.0
30419R	Faith Creek area	B-5	7N	7E	34	1M-qtz-chl-stb(?) vn in chl qtz schist	-0.5	15.0	-7.0	300.0	-1.4
30420R	Faith Creek area	B-5	7N	7E	34	qtz-chl-sulfide vn in gray graph chl rk	-0.5	32.0	-7.0	-100.0	-1.4
30421R	Faith Creek area	B-5	7N	7E	33	qtz + carb layer in light gray feld qtzt	-0.5	37.0	6.0	100.0	-0.5
30422R	Faith Creek area	B-5	7N	7E	33	brown wx white lamin qtzt w/ wx py	-0.5	10.0	-5.0	500.0	-0.8
30423R	Faith Creek area	B-5	?N	7E	??	py-stb-sph-asp-cpy-qtz vn in gray schist	67.0	-227.0	-227.0	-227.0	-227.0
30424R	Faith Creek area	B-5	7N	7E	23	carb in gray lamin qtz eye qtzt	0.5	140.0	-10.0	100.0	-1.0
30425R	Faith Creek area	B-5	7N	7E	23	thinly interlayered graph schist w/qtzt	-0.5	34.0	14.0	600.0	-1.0
30426R	Faith Creek area	B-5	7N	7E	23	brown wx thinly layered graph schist	-0.5	28.0	7.0	700.0	-1.1

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30407R	-5.0	180.0	-1.0	4.0	0.6	7.0	-4.0	0.5	-200.0	-2.0	20.0	1.7	1.5
30408R	5.0	140.0	4.0	37.0	3.1	5.0	-4.0	0.1	-200.0	1500.0	250.0	120.0	11.3
30409R	-5.0	180.0	1.0	6.0	0.6	2.0	-4.0	-0.1	-200.0	12.0	50.0	2.0	1.2
30410R	-5.0	180.0	1.0	10.0	1.7	6.0	-4.0	0.8	-200.0	-2.0	40.0	0.3	4.1
30411R	-5.0	180.0	-1.0	3.0	0.9	8.0	-4.0	1.2	-200.0	-2.0	-30.0	0.7	2.0
30412R	-5.0	190.0	1.0	21.0	1.9	5.0	-4.0	0.5	-200.0	-2.0	-30.0	2.2	3.3
30413R	-5.0	210.0	1.0	4.0	0.8	4.0	-4.0	0.2	-200.0	-2.0	70.0	0.6	1.8
30414R	7.0	200.0	-1.0	460.0	1.7	1.0	-4.0	3.1	-200.0	4.0	-60.0	0.2	4.3
30415R	-5.0	-10.0	1.0	5.0	-0.2	-1.0	24.0	-0.1	-200.0	-2.0	-40.0	-0.2	1.6
30416R	-5.0	190.0	-1.0	7.5	0.7	5.0	-4.0	1.5	-200.0	-2.0	-30.0	0.5	2.3
30417R	5.0	160.0	-1.0	2.0	1.6	5.0	-4.0	1.9	-200.0	-2.0	-40.0	0.3	2.9
30418R	5.0	210.0	-1.0	2.5	1.7	7.0	-4.0	1.7	-200.0	-2.0	50.0	0.7	4.2
30419R	9.0	210.0	-1.0	-0.5	3.4	10.0	-4.0	2.9	-200.0	-2.0	-60.0	2.4	12.2
30420R	23.0	200.0	-1.0	-0.5	10.0	15.0	5.0	2.0	-200.0	-2.0	-50.0	1.3	25.3
30421R	-5.0	170.0	1.0	4.0	0.8	4.0	-4.0	-0.1	-200.0	6.0	30.0	3.3	1.0
30422R	6.0	140.0	5.0	50.0	4.0	5.0	-4.0	0.1	-200.0	10.0	160.0	5.5	9.0
30423R	-227.0	-227.0	-227.0	290.0	-227.0	-227.0	-227.0	-227.0	-200.0	84000.0	-20.0	110000.0	-227.0
30424R	-5.0	150.0	-1.0	6.5	0.7	3.0	-4.0	0.1	-200.0	720.0	30.0	430.0	1.5
30425R	-5.0	160.0	2.0	10.0	1.8	4.0	-4.0	0.5	-200.0	440.0	250.0	290.0	14.7
30426R	12.0	160.0	4.0	44.0	3.1	6.0	-4.0	0.8	-200.0	24.0	170.0	14.0	15.9

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30407R	-5.0	3.0	-1.0	7.5	1.4	-4.0	16.0	16.0	39.0	2.0	-0.4	0.8	0.1
30408R	11.0	13.0	-1.0	11.0	4.2	6.0	280.0	39.0	59.0	4.5	0.7	2.3	0.3
30409R	-5.0	3.0	-1.0	3.4	1.0	-4.0	11.0	11.0	22.0	1.3	0.5	0.5	0.1
30410R	-5.0	3.0	-1.0	9.3	2.1	-4.0	25.0	22.0	52.0	2.6	-0.5	1.2	0.2
30411R	-5.0	3.0	-1.0	9.9	2.1	-4.0	12.0	14.0	32.0	2.0	-0.5	1.0	0.2
30412R	-5.0	4.0	-1.0	5.7	1.5	-4.0	15.0	12.0	20.0	1.2	-0.4	0.9	0.2
30413R	-5.0	3.0	1.0	5.5	0.9	-4.0	10.0	10.0	21.0	1.0	0.4	0.6	0.1
30414R	5.0	3.0	-1.0	5.4	-0.8	-4.0	41.0	21.0	41.0	2.2	-0.8	1.8	0.3
30415R	-5.0	3.0	-1.0	-0.5	-0.5	23.0	13.0	9.0	-3.0	-0.1	-0.5	-0.2	-0.1
30416R	-5.0	3.0	-1.0	4.6	0.7	-4.0	12.0	3.0	8.0	0.3	-0.5	0.5	0.1
30417R	-7.0	3.0	-1.0	5.2	1.3	-4.0	21.0	5.0	12.0	0.5	-0.6	0.6	0.2
30418R	8.0	4.0	-1.0	8.7	1.5	-4.0	20.0	15.0	41.0	1.7	-0.6	1.2	0.3
30419R	-6.0	5.0	-1.0	19.0	2.9	10.0	55.0	18.0	42.0	4.1	1.4	5.3	1.0
30420R	-6.0	8.0	2.0	26.0	4.4	-4.0	84.0	32.0	105.0	5.0	1.3	3.6	0.7
30421R	-5.0	3.0	-1.0	5.2	0.8	-4.0	15.0	9.0	19.0	0.7	-0.2	0.3	0.1
30422R	-5.0	4.0	1.0	11.0	1.2	-4.0	50.0	29.0	53.0	3.4	-0.5	1.7	0.3
30423R	-227.0	-2.0	-227.0	-227.0	-227.0	-227.0	-227.0	-227.0	-227.0	-227.0	-227.0	-227.0	-227.0
30424R	-12.0	-2.0	-1.0	4.8	1.4	-4.0	77.0	13.0	25.0	1.6	-0.7	1.4	0.1
30425R	-7.0	-2.0	-1.0	7.4	2.7	-4.0	32.0	12.0	26.0	1.8	1.4	1.8	0.3
30426R	11.0	3.0	-1.0	9.8	3.4	-4.0	65.0	49.0	92.0	6.6	1.3	2.7	0.5

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30427R	Faith Creek area	B-5	7N	7E	26	friable yellow wx white musc schist	-0.5	15.0	-5.0	800.0	-0.9
30428R	Faith Creek area	B-5	7N	7E	26	yellow wx white schist + graph schist	-0.5	28.0	-6.0	800.0	2.1
30429R	Bachelor Creek	B-5	7N	8E	22	fine sulfides in heavy black qtzt	-0.5	6.0	-5.0	200.0	-0.5
30430R	Bachelor Creek	B-5	7N	8E	22	white to light gray micaceous qtzt	-0.5	8.0	5.0	200.0	-0.5
30431R	Bachelor Creek	B-5	7N	8E	28	white musc qtzt + dark gray rusty schist	-0.5	11.0	-5.0	100.0	-0.5
30432R	Bachelor Creek	B-5	7N	8E	28	2% py in calcareous qtz feld porphyry	0.5	100.0	-6.0	900.0	-1.4
30433R	Bachelor Creek	B-5	7N	8E	10	black mud from Mn-stained pod in schist	-0.5	37.0	-5.0	300.0	-0.9
30434R	Bachelor Creek	B-5	7N	8E	10	light gray-whitish qtzt	-0.5	5.0	-5.0	-100.0	-0.7
30435R	Bachelor Creek	B-5	7N	8E	10	1% gray sulfides in white qtzt-schist	-0.5	4.0	-5.0	300.0	-0.7
30436R	Bachelor Creek	B-5	7N	8E	10	rusty wx clean white resistant qtzt	-0.5	6.0	-5.0	100.0	-0.5
30437R	Bachelor Creek	B-5	7N	8E	3	white schist	-0.5	5.0	-5.0	200.0	-0.8
30438R	Bachelor Creek	B-5	7N	8E	3	vuggy white musc qtzt	-0.5	3.0	-5.0	200.0	-0.9
30439R	Bachelor Creek	B-5	7N	8E	3	greenish wx gray spotty schist	-0.5	8.0	-5.0	400.0	-1.1
30440R	Bachelor Creek	B-5	7N	8E	3	Fe-stained white schist	-0.5	6.0	6.0	200.0	-1.1
30441R	Bachelor Creek	B-5	7N	8E	35	Fe-stained felsic grit, qtzt, + schist	-0.5	3.0	5.0	200.0	-1.2
30442R	Bachelor Creek	B-5	7N	8E	3	light to med gray qtzt	-0.5	2.0	6.0	300.0	-1.3
30443R	Bachelor Creek	B-5	7N	8E	3	5% po + py in finely lamin graph schist	-0.5	2.0	-6.0	700.0	-1.7
30444R	Bachelor Creek	B-5	7N	8E	3	qtz lenses in graph schist	-0.5	2.0	-6.0	900.0	-1.6
30445R	Faith Creek area	B-5	7N	7E	26	rusty dark gray qtzt w/schistose layers	-0.5	7.0	-5.0	800.0	-1.2
30446R	Faith Creek area	B-5	7N	7E	27	po +py in ultramafic pods in lamprophyre	-0.5	14.0	-7.0	2400.0	2.4

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30427R	12.0	130.0	8.0	34.0	2.3	6.0	-4.0	0.5	200.0	30.0	240.0	12.0	12.2
30428R	26.0	100.0	12.0	48.0	3.7	5.0	-4.0	0.4	-200.0	14.0	230.0	6.3	13.2
30429R	-5.0	110.0	1.0	10.0	1.1	6.0	-4.0	-0.1	-200.0	12.0	40.0	6.4	3.1
30430R	-5.0	160.0	-1.0	7.5	1.2	6.0	-4.0	-0.1	-200.0	6.0	-20.0	4.9	2.8
30431R	-5.0	110.0	1.0	5.5	0.7	3.0	-4.0	-0.1	-200.0	12.0	60.0	6.3	1.7
30432R	6.0	100.0	6.0	10.0	1.8	5.0	-4.0	2.0	-200.0	190.0	190.0	3.8	4.6
30433R	10.0	160.0	5.0	42.0	3.3	5.0	-4.0	0.3	-200.0	8.0	140.0	4.1	10.5
30434R	-5.0	-10.0	-1.0	5.0	0.8	5.0	-4.0	0.7	-200.0	6.0	-20.0	1.4	2.1
30435R	-5.0	130.0	-1.0	3.5	0.7	4.0	-4.0	0.6	-200.0	-2.0	30.0	1.0	1.6
30436R	-5.0	190.0	-1.0	2.0	0.2	-1.0	-4.0	-0.1	-200.0	-2.0	-20.0	1.0	0.2
30437R	-5.0	120.0	-1.0	5.0	1.1	7.0	-4.0	0.9	-200.0	-2.0	60.0	1.2	3.9
30438R	-5.0	140.0	1.0	7.5	1.2	9.0	-4.0	0.4	-200.0	-2.0	80.0	1.3	3.2
30439R	8.0	110.0	2.0	31.0	4.4	9.0	4.0	0.4	-200.0	-2.0	150.0	3.5	9.0
30440R	-5.0	130.0	1.0	3.0	1.3	10.0	-4.0	0.7	-200.0	-2.0	40.0	0.8	4.3
30441R	-5.0	110.0	1.0	1.5	1.4	7.0	-4.0	0.9	-200.0	-2.0	70.0	1.0	3.6
30442R	-5.0	130.0	-1.0	7.5	1.7	6.0	-4.0	1.0	-200.0	4.0	50.0	2.1	4.2
30443R	14.0	130.0	2.0	47.0	5.0	3.0	-4.0	-0.6	-200.0	-2.0	200.0	3.5	14.3
30444R	9.0	150.0	5.0	37.0	4.4	4.0	-4.0	0.7	200.0	-2.0	300.0	5.7	17.0
30445R	7.0	150.0	2.0	31.0	4.2	5.0	-4.0	0.8	-200.0	-2.0	190.0	1.3	16.0
30446R	19.0	150.0	6.0	100.0	5.6	4.0	6.0	1.0	-200.0	-2.0	0.0	1.4	24.0

Appendix F (continued)

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30427R	-5.0	3.0	-1.0	8.4	2.1	-4.0	67.0	35.0	72.0	3.9	1.1	2.7	0.5
30428R	-6.0	5.0	1.0	14.0	4.0	4.0	120.0	48.0	92.0	6.4	-0.7	3.3	0.6
30429R	-5.0	4.0	-1.0	7.3	1.7	-4.0	29.0	14.0	34.0	1.9	0.3	1.2	0.2
30430R	-5.0	3.0	-1.0	8.3	1.4	-4.0	28.0	15.0	28.0	1.9	-0.3	1.0	0.2
30431R	-5.0	2.0	-1.0	3.2	0.6	-4.0	30.0	8.0	18.0	1.1	-0.2	0.5	0.1
30432R	-10.0	7.0	2.0	18.0	6.0	-4.0	280.0	56.0	84.0	4.0	1.5	1.1	0.2
30433R	-5.0	4.0	-1.0	8.2	1.9	-4.0	68.0	28.0	59.0	3.8	1.1	2.3	0.3
30434R	-5.0	3.0	-1.0	6.6	1.2	-4.0	12.0	11.0	20.0	1.3	0.4	0.6	0.1
30435R	-5.0	4.0	-1.0	4.7	0.9	-4.0	7.5	10.0	18.0	1.1	-0.4	0.7	0.1
30436R	-5.0	2.0	-1.0	-0.5	-0.5	-4.0	1.0	1.0	-3.0	0.1	-0.2	-0.2	-0.1
30437R	-5.0	3.0	-1.0	5.3	1.5	-4.0	20.0	12.0	24.0	1.4	-0.5	1.1	0.2
30438R	-5.0	3.0	1.0	6.0	2.0	-4.0	17.0	16.0	26.0	1.7	0.6	1.0	0.2
30439R	-5.0	4.0	1.0	7.9	3.3	-4.0	70.0	13.0	27.0	1.5	0.6	1.5	0.4
30440R	-5.0	3.0	-1.0	6.9	2.6	-4.0	21.0	16.0	31.0	2.0	-0.4	1.4	0.3
30441R	-5.0	4.0	-1.0	3.5	1.5	-4.0	24.0	13.0	28.0	1.6	-0.4	0.9	0.1
30442R	-5.0	4.0	-1.0	8.1	1.5	-4.0	30.0	17.0	33.0	2.2	-0.6	1.2	0.2
30443R	-7.0	4.0	2.0	15.0	3.6	-4.0	92.0	46.0	88.0	5.3	1.3	2.1	0.4
30444R	-6.0	5.0	2.0	11.0	3.0	-4.0	90.0	55.0	102.0	6.1	1.9	2.3	0.5
30445R	6.0	5.0	1.0	14.0	3.0	-4.0	67.0	18.0	54.0	2.2	-0.5	2.4	0.4
30446R	10.0	5.0	-1.0	13.0	3.5	-4.0	180.0	59.0	104.0	8.3	2.2	2.8	0.6

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30447R	Bachelor Creek	B-5	7N	8E	22	qtz-rich layers in chl musc qtzt	-0.5	15.0	-5.0	300.0	-1.0
30448R	Bachelor Creek	B-5	7N	8E	23	brown wx clean white marble w/ qtz eyes	-0.5	4.0	-5.0	100.0	9.8
30449R	Bachelor Creek	B-5	7N	8E	23	fgr dark green calc-sil	-0.5	15.0	-9.0	300.0	5.5
30450R	Bachelor Creek	B-5	7N	8W	23	fine sulfide specs in calc qtzt	-0.5	47.0	-6.0	1100.0	-2.2
30451R	Bachelor Creek	B-5	7N	8E	23	mag sulfides in graph schist + sil qtzt	1.0	12.0	-5.0	200.0	3.6
30452R	Bachelor Creek	B-5	7N	8E	23	mag sulfides in dark lamin musc chl qtzt	-0.5	6.0	8.0	200.0	2.1
30453R	Bachelor Creek	B-5	7N	8E	23	calc-sil rk w/ sulfides	-0.5	49.0	-7.0	400.0	13.0
30454R	Bachelor Creek	B-5	7N	8E	16	fine sulfides in yellow wx light qtzt	-0.5	6.0	-5.0	100.0	-0.8
30455R	Table Mt	B-4	7N	9E	3	orange wx vuggy tm-qtz vns + dark vnlts	0.5	25.0	7.0	100.0	-1.4
30456R	Table Mt	B-4	7N	9E	4	Fe-stained qtz vn w/ minor sulfides	4.0	38.0	550.0	100.0	-0.5
30457R	Table Mt	B-4	7N	9E	4	Fe-stained dark green-black tm-rich rx	-0.5	14.0	-5.0	200.0	-1.1
30458R	Table Mt	B-4	7N	9E	9	5% sulfides in interbanded qtzt + tm-qtz	-0.5	16000.0	880.0	-1200.0	-5.1
30459R	Table Mt	B-4	7N	9E	9	albitic graphitic qtz schist w/sulfides	-0.5	36.0	-7.0	800.0	-2.1
30460R	Table Mt	B-4	7N	9E	9	tm-qtz vns w/ bands of albite schist	-0.5	38.0	-6.0	300.0	-1.6
30461R	Table Mt	B-4	7N	9E	9	tm salveges along fgr dense tm-qtz vns	-0.5	13.0	-6.0	300.0	-1.8
30462R	Table Mt	B-4	7N	9E	9	Fe-stained bio schist	2.0	22.0	3200.0	7200.0	-5.2
30463R	Table Mt	B-4	7N	9E	9	blue gray qtzt w/ sulfides	-0.5	52.0	100.0	300.0	2.3
30464R	Table Mt	B-4	7N	9E	9	3% sulfides (aspy or stb?) in fgr tm vn	-0.5	58.0	540.0	300.0	3.4
30465R	Table Mt	B-4	7N	9E	9	qtz-carb veined breccia near rhyolite	-0.5	32.0	17.0	100.0	10.0
30473R	Bachelor Creek	B-5	7N	8E	3	graph schist	-0.5	11.0	-7.0	800.0	-2.0

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30447R	6.0	140.0	2.0	12.0	2.1	5.0	-4.0	0.1	-200.0	20.0	70.0	3.0	6.2
30448R	-5.0	100.0	1.0	8.5	0.5	2.0	-4.0	0.3	-200.0	-2.0	-20.0	0.3	1.1
30449R	17.0	40.0	6.0	15.0	5.8	3.0	-4.0	3.0	300.0	8.0	-60.0	0.8	11.8
30450R	6.0	90.0	6.0	24.0	1.9	5.0	-4.0	1.9	-200.0	12.0	180.0	0.8	5.0
30451R	10.0	150.0	5.0	780.0	3.0	4.0	-4.0	0.5	-200.0	-2.0	60.0	1.3	7.9
30452R	10.0	180.0	12.0	190.0	6.2	7.0	4.0	0.8	-200.0	-2.0	200.0	0.9	28.9
30453R	-5.0	140.0	19.0	87.0	3.3	5.0	-4.0	0.5	-200.0	-2.0	60.0	1.2	23.8
30454R	-5.0	150.0	-1.0	8.0	0.4	3.0	-4.0	0.1	-200.0	-2.0	30.0	1.3	0.7
30455R	6.0	160.0	2.0	120.0	3.2	3.0	6.0	0.4	-200.0	6.0	60.0	0.6	12.8
30456R	-5.0	220.0	1.0	73.0	1.6	-1.0	-4.0	-0.1	-200.0	22.0	30.0	0.5	1.4
30457R	9.0	80.0	2.0	150.0	3.2	2.0	-4.0	0.5	-200.0	-2.0	150.0	0.4	10.0
30458R	7.0	930.0	-4.0	150.0	3.8	-3.0	-20.0	0.3	-700.0	310.0	-30.0	110.0	16.0
30459R	12.0	130.0	19.0	10.0	4.3	5.0	-4.0	0.8	-200.0	-2.0	300.0	0.7	21.3
30460R	11.0	180.0	12.0	120.0	4.1	4.0	18.0	0.8	-200.0	12.0	150.0	0.6	19.0
30461R	11.0	110.0	1.0	23.0	2.8	4.0	-4.0	0.7	-200.0	-2.0	-30.0	0.3	15.0
30462R	-5.0	1100.0	90.0	210.0	5.4	-1.0	-4.0	0.4	-1200.0	-2.0	100.0	-2.5	8.8
30463R	8.0	190.0	7.0	250.0	3.8	3.0	-4.0	0.2	200.0	38.0	-30.0	0.6	11.3
30464R	17.0	190.0	16.0	370.0	6.7	4.0	5.0	0.5	-200.0	-2.0	90.0	1.1	20.6
30465R	9.0	110.0	2.0	54.0	2.1	-1.0	9.0	-0.1	-200.0	12.0	30.0	2.9	6.1
30473R	11.0	160.0	2.0	43.0	3.8	6.0	-4.0	1.6	-200.0	14.0	240.0	1.7	16.6

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30447R	-5.0	4.0	-1.0	8.7	1.4	-4.0	55.0	25.0	52.0	3.5	0.8	1.5	0.3
30448R	-5.0	4.0	-1.0	3.4	0.7	-4.0	10.0	9.0	18.0	1.1	0.3	0.5	0.1
30449R	-16.0	5.0	2.0	25.0	4.4	-4.0	120.0	176.0	252.0	9.7	2.9	2.3	0.5
30450R	-10.0	5.0	1.0	19.0	5.6	-4.0	150.0	62.0	97.0	4.4	1.0	1.0	0.3
30451R	-5.0	13.0	-1.0	7.2	2.0	-4.0	60.0	24.0	44.0	2.9	0.9	1.5	0.2
30452R	-6.0	10.0	-1.0	10.0	2.3	-4.0	78.0	40.0	83.0	6.6	1.9	2.8	0.5
30453R	-10.0	29.0	-1.0	8.7	3.0	-4.0	17.0	37.0	75.0	5.8	2.7	3.3	0.6
30454R	-5.0	3.0	-1.0	3.4	0.9	-4.0	6.0	8.0	14.0	0.9	-0.3	0.3	-0.1
30455R	-8.0	8.0	-1.0	6.6	1.6	25.0	14.0	31.0	54.0	4.0	-0.5	1.5	0.3
30456R	-5.0	4.0	-1.0	1.3	0.5	-4.0	5.5	5.0	16.0	0.7	-0.2	0.3	-0.1
30457R	-5.0	20.0	-1.0	4.3	2.0	6.0	22.0	16.0	21.0	1.6	-0.5	0.7	0.2
30458R	-96.0	15.0	-4.0	8.1	-4.7	93.0	40.0	176.0	212.0	19.9	-10.8	-3.1	0.4
30459R	-6.0	6.0	3.0	18.0	4.6	8.0	69.0	66.0	117.0	8.7	2.3	3.7	0.7
30460R	-5.0	13.0	-1.0	8.6	1.9	25.0	37.0	28.0	55.0	4.1	-0.6	2.0	0.3
30461R	-6.0	11.0	1.0	15.0	3.6	-4.0	16.0	53.0	93.0	7.4	1.3	2.4	0.5
30462R	-180.0	10.0	-3.0	12.0	-8.3	37000.0	76.0	27.0	-3.0	1.7	-1.7	-5.9	-0.1
30463R	-11.0	5.0	-1.0	5.5	1.4	800.0	43.0	16.0	29.0	2.6	1.0	1.3	0.2
30464R	-8.0	4.0	-1.0	6.7	0.8	87.0	73.0	27.0	54.0	4.5	0.9	2.7	0.5
30465R	-6.0	3.0	-1.0	1.9	2.0	37.0	47.0	8.0	19.0	1.6	0.4	1.0	0.2
30473R	-8.0	4.0	2.0	13.0	3.1	20.0	63.0	56.0	97.0	6.3	1.9	2.2	0.4

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30474R	Bachelor Creek	B-5	7N	8E	3	orange wx light gray qtzt	-0.5	7.0	-5.0	200.0	-1.0
30475R	Bachelor Creek	B-5	7N	8E	3	greenish gray schist + rusty wx qtzt	-0.5	6.0	-6.0	700.0	-1.9
30476R	Bachelor Creek	B-5	7N	8E	3	light grey lamin feld qtzt	-0.5	7.0	-5.0	200.0	-0.9
30477R	Bachelor Creek	B-5	7N	8E	3	vuggy white qtzt	-0.5	5.0	-5.0	200.0	-0.9
30478R	Bachelor Creek	B-5	7N	8E	3	white schist	-0.5	3.0	-5.0	100.0	-0.6
30479R	Bachelor Creek	B-5	7N	8E	3	vuggy light qtzt	-0.5	6.0	-5.0	200.0	-0.8
30480R	Bachelor Creek	B-5	7N	8E	3	qtz lenses in med gray graph qtz schist	-0.5	5.0	-5.0	700.0	-1.3
30481R	Bachelor Creek	B-5	7N	8E	3	green stained dark gray graph schist	-0.5	7.0	-5.0	500.0	0.9
30482R	Bachelor Creek	B-5	7N	8E	3	med gray qtzt	-0.5	2.0	-5.0	300.0	-0.8
30483R	Bachelor Creek	B-5	7N	8E	3	white schist	-0.5	3.0	-5.0	200.0	-0.7
30484R	Bachelor Creek	B-5	7N	8E	3	dark gray graph schist	-0.5	6.0	-5.0	1000.0	-1.4
30485R	Bachelor Creek	B-5	7N	8E	3	rusty-wx white qtzt to qtz schist	-0.5	3.0	-5.0	300.0	-0.8
30486R	Bachelor Creek	B-5	7N	8E	3	green stained dark gray chalky wx schist	-0.5	4.0	5.0	800.0	1.4
30487R	Bachelor Creek	B-5	7N	8E	3	Fe-stained py-rich med gray qtzt-schist	-0.5	3.0	-5.0	700.0	-1.1
30488R	Bachelor Creek	B-5	7N	8E	3	chalky white oxidation from graph schist	-0.5	4.0	-5.0	800.0	-1.3
30489R	Bachelor Creek	B-5	7N	8E	3	rusty Fe-stained mud coating tailing rx	-0.5	23.0	-5.0	700.0	-0.9
30490R	Bachelor Creek	B-5	7N	8E	3	rusty-wx white to light gray musc qtzt	-0.5	4.0	-5.0	100.0	-0.7
30491R	Bachelor Creek	B-5	7N	8E	3	felsic grit	-0.5	2.0	-5.0	-100.0	-0.5
30492R	Bachelor Creek	B-5	7N	8E	3	ochre-wx white schist	-0.5	2.0	-5.0	600.0	-1.1
30493R	Table Mt	B-4	7N	9E	10	1% fine mag sulfides in chl musc qtzt	-0.5	20.0	400.0	100.0	4.4

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30474R	-5.0	90.0	-1.0	7.0	1.2	4.0	-4.0	0.5	-200.0	-2.0	50.0	1.8	3.0
30475R	10.0	160.0	2.0	47.0	3.7	4.0	5.0	1.0	-200.0	-2.0	250.0	3.2	15.4
30476R	5.0	120.0	1.0	12.0	1.7	7.0	-4.0	0.9	-200.0	-2.0	40.0	3.9	4.8
30477R	5.0	140.0	1.0	11.0	1.6	5.0	-4.0	0.9	-200.0	-2.0	60.0	3.1	4.5
30478R	-5.0	140.0	1.0	9.5	0.9	4.0	-4.0	0.3	-200.0	-2.0	60.0	1.5	2.7
30479R	-5.0	140.0	1.0	7.0	1.2	5.0	-4.0	0.6	-200.0	-2.0	60.0	2.5	4.1
30480R	12.0	140.0	4.0	41.0	4.0	4.0	-4.0	0.7	-200.0	-2.0	200.0	1.6	15.3
30481R	5.0	190.0	2.0	20.0	2.1	3.0	-4.0	0.5	-200.0	-2.0	140.0	1.8	9.4
30482R	5.0	110.0	2.0	14.0	2.5	5.0	-4.0	0.8	-200.0	-2.0	140.0	1.0	5.9
30483R	-5.0	140.0	1.0	4.5	1.0	4.0	-4.0	0.4	-200.0	-2.0	70.0	1.1	4.1
30484R	10.0	160.0	4.0	46.0	3.8	4.0	-4.0	0.8	-200.0	-2.0	320.0	2.7	19.3
30485R	-5.0	140.0	2.0	19.0	1.9	5.0	-4.0	0.6	-200.0	-2.0	80.0	1.4	5.6
30486R	7.0	130.0	4.0	33.0	3.5	4.0	-4.0	0.6	-200.0	-2.0	220.0	1.5	16.2
30487R	12.0	160.0	5.0	41.0	3.6	4.0	-4.0	0.6	-200.0	-2.0	230.0	3.2	13.9
30488R	24.0	120.0	8.0	59.0	4.6	3.0	-4.0	0.2	-200.0	22.0	270.0	7.7	16.7
30489R	9.0	130.0	3.0	16.0	3.6	4.0	-4.0	0.6	-200.0	6.0	140.0	6.1	8.9
30490R	5.0	120.0	1.0	4.5	1.1	5.0	-4.0	0.6	-200.0	-2.0	30.0	0.4	2.5
30491R	-5.0	180.0	-1.0	5.0	0.8	1.0	-4.0	0.1	-200.0	-2.0	20.0	1.0	1.0
30492R	-5.0	140.0	3.0	19.0	2.9	5.0	-4.0	1.0	-200.0	14.0	170.0	4.6	11.6
30493R	8.0	190.0	1.0	220.0	3.2	4.0	-4.0	0.1	-200.0	-2.0	30.0	1.3	7.0

Appendix F (continued)

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30474R	6.0	3.0	-1.0	6.4	1.5	5.0	26.0	11.0	23.0	1.5	0.5	0.7	0.1
30475R	8.0	4.0	-1.0	11.0	2.6	6.0	69.0	49.0	95.0	5.8	1.4	2.2	0.4
30476R	-5.0	4.0	4.0	8.0	2.6	-4.0	28.0	15.0	31.0	2.4	0.5	1.3	0.2
30477R	-5.0	3.0	5.0	9.0	2.0	-4.0	28.0	16.0	34.0	2.8	0.5	1.3	0.2
30478R	-5.0	3.0	4.0	3.9	1.2	-4.0	12.0	8.0	16.0	1.1	-0.2	0.6	0.1
30479R	-5.0	3.0	3.0	8.2	2.4	-4.0	22.0	16.0	33.0	2.4	-0.2	0.9	0.1
30480R	-5.0	5.0	5.0	13.0	3.8	-4.0	75.0	46.0	85.0	6.7	0.9	2.5	0.4
30481R	-5.0	4.0	4.0	7.2	1.9	-4.0	36.0	22.0	44.0	2.9	0.8	1.4	0.3
30482R	-5.0	4.0	4.0	6.8	2.6	-4.0	41.0	14.0	30.0	1.9	-0.2	1.2	0.2
30483R	-5.0	3.0	5.0	5.1	2.2	-4.0	16.0	11.0	22.0	1.6	0.3	0.9	0.1
30484R	-5.0	6.0	5.0	15.0	4.8	-4.0	70.0	59.0	109.0	8.1	1.4	2.6	0.4
30485R	-5.0	3.0	5.0	8.1	2.6	-4.0	28.0	13.0	26.0	1.8	0.4	0.9	0.1
30486R	-5.0	5.0	5.0	14.0	4.0	-4.0	71.0	43.0	77.0	5.4	0.9	2.1	0.3
30487R	-5.0	3.0	5.0	12.0	4.0	-4.0	71.0	41.0	77.0	5.3	1.3	1.9	0.3
30488R	-5.0	4.0	5.0	18.0	5.4	-4.0	100.0	57.0	105.0	8.1	1.6	2.8	0.5
30489R	-5.0	5.0	5.0	9.5	3.2	5.0	54.0	29.0	57.0	4.0	0.8	1.5	0.3
30490R	-5.0	3.0	4.0	7.0	2.3	-4.0	19.0	12.0	25.0	1.9	-0.2	1.0	0.1
30491R	-5.0	-2.0	4.0	1.8	-0.5	-4.0	13.0	5.0	13.0	0.9	0.2	0.3	-0.1
30492R	-5.0	3.0	5.0	11.0	3.0	5.0	58.0	28.0	50.0	3.6	0.4	1.7	0.3
30493R	5.0	7.0	-1.0	4.0	0.9	16.0	14.0	12.0	25.0	1.9	0.6	1.0	0.2

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
30494R	Table Mt	B-4	7N	9E	10	1% sulfides in dark gray bio schist	-0.5	23.0	-6.0	700.0	-1.4
30495R	Table Mt	B-4	7N	9E	10	fine sulfides in qtz lense in schist	-0.5	34.0	-5.0	300.0	-0.7
30496R	Table Mt	B-4	7N	9E	10	tm banded w/ light green qtzt vns	-0.5	120.0	8.0	300.0	-1.0
30497R	Table Mt	B-4	7N	9E	10	black, white + green tm-chl(?)-qtz vn	4.0	92.0	13.0	100.0	-1.2
30498R	Table Mt	B-4	7N	9E	10	black schist w/ albite porphyroblasts	-0.5	29.0	-6.0	500.0	-1.5
30499R	Table Mt	B-4	7N	9E	3	carb + pyx skarn	-0.5	3.0	-5.0	-100.0	20.0
30500R	Table Mt	B-4	7N	9E	3	fgr blue-green sulfide-bearing px skarn	2.0	2.0	180.0	200.0	12.0
30501R	Table Mt	B-4	7N	9E	3	2% gray sulfides in blue gray qtzt	0.5	260.0	96.0	300.0	0.9
32001R		C-6	9N	4E	26	3-4" chl greisen veins in mgr equig gr	2.0	17.0	7.0	300.0	-1.1
32002R		C-6	9N	4E	26	5% asy in 8" greisen vn in fgr equig gr	1.5	24.0	-5.0	300.0	-0.9
32004R	Tin Ridge	C-6	9N	4E	26	3-4" chl-qtz-tpz vns in equig gr	-0.5	8.0	-5.0	400.0	-1.8
32005R	Tin Ridge	C-6	9N	4E	22	3" chl-sulfide (py? aspy?) in greisen vn	5.0	93.0	-5.0	300.0	-1.6
32007R	Tin Ridge	C-6	9N	4E	26	6" greisen vn in fgr porphyritic gr	1.0	79.0	-5.0	200.0	1.6
32008R	Tin Ridge	C-6	9N	4E	27	hfls channel 10' adjacent to contact	-0.5	3.0	-5.0	200.0	-1.0
32009R	Tin Ridge	C-6	9N	4E	27	3-6" chl greisen vn rubble	1.0	6.0	-5.0	200.0	-1.2
32010R	Tin Ridge	C-6	9N	4E	27	1% chl greisen vn in rubble	1.0	-2.0	-5.0	200.0	-1.3
32011R	Tin Ridge	C-6	9N	4E	27	1-4" chl greisen vn in chl alt gr	1.0	5.0	-5.0	400.0	-1.4
32012R	Tin Ridge	C-6	9N	4E	27	chl greisen vns in cgr seriate granite	2.0	7.0	-5.0	200.0	-1.2
32013R	Tin Ridge	C-6	9N	4E	27	6" chl greisen vn	2.0	3.0	-5.0	400.0	-1.3
32014R	Tin Ridge	C-6	9N	4E	27	chl greisen float	3.0	4.0	-5.0	400.0	1.3

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
30494R	17.0	160.0	14.0	130.0	6.2	4.0	-4.0	0.5	-200.0	-2.0	250.0	3.0	22.1
30495R	5.0	200.0	4.0	54.0	1.9	4.0	-4.0	0.1	-200.0	-2.0	120.0	1.8	5.6
30496R	6.0	140.0	2.0	260.0	3.4	3.0	4.0	0.4	200.0	280.0	180.0	1.0	16.2
30497R	6.0	150.0	1.0	52.0	2.4	3.0	6.0	0.6	-200.0	60.0	30.0	3.6	14.6
30498R	27.0	180.0	33.0	80.0	7.3	6.0	-4.0	1.0	-200.0	-2.0	280.0	0.9	27.6
30499R	11.0	90.0	1.0	82.0	7.8	2.0	-4.0	-0.1	-200.0	-2.0	-20.0	2.4	6.9
30500R	15.0	60.0	1.0	1400.0	14.2	3.0	9.0	0.1	-200.0	-2.0	-20.0	0.6	4.0
30501R	-5.0	140.0	2.0	160.0	2.2	4.0	-4.0	0.1	-200.0	-2.0	50.0	2.1	2.6
32001R	-5.0	110.0	8.0	20.0	3.9	4.0	-4.0	-0.1	-200.0	200.0	690.0	3.2	5.8
32002R	-5.0	110.0	7.0	17.0	3.4	4.0	-4.0	0.2	-200.0	58.0	650.0	1.7	3.6
32004R	-5.0	100.0	2.0	4.0	7.8	6.0	-4.0	0.9	-200.0	14.0	400.0	4.7	4.1
32005R	-5.0	70.0	4.0	16.0	6.1	5.0	-4.0	1.4	-200.0	540.0	1100.0	2.3	5.1
32007R	-5.0	120.0	10.0	150.0	2.9	3.0	-4.0	0.5	-200.0	12.0	840.0	1.8	3.7
32008R	-5.0	140.0	4.0	8.5	1.7	8.0	4.0	1.0	-200.0	6.0	180.0	0.7	3.1
32009R	-5.0	90.0	2.0	37.0	10.1	4.0	-4.0	0.1	-200.0	130.0	240.0	0.9	10.6
32010R	-5.0	120.0	4.0	30.0	6.4	4.0	-4.0	0.2	-200.0	52.0	500.0	1.1	7.3
32011R	-5.0	120.0	4.0	18.0	6.4	3.0	-4.0	0.2	-200.0	60.0	410.0	0.8	8.1
32012R	-5.0	120.0	6.0	230.0	4.8	4.0	-4.0	-0.1	-200.0	12.0	520.0	1.5	5.0
32013R	-5.0	110.0	9.0	6.0	6.3	4.0	-4.0	0.1	-200.0	48.0	780.0	1.1	6.3
32014R	-5.0	120.0	9.0	5.0	5.0	3.0	-4.0	-0.1	-200.0	40.0	630.0	1.8	6.2

Appendix F (continued)

Station	Se	Sn	Te	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
30494R	-5.0	6.0	1.0	12.0	3.5	5.0	94.0	45.0	83.0	6.4	1.2	2.9	0.5
30495R	-5.0	3.0	1.0	6.0	1.7	6.0	27.0	13.0	32.0	1.9	0.4	1.4	0.3
30496R	-7.0	22.0	-1.0	8.0	1.6	17.0	170.0	21.0	42.0	2.6	0.4	1.1	0.2
30497R	55.0	17.0	2.0	7.8	2.0	28.0	10.0	26.0	50.0	3.6	0.7	1.6	0.3
30498R	-5.0	5.0	-1.0	11.0	2.1	-6.0	110.0	35.0	66.0	5.5	0.9	3.0	0.6
30499R	5.0	79.0	1.0	8.1	2.6	9.0	61.0	27.0	58.0	3.0	1.1	1.9	0.4
30500R	10.0	26.0	-1.0	4.7	1.4	580.0	69.0	16.0	43.0	2.0	0.6	0.9	0.2
30501R	-8.0	5.0	-1.0	4.2	0.6	580.0	13.0	10.0	21.0	1.7	0.4	0.7	0.1
32001R	18.0	27.0	4.0	22.0	14.1	5.0	500.0	36.0	105.0	15.8	-0.4	22.4	4.2
32002R	-5.0	31.0	4.0	18.0	37.3	5.0	160.0	17.0	46.0	6.5	-0.3	11.8	2.7
32004R	10.0	150.0	3.0	39.0	38.2	5.0	480.0	70.0	143.0	11.6	-0.6	13.2	2.8
32005R	-9.0	37.0	4.0	28.0	26.5	-6.0	380.0	39.0	93.0	13.4	-0.6	16.6	3.1
32007R	9.0	54.0	2.0	28.0	21.9	50.0	16.0	36.0	71.0	9.6	-0.5	10.8	2.1
32008R	-5.0	4.0	-1.0	8.7	4.7	-6.0	70.0	18.0	39.0	2.7	0.7	1.2	0.3
32009R	-5.0	130.0	5.0	31.0	23.0	9.0	410.0	50.0	108.0	10.3	-0.3	8.2	1.5
32010R	-5.0	33.0	8.0	35.0	27.4	6.0	460.0	57.0	128.0	12.1	-0.3	10.8	1.9
32011R	-5.0	67.0	6.0	33.0	24.5	11.0	340.0	67.0	136.0	12.5	0.6	10.9	1.8
32012R	-5.0	19.0	6.0	33.0	19.6	10.0	61.0	59.0	128.0	11.3	-0.3	9.2	1.6
32013R	-5.0	220.0	6.0	34.0	21.9	5.0	340.0	63.0	126.0	12.6	-0.4	11.2	1.9
32014R	11.0	33.0	8.0	31.0	25.4	4.0	370.0	52.0	116.0	12.7	-0.3	13.2	2.2

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
32015R	Tin Ridge	C-6	9N	4E	27	up to 2% py + fl in 4-12" chl greisen vn	27.0	6.0	-5.0	300.0	-1.2
32016R	Tin Ridge	C-6	9N	4E	27	MnOx + chl greisen in fgr porph gr	2.0	3.0	-5.0	300.0	-1.2
32017R	Tin Ridge	C-6	9N	4E	27	fgr equig gr in csg seriate gr + greisen	1.0	4.0	-5.0	300.0	-0.7
32018R	Tin Ridge	C-6	9N	4E	27	seriate csg gr w/ equig gr-greisen float	-0.5	3.0	-5.0	400.0	-0.8
32019R	Tin Ridge	C-6	9N	4E	27	20-50' greisen zone in alt fgr porph gr	1.0	15.0	-5.0	200.0	-0.7
32020R	Tin Ridge	C-6	9N	4E	27	greisen rubble in seriate csg gr	-0.5	2.0	-5.0	400.0	-0.8
32021R	Tin Ridge	C-6	9N	4E	27	seriate csg gr w/ equig gr-greisen float	-0.5	3.0	-5.0	300.0	-1.1
32022R	Tin Ridge	C-6	9N	4E	27	greisen in seriate csg + equig fgr gr	1.5	-2.0	-5.0	200.0	-1.2
32023R	Tin Ridge	C-6	9N	4E	27	50' of equig gr w/ greisen	4.0	3.0	6.0	300.0	-0.9
32024R	Tin Ridge	C-6	9N	4E	27	chl + Mn alt gr w/ greisen	1.0	3.0	-5.0	300.0	-1.1
32025R	Tin Ridge	C-6	9N	4E	27	20' greisen in seriate csg + equig gr	0.5	-2.0	-5.0	300.0	-1.2
32026R	Tin Ridge	C-6	9N	4E	27	composite smpl in 470' greisen zone	1.5	9.0	7.0	300.0	-1.0
32027R	Tin Ridge	C-6	9N	4E	27	1.5' thick greisen boulders in float	-0.5	3.0	8.0	100.0	-1.2
32028R	Tin Ridge	C-6	9N	4E	27	fgr porpy + csg seriate gr w/ greisen vn	-0.5	7.0	-5.0	200.0	-0.7
32029R	Tin Ridge	C-6	9N	4E	27	minor greisen in fgr porph + csg gr	3.5	2.0	-6.0	400.0	-1.9
32030R	Tin Ridge	C-6	9N	4E	26	FeOx greisen in fgr porph + csg gr	1.0	2.0	-5.0	200.0	-1.7
32031R	Tin Ridge	C-6	9N	4E	27	1" chl greisen veins	5.5	7.0	-5.0	200.0	-1.3
32032R	Tin Ridge	C-6	9N	4E	27	intense chl alt + greisen	0.5	1300.0	-8.0	100.0	-1.6
32033R	Tin Ridge	C-6	9N	4E	27	chloritized bio in equig gr	1.5	21.0	7.0	-100.0	-1.1
32034R	Zinn Gulch	C-6	9N	4E	27	2-4" zone of chl greisen	-0.5	6.0	-5.0	300.0	-1.1

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Ne(%)	Ni	Pb	Rb	Sb	Sc
32015R	-5.0	110.0	6.0	7.0	7.0	3.0	-4.0	-0.1	-200.0	360.0	460.0	2.4	5.0
32016R	-5.0	100.0	3.0	5.0	5.0	4.0	-4.0	0.1	-200.0	280.0	380.0	2.4	7.6
32017R	-5.0	100.0	3.0	4.0	9.7	3.0	-4.0	-0.1	-200.0	34.0	280.0	1.8	8.0
32018R	-5.0	90.0	3.0	2.5	6.3	3.0	-4.0	0.3	-200.0	12.0	390.0	1.8	4.7
32019R	-5.0	80.0	2.0	2.5	8.9	3.0	-4.0	0.1	-200.0	56.0	180.0	1.8	6.1
32020R	-5.0	100.0	2.0	4.0	5.2	3.0	-4.0	0.4	-200.0	20.0	470.0	1.0	4.2
32021R	-5.0	120.0	3.0	4.5	4.1	3.0	-4.0	0.2	-200.0	10.0	400.0	2.0	4.3
32022R	-5.0	110.0	3.0	2.0	5.4	4.0	-4.0	0.1	-200.0	130.0	460.0	1.5	5.7
32023R	-5.0	120.0	9.0	7.5	5.3	5.0	-4.0	0.1	-200.0	230.0	560.0	2.3	5.8
32024R	-5.0	120.0	2.0	0.5	4.0	2.0	-4.0	0.3	-200.0	10.0	390.0	1.7	4.3
32025R	-5.0	110.0	3.0	1.5	5.4	4.0	-4.0	0.1	-200.0	46.0	450.0	1.4	5.9
32026R	-5.0	80.0	1.0	5.0	6.9	3.0	12.0	0.2	-200.0	120.0	210.0	2.3	4.5
32027R	-5.0	90.0	1.0	4.0	9.8	4.0	17.0	-0.1	-200.0	30.0	90.0	1.4	5.2
32028R	-5.0	80.0	1.0	13.0	9.1	3.0	10.0	0.1	-200.0	8.0	140.0	2.0	5.3
32029R	-5.0	70.0	5.0	9.0	7.2	4.0	4.0	1.5	-200.0	92.0	420.0	2.3	7.4
32030R	-5.0	80.0	3.0	14.0	7.6	4.0	25.0	-0.1	-200.0	56.0	300.0	5.7	4.4
32031R	-5.0	130.0	3.0	11.0	4.4	5.0	12.0	-0.1	-200.0	50.0	380.0	1.0	4.6
32032R	-5.0	130.0	7.0	65.0	4.0	4.0	6.0	0.1	-200.0	56.0	680.0	1.7	6.2
32033R	-5.0	150.0	7.0	40.0	4.3	3.0	10.0	-0.1	-200.0	60.0	560.0	4.1	5.1
32034R	-5.0	130.0	6.0	34.0	3.6	10.0	7.0	0.1	-200.0	24.0	570.0	2.7	11.7

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
32015R	-5.0	37.0	5.0	27.0	16.0	6.0	300.0	61.0	117.0	10.4	0.6	6.6	1.1
32016R	-5.0	11.0	7.0	35.0	27.3	6.0	690.0	61.0	129.0	14.0	-0.3	11.4	2.0
32017R	-5.0	16.0	8.0	30.0	30.6	-6.0	150.0	15.0	43.0	9.4	0.2	12.0	2.2
32018R	-5.0	16.0	6.0	32.0	34.2	-6.0	130.0	18.0	50.0	8.1	-0.2	10.5	2.0
32019R	-5.0	13.0	7.0	24.0	17.1	-6.0	160.0	10.0	27.0	6.3	-0.2	8.9	1.5
32020R	-5.0	11.0	7.0	21.0	28.0	-6.0	260.0	17.0	45.0	8.5	-0.2	11.7	2.1
32021R	-5.0	10.0	5.0	26.0	11.9	4.0	100.0	46.0	106.0	9.1	0.5	6.9	1.2
32022R	-5.0	15.0	7.0	36.0	22.8	8.0	520.0	65.0	129.0	12.1	-0.4	10.0	2.0
32023R	-5.0	130.0	8.0	22.0	34.2	-6.0	590.0	31.0	76.0	11.1	0.4	13.1	2.3
32024R	-5.0	10.0	6.0	25.0	11.7	5.0	150.0	44.0	96.0	8.9	-0.3	7.4	1.2
32025R	-5.0	11.0	7.0	37.0	23.9	5.0	230.0	65.0	124.0	12.0	-0.4	9.3	1.7
32026R	10.0	47.0	2.0	25.0	19.5	-6.0	290.0	22.0	52.0	7.6	-0.3	10.8	2.0
32027R	-5.0	19.0	2.0	25.0	12.0	6.0	360.0	44.0	85.0	7.2	0.4	6.9	1.2
32028R	-5.0	12.0	3.0	29.0	15.2	-6.0	310.0	10.0	28.0	6.2	-0.2	9.7	1.7
32029R	-5.0	50.0	2.0	34.0	9.0	6.0	460.0	70.0	128.0	11.3	0.9	11.8	2.0
32030R	-5.0	220.0	2.0	43.0	20.8	9.0	510.0	95.0	155.0	12.2	-0.5	7.8	1.5
32031R	-5.0	24.0	2.0	28.0	20.4	9.0	120.0	52.0	101.0	10.0	-0.4	11.0	2.0
32032R	-5.0	480.0	3.0	31.0	13.7	10.0	67.0	63.0	114.0	13.7	0.7	13.3	2.2
32033R	-5.0	49.0	4.0	14.0	10.5	-6.0	110.0	33.0	95.0	17.3	-0.3	27.5	4.4
32034R	-5.0	57.0	7.0	37.0	31.7	8.0	850.0	26.0	70.0	11.7	-0.3	28.0	5.1

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ce(%)
32035R	Zinn Gulch	C-6	9N	4E	27	up to 5% py (asp?) in 2' chl greisen vns	4.5	22.0	-5.0	300.0	-0.9
32036R	Zinn Gulch	C-6	9N	4E	27	1' chl greisen vns in chloritized mgr gr	9.5	6.0	12.0	200.0	-1.2
32037R	Zinn Gulch	C-6	9N	4E	27	chl-hem greisen	1.0	9.0	10.0	200.0	-1.1
32038R	Zinn Gulch	C-6	9N	4E	27	2' chl + zinn greisen vn	1.5	120.0	-5.0	200.0	-1.0
32039R	Zinn Gulch	C-6	9N	4E	27	qtz + tm near hflsd contact w/mgr gr	-0.5	44.0	-5.0	200.0	-1.0
32040R	Zinn Gulch	C-6	9N	4E	27	hfls greisen rubble near fgr gr contact	-0.5	18.0	-5.0	300.0	-1.1
32041R	Zinn Gulch	C-6	9N	4E	27	1-2" greisen at zinn-alt mgr gr contact	-0.5	30.0	-5.0	200.0	-0.9
32042R	Tin Ridge	C-6	9N	4E	27	1-3" chl + zinn greisen vns in hfls rx	0.5	16.0	-5.0	200.0	-1.0
32043R	Tin Ridge	C-6	9N	4E	27	2-3" chl greisen vn in hfls rubble.	-0.5	13.0	-8.0	400.0	-1.3
32044R	Tin Ridge	C-6	9N	4E	27	qtzt breccia cemented by tm in hfls zone	1.0	310.0	35.0	-400.0	-0.9
32045R	Tin Ridge	C-6	9N	4E	27	1-2" chl greisen rubble in zinn altd gr	26.0	170.0	9.0	100.0	-1.2
32047R	Tin Ridge	C-6	9N	4E	26	greisen vns + tm clots in mgr equig gr	1.5	17.0	-6.0	200.0	-1.3
32048R	Tin Ridge	C-6	9N	4E	26	greisen vn in hflsd gr contact	-0.5	8.0	-5.0	200.0	-0.5
32049R	Tin Ridge	C-6	9N	4E	26	tm + qtz in vns near hflsd gr contact	2.0	12.0	-6.0	300.0	-1.2
32050R	Tin Ridge	C-6	9N	4E	26	qtz-tm hnfls from gr contact zone	-0.5	10.0	6.0	300.0	-1.0
32051R	Tin Ridge	C-6	9N	4E	26	2-3" chl greisen veins in unaltered gr	-0.5	10.0	-6.0	100.0	-1.8
32052R	Zinn Gulch	C-6	9N	4E	26	6-8" chl greisen vns at gr contact	-0.5	15.0	-6.0	300.0	-1.2
32053R	Zinn Gulch	C-6	9N	4E	27	3-4" thick chl greisen vns in chl alt gr	8.5	93.0	-6.0	100.0	-1.2
32054R	Zinn Gulch	C-6	9N	4E	27	3-8" chl + sulfide greisen vns in alt gr	9.5	20.0	-6.0	200.0	-1.5
32055R	Zinn Gulch	C-6	9N	4E	27	chl-zinn-sulfide greisen vns in alt gr	2.5	17.0	-6.0	200.0	-1.1

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
32035R	-5.0	120.0	3.0	92.0	5.5	6.0	9.0	-0.1	-200.0	120.0	290.0	1.9	6.6
32036R	-5.0	140.0	6.0	74.0	4.6	3.0	30.0	-0.1	-200.0	100.0	570.0	2.0	9.7
32037R	6.0	140.0	15.0	14.0	4.6	2.0	23.0	-0.1	-200.0	20.0	910.0	1.7	7.5
32038R	-5.0	110.0	18.0	38.0	4.1	3.0	-4.0	-0.1	-200.0	48.0	1000.0	1.8	5.4
32039R	5.0	130.0	14.0	25.0	2.4	4.0	-4.0	0.4	-200.0	-2.0	380.0	0.9	7.3
32040R	5.0	130.0	19.0	44.0	3.4	4.0	-4.0	0.3	-200.0	-2.0	480.0	1.1	11.6
32041R	12.0	140.0	8.0	12.0	5.4	4.0	-4.0	-0.1	200.0	10.0	710.0	1.0	5.8
32042R	-5.0	110.0	17.0	20.0	3.6	4.0	-4.0	0.1	-200.0	16.0	1000.0	1.4	6.1
32043R	5.0	120.0	25.0	21.0	4.8	4.0	32.0	-0.1	-200.0	38.0	1200.0	1.8	11.0
32044R	6.0	100.0	18.0	48.0	3.4	4.0	-4.0	0.4	-200.0	6.0	470.0	1.9	10.1
32045R	110.0	80.0	7.0	410.0	7.2	2.0	-4.0	0.1	-200.0	200.0	450.0	2.1	6.3
32047R	-5.0	90.0	7.0	13.0	3.5	3.0	24.0	0.1	-200.0	60.0	480.0	1.8	3.8
32048R	6.0	90.0	4.0	8.5	3.8	4.0	11.0	-0.1	-200.0	34.0	410.0	1.0	4.0
32049R	5.0	140.0	5.0	12.0	2.1	4.0	-4.0	0.6	-200.0	84.0	190.0	1.0	7.6
32050R	8.0	170.0	5.0	14.0	2.6	4.0	-4.0	0.6	-200.0	14.0	180.0	0.6	6.9
32051R	-5.0	100.0	4.0	27.0	9.6	5.0	10.0	-0.1	-200.0	86.0	140.0	6.5	3.9
32052R	-5.0	110.0	5.0	100.0	4.9	7.0	20.0	0.1	-200.0	130.0	400.0	2.6	8.9
32053R	-5.0	110.0	7.0	120.0	4.9	3.0	-4.0	0.1	-200.0	170.0	530.0	2.9	8.3
32054R	-5.0	150.0	6.0	110.0	4.6	3.0	-4.0	0.1	-200.0	74.0	540.0	2.5	9.9
32055R	-5.0	130.0	14.0	28.0	4.5	4.0	7.0	-0.1	-200.0	40.0	830.0	2.1	7.5

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
32035R	-5.0	65.0	5.0	30.0	35.1	7.0	140.0	17.0	44.0	7.7	-0.2	18.5	3.6
32036R	10.0	230.0	5.0	19.0	23.3	8.0	260.0	40.0	130.0	19.0	-0.4	31.2	5.4
32037R	10.0	42.0	17.0	16.0	14.4	6.0	240.0	28.0	123.0	18.0	-0.3	33.7	5.5
32038R	5.0	23.0	7.0	14.0	12.0	4.0	220.0	26.0	84.0	16.0	-0.3	32.4	5.3
32039R	-5.0	27.0	1.0	9.1	2.4	9.0	23.0	22.0	36.0	3.4	0.5	3.3	0.6
32040R	-5.0	60.0	4.0	10.0	4.2	23.0	58.0	28.0	52.0	5.3	0.4	4.4	0.8
32041R	-5.0	48.0	39.0	9.1	16.6	14.0	200.0	18.0	60.0	12.4	0.4	19.6	3.2
32042R	-5.0	79.0	16.0	17.0	10.9	15.0	140.0	26.0	76.0	11.5	-0.3	22.1	3.7
32043R	22.0	66.0	20.0	20.0	18.7	24.0	200.0	30.0	96.0	17.3	-0.3	33.7	5.4
32044R	-5.0	73.0	3.0	4.7	2.6	5.0	35.0	11.0	36.0	5.5	0.5	4.3	0.8
32045R	-5.0	48.0	13.0	13.0	8.2	10.0	270.0	23.0	72.0	12.0	0.5	20.2	3.3
32047R	-5.0	46.0	2.0	23.0	18.0	6.0	620.0	43.0	90.0	10.7	-0.3	11.1	2.1
32048R	-5.0	58.0	2.0	29.0	8.3	7.0	210.0	41.0	77.0	6.6	0.4	6.6	1.2
32049R	-5.0	8.0	-1.0	13.0	3.9	-4.0	330.0	36.0	57.0	5.7	0.4	5.3	0.8
32050R	-5.0	6.0	1.0	9.6	3.5	-4.0	85.0	25.0	43.0	3.1	0.5	3.0	0.4
32051R	-5.0	1900.0	1.0	35.0	18.8	35.0	1200.0	76.0	129.0	9.8	0.5	8.2	1.5
32052R	-5.0	28.0	5.0	25.0	35.3	8.0	430.0	33.0	75.0	12.4	0.5	20.1	3.5
32053R	-5.0	100.0	6.0	15.0	15.4	6.0	310.0	33.0	84.0	16.3	-0.3	27.7	4.6
32054R	-5.0	1300.0	5.0	18.0	16.7	15.0	180.0	47.0	138.0	22.8	-0.4	37.7	6.3
32055R	11.0	73.0	14.0	18.0	14.1	10.0	190.0	27.0	97.0	15.3	-0.3	28.6	4.6

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ce(%)
32056R	Zinn Gulch	C-6	9N	4E	27	3-6" chl-musc-zinn-sulfide greisen vn	-0.5	36.0	-8.0	200.0	-1.2
32057R	Zinn Gulch	C-6	9N	4E	27	tm cemented qtzt breccia	-0.5	270.0	6.0	200.0	-1.0
32058R	Zinn Gulch	C-6	9N	4E	27	6-8" chl greisen vn + zinn in alt gr	-0.5	20.0	-6.0	200.0	-1.4
32059R	Zinn Gulch	C-6	9N	4E	27	1/8-1/4" zinn-qtz vns in zinn-alt gr	-0.5	52.0	-11.0	100.0	-1.1
32060R	Zinn Gulch	C-6	9N	4E	27	1-3" chl-zinn greisen vns in zinn-alt gr	1.0	30.0	7.0	200.0	-1.0
32061R	Zinn Gulch	C-6	9N	4E	27	3-6" chl greisen vns in chl fgr gr	-0.5	11.0	-7.0	200.0	-1.5
32062R	Tin Ridge	C-6	9N	4E	27	1-3" chl greisen vns w/ fl	7.5	190.0	8.0	300.0	3.4
32063R	Tin Ridge	C-6	9N	4E	27	3-5" chl greisen vns w/ minor sulfides	1.5	12.0	-6.0	-100.0	-1.3
32064R	Zinn Gulch	C-6	9N	4E	27	6-10" greisen vns in chl gr	1.5	9.0	-6.0	100.0	-1.3
32065R	Tin Ridge	C-6	9N	4E	27	6-8" chl-fl greisen vns in fgr porph gr	2.0	6.0	7.0	100.0	-1.2
32066R	Zinn Gulch	C-6	9N	4E	27	2-8" chl-zinn greisen vn in fgr equig gr	2.5	26.0	13.0	300.0	-1.1
32067R	Zinn Gulch	C-6	9N	4E	27	6-8" zinn-chl greisen vns at gr contact	4.5	15.0	-6.0	200.0	-0.9
32068R	Zinn Gulch	C-6	9N	4E	27	2-3" chl-zinn vns in fgr equig zinn gr	-0.5	25.0	-8.0	300.0	-1.0
32069R	Zinn Gulch	C-6	9N	4E	27	2-3" chl-zinn greisen vns in cht alt gr	0.5	8.0	-7.0	200.0	-1.3
32070R	Zinn Gulch	C-6	9N	4E	27	2-4" chl-zinn greisen vns in chl alt gr	3.0	16.0	-6.0	200.0	-1.2
32071R	Zinn Gulch	C-6	9N	4E	27	3-6" chl greisen vns in chl alt gr	1.0	14.0	-7.0	300.0	-1.3
32072R	Zinn Gulch	C-6	9N	4E	27	3-5" chl greisen vns in chl alt fgr porp	0.5	22.0	-8.0	200.0	-1.8
32073R	Zinn Gulck	C-6	9N	4E	27	3-4" chl greisen vns in chl alt fgr gr	1.0	8.0	-5.0	200.0	-1.1
32074R	Zinn Gulch	C-6	9N	4E	27	1-4" chl greisen vns in chl alt fgr gr	1.0	18.0	-7.0	300.0	-1.6
32075R	Zinn Gulch	C-6	9N	4E	27	6-10" chl greisen vn in chl fgr porph gr	0.5	3.0	7.0	200.0	-1.6

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
32056R	-5.0	120.0	23.0	22.0	4.5	3.0	5.0	0.1	-200.0	14.0	1300.0	2.5	8.1
32057R	8.0	100.0	1.0	69.0	2.9	7.0	5.0	0.3	-200.0	2.0	-20.0	0.2	8.4
32058R	-5.0	150.0	13.0	5.0	4.4	4.0	-4.0	-0.1	-200.0	18.0	900.0	1.7	2.7
32059R	-5.0	100.0	27.0	4.0	2.5	-1.0	-4.0	0.5	-200.0	4.0	2200.0	1.2	16.4
32060R	-5.0	130.0	18.0	5.5	3.6	3.0	-4.0	0.1	-200.0	-2.0	1700.0	1.2	5.6
32061R	-5.0	100.0	3.0	4.5	5.5	3.0	7.0	-0.1	-200.0	-2.0	330.0	1.3	8.3
32062R	5.0	90.0	3.0	510.0	5.3	4.0	10.0	0.3	200.0	36.0	440.0	1.2	5.4
32063R	-5.0	80.0	1.0	8.0	6.2	5.0	23.0	0.2	-200.0	54.0	310.0	1.6	6.8
32064R	-5.0	230.0	2.0	25.0	8.6	5.0	18.0	-0.1	-200.0	110.0	250.0	1.8	6.1
32065R	-5.0	100.0	3.0	24.0	5.8	5.0	11.0	-0.1	-200.0	61.0	430.0	1.6	7.2
32066R	-5.0	120.0	22.0	19.0	4.6	3.0	-4.0	0.2	200.0	18.0	1700.0	7.3	7.1
32067R	-5.0	110.0	6.0	590.0	3.9	4.0	-4.0	0.1	-200.0	14.0	460.0	1.5	5.6
32068R	-5.0	110.0	14.0	23.0	5.3	5.0	-4.0	0.1	-200.0	16.0	1200.0	3.5	9.3
32069R	-5.0	100.0	10.0	4.5	2.8	4.0	-4.0	0.1	-200.0	12.0	1000.0	1.8	6.5
32070R	-5.0	100.0	14.0	25.0	5.4	3.0	7.0	0.1	-200.0	100.0	1100.0	5.2	7.1
32071R	-5.0	120.0	4.0	7.0	6.7	5.0	19.0	-0.1	-200.0	51.0	320.0	1.3	10.2
32072R	-5.0	90.0	2.0	26.0	7.0	4.0	10.0	-0.1	200.0	27.0	210.0	1.7	8.2
32073R	-5.0	60.0	1.0	13.0	3.0	2.0	9.0	0.1	-200.0	22.0	150.0	0.5	3.9
32074R	-5.0	60.0	4.0	180.0	8.4	5.0	20.0	-0.1	-200.0	10.0	520.0	3.9	9.6
32075R	-5.0	100.0	3.0	33.0	4.9	3.0	8.0	-0.1	-200.0	30.0	430.0	1.5	6.5

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
32056R	-5.0	53.0	12.0	19.0	15.7	170.0	170.0	31.0	86.0	13.9	-0.3	25.2	4.0
32057R	-5.0	90.0	3.0	6.7	3.5	35.0	7.0	13.0	24.0	1.6	-0.2	0.8	0.2
32058R	9.0	36.0	5.0	24.0	7.2	5.0	110.0	47.0	134.0	20.7	0.5	31.4	5.0
32059R	-7.0	14.0	60.0	5.0	5.0	1200.0	53.0	7.0	17.0	2.8	-0.2	5.4	0.9
32060R	-5.0	32.0	23.0	11.0	17.9	24.0	74.0	17.0	46.0	6.4	-0.2	17.2	2.8
32061R	20.0	98.0	2.0	25.0	14.3	15.0	410.0	55.0	97.0	10.2	-0.4	11.6	1.9
32062R	18.0	300.0	1.0	28.0	14.3	14.0	120.0	67.0	110.0	8.6	0.8	6.4	1.2
32063R	-5.0	17.0	2.0	32.0	18.1	-4.0	230.0	39.0	83.0	8.5	0.5	10.6	1.8
32064R	-5.0	67.0	3.0	33.0	18.2	9.0	270.0	47.0	92.0	9.7	-0.3	11.4	1.9
32065R	-5.0	39.0	6.0	26.0	24.7	-4.0	350.0	34.0	85.0	13.9	0.5	25.8	4.4
32066R	-5.0	46.0	19.0	17.0	17.4	10.0	120.0	28.0	92.0	15.1	-0.3	31.4	5.2
32067R	-5.0	26.0	15.0	10.0	13.3	26.0	65.0	19.0	49.0	6.8	0.4	10.7	1.8
32068R	-5.0	39.0	11.0	24.0	20.1	14.0	80.0	25.0	60.0	12.1	-0.3	26.6	4.3
32069R	-5.0	31.0	8.0	15.0	7.4	8.0	93.0	34.0	110.0	18.2	1.3	29.6	4.7
32070R	-5.0	52.0	10.0	15.0	13.8	5.0	460.0	25.0	77.0	11.1	-0.3	23.0	3.8
32071R	-5.0	24.0	3.0	26.0	31.5	5.0	300.0	39.0	82.0	10.2	-0.3	17.5	3.1
32072R	-5.0	36.0	1.0	33.0	14.4	11.0	320.0	74.0	129.0	10.7	0.5	8.3	1.3
32073R	-5.0	20.0	1.0	18.0	8.2	5.0	170.0	30.0	57.0	5.0	0.3	5.0	0.8
32074R	-5.0	84.0	2.0	34.0	20.3	-5.0	280.0	67.0	120.0	12.2	-0.4	11.7	2.0
32075R	-5.0	72.0	3.0	27.0	20.5	14.0	200.0	63.0	120.0	14.1	-0.4	13.7	2.5

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
32076R	Zinn Gulch	C-6	9N	4E	27	2-3" chl greisen vns near gr/gr contact	9.0	11.0	-6.0	200.0	-1.1
32077R	Zinn Gulch	C-6	9N	4E	27	6" chl-zinn-tpz(?) greisen vn in zinn gr	2.0	8.0	-6.0	100.0	-1.0
32078R	Zinn Gulch	C-6	9N	4E	27	1/4-3" chl-zinn-tpz(?) greisen vns in gr	1.5	100.0	-9.0	200.0	-1.1
32079R	Zinn Gulch	C-6	9N	4E	27	8" greisen vns in zinn-tm-alb alt mgr gr	-0.5	16.0	-7.0	100.0	-1.3
32080R	Zinn Gulch	C-6	9N	4E	27	3-4" chl-zinn-tpz(?)-py greisen vn in gr	1.5	27.0	-7.0	200.0	-0.9
32081R	Zinn Gulch	C-6	9N	4E	27	2" chl greisen vns in chl mgr equig gr	5.0	15.0	-8.0	500.0	-1.4
32082R	Zinn Gulch	C-6	9N	4E	27	3-5" chl greisen vns in gr contact	-0.5	4.0	-6.0	300.0	-1.3
32083R	Zinn Gulch	C-6	9N	4E	27	3-4" chl greisen vns in fgr porph chl gr	35.0	-2.0	-6.0	300.0	-1.4
32084R	Zinn Gulch	C-6	9N	4E	27	3-4" chl greisen vn in chl fgr porph gr	4.5	3.0	-8.0	200.0	-1.6
32085R	Zinn Gulch	C-6	9N	4E	27	1' chl greisen vns in chl alt gr + rhy?	57.0	4.0	-7.0	200.0	-1.2
32086R	Zinn Gulch	C-6	9N	4E	27	3-6" chl-zinn-tpz(?) greisen vns in gr	3.5	8.0	-7.0	200.0	-1.2
32087R	Zinn Gulch	C-6	9N	4E	27	500' zone of chl-zinn-tpz(?) greisen	3.5	9.0	10.0	100.0	-1.1
32088R	Zinn Gulch	C-6	9N	4E	27	1-3" chl-zinn greisen vn in zinn alt gr	7.5	5.0	12.0	200.0	-1.0
32089R	Zinn Gulch	C-6	9N	4E	27	1' chl greisen in chl mgr equig gr	44.0	33.0	6.0	200.0	-1.1
32090R	Zinn Gulch	C-6	9N	4E	27	6" chl-zinn-tpz greisen in zinn alt gr	1.5	-2.0	-7.0	200.0	-1.0
32091R	Zinn Gulch	C-6	9N	4E	27	2-3" chl greisen vns in chl fgr porph gr	2.0	3.0	-7.0	200.0	-1.5
32092R	Tin Ridge	C-6	9N	4E	27	1-2" chl-qtz-fl greisen vn in chl alt gr	3.0	5.0	-6.0	200.0	-1.6
32093R	Tin Ridge	C-6	9N	4E	27	3-6" chl greisen vn in chl alt fgr gr	1.0	4.0	-8.0	200.0	-1.7
32097R	Hope Ck Sn skarns	B-5	7N	6E	26	zinn-qtz-tm vns + vugs in equig gr hfls	1.0	8.0	7.0	100.0	-1.0
32098R	Hope Ck Sn skarns	B-5	7N	6E	26	1/4" amph vns in hfls layer	-0.5	150.0	-8.0	300.0	4.8

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
32076R	-5.0	120.0	2.0	56.0	3.3	3.0	6.0	0.3	-200.0	44.0	220.0	1.4	9.8
32077R	-5.0	120.0	12.0	6.0	3.9	3.0	13.0	-0.1	-200.0	48.0	860.0	1.3	7.1
32078R	-5.0	120.0	14.0	15.0	4.5	4.0	-4.0	0.2	-200.0	200.0	1000.0	0.9	15.3
32079R	-5.0	150.0	15.0	14.0	3.3	4.0	-4.0	-0.1	-200.0	20.0	850.0	1.8	6.5
32080R	-5.0	130.0	12.0	25.0	3.9	3.0	26.0	-0.1	-200.0	30.0	860.0	1.2	5.3
32081R	-5.0	150.0	5.0	3.0	3.4	3.0	-4.0	0.9	200.0	34.0	450.0	0.3	12.4
32082R	-5.0	100.0	5.0	16.0	4.8	3.0	18.0	-0.1	-200.0	28.0	560.0	1.4	5.6
32083R	-5.0	70.0	5.0	36.0	10.8	5.0	29.0	-0.1	-200.0	64.0	340.0	3.1	7.7
32084R	-5.0	100.0	3.0	6.5	6.6	5.0	19.0	-0.1	-200.0	38.0	290.0	2.3	10.5
32085R	-5.0	100.0	2.0	24.0	6.4	5.0	24.0	0.2	-200.0	200.0	250.0	1.9	9.7
32086R	-5.0	110.0	17.0	32.0	4.6	4.0	4.0	0.1	-200.0	44.0	1300.0	3.4	9.1
32087R	-5.0	150.0	20.0	48.0	3.8	4.0	-4.0	0.1	-200.0	50.0	1400.0	1.7	8.6
32088R	-5.0	130.0	20.0	110.0	3.3	3.0	-4.0	0.1	-200.0	38.0	1400.0	2.7	7.5
32089R	-5.0	110.0	2.0	8.0	4.8	4.0	33.0	-0.1	-200.0	230.0	210.0	1.8	7.5
32090R	-5.0	130.0	21.0	47.0	4.3	3.0	-4.0	0.1	-200.0	20.0	1600.0	2.0	7.5
32091R	-5.0	100.0	2.0	2.5	4.7	4.0	35.0	0.1	200.0	400.0	360.0	2.1	5.9
32092R	-5.0	130.0	2.0	9.5	3.3	5.0	13.0	0.4	-200.0	40.0	260.0	0.8	5.8
32093R	-5.0	90.0	3.0	43.0	6.4	3.0	7.0	0.2	-200.0	22.0	370.0	2.6	7.7
32097R	-5.0	110.0	5.0	6.0	0.9	2.0	-4.0	2.2	-200.0	4.0	630.0	0.4	4.9
32098R	15.0	100.0	11.0	34.0	4.1	3.0	-4.0	1.3	-200.0	-2.0	110.0	0.5	15.2

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
32076R	-5.0	19.0	2.0	12.0	9.9	-5.0	330.0	27.0	54.0	5.9	0.5	11.0	1.9
32077R	6.0	25.0	6.0	14.0	14.9	-4.0	130.0	28.0	91.0	14.5	-0.2	30.0	4.7
32078R	-6.0	45.0	38.0	13.0	16.5	300.0	140.0	20.0	54.0	8.0	-0.3	13.6	2.4
32079R	8.0	26.0	21.0	18.0	18.2	10.0	110.0	41.0	120.0	19.3	0.6	34.3	5.4
32080R	11.0	20.0	8.0	14.0	12.3	-4.0	130.0	20.0	84.0	11.4	-0.2	20.4	3.5
32081R	10.0	23.0	7.0	16.0	12.7	6.0	110.0	41.0	116.0	21.8	-0.3	40.2	6.4
32082R	-5.0	50.0	3.0	16.0	23.5	5.0	290.0	42.0	94.0	12.7	-0.3	16.8	3.0
32083R	-5.0	58.0	3.0	29.0	27.0	7.0	380.0	47.0	100.0	10.4	-0.3	13.2	2.5
32084R	-5.0	65.0	4.0	30.0	23.5	11.0	310.0	61.0	122.0	13.1	-0.4	13.6	2.5
32085R	-5.0	21.0	3.0	21.0	19.1	9.0	280.0	21.0	46.0	6.1	-0.3	14.9	2.5
32086R	5.0	35.0	15.0	15.0	14.6	86.0	160.0	27.0	87.0	13.8	-0.3	26.1	4.2
32087R	-5.0	25.0	16.0	14.0	15.8	96.0	150.0	24.0	66.0	12.5	-0.3	23.0	3.8
32088R	-5.0	58.0	14.0	15.0	13.7	12.0	110.0	25.0	69.0	11.8	-0.3	22.0	3.5
32089R	-5.0	10.0	4.0	21.0	23.9	6.0	310.0	21.0	46.0	8.9	0.2	16.4	2.9
32090R	-5.0	30.0	10.0	16.0	15.1	14.0	100.0	20.0	66.0	10.0	-0.2	19.1	3.0
32091R	-5.0	19.0	3.0	30.0	10.9	5.0	550.0	59.0	100.0	8.3	-0.4	6.4	1.1
32092R	-5.0	14.0	2.0	31.0	19.7	6.0	230.0	70.0	126.0	11.6	-0.4	9.3	1.6
32093R	-5.0	100.0	2.0	29.0	12.1	13.0	530.0	78.0	128.0	11.4	-0.4	9.4	1.5
32097R	-5.0	7.0	11.0	7.5	10.6	18.0	24.0	7.0	11.0	1.5	-0.3	1.9	0.4
32098R	-5.0	35.0	3.0	9.8	1.3	78.0	41.0	39.0	65.0	4.7	1.9	2.5	0.4

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
32099R	Hope Ck Sn skarns	B-5	7N	6E	23	3-4" sulfide-rich hfls wx ls	3.0	9.0	25.0	100.0	11.0
32101R	Hope Ck Sn skarns	B-5	7N	6E	23	3" vn of amph-pyx(?)-aspy	-0.5	3.0	-5.0	-100.0	12.0
32102R	Hope Ck Sn skarns	B-5	7N	6E	23	qtzt w/ 2% cpx(?)-amph(?) vns	0.5	14.0	8.0	700.0	1.3
32104R	Hope Ck Sn skarns	B-5	7N	6E	23	calc-sil hfls (wol?) alt to green pxy(?)	1.0	10.0	-8.0	200.0	12.0
32105R	Hope Ck Sn skarns	B-5	7N	6E	23	3" qtz-green amph vn in woll qtzt	-0.5	5.0	11.0	500.0	8.7
32106R	Hope Ck Sn skarns	B-5	7N	6E	23	pyx-gar skarn in ido-woll hfls	1.0	9.0	-8.0	100.0	19.0
32107R	Hope Ck Sn skarns	B-5	7N	6E	23	gn-cpx skarn from wol-idoclase hfls	1.0	14.0	65.0	100.0	19.0
32108R	Hope Ck Sn skarns	B-5	7N	6E	23	green cpx(?) replacing calc-sil qztz	-0.5	8.0	25.0	100.0	15.0
32109R	Hope Ck Sn skarns	B-5	7N	6E	23	amph-tm-aspy skarn	-0.5	11.0	-8.0	100.0	9.7
32110R	Hope Ck Sn skarns	B-5	7N	6E	23	amph-tm-aspy skarn	0.5	8.0	-8.0	100.0	14.0
32111R	Hope Ck Sn skarns	B-5	7N	6E	23	aspy-bearing hfls in bio qtzt	1.0	84.0	19.0	900.0	-2.1
32126R	Tin Ridge	C-6	9N	4E	27	greisen from gr contact zone	1.5	11.0	-6.0	200.0	-1.0
32127R	Tin Ridge	C-6	9N	4E	27	greisen in MnOx, FeOx equig gr	-0.5	3.0	-5.0	300.0	-0.9
32128R	Tin Ridge	C-6	9N	4E	27	chl, alb, qtz, + tm? vns in gr	4.5	2.0	-5.0	300.0	-1.1
32129R	Tin Ridge	C-6	9N	4E	27	fl + sulfides in MnOx greisen + gr	2.0	2.0	6.0	300.0	-0.7
32130R	Tin Ridge	C-6	9N	4E	27	chl fgr porph gr + greisen	2.0	6.0	-5.0	500.0	-1.1
32131R	Tin Ridge	C-6	9N	4E	27	equig gr near hfls contact	5.5	-2.0	5.0	300.0	-0.9
32132R	Tin Ridge	C-6	9N	4E	27	greisen in fgr porph gr w/ fl vns	1.5	2.0	-5.0	400.0	-1.1
32133R	Tin Ridge	C-6	9N	4E	27	qtz-chl-feld greisen in equig + porph gr	1.5	7.0	-5.0	300.0	-0.9
32134R							3.0	-2.0	-5.0	500.0	11.0

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
32099R	10.0	60.0	1.0	570.0	15.0	3.0	25.0	0.2	-200.0	-2.0	-30.0	0.9	38.3
32101R	12.0	60.0	2.0	100.0	8.4	-1.0	4.0	0.6	-200.0	-2.0	-20.0	-0.2	13.1
32102R	9.0	180.0	2.0	180.0	2.3	2.0	-4.0	0.4	200.0	34.0	120.0	0.5	3.9
32104R	6.0	110.0	38.0	14.0	9.8	5.0	4.0	1.0	-200.0	10.0	170.0	6.0	6.5
32105R	7.0	70.0	43.0	5.0	1.8	3.0	-4.0	1.0	-200.0	-2.0	850.0	1.9	3.2
32106R	9.0	70.0	9.0	12.0	10.6	3.0	8.0	0.3	-200.0	-2.0	100.0	1.0	3.8
32107R	13.0	90.0	11.0	150.0	7.6	6.0	6.0	0.2	-200.0	-2.0	-20.0	1.3	2.7
32108R	6.0	50.0	25.0	4.5	9.7	9.0	-4.0	0.7	300.0	-2.0	80.0	1.8	3.6
32109R	15.0	60.0	5.0	250.0	9.4	-1.0	-4.0	0.6	-200.0	-2.0	40.0	0.5	12.3
32110R	20.0	60.0	4.0	340.0	9.0	-1.0	-4.0	0.5	200.0	-2.0	30.0	0.3	14.6
32111R	27.0	160.0	37.0	270.0	4.9	7.0	9.0	2.7	-200.0	6.0	600.0	1.7	27.7
32126R	9.0	120.0	1.0	46.0	5.4	4.0	6.0	0.1	-200.0	90.0	200.0	1.6	6.1
32127R	-5.0	120.0	3.0	4.0	10.0	4.0	-4.0	-0.1	-200.0	-2.0	380.0	2.5	5.6
32128R	-5.0	90.0	-1.0	81.0	10.7	4.0	-4.0	0.3	-200.0	8.0	230.0	1.6	5.4
32129R	-5.0	120.0	2.0	160.0	7.3	2.0	-4.0	0.3	-200.0	150.0	260.0	3.9	5.0
32130R	-5.0	120.0	3.0	68.0	5.3	3.0	-4.0	0.4	-200.0	130.0	460.0	2.0	5.6
32131R	-5.0	130.0	14.0	61.0	5.5	3.0	-4.0	0.1	-200.0	48.0	910.0	3.7	7.6
32132R	-5.0	130.0	3.0	4.5	7.3	4.0	-4.0	-0.1	-200.0	54.0	310.0	1.5	8.4
32133R	-5.0	120.0	5.0	22.0	7.2	4.0	-4.0	0.1	-200.0	46.0	430.0	3.1	7.4
32134R	5.0	80.0	3.0	21.0	3.3	1.0	-4.0	0.1	-200.0	120.0	470.0	0.4	3.1

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
32099R	-5.0	91.0	-1.0	5.5	1.3	220.0	200.0	25.0	58.0	7.8	1.6	10.5	1.8
32101R	-5.0	45.0	-1.0	0.8	-0.6	230.0	72.0	3.0	8.0	1.0	0.5	1.4	0.3
32102R	-5.0	8.0	-1.0	3.9	1.2	4.0	28.0	12.0	21.0	1.5	0.3	0.8	0.2
32104R	-5.0	210.0	-1.0	7.4	1.4	14.0	260.0	26.0	44.0	3.1	1.5	1.5	0.2
32105R	-5.0	21.0	-1.0	1.9	1.4	660.0	62.0	5.0	13.0	1.7	0.8	1.0	0.2
32106R	-5.0	1900.0	-1.0	4.8	1.0	97.0	290.0	44.0	66.0	3.6	4.3	1.4	0.2
32107R	-5.0	140.0	-1.0	6.7	2.3	1300.0	850.0	27.0	47.0	4.6	3.5	2.1	0.3
32108R	-5.0	510.0	-1.0	10.0	1.9	220.0	350.0	29.0	52.0	4.2	2.5	2.3	0.4
32109R	-5.0	48.0	-1.0	1.9	-0.5	170.0	59.0	6.0	13.0	1.6	0.5	2.0	0.3
32110R	-5.0	37.0	-1.0	6.2	-0.6	96.0	81.0	28.0	46.0	3.7	1.1	2.4	0.4
32111R	-5.0	15.0	1.0	19.0	5.0	-8.0	170.0	76.0	125.0	9.8	2.3	6.0	0.9
32126R	-5.0	24.0	1.0	7.6	1.5	17.0	730.0	21.0	43.0	2.6	0.8	2.4	0.4
32127R	-5.0	170.0	9.0	27.0	45.4	-4.0	130.0	20.0	67.0	15.0	-0.2	18.0	3.2
32128R	-5.0	24.0	7.0	34.0	17.5	7.0	250.0	36.0	85.0	9.7	-0.3	9.4	1.6
32129R	-5.0	24.0	11.0	14.0	15.2	6.0	840.0	10.0	38.0	8.5	-0.2	14.6	2.4
32130R	-5.0	17.0	7.0	29.0	26.4	-4.0	360.0	38.0	86.0	9.4	0.6	12.1	2.0
32131R	6.0	29.0	19.0	14.0	15.3	-4.0	290.0	24.0	93.0	16.5	-0.3	22.4	3.5
32132R	-5.0	89.0	8.0	31.0	21.2	7.0	230.0	47.0	111.0	12.0	0.6	13.4	2.2
32133R	-5.0	41.0	9.0	28.0	27.7	6.0	260.0	24.0	67.0	9.6	-0.2	19.0	3.2
32134R	-5.0	11.0	5.0	3.1	1.0	11.0	210.0	9.0	25.0	2.1	1.1	2.4	0.6

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Ba	Ca(%)
32135R	Zinn Gulch	C-6	9N	4E	27	MnOx csg chl-qtz-zinn greisen in hfls	5.0	-2.0	-5.0	200.0	-0.9
32136R	Zinn Gulch	C-6	9N	4E	27	alt hfls near equig gr	21.0	-2.0	-5.0	200.0	1.6
32137R	Zinn Gulch	C-6	9N	4E	27	alb in equig zinn gr w/ visible mo	-0.5	-2.0	-5.0	100.0	-1.4
32138R	Zinn Gulch	C-6	9N	4E	27	zinn greisen in equig zinn gr	5.5	2.0	-5.0	300.0	-1.0
32139R	Zinn Gulch	C-6	9N	4E	27	zinn-chl greisen in equig zinn gr float	1.0	5.0	-5.0	400.0	-0.9
32140R	Zinn Gulch	C-6	9N	4E	27	zinn greisen	1.0	4.0	-5.0	300.0	-1.0
32141R	Zinn Gulch	C-6	9N	4E	27	zinn-chl-MnO greisen in equig zinn gr	12.0	18.0	-5.0	200.0	-0.9
32142R	Zinn Gulch	C-6	9N	4E	27	chl-qtz-zinn greisen	-0.5	2.0	-5.0	300.0	-0.9
32143R	Zinn Gulch	C-6	9N	4E	27	fl in greisen in equig zinn gr	2.0	-2.0	-5.0	200.0	-0.9
32144R	Zinn Gulch	C-6	9N	4E	27	zinn greisen in equig zinn gr	2.5	70.0	-5.0	400.0	-1.0
32145R	Zinn Gulch	C-6	9N	4E	27	zinn greisen	1.0	89.0	-5.0	300.0	-0.8
32146R	Zinn Gulch	C-6	9N	4E	27	zinn greisen	0.5	17.0	-5.0	500.0	1.4
32147R	Tin Ridge	C-6	9N	4E	27	qtz-chl greisen in fgr porph gr	1.5	2.0	-5.0	400.0	-1.4
32148R	Tin Ridge	C-6	9N	4E	23	wol, idocrase + asp(?) in calc-sil zone	-0.5	14.0	-5.0	900.0	2.9
32414R	West Cliff area	C-6	9N	4E	22	mgr seriate gr w/ py	2.5	110.0	10.0	400.0	-0.8
32415R	West Cliff area	C-6	9N	4E	21	py in Cu, Fe + Mn-stained hornfels	-0.5	2.0	-6.0	1700.0	-0.5
32416R	West Cliff area	C-6	9N	4E	21	Fe-stained hornfels	1.0	20.0	-5.0	200.0	-0.7
32417R	Mascot Creek	C-6	9N	4E	15	greisen w/ py	-0.5	5100.0	-24.0	200.0	-0.5
32418R	Lower Hope Creek	B-5	7N	7E	31	rhyolite breccia in float	0.5	53.0	43.0	200.0	-0.5
32419R	Lower Hope Creek	B-5	7N	7E	20	cemented gouge zone w/ qtz in qtzt	-0.5	6.0	-5.0	200.0	-0.8

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
32135R	-5.0	160.0	31.0	35.0	3.4	4.0	-4.0	-0.1	-200.0	110.0	1600.0	3.4	9.9
32136R	-5.0	110.0	4.0	70.0	6.2	3.0	-4.0	-0.1	-200.0	370.0	310.0	3.8	4.3
32137R	-5.0	140.0	46.0	6.5	1.6	6.0	-4.0	2.3	-200.0	8.0	2100.0	1.4	11.3
32138R	-5.0	150.0	16.0	150.0	5.6	4.0	-4.0	0.5	-200.0	120.0	1100.0	6.0	7.7
32139R	-5.0	140.0	35.0	150.0	4.8	4.0	-4.0	0.2	-200.0	34.0	1600.0	1.4	9.4
32140R	-5.0	140.0	67.0	5.0	5.4	4.0	-4.0	-0.1	-200.0	10.0	3100.0	1.4	17.0
32141R	-5.0	150.0	10.0	570.0	7.5	4.0	-4.0	-0.1	-200.0	220.0	600.0	2.6	6.0
32142R	-5.0	180.0	54.0	12.0	4.3	3.0	11.0	-0.1	-200.0	14.0	2200.0	1.2	10.3
32143R	-5.0	140.0	11.0	20.0	5.8	3.0	-4.0	-0.1	-200.0	30.0	980.0	6.3	6.0
32144R	-5.0	170.0	26.0	110.0	4.0	2.0	-4.0	-0.1	-200.0	190.0	1900.0	1.7	7.1
32145R	-5.0	150.0	47.0	25.0	4.5	-1.0	-4.0	-0.1	-200.0	24.0	2100.0	1.0	11.7
32146R	-5.0	150.0	71.0	50.0	5.3	3.0	-4.0	-0.1	-200.0	36.0	3000.0	2.2	11.7
32147R	-5.0	120.0	2.0	6.5	6.9	5.0	-4.0	-0.1	-200.0	100.0	230.0	1.8	9.5
32148R	18.0	180.0	12.0	200.0	3.2	4.0	-4.0	2.2	-200.0	12.0	180.0	0.7	14.9
32414R	-5.0	90.0	2.0	5.0	0.9	1.0	-4.0	0.4	-200.0	18.0	220.0	8.1	2.9
32415R	10.0	170.0	39.0	65.0	2.2	4.0	-4.0	0.3	-200.0	2.0	550.0	0.9	28.2
32416R	-5.0	150.0	2.0	46.0	4.9	5.0	-4.0	-0.1	-200.0	170.0	80.0	1.5	4.4
32417R	87.0	190.0	4.0	1300.0	11.6	2.0	-4.0	-0.1	-300.0	170.0	40.0	-1.7	5.0
32418R	-5.0	160.0	10.0	6.0	0.8	1.0	-4.0	-0.1	-200.0	2.0	40.0	29.0	1.1
32419R	5.0	180.0	2.0	49.0	2.4	6.0	-4.0	0.7	-200.0	4.0	30.0	1.4	3.7

Appendix F (continued)

Station	Se	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
32135R	-5.0	17.0	42.0	17.0	16.3	130.0	140.0	21.0	101.0	13.7	-0.2	23.5	3.6
32136R	-5.0	23.0	8.0	9.3	5.0	8.0	320.0	14.0	37.0	4.3	0.5	7.5	1.2
32137R	7.0	8.0	36.0	20.0	18.1	16.0	27.0	16.0	36.0	3.7	-0.4	10.9	1.7
32138R	-5.0	120.0	18.0	17.0	19.4	21.0	150.0	21.0	82.0	13.2	-0.3	24.3	4.2
32139R	-6.0	30.0	32.0	18.0	12.5	19.0	160.0	25.0	97.0	14.5	0.4	20.5	3.2
32140R	-6.0	16.0	26.0	17.0	23.4	190.0	78.0	26.0	86.0	14.9	-0.3	20.6	3.4
32141R	7.0	120.0	22.0	16.0	27.9	9.0	250.0	21.0	85.0	15.7	-0.2	27.3	4.4
32142R	-5.0	13.0	15.0	18.0	13.5	10.0	57.0	27.0	84.0	12.9	-0.2	15.3	2.2
32143R	-5.0	40.0	16.0	16.0	19.9	5.0	280.0	25.0	96.0	15.7	-0.2	26.3	4.1
32144R	-5.0	27.0	14.0	16.0	17.8	6.0	140.0	29.0	106.0	18.0	-0.3	23.0	3.8
32145R	-6.0	10.0	23.0	16.0	15.8	720.0	68.0	22.0	79.0	12.6	-0.2	16.0	2.5
32146R	-5.0	30.0	17.0	17.0	16.8	230.0	79.0	27.0	94.0	16.1	-0.3	21.4	3.5
32147R	-5.0	10.0	9.0	40.0	30.1	4.0	430.0	70.0	152.0	15.2	-0.4	12.5	2.1
32148R	-5.0	10.0	6.0	12.0	4.2	-4.0	35.0	37.0	74.0	5.5	0.7	2.5	0.4
32414R	-5.0	5.0	4.0	16.0	8.1	-4.0	9.5	15.0	36.0	2.4	-0.2	5.2	0.9
32415R	-5.0	6.0	5.0	28.0	7.4	4.0	12.0	97.0	172.0	13.4	1.9	4.0	0.7
32416R	-5.0	32.0	4.0	7.8	2.3	-4.0	250.0	19.0	39.0	2.9	0.6	1.2	0.2
32417R	-21.0	100.0	22.0	45.0	27.2	-5.0	81.0	45.0	82.0	9.7	1.0	4.8	0.7
32418R	-5.0	2.0	4.0	1.4	1.4	-4.0	2.5	5.0	13.0	0.8	-0.2	0.4	-0.1
32419R	-5.0	3.0	3.0	19.0	3.9	-4.0	34.0	17.0	37.0	2.8	0.3	1.4	0.2

Appendix F (continued)

Station	Prospect	Quad.	T.	R.	Sec.	Sample Description	Ag	As	Au(ppb)	Be	Ca(%)
32420R	Lower Hope Creek	B-5	7N	7E	19	50" qtz zone along hbl gr/hfls contact	0.5	12.0	-5.0	100.0	-0.5
32421R	Faith Creek area	B-5	?N	?E	??	qtz-py-stb-sph-asp-cpy vn in gray schist	-0.5	11000.0	4800.0	-4700.0	-61.0
32501R	Lower Hope Creek	B-5	7N	7E	21	sulfides in hfls at hbl gr contact	1.5	7200.0	190.0	-500.0	-2.5
32502R	Lower Hope Creek	B-5	7N	7E	19	sulfides in hfls contact w/ hbl gr	-0.5	2400.0	540.0	1400.0	-3.6
32503R	Lower Hope Creek	B-5	7N	7E	19	sulfides in hbl gr fine chilled margin	-0.5	6100.0	290.0	1300.0	-3.1
32504R	Lower Hope Creek	B-5	7N	7E	19	py in chilled hbl gr contact	-0.5	550.0	44.0	800.0	-1.3
32505R	Lower Hope Creek	B-5	7N	7E	32	po clasts in lamprophyre	-0.5	19.0	-5.0	2200.0	1.7
32506R	Lower Hope Creek	B-5	7N	6E	36	lamprophyre dike in hbl gr	-0.5	15.0	-6.0	2500.0	3.2
32507R	West Cliff area	C-6	9N	4E	22	mineralized greisen vn rubble	-0.5	3.0	-5.0	100.0	-1.0
32508R	Mascot Creek	C-6	9N	4E	14	mafic dike rubble	26.0	10.0	-5.0	100.0	-1.2
32509R	Mascot Creek	C-6	9N	4E	14	weakly mineralized greisen rubble	1.0	1200.0	6.0	200.0	-1.4
32510R	West Cliff area	C-6	9N	4E	20	weakly sulfidized hfls near Lime Pk gr	-0.5	20.0	-5.0	100.0	-0.7
32511R	West Cliff area	C-6	9N	4E	20	weakly sulfidized hfls at gr contact	-0.5	3.0	-5.0	1500.0	-1.6

Appendix F (continued)

Station	Co	Cr	Cs	Cu	Fe(%)	Hf	Mo	Na(%)	Ni	Pb	Rb	Sb	Sc
32420R	-5.0	230.0	3.0	16.0	0.3	-1.0	-4.0	-0.1	-200.0	4.0	50.0	4.0	0.5
32421R	71.0	-330.0	-26.0	1700.0	14.8	-33.0	-220.0	6.0	4200.0	62000.0	-20.0	48000.0	2.9
32501R	-5.0	190.0	6.0	23.0	2.3	-1.0	-10.0	-0.1	-300.0	390.0	-50.0	120.0	0.9
32502R	5.0	90.0	11.0	100.0	3.3	7.0	-6.0	1.7	-300.0	54.0	40.0	68.0	9.6
32503R	-5.0	130.0	14.0	8.5	2.7	4.0	-10.0	0.4	-300.0	32.0	30.0	33.0	6.1
32504R	-5.0	120.0	25.0	8.5	1.2	4.0	-4.0	-0.1	-200.0	36.0	340.0	22.0	8.0
32505R	9.0	140.0	7.0	45.0	4.5	3.0	-4.0	0.7	-200.0	-2.0	0.0	3.0	20.3
32506R	15.0	150.0	7.0	62.0	4.8	3.0	-4.0	0.8	-200.0	34.0	0.0	38.0	24.3
32507R	-5.0	80.0	2.0	200.0	7.7	1.0	33.0	0.1	-200.0	700.0	370.0	6.4	3.6
32508R	-5.0	90.0	2.0	1500.0	6.7	1.0	-4.0	-0.1	-200.0	14000.0	60.0	7.4	1.9
32509R	-5.0	130.0	6.0	170.0	2.4	6.0	-4.0	0.7	-200.0	80.0	680.0	3.2	5.6
32510R	8.0	170.0	2.0	140.0	2.2	3.0	-4.0	0.4	-200.0	120.0	80.0	16.0	3.6
32511R	11.0	140.0	21.0	100.0	3.7	5.0	-4.0	0.7	-200.0	6.0	810.0	1.2	21.7

Appendix F (continued)

Station	Sc	Sn	Ta	Th	U	W	Zn	La	Ce	Sm	Eu	Yb	Lu
32420R	-5.0	2.0	4.0	1.3	0.7	-4.0	4.5	3.0	5.0	0.4	-0.2	-0.2	-0.1
32421R	-330.0	-2.0	-30.0	-35.0	76.7	-98.0	73000.0	-54.0	-112.0	-0.1	36.5	36.7	3.9
32501R	-26.0	-2.0	20.0	1.8	-2.2	-4.0	75.0	15.0	-7.0	1.7	1.2	1.1	-0.1
32502R	-18.0	-2.0	18.0	27.0	9.4	8.0	58.0	85.0	125.0	9.0	2.3	2.5	0.3
32503R	-21.0	2.0	23.0	14.0	8.2	-5.0	21.0	49.0	80.0	5.0	-1.0	-0.7	-0.1
32504R	-5.0	3.0	5.0	19.0	5.1	-4.0	33.0	71.0	98.0	7.6	1.5	1.2	0.1
32505R	-5.0	4.0	4.0	12.0	4.8	-4.0	100.0	46.0	87.0	8.2	1.7	2.3	0.4
32506R	-5.0	2.0	4.0	14.0	5.9	-4.0	220.0	51.0	94.0	8.5	1.5	2.5	0.5
32507R	-5.0	9.0	5.0	24.0	17.7	5.0	25000.0	37.0	74.0	6.3	-0.3	3.8	0.7
32508R	-5.0	290.0	5.0	19.0	6.1	7.0	47000.0	58.0	100.0	8.9	-0.3	3.4	0.6
32509R	-5.0	620.0	5.0	71.0	24.0	17.0	200.0	58.0	118.0	11.7	-0.6	8.1	1.5
32510R	-5.0	8.0	4.0	5.5	1.8	-4.0	390.0	15.0	30.0	2.0	0.3	0.5	0.1
32511R	-5.0	17.0	5.0	26.0	6.2	8.0	36.0	86.0	159.0	10.6	1.7	3.6	0.6

APPENDIX G

DESCRIPTION OF MINERAL OCCURRENCES IN THE LIME PEAK–MT. PRINDLE AREA, EAST–CENTRAL ALASKA

compiled by T.B. Weglarz and M.D. Albanese

APPENDIX G

DESCRIPTION OF MINERAL OCCURRENCES IN THE LIME PEAK-MT PRINDLE AREA, EAST-CENTRAL ALASKA

This appendix contains a brief description of selected mineral occurrences (numbers) and areas containing mineral occurrences (letters) shown on plate 6-1. Abbreviations used are the same as those used in appendix D. Mineral occurrence descriptions are compiled from information obtained during the 1986-1987 ADGGS investigations unless indicated otherwise. Analytical data for ADGGS samples is tabulated in appendices D (1986 analyses) and F (1987 analyses).

AREAS OF MINERAL OCCURRENCES

A. West Cliff area. Molybdenite and pyrite found near the crest of the ridge above Mascot Creek in a pervasively iron-stained, sheared monzogranite. Iron-stained hornfels with traces of pyrite and chalcopyrite is present on the western margin of the Lime Peak pluton. See chapter 6, this report.

B. Mascot Creek. Mafic dike rubble (diabase?) containing disseminated galena, chalcopyrite, and pyrite occurs in an inferred east-west trending zone. Near confluence of upper Mascot Creek tributaries, abundant greisen rubble is present with traces of tourmaline, pyrite, pyrrhotite, and/or chalcopyrite. See chapter 6, this report.

C. Zinn Gulch. Zone of abundant zinnwaldite-chlorite-cassiterite greisen veins up to 1' thick in zinnwaldite-tourmaline-topaz altered equigranular granite. Channel samples across individual veins contain up to 1.8% Sn, 11 ppm Ag, 20 ppm Ta, 800 ppm W, and 2,100 ppm pb. Approximately 2 dozen high- grade greisen veins have been located in this area. See chapter 6, this report.

D. Tin Ridge. Zone of chlorite greisen veins (and rare fluorite veins) in chlorite-altered granite containing up to 2,000 ppm Sn and 16 ppm Ag; also abundant unmineralized tourmaline veins in adjacent hornfels. At least 50 greisen veins known in this area. See chapter 6, this report.

E. South Lime Peak. Multi-element stream-sediment, heavy-mineral concentrate, and rock geochemical anomalies. Weak light tan to brown secondary oxides (?) coating fracture surfaces in monzogranite (TKg2). Rock geochemical anomalies in section 19 are crudely zoned from a core of anomalous Sn and La, outwards through W, Pb, Zn, Ag, and Mo. No visible greisen veins. See chapters 5 and 6, this volume.

F. Bedrock Creek. Chlorite greisen veins in seriate granite associated with porphyritic granite and rhyolite dikes. More than 30 M.t. of mineralized rock containing >.05% Sn present, representing more than 20,000 lbs of Sn resources. Significant bedrock anomalies in B, Be, F, Li, Sn, U, Ag, Au, Cu, Pb, and Zn occur. Tourmaline, fluorite, topaz, zircon, monazite, xenotime, pyrite, chalcopyrite, molybdenite, cassiterite, sphalerite, galena and native bismuth have also been noted (Warner and others, 1986; this report, chapter 6).

G. Upper Preacher Creek area. South-dipping contact of TKg2 phase of Quartz Creek pluton. Hornfelsed quartzite and pelitic schist along contact typically limonitic with local areas preserving disseminated to semimassive pyrite and arsenopyrite. Quartz-tourmaline veins and veinlets are common in the hornfels zone. This mineralized hornfels zone is probably the source of multielement geochemical anomalies and scheelite in pan concentrates around the east end of Quartz Creek pluton. See chapter 6, this report.

H. Hope Creek Sn skarns. Zone of discontinuous skarn outcrop and float about 2,000' long, along equigranular granite/calcareous hornfels contact, containing up to 1.8% Sn and occasional fluorite and greisen veins. Skarns are up to 20' thick. See chapter 6, this report.

I. Lower Hope Creek. Minor pyrite and trace arsenopyrite in contact phase of hornblende monzogranite and associated hornfels. Mineralization is sporadic, control not understood. Volume minor, but if hornblende monzogranite consists of sill-like or multiple sills, significant tonnage could be present. Clasts of schist in lamprophyre probably from underlying Cleary sequence(?). Trace hematitic gouge west of Zephyr Creek and mass of brecciated chalcedonic quartz at head of creek to west of Zephyr. Placer workings in Hope Creek and hand work in lower Zephyr Creek. See chapter 6, this report.

J. Faith Creek. Area contains sporadic veins of quartz or quartz-sulfide that generally occur beneath gray graphitic schist underlain by orange or red oxidized zones. Sulfides include varying proportions of pyrite, sphalerite, arsenopyrite, chalcopyrite, and stibnite. Selected grab samples of sulfide-quartz veins contained up to 4.8 ppm Au, 67 ppm Ag, 8.4% Pb, 11% Sb, 1700 ppm Cu, 4200 ppm Ni, and 7.3% Zn.

J. Upper Bachelor Creek. Area near fork underlain by banded schistose white quartzite and black or gray graphitic schist and graphitic quartzite. Banded white quartzite typically contains disseminated pyrite and arsenopyrite. Graphitic rocks contain abundant stratiform(?) polysulfides along foliation. Sulfides include chalcopyrite, pyrite, arsenopyrite, and gray enargite(?). See chapter 6, this report.

K. Table Mountain. Biotite tourmaline schist with up to 1% fine disseminated sulfides including pyrite, pyrrhotite, arsenopyrite, chalcopyrite and stibnite; dense blue-green quartzite with up to 5% pyrrhotite and arsenopyrite, and tourmaline-quartz veins with up to 5% arsenopyrite within hornfelsed pelitic schist and gray quartzite. Mineralized lithologies could possibly represent a hornfelsed variant of the Cleary sequence(?). The area also contains scheelite and chalcopyrite-bearing skarns (see chapter 6, this report).

MINERAL OCCURRENCES

1. Weakly metamorphosed shale, reacts to zinc zap.
2. Weakly metamorphosed shale, reacts to zinc zap.
3. Smpl 05330R, greenstone in contact with gr, 8400 ppm Zn
4. Grit, 10,000 ppm Zn, 700 ppm Cu (Foster and others, 1984).
5. Skarn or skarnoid, garnet, cpx, idocrase(?).
6. Smpl 04453R, sheared qtzt hfls w/ az + cal, 740 ppm Cu.
7. Smpl 15734R, chl replacement of calc-sil hfls/mb, 920 ppm Cu, 28 ppm Co.
8. Vuggy qtzt + white schist,

9. Intrusive breccia, 200 ppm Mo.
10. Smpl 15657R, gossanous Mn-stained fl float, 1000 ppm Rb.
11. Smpl 15655R, Mn-stained + fractured Grl, 1100 ppm Zn, 100 ppm Th.
12. Comp smpl 15694R, chl greisen in Grl talus, 1200 ppm Zn.
13. Smpl 04458R, chl greisen shear w/ mal, 4700 ppm Cu.
14. Alt rx, 700 ppb Pb, 1500 ppm Zn (Foster and others, 1984).
15. Smpl 06469R, layered fl-rich rx replacing mb, 7200 ppm Zn; smpl 06470R, chl-qtz-fl skarn, 7900 ppm Zn; smpl 06471R, sulfide-bearing skarn, 7200 ppm Zn; qtzt, 1500 ppm Zn (Foster and others, 1984); garnet-cpx veins in calc-sil hfls (Foster and others, 1984).
16. Smpl 15641R, sulfide-bearing hfls or dike, 5 ppm Ag, 1900 ppm Pb, 1200 ppm Zn.
17. Smpl 15661R, chl greisen vlts w/ MnOx selvages, 1.5 ppm Ag, 1000 ppm Zn, 520 ppm Rb; smpl 15662R, lim MnOx gossan, 7 ppm Ag, 204 ppm U, 800 ppm Zn; smpl 15663R, clay-alt FeOx coated dike in Grl, 1600 ppm Zn; smpl 15664R, sheared chl-MnOx alt Grl, 4 ppm Ag, 1000 ppm Zn; comp smpl 15665R, MnOx-clay-alt Grl w/ chl + gar, 510 ppm Rb; comp smpl 15667R, chl-alt Grl, 520 ppm Rb.
18. Smpl 4461R, massive po vns, 750 ppm Cu; calc-sil hflsd grit or qtzt w/ chl greisens vns/massive po vns.
19. Smpl 04465R, Gr2 w/ trace Mo, 130 ppm mo, 550 ppm Rb; comp smpl 04468R, qtz-chl-tm greisen, 1400 ppm Sn; smpl 4469, qtz-hem-clay greisen alt Gr2, 4 ppm Ag, 1500 ppm Zn, 280 ppm Mo; smpl 4470R, qtz-chl greisen with trace mo, 6 ppm Ag, 210 ppm Cu, 580 ppm Sn, 230 ppm Mo, 660 ppm Rb.
20. Oxidized granite, 3000 ppm Zn, 700 ppm Pb (Foster and others, 1984); hfls, 2000 ppm Zn, 700 ppm Cu, 20 ppm Ag (Foster and others, 1984).
21. Granite, 1000 ppm Zn (Foster and others, 1984).
22. Smpl 04439R, chl-MnOx-qtz greisen in Gr2 rubble, 29 ppm Ag, 10,000 ppm Zn.
23. Smpl 04451R, qtz-tm greisen, 5.5 ppm Ag, 1700 ppm Zn.
24. Quartzite, 5,000 ppm Pb, 5,000 ppm Zn (Foster and others, 1984).
25. Smpl 4463R, qtz-mo veins in Gr2, 220 ppm Mo; qtzt, 5000 ppm pb, 5000 ppm Zn (Foster and others, 1984).
26. Smpl 5553R, highly alt Mn-stained rk, 1900 ppm Zn.
27. The Cliff, see Chapter 6, this report. Smpl 4522R, fl-qtz-chl greisen breccia in hfls, 24 ppm Ag, 1300 ppm Pb, 1100 ppm Zn; comp smpl 5921R, wx py vnlts in Grl, 820 ppm Sn; smpl 5919R, gr w/ greisen, 5.5 ppm Ag, 1900 ppm Rb, 260 ppm Sn; smpl 15603R, 18"-wide chl greisen vn, 4 ppm Ag, 900 ppm Sn; smpl 15607R, 6 to 8"-wide greisen vn, 15 ppm Ag, 2500 ppm Zn; smpl 15628R, hem-cemented breccia w/ feld clast, 88 ppm Sb, 144 ppm U; comp smpl 16383R, chl-py greisen alt Grl cut by Gr2, 7.2 ppm Ag, 1000 ppm Sn; comp smpl 16385R, chl-musc greisen vn, 4.5 ppm Ag, 1100 pm Sn; comp smpl 16386R, Fe-stained py-bearing chl alt Grl, 9.5 ppm Ag, 1400 ppm Sn; comp smpl 16388R, lim-stained chl greisen vns, 4 ppm Ag, 2300 ppm Zn; comp smpl 16501R, py-bearing chl greisen selvages, 27 ppm Ag, 2200 ppm Sn, 4700 ppm Zn.
28. Smpl 0662R, Fe-stained qtz hfls breccia, 20 ppm Ag, 550 ppm Sn.
29. Bio granite in orange-stained brecciated country rock w/ high geiger counter readings at contact (F.R. Weber, personal commun).
30. Comp smpl 5341R, Grl greisen float, 2400 ppm Zn; smpl 5926R, greisen w/ fl, 8.5 ppm Ag, 1100 ppm Zn, 490 ppm Rb.
31. Comp smpl 5342R, rusty Gr2 greisen float, 1000 ppm Zn, 640 ppm Sn, 600 ppm Rb.
32. Smpl 15728R, qtz-musc vns in musc gr, 1700 ppm Rb.
33. Smpl 16379R, chl-musc greisen in bio gr, 1100 ppm Rb.

34. Smpl 16375R, qtz-K-spar(?)-tpz(?)-chl pegmatite boulder, 1100 ppm Rb; smpl 16376R, weak chl greisen in bio gr rubble, 1300 ppm Rb; smpl 16377R, chl greisen vn in qtzt hfls, 1000 ppm Rb.
35. Smpl 4464R, chl-musc greisen in Gr3, 9.5 ppm Ag, 790 ppm Rb; smpl 4500R, aplite or qtz breccia dike w/ sulfides, 1000 ppm Rb; comp smpl 4503R. Mn-stained musc-fl greisen, 300 ppm W, 1500 ppm Rb; smpl 4505R, black musc-fl greisen in Gr3, 2200 ppm Rb, 2.5 ppm Ag; smpl 4506R, Gr3 w/ patchy amber mineral alt, 1700 ppm Rb, smpl 4507R, musc-chl-tm greisen, 1800 ppm Rb, 3 ppm Ag; smpl 4508R, musc-fl-chl greisen in Gr3, 1500 ppm Rb, 220 ppm W, 6.5 ppm Ag; smpl 4510R, qtz-fl vns/breccia, 8.5 ppm Ag; smpl 4513R, qtz-chl-hem greisen w/ py, 2600 ppm Sn; smpl 4516R, MnOx-chl-qtz greisen in Gr1, 16 ppm Ag; smpl 4518R, chl-qtz greisen in Gr3, 11 ppm Ag, 2100 ppm Pb, 1200 ppm Zn; smpl 4547R, qtz vn in hfls, 1600 ppm Rb; smpl 4549R, qtz greisen in Gr3, 800 ppm W; smpl 15722R, chl-musc greisen vn rubble in gr, 1600 ppm Rb; smpl 15723R, chl vnlts in musc-chl gr rubble, 1500 ppm Rb; smpl 15724R, 25% musc and k-spar-musc vns, 75% wall rk, 1400 ppm Rb; smpl 15725R, csg k-spar-musc vn cut by chl greisen rx, 1700 ppm Rb; smpl 15727R, chl-musc greisen vns in gr, 50% wall rk, 1100 ppm Rb; comp smpl 16365R, hfls near gr contact, 1300 ppm Rb; smpl 16366R, lim-stained bio gr w/ tpz and gar(?), 1000 ppm Rb; smpl 16367R, chl greisen vlts in bio gr w/ tpz(?), 1400 ppm Rb; comp smpl 16369R, greisen vns in gr w/ tm-FeOx, 2200 ppm Rb; comp smpl 16370R, chl-musc greisen vns in bio gr, 2000 ppm Rb; comp smpl 16372R, 4 chl greisen vns, 1800 ppm Rb; comp smpl 16380R, chl-musc greisen vn in bio gr, 1000 ppm Rb.
36. Comp smpl 16363R, tm(?)-chl-qtz greisen vns in hfls, 2400 ppm Rb; comp smpl 16364R, qtzt hfls w/ tm-qtz-chl vns, 1000 ppm Rb.
37. Smpl 16701R, chl greisen in Gr1 rubble, 5.5 ppm Ag, 16,000 ppm Sn; smpl 16704R, chl-musc alt Gr1 w/ chl greisen vns, 18,000 ppm Sn.
38. Smpl 5928R, scoriaceous greisen float, 7 ppm Ag, 550 ppm Cu, 9500 ppm Zn.
39. Smpl 5929R, greisen w/ fl, 900 ppm Cu, 3600 ppm Zn, 3 ppm Ag; rock sample, 1000 ppm Sn, 1000 ppm Zn.
40. Smpl 5344R, gossanous hem-chl Gr1 greisen, 110 ppm Ag, 720 ppm Cu,. 2200 ppm Zn; granite, 2,000 ppm Pb, 3,000 ppm Zn (Foster and others, 1984).
41. Rock smpl, 2,000 ppm As, 1,000 ppm Pb, 7000 ppm Zn (Foster and others, 1984).
42. Qtz feldspar porphyry, 30 ppm Ag, 700 ppm Pb, 1,000 ppm Sn, (Foster and others, 1984).
43. Porphyry, 1,000 ppm Sn, 2,000 ppm Zn (Foster and others).
44. Gar-epidote skarn developed in mb in maroon + green slate/qtz-white mica tm $\pm$ feld vns.
45. Intensely alt rk, 700 ppm Pb, 1,000 ppm Zn; small replacement greisen in seriate csg gr.
46. Porphyry, 1,000 ppm Sn (Foster and others, 1984).
47. Comp smpl 15472R, Gr1 w/ intense Fe/MnOx stain, 15 ppm Ag, 1,000 ppm Cu, 3100 ppm Zn, 560 ppm As.
48. Porphyry, 1000 ppm Zn (Foster and others, 1984); andesite, 1000 ppm Sn (Foster and others, 1984); basalt, 1000 ppm Zn (Foster and others, 1984); large greisen about 2' across (Warner and others, 1986); greisen vein in porphyritic mgr gr.
49. Smpl 6449R, chl alt gr with aspy and cpy/po(?), 18 ppm Ag, 13,000 ppm As, 2,900 ppm Cu, 4,000 ppm Sn, 1800 ppm Zn; dense green boulder in saddle w/ aspy + cpy(?), po(?) or py(?).
50. Smpl 4404R, greisen in Gr1 float w/ py, 18 ppm Ag, 1,900 ppm Zn.
51. Aplite, 1,000 ppm As (Foster and others, 1984).
52. Mn-Ox felsic igneous rx w/possible fl + tpz, 3,000 ppm Cu, 700 ppm Pb, 1,000 ppm Zn, 15 ppm Ag (Foster and others, 1984).

53. Greenstone, 3,000 ppm Pb, 700 ppm Sn, 1,000 ppm Zn (Foster and others, 1984); felsic/mafic dike, greisen(?) + sulfides (py); 54. Smpl 5907R, hem-stained Grl float, 1100 ppm Zn.
55. Alt granite w/ Fe-Mn stain and possible greisen, 500 ppm Cu, 1,000 ppm Sn, 500 ppm Pb, 3,000 ppm Zn (Foster and others, 1984).
56. 2' channel smpl 6473, chl greisen vn, 14 ppm Ag, 1,000 ppm Rb; 1' channel smpl 6474, mo-bearing chl greisen zone, 3.5 ppm Ag, 1500 ppm Rb; smpl 6477R, bio-rich pegmatite pod, 580 ppm W, 130 ppb Au, 1900 ppm Rb; comp smpl 15566R, qtz-chl greisen zone, 830 ppm Zn, 3700 ppm Rb, 150 ppm Th; comp smpl 15567R, qtz-chl greisen zone, 1200 ppm Rb; comp smpl 15569R, south dipping late vn w/ musc, 12 ppm Ag; comp smpl 15570R, qtz-chl-tpz(?) greisen zone, 63 ppm Mo, 1200 ppm Rb; comp smpl 15573R, greisen vn, 43 ppm Mo, 1200 ppm Rb, 4.5 ppm Ag, 270 Sn; smpl 1594R, qtz-chl alt vn, 5 ppm Ag, 830 ppm Rb; smpl 15595R, chl-qtz-tpz(?) vn, 490 ppm Sn, 47 ppm Mo, 1100 ppm Rb; smpl 15596R greisen vn, 8 ppm Ag, 890 ppm Rb; smpl 15597R, qtz ser vn w/ sulfides, 550 ppm As; smpl 15572R, 2 chl-qtz vns, 370 ppm Sn, 650 ppm Rb.
57. Granite, 700 ppm Pb (Foster and others, 1984).
58. Smpl 6600R, greisen float in Grl + hfls, 9.5 ppm Ag, 400 ppm Cu, 630 ppm Zn, 240 ppm Sn, 770 ppm Rb.
59. Smpl 4405R, qtz-bio-tm(?) greisen in alt Grl, 2 ppm Ag, 210 ppm W, 780 ppm Sn.
60. Comp smpl 4410R, qtz-tm greisen in Grl, 16 ppm Ag, 1700 ppm Zn.
61. Alt granite w/ Fe-Mn stain + possible greisen, 500 ppm Cu, 1000 ppm Sn, 500 ppm Pb, 3000 ppm Zn (Foster and others, 1984, F.R. Weber, personal commun.); tm greisen in seriate cgr gr, greisen breccia.62. Smpl 16441R, 3-5"-wide chl greisen vn, 2,000 ppm Sn; smpl 16702R, 3-5"-wide chl greisen vn, 6.5 ppm Ag, 1,300 ppm Pb, 1,900 ppm Zn.
63. Smpl 4406R, greisen w/ py, cpy, tm, and fl, 1.5 ppm Ag, 570 ppm Zn, 74.3 U, 500 ppm Sn.
64. Smpl 6441R, gar-pyx skarn alt qtzt boulder, 1,300 ppm Zn, 200 ppm Sn; smpl 6443R, rhy porphyry flour, 1,000 ppm Rb.
65. Smpl 5579R, sulfide-bearing Fe-stained rubble, 440 ppm Th.
66. Smpl 6605R, rusty brecciated felsic porphyritic rk, 5.5 ppm Ag, 130 ppm Mo.
67. Smpl 4434R, small py vn in gr rubble, 20 ppm Ag.
68 Smpl 15484R, greisen vns w/ sulfides in qtz schist, 290 ppm As.
69 Smpl 15484R, greisen vns w/ sulfides in qtz schist, 270 ppm W.
70. Smpl 4528R, gar-pyx skarn, 1,800 ppm Sn.
71. Banded calc-silicate (skarnoid).
72. Smpl 5931R, alt qtzt w/ py, 170 ppm Sb, 800 ppm Rb, 840 ppm As.
73. Banded pyx skarn.
74. Qtzt, 1,000 ppm Pb (Foster and others, 1984).
75. Smpl 5594R, qtz-fl alt Gr2 w/ py, 6.5 ppm Ag, 28 ppm Sb.
76. Qtzt hfls w/ sulfides, 1500 ppm Pb, 20 ppm Ag, 2,000 ppm Zn (Foster and others, 1984).
77. Rusty iron-carbonate coating, reacts to Zn zap.
78. Smpl 5596R, bull cocks comb qtz float w/ aspy(?), 10 ppm Ag, 110 ppm Sb.
79. Radioactive artesian springs located along the contact of the Mt Prindle pluton and Birch Creek schist, up to 400 ppm U in water, and 47-570 ppm U in spring sediments. Aplite and pegmatite dikes are present locally (Barker and Clautice, 1977).
80. Smpl 4466R, felsite, 8.5 pp, Ag.
81. Breccia, 500 ppm Cu, 2,000 ppm As (Foster and others, 1984).
82. Comp smpl 4534R, green qtz breccia/gangue w/ py and FeOx, 540 ppm Sn, 1.5 ppm Ag.

83. Smpl 15429R, chalcedony vn, FeOx and Grl, 11 ppm Ag; comp smpl 15431R, chalcedony and sil Grl, 13 ppm Ag; comp smpl 15432R, chalcedony and sil Grl, 8 ppm Ag, 70 ppm Sb; comp smpl 15433R, sil Grl + felsic dike, 9 ppm Ag, 53 ppm Sb; comp smpl 15435R, felsite dike, 8.5 ppm Ag, 200 ppm Sn; comp smpl 15436R, alt sil felsite, 9.5 ppm Ag, 240 ppm Sn.
84. 15 cm-wide fl vn w/ qtz and opal in brecciated contact phase of bio gr. Aureole of gar-diop tactite in calc schist at the head of Hope Creek. Minor po, marcasite, sph, cpy, py, and aspy in carb-bearing meta rx (Holm, 1973).
85. Comp smpl 6452R, small sil vn/breccia in Gr2, 7 ppm Ag, 4,300 ppm Sn.
86. Smpl 4531R, chl-amph skarn, 1100 ppm Sn, 4,000 ppm Zn; comp smpl 4532R, qtz-chl-fl skarn in calc-sil hfls, 20 ppm Ag, 1,000 ppm Pb, 18,000 ppm Sn, 170 ppm W, 1,500 ppm Zn, 280 ppm As; tm + fl in Qtz Ck pluton, minor mo.
87. Smpl 4535R, calc-sil hfls w/ po adjacent to Gr3, 2,400 ppm Sn, 250 ppm W, 1,000 ppm Zn; smpl 4536R, gar-idocrase skarn or skarnoid, 760 ppm W; possible qtz-chl-fl skarn, calc-sil hfls w/ po in contact w/ equig mgr gr; gar-amph skarn,possible sch.
88. Smpl 4537R, car-amph skarn w/ possible sch, 16 ppm Ag; comp smpl 4538R, massive amph-chl skarn, 2,800 ppm Sn; gar-pyx skarn; bio-qtz hfls w/ po.
89. Smpl 15447R, chl greisen vlts in Grl float, 960 ppm As, 1,200 ppm Sn, 370 ppm W.
90. Hope Creek (Sb, Cu, Pb, Mo, W) qtz-mica schist bedrock intruded by granite. Smpl near head of creek contained small amounts of fl, gar, mo, allanite(?), py, po, sch, rutile, and stibnite (Menzie and others, 1983).
91. Comp smpl 4370R, fe-stained qtz vn w/py and FeOx, 540 ppm Sn, 1.5 ppm Ag.
92. Smpl 15489R, fe-stained bio-hbl Gr2, 1,100 ppm As.
93. Smpl 6629R, qtz vn w/ py, cpy and aspy.
94. Smpl 4380R, fe-stained qtz vn float w/ trace py, 370 ppb Au; smpl 4382R, qtz-carb-sch vn w/ py + aspy, 1,400 ppm As.
95. Slightly calcareous quartz porphyry intrusive rubble with white feldspars up to 3 mm and minor fine-grained pyrite and galena (190 ppm Pb). Probable source of Pb anomalies in local stream-sediment samples.
96. Qtzt w/ sulfide, 1,000 ppm Cu (Foster and others, 1984, F.R. Weber, personal commun).
97. Qtzt, mineralized dark green massive rx w/ cpy, cv, and aspy, 700 ppm Cu (Foster and others, 1984, F.R. Weber, personal commun.)
98. Gar skarn w/ sulfides (F.R. Weber, personal commun); pelitic mica schist w/ tm (F.R. Weber, personal commun).
99. Skarnoid, calc sil rx near qtz vns + rhy.
100. Smpl 4426R, 91 ppb Au.
101. Calc-sil schist w/ sulfides.
102. Smpl 5584R, possible Au or Fe-stained po in schist, 7,200 ppm As, 7,900 ppb Au, 1.5 ppm Ag, 290 ppm Cu.
103. Comp smpl 5586R, tm-qtz vn w/ visible mo, 55 ppm Mo, 37 ppb Au.
104. Smpl 15409R, qtz vn/schist(?) cobble, 110 ppb Au; smpl 19003R, chl-bio-qtz, bio-tm and qtz-tm schist, 20,000 ppm As, 3.6 ppm Ag, 9,400 ppb Au; comp smpl 5585R, hfls w/ aspy(?), gar, tm and mo, 5400 ppm As, 2,800 ppb Au, 27 ppm Se, 1.5 ppm Ag, 240 ppm Cu; black bio schist w/ sulfides, >10,000 ppm As, 140 ppm Au (Menzie and others, 1987); black bio schist w/ sulfides, 10,000 ppm As, 40 ppm Au (Menzie and others, 1987).
105. Qtzt, 500 ppm Cu (Foster and others, 1984); bio qtz sch + qtzt w/ disseminated aspy; tm-bearing meta schist unit.
106. Smpl 15410R, qtz-musc schist w/ disseminated sulfides, 110 ppb Au, 1 ppm Ag, 530 ppm Cu.
107. Rubble slope, skarnoid, arenaceous mb and calc schist w/ calc-sil.
108. Skarn float in creek.

109. Comp smpl 6481, pyx hfls skarn w/ po, 280 ppb Au, 310 Cu, 2 ppm Ag; comp smpl 6482R, pyx-gar skarn w/ sch, 2300 ppm W, 120 ppb Au; comp smpl 6483R, gar-pyx skarn w/ sch, 3,200 ppm W; comp smpl 6485R, skarn, 950 ppm W; comp smpl 6486R, skarn, 2,000 ppm W; comp smpl 6487R, skarn, 850 ppm W; comp smpl 6488R, skarn, 710 ppm W; comp smpl 6489R, skarn, 540 ppm W; comp smpl 6595R, skarn, 700 ppm W, 280 ppb Au; comp smpl 6596R, skarn, 890 ppm W; smpl 6597R, alt rhy plug, 1,100 ppm Rb;gar skarn w/ sulfides, 700 ppm Cu (Foster and others, 1984, F.R. Weber, personal commun).
110. Schist, 700 ppm Cu (Foster and others, 1984); qtzt, 150 ppm W.
111. Comp smpl 6598R, massive gar-pyx skarn, 870 ppm W, 420 ppb Au; comp smpl 15559R, dark layered gar-pyx rk, 540 ppm W; heavily fe-stained py, qtz skarn(?), some sulfides (po), small zone of px-gar rx (F.R. Weber, personal commun).
112. Comp smpl 15480R, calc-sil skarn, 580 ppm W; qtzt, 500 ppm Cu (Foster and others, 1984); heavily fe-stained dense green rx w/ po (F.R. Weber, personal commun).
113. Skarn w sulfides (F.R. Weber, personal commun); hfls, 500 ppm W (Foster and others, 1984); marble, 300 ppm W (Foster and others, 1984).
114. Andesite, 1,000 ppm As, 1 ppm Ag (Foster and others, 1984).
115. Granite, 200 ppm Mo (Foster and others, 1984); qtzt, 700 ppm Cu (Foster and others, 1984); andesite, 1,000 ppm As (Foster and others, 1984); granite w/ sulfides, 1,000 ppm As (Foster and others, 1984, F.R. Weber, personal commun).
116. Granite, 0.2 ppm Au, 100 ppm Sb, 2 pm Ag, >10,000 ppm As (Foster and others, 1984).

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APPENDIX H

SAMPLE LOCATIONS FOR MAJOR OXIDE, TRACE AND RARE EARTH ELEMENT, AND MODAL ANALYSES, LIME PEAK–MT. PRINDLE AREA , ALASKA

compiled by L.E. Burns and M.D. Albanese

This appendix lists and displays locations of samples analyzed for major oxide, trace and rare earth elements, and modal analyses discussed in chapter 3 of this report. Analyses include samples from the Hope granite suite and spatially associated mafic dikes (pages H-2 through H-5) and from other plutonic rocks including the Pinnell Trail monzogranite, lamprophyres of the alkalic suite, hornblende quartz monzonite, and felsites (pages H-6 through H-7).

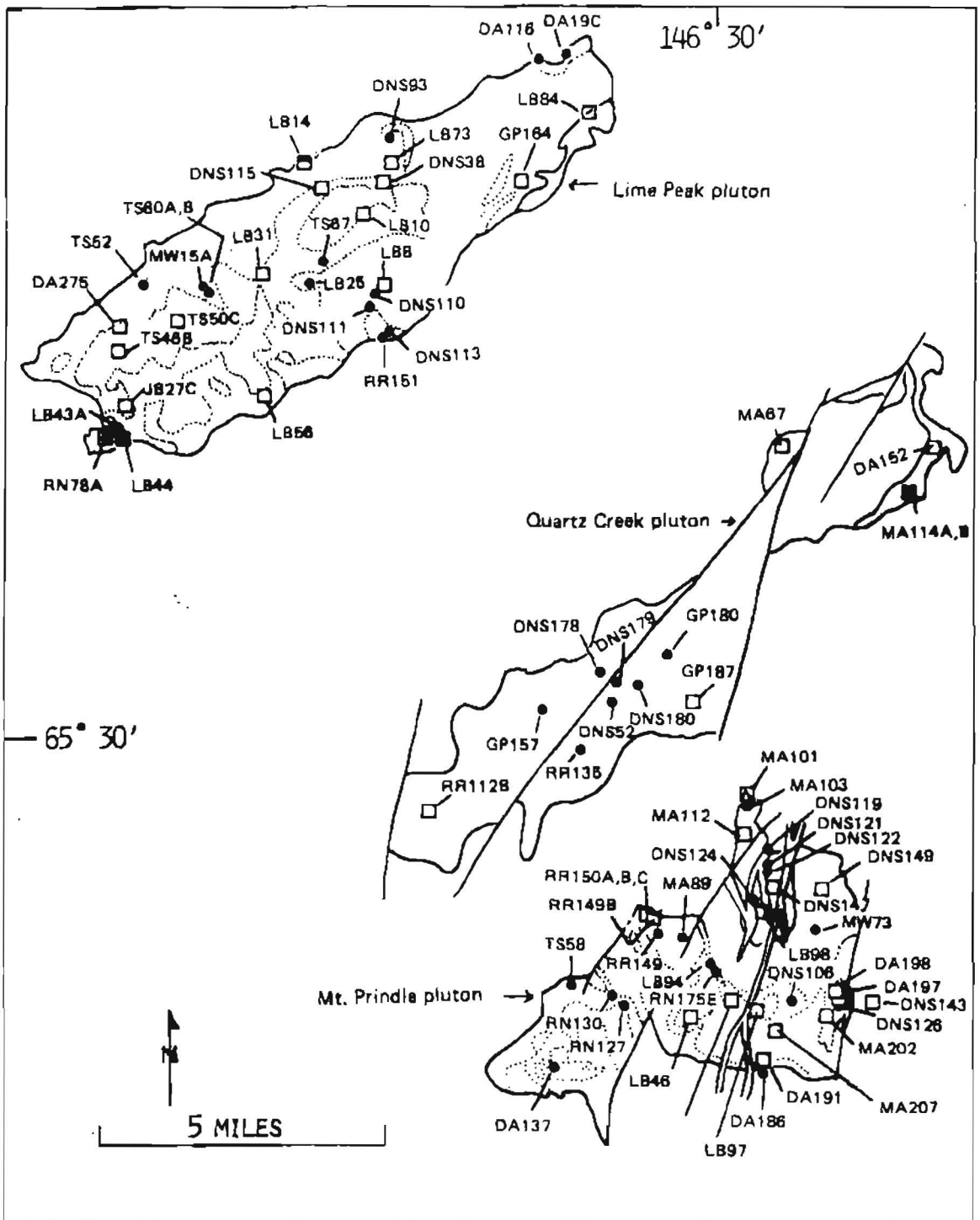


Figure H-1 Locations of samples from the Hope granite suite and spatially associated mafic dikes analyzed for major oxide, trace and rare earth element analyses (circles), and modal analyses (squares) in the Lime Peak – Mt. Prindle area, Alaska.

LIME PEAK SAMPLES ANALYZED FOR MAJOR OXIDE AND TRACE ELEMENT GEOCHEMISTRY. Analysis for sample DNS111 on table 3.19; all other analyses reported on tables 3.6 and 3.7

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
LB44	146 52.75	65 34.50	C-6	9N	4E	27
RN178A	146 53.50	65 34.50	C-6	9N	4E	27
LB43A	146 53.17	65 43.63	C-6	9N	4E	27
DNS113	146 43.08	65 36.25	C-6	9N	5E	16
DNS111	146 43.52	65 36.67	C-6	9N	5E	16
MW15E	147 49.88	65 37.07	C-6	9N	5E	12
LB25	146 46.08	65 37.00	C-6	9N	5E	8
DA116	146 36.75	65 40.58	C-6	10N	5E	24
RR151	146 43.17	65 36.17	C-6	9N	5E	16
TS60A,B	146 49.75	65 36.92	C-6	9N	5E	12
DA116	146 36.17	65 40.67	C-6	10N	6E	19
DNS110	146 43.50	65 36.85	C-6	9N	5E	9
TS67	146 45.67	65 37.42	C-6	9N	5E	8
DNS93	146 43.95	65 39.47	C-6	10N	5E	33
TS52	146 52.08	65 37.17	C-6	9N	4E	11

LIME PEAK SAMPLES ANALYZED FOR MODAL COMPOSITION DETERMINED BY POINT COUNTS. Results tabulated on table 3.2 and figure 3.6.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
LB73	146 43.00	65 39.00	C-6	10N	5E	33
DNS115	146 45.33	65 37.67	C-6	9N	5E	5
DNS38	146 43.17	65 38.67	C-6	10N	5E	33
TS50C	146 50.83	65 36.47	C-6	9N	4E	14
DA275	146 53.17	65 36.50	C-6	9N	4E	15
JB27C	146 52.75	65 35.12	C-6	9N	4E	22
LB56	146 47.17	65 35.20	C-6	9N	5E	19
GP164	146 37.83	65 38.58	C-6	9N	5E	1
LB8	146 43.33	65 36.97	C-6	9N	5E	9
LB31	146 48.17	65 37.17	C-6	9N	5E	7
TS46B	146 53.17	65 36.17	C-6	9N	4E	15
LB10	146 44.13	65 38.08	C-6	9N	5E	4
LB84	146 35.00	65 39.75	C-6	10N	6E	30
LB44	146 52.75	65 34.50	C-6	9N	4E	27
RN178A	146 53.50	65 34.50	C-6	9N	4E	27
LB14	146 46.13	65 38.00	C-6	10N	5E	32

MOUNT PRINDLE SAMPLES ANALYZED FOR MAJOR OXIDE AND TRACE ELEMENT GEOCHEMISTRY. Analyses listed on tables 3.6 and 3.7.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
DNS119	146 28.92	65 28.25	B-5	7N	6E	3
DNS124	146 29.17	65 27.33	B-5	7N	6E	10
TS58	146 35.63	65 26.05	B-6	7N	6E	18
DA137	146 36.20	65 24.63	B-6	7N	6E	19
DNS121	146 28.75	65 28.03	B-5	7N	6E	3
MA89	146 31.95	65 26.52	B-6	7N	6E	9
RN130	146 33.67	65 25.83	B-6	7N	6E	17
RN149	146 33.08	65 26.80	B-6	7N	6E	9
RN127	146 33.33	65 25.75	B-6	7N	6E	17
RN175E	146 30.18	65 26.08	B-6	7N	6E	16
MW73	146 26.40	65 26.88	B-5	7N	6E	11
DA186	146 28.13	65 24.83	B-5	7N	6E	27
MA103	146 29.42	65 28.83	B-5	8N	6E	34
DNS122	146 28.80	65 27.83	B-5	7N	6E	3
DNS106	146 27.47	65 26.00	B-5	7N	6E	14
LB94	146 30.17	65 26.07	B-6	7N	6E	16

MOUNT PRINDLE SAMPLES ANALYZED FOR MODAL COMPOSITION DETERMINED BY POINT COUNTS. Results tabulated on table 3.4 and figure 3.6.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
DA191	146 28.20	65 24.97	B-5	7N	6E	22
DNS126	146 25.30	65 25.90	B-5	7N	6E	13
MA207	146 27.83	65 25.33	B-5	7N	6E	14
DA197	146 25.40	65 26.10	B-5	7N	6E	13
MA202	146 26.00	65 25.63	B-5	7N	6E	14
DA198	146 25.50	65 26.20	B-5	7N	6E	13
LB46	146 31.03	65 25.50	B-6	7N	6E	21
DNS149	146 26.80	65 27.77	B-5	7N	6E	2
RR149B	146 33.08	65 26.97	B-6	7N	6E	8
LB98	146 28.75	65 27.13	B-5	7N	6E	10
DNS143	146 25.08	65 25.75	B-5	7N	6E	13
LB97	146 28.97	65 25.75	B-5	7N	6E	15
RR150A,B	146 33.33	65 27.00	B-6	7N	6E	7
MA112	146 29.75	65 28.40	B-5	8N	6E	34
MA101	146 29.67	65 29.08	B-5	8N	6E	34
DNS147	146 28.17	65 27.58	B-5	7N	6E	3

QUARTZ CREEK SAMPLES ANALYZED FOR MAJOR OXIDE AND TRACE ELEMENT GEOCHEMISTRY. Analysis for sample DNS52 on table 3.19; all other analyses reported on tables 3.6 and 3.7.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
DNS179	146 33.83	65 30.85	C-6	8N	6E	17
DNS178	146 34.80	65 30.97	C-6	8N	6E	17
GP180	146 31.75	65 31.58	C-6	8N	6E	16
DNS52	146 33.92	65 30.42	C-6	8N	6E	20
GP157	146 35.92	65 30.38	C-6	8N	6E	19
MA114	146 23.20	65 33.67	C-5	9N	7E	31
RR135	146 34.92	65 29.92	C-6	8N	6E	30
DNS180	146 32.95	65 30.83	C-6	8N	6E	20

QUARTZ CREEK SAMPLES ANALYZED FOR MODAL COMPOSITION DETERMINED BY POINT COUNTS. Results tabulated on table 3.3 and figure 3.6.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
DA152	146 22.00	65 34.33	C-5	9N	7E	30
GP187	146 31.67	65 30.42	C-6	8N	6E	21
MA114	146 23.20	65 33.67	C-5	9N	7E	31
MA67	146 28.25	65 34.37	C-5	9N	6E	27
RR112B	146 41.08	65 28.88	B-6	8N	5E	35

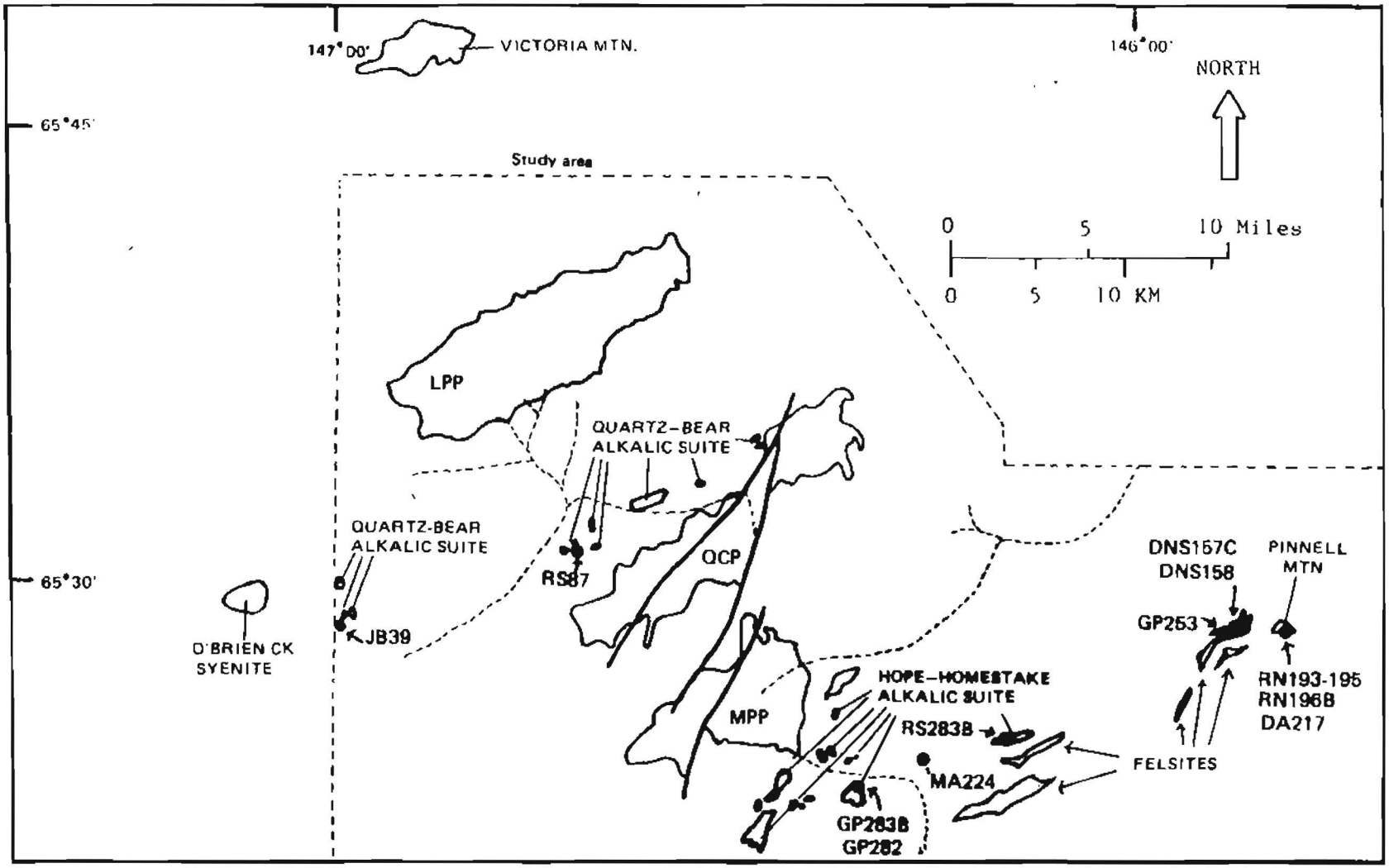


Figure H-2 Locations of samples from the Pinnell Trail monzogranite, lamprophyres, hornblende quartz monzonite, and felsites analyzed for major oxide and/or trace and rare earth element analyses in the Lime Peak – Mt. Prindle area, Alaska.

PINNELL TRAIL MONZOGRANITE SAMPLES ANALYZED FOR MAJOR OXIDE AND TRACE ELEMENT GEOCHEMISTRY. Analyses reported on tables 3.13 and 3.14.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
DA217C	145 49.58	65 28.43	B-4	8N	9E	35
RN196B	145 49.50	65 28.35	B-4	8N	9E	35
RN193-195	145 49.41	65 28.50	B-4	8N	9E	35

ALKALIC SUITE:LAMPROPHYRE SAMPLES ANALYZED FOR MAJOR OXIDE ANALYSIS. Data reported on table 3.16.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
JB39	146 59.50	65 28.76	B-6	8N	4E	31
MA224	146 16.95	65 24.56	B-5	7N	6E	27
GP283B	146 21.63	65 23.65	B-5	7N	6E	32
RS283B	10.75	25.13	B-5	7N	8E	19

HORNBLENDE QUARTZ MONZONITE SAMPLES ANALYZED FOR MAJOR OXIDE ANALYSIS. Data reported in table 3.15.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
RS87	146 41.95	65 31.10	C-6	8N	5E	15
GP282	146 21.43	65 23.45	B-5	7N	6E	32

FELSITE SAMPLES ANALYZED FOR MAJOR OXIDE AND TRACE ELEMENT GEOCHEMISTRY. Analyses reported in table 3.18.

	Long.	Lat.	Quad (Circle)	Tnshp	Range	Section
DNS158	145 52.88	65 28.28	B-4	8N	9E	34
DNS157C	145 52,81	65 28,21	B-4	8N	9E	34
GP253	145 55.45	65 27.41	B-4	7N	9E	5