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ALTERATION MINERALOGY AND PATHFINDER ELEMENT INVENTORY IN THE FOOTPRINT OF THE McARTHUR RIVER UNCONFORMITY-RELATED URANIUM DEPOSIT, CANADA

by

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A thesis submitted to the Department of Geological Sciences and Geological Engineering

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Abstract

The chemical compositions, modal mineralogy, and textural variability of interstitial minerals in sandstones of the Athabasca Group strata in the vicinity of the McArthur River unconformity-related uranium deposit were characterized using a combination of short wave infrared spectroscopy (SWIR), scanning electron microscopy (SEM), electron probe microanalysis (EPMA) and laser ablation mass spectrometry (LA-ICP-MS) to determine the residence sites of pathfinder trace elements. Located in the Athabasca Basin, Saskatchewan, Canada, the deposit is situated below ~ 550 m of quartz arenitic sandstones that are strongly silicified between depths of approximately 200-400 m. The silicified layer exhibits significant control on the distribution of alteration minerals, and appears to have restricted both the primary and secondary dispersion of pathfinder trace elements, which include U, radiogenic Pb isotopes, V, Ni, Co, Cu, Mo, As, Zn, and REEs.

Diagenetic background sandstones contain assemblages of illite, dickite, aluminum-phosphate-sulfate (APS) minerals, apatite, and Fe-Ti oxide minerals. Altered sandstones contain assemblages of Al-Mg chlorite (sudoite), alkali-deficient dravite, APS minerals, kaolinite, illite, and oxide minerals. Throughout the sandstones, APS minerals account for the majority of the Sr and LREE concentrations, whereas late pre-ore chlorite, containing up to 0.1 wt.% Ni, accounts for the majority of Ni concentrations. Cobalt, Cu, Mo, and Zn occur predominantly in cryptic sub-micron sulfide and sulfarsenide inclusions in clay mineral aggregates and in association with Fe-Ti oxides. Uranium occurs predominantly in cryptic micro-inclusions associated with pyrite in late-stage quartz overgrowths, and with paragenetically late Fe-Ti oxide micro-inclusions in kaolinite. Additionally, up to 0.2 wt.% U is cryptically distributed in post-ore Fe-oxide veins. Early diagenetic apatite and monazite and apatite inclusions in detrital quartz and detrital zircon also contribute significant U and HREE to samples analyzed with an aggressive leach such as Aqua Regia. Detailed LA-ICP-MS chemical mapping of interstitial assemblages, detrital grains, and cements provides critical insight into the distribution and

inventory of pathfinder elements, as part of the CMIC effort to characterize the 3D footprint of the McArthur River deposit.

Co-Authorship

This thesis and the manuscript contained herein represent the work of Nicholas Joyce. Daniel Layton-Matthews, Kurt Kyser, Kevin Ansdell, Dave Quirt, and Tom Kotzer provided scientific, logistical, and editorial support for this research and are co-authors for Chapter 2, which will be submitted to Geochemistry: Exploration, Environment, Analysis (GEEA) for publication.

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I would like to thank the researchers and administrators within the CMIC-NSERC Exploration Footprints Network for their support and guidance throughout the project, as well as the sponsor companies and their representatives for their contributions. This is CMIC-NSERC Exploration Footprints Network Contribution 100.

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Piercey, Mary Devine, Shawn Scott, Kaitlyn Brown, Najib El Guomi, and Leo Feltrin. I would like to acknowledge the technical support of Evelyne Leduc and Dr. Don Chipley at the Queen's Facility for Isotopic Research (QFIR), and particularly of Agatha Doboze for providing many hours of support and guidance on the SEM, and of Brian Joy, for conducting the microprobe analyses. Matt Leybourne and Joe Petrus at the Mineral Exploration Research Center (MERC) at Laurentian University provided exceptional support with LA-ICP-MS analysis. I would also like to thank Dan Brisbin for hiring me out of undergrad, and Cameco Corp. for supporting my interest in uranium exploration. As a Cameco intern in 2013, I was able to work in my future MSc research area and learn the necessary geological context prior to my arrival at Queen's University. Mike Lesher deserves special recognition as well, for his leadership of the CMIC Footprints Project and for his mentorship in broadening my scientific perspective, by facilitating my participation in field-based workshops across all three commodity groups, and encouraging collaboration across geoscience disciplines.

Finally, I would like to thank my family and friends for their support and encouragement throughout my thesis. Sometimes the intangibles make all the difference.

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List of Abbreviations

NSERC – National Science and Engineering Research Council

CMIC – Canadian Mining Innovation Council (Exploration Footprints Project)

URUD – Unconformity-related uranium deposit

SWIR – Short wave Infrared Spectroscopy

SEM – Scanning Electron Microscopy

BSED – Backscattered Electron Detector

EPMA – Electron Probe Microanalysis

LA-ICP-MS – Laser Ablation Inductively Coupled Plasma Mass Spectrometry

MFd – Manitou Falls Formation Dunlop member

MFc – Manitou Falls Formation Collins member

MFb – Manitou Falls Formation Bird member

MFa – Manitou Falls Formation A member (Read Formation)

Chapter 1

General Introduction

1.1 Overview

Exploration for unconformity-related uranium deposits in the Athabasca Basin has traditionally relied on geophysical surveys followed by extensive drilling and then geochemistry to discover and delineate ore bodies. The resulting accumulations of data from geochemical, petrological, and mineralogical analysis by exploration companies have allowed researchers to develop detailed models of proximal alteration and deposit genesis (e.g. Hoeve and Sibbald, 1978; Hoeve and Quirt, 1984; Jefferson et al., 2007), and provided context for the study of deposit footprints that span from ore zone boundaries to the most distal extent of alteration. The objective of the CMIC-Exploration Innovation Consortium (EIC) Footprints Project – of which this research is a part– is to develop new and innovative approaches to more effectively target hidden ore deposits through multi-parameter, integrated exploration (CMIC, 2013).

The Athabasca Basin contains NI 43-101 compliant resources of over 587,063 tonnes of uranium at an average grade of 2.32% U_3O_8 (1.97% U) (Saskatchewan Ministry of the Economy, 2013), representing a gross total metal value of US$83 billion at a long term projected price of US$64/lb (Bronkhorst et al., 2012). The McArthur River unconformity-related uranium deposit, at an estimated 326,800 tonnes U_3O_8 reasonably assured conventional reserves (including past production) of an average grade of 21.6% U_3O_8, is both an order of magnitude larger, and higher grade than the average uranium deposit in the Athabasca Basin and therefore presents a particularly attractive opportunity for the study of mineral deposit footprints (Bronkhorst et al., 2012). Through the examination of drill core samples collected along the P2 fault in the vicinity of McArthur River, this study provides critical insight into the distribution and mineralogical inventory of pathfinder elements as part of the CMIC effort to characterize the 3D footprint of the McArthur River deposit through the integration and analysis of diverse datasets.

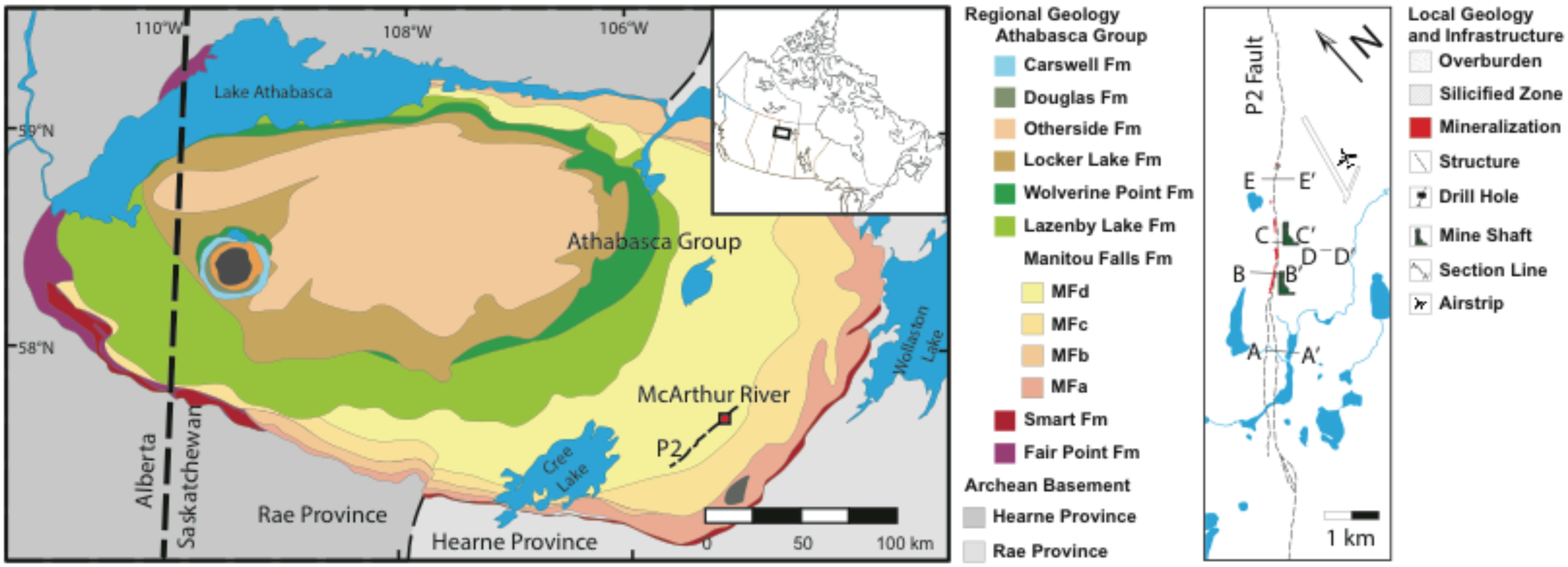

Figure 1. (A) Regional map of the Athabasca Basin and general stratigraphy showing the location of the McArthur River deposit and trace of the P2 fault (modified after Hiatt and Kyser, 2005). (B) The McArthur River project area, P2 fault trace and section lines where sampling was conducted (after Bronkhorst et al., 2012).

1.2 Geological Setting

The McArthur River deposit occurs along the P2 Fault in the Eastern Athabasca Basin (Fig. 1). The deposit straddles the basal unconformity of the Athabasca Basin with the underlying metamorphic basement of the Hearne Province. This study of the deposit footprint in the overlying sandstones of the Manitou Falls and Read Formations is focused along the P2 structural corridor.

1.2.1 Metamorphic Basement

The Churchill province, encompassing the Rae and Hearne Provinces, Chesterfield Domain, and Snowbird Tectonic Zone (STZ), is composed primarily of Neoarchean granitoid-gneisses. Granites dated between 3.33 – 2.95 Ga occur on the Melville Peninsula, near Baker Lake, and proximal to Lake Athabasca in the Rae province; 3.48 Ga gneisses occur 200 km northeast of the Athabasca Basin in the Hearne province (Hoffman, 1988). Gneissic basement rocks are overlain by 2.45-2.20 Ga Proterozoic metasedimentary and metavolcanic sequences, and are intruded by 1.84-1.75 Ga granitic suits (Berman et al., 2007). The NE trending STZ, characterized by medium- to high-grade metamorphic facies linked by a sinuous belt of right-lateral transpressive granulite-facies mylonites (Hanmer et al., 1995), is the predominant crustal discontinuity underlying the Athabasca Basin.

Northwest trending diabase dykes of the Mackenzie Dyke Swarm, emplaced at ca.1.27 Ga, crosscut the otherwise un-deformed eastern Athabasca Basin (Fahrig and Wanless, 1963; Armstrong and Ramaekers, 1985; Lecheminant and Heaman, 1989). The nearest documented diabase intrusions are the 1.1 Ga Moore Lakes Complex lopolith sills, located approximately 30 km south of McArthur River surrounding a series of Wollaston Group inliers (Armstrong and

Ramaekers, 1985; Macdougall and Williams, 1993; Macdougall, and Heaman, 2002). In the Cree Lake area, approximately 100 km SW of McArthur River, dating of the Cree Lake Swarm of diabase dykes has yielded ages of between 1.16 and 1.31 Ga (Armstrong and Ramaekers, 1985; Quirt, 1993). Although not abundant in the basin, the dykes, averaging 30 m in width and up to several thousand meters in length (Lecheminant and Heaman, 1989), occur in swarms, locally altering the sandstones to quartzite by contact metamorphism (Quirt, 1993).

1.2.2 Athabasca Basin

The Late-Paleoproterozoic Athabasca Basin is one of several intracrustal basins, including the Thelon and Hornby Bay Basins that formed on the Canadian Shield following the Trans-Hudson Orogeny. The Athabasca Basin contains over 1.5 km of preserved sedimentary strata from a maximum estimated thickness of 5-7 km achieved in the mid-Proterozoic (Pagel et al., 1980; Kotzer & Kyser, 1995). The basin is composed of three NE-SW-oriented sub-basins controlled by major Hudsonian-aged basement faults, filled by four major depositional sequences sourced from six major deposystems (Yeo et al., 2002, 2005). McArthur River is located in the easternmost Cree sub-basin (Ramaekers et al., 2007). The stratigraphic framework for the Basin can be divided into four main, relatively flat-lying and un-deformed, unconformity-bounded sequences dominated by fluvial-marine sandstones with conglomeratic and mudstone-rich layers deposited between approximately 1740-1541 Ma in a pre-vegetative arid to semi-humid landscape (Ramaekers, 1979; 1980; 1990; Yeo et al., 2007). The Manitou Falls and Smart Formations were deposited between ~1710 and ~1690 Ma (Ramaekers & Catuneanu, 2004), and may have extended well beyond the current basin margins, possibly encompassing the conglomeratic sandstones of the Reilly Formation, located 85 km from the margin. The Athabasca Basin may have been analogous to deserts in present-day Utah and Nevada, but was devoid of any plants (Long, 2006).

1.2.3 Manitou Falls Formation

In the Eastern Athabasca Basin, the Athabasca Group is comprised of four lithofacies members of the Manitou Falls and Read Formations, deposited between approximately 1710-1690 Ma in three upward-fining stratigraphic sequences (Armstrong and Ramaekers, 1985; Kotzer et al., 1992; Ramaekers & Catuneanu, 2004; Hiatt and Kyser, 2007). Sandstones are flat lying, unmetamorphosed, mature, medium to coarse-grained quartz arenites that generally contain between 2-20% clay matrix.

The basal sediments in the vicinity of McArthur River belong to the <200 m-thick Read formation (MFa), which includes matrix-supported conglomerates and matrix-rich sandstones of variable thickness and restricted lateral bed continuity (<20 m). The overlying Manitou Falls Formation is composed of medium to coarse-grained quartz arenite with minor conglomerate beds, and shows high lateral bed continuity along E-W trending channelized sedimentary deposits (Ramaekers, 1979; 1980; 1990; Long, 2006). From oldest to youngest (Fig. 1), the overlying sandstones include the ~100 m thick Bird member (MFb), the ~100 m thick Collins member (MFc), and the ~200 m thick Dunlop member (MFd).

The A member of the Manitou Falls Formation (MFa) (Ramaekers, 1979; 1980; 1990) has been reinterpreted by Ramaekers et al. (2007), such that much of the type section has been reassigned to stratigraphically higher units, with the remainder assigned to the heterolithic Read Formation. The Read Formation contains pink, moderately well to poorly sorted, medium- to coarse-grained sandstones, with minor granule and small pebble conglomerates (Ramaekers, 1979; 1980; 1990). Bedding within the sandstones is either massive or weakly horizontally laminated in variably graded composite sets that are 2 – 4 cm thick, with planar and cross-stratification, and rare ripple cross-laminations (Ramaekers, 1979; 1980; 1990). At the base of the Read Formation, angular boulder and cobble conglomerates, are controlled by the paleotopography of the underlying basement rocks. The matrix within the basal conglomerates is medium- to coarse-grained sand, with rare mudstones and crypto-microbial laminae (Ramaekers, 1979; 1980; 1990; Yeo et al., 2007). Angular to sub-angular framework-supported conglomerates with limited lateral continuity that fine and thin away from basement highs, are interpreted as small talus aprons (fanglomerate) adjacent to bedrock spurs (Quirt, 2000; Long, 2006).

The MFb contains medium to very coarse-grained sandstone with minor granule conglomerate and granular sandstone and very rare mudstone laminae (Ramaekers, 1979; 1980; 1990). The MFb sandstones are characterized by massive bedding, planar and trough cross-stratification and ripple cross-lamination with inconsistent upward grading (Ramaekers, 1979; 1980; 1990).

The MFc is dominated by fine-grained mature quartz arenite sandstones with minor pebbly beds and mudstone interbeds with <1% clay intraclasts and <2% conglomerate interbeds (Ramaekers, 1979; 1980; 1990). The MFd is characterized by clay-intraclast-rich, fine-grained mature quartz arenite sandstones with mudstone interbeds and rare pebbly beds (Ramaekers, 1979; 1980; 1990).

The lowermost stratigraphy contains paleosol horizons, alluvial fans, and braided stream deposits rich in clay matrix. Overlying strata contain high-energy braided stream deposits of the upper MFa, MFb, and distal braided stream deposits of the lower MFc. The uppermost preserved strata in the study area contain coarse-grained channelized deposits of the MFc, that grade upwards into fine-grained fluvial-marine sediments of the MFd (Hiatt and Kyser, 2007). Quartz cementation was inhibited during burial diagenesis in the coarse-grained basal sediments of each stratigraphic sequence by the matrix support of interstitial clays; conversely quartz cementation was preferentially developed in the overlying fine-grained, compositionally and texturally mature sediments (Hiatt and Kyser, 2007).

1.3 McArthur River

Exploration drilling along the P2 conductor led to the discovery of McArthur River in 1988 by Cameco Corporation, following 11 years of exploration drilling and geophysics in the P2 grid area of the eastern Athabasca Basin. Mining commenced in 1999. The mineral resources at the McArthur River Operation are contained within nine distinct mineralized areas; Zones 1, 2, 3, 4, 4 South, McA North (1), McA North (2), Zone A, and Zone B. Underexplored mineral occurrences include the McA North (3) and McA South.

The McArthur River deposit occurs along the transition between the Wollaston-Mudjatik domains of the Hearne province. The local basement contains high proportions of pelitic, quartzose, and arkosic paragneiss, isoclinally folded and interleaved with Archean orthogniess, and intruded by abundant pegmatites and leucogranites (Jefferson et al., 2007). The deposit is situated along the P2 fault, a reverse fault showing offset at the unconformity. Mineralization at McArthur River occurs primarily in sandstone replacement bodies and fault-related breccias in the faulted wedge along post-basinal reverse faults as uraninite with lesser coffinite; basement mineralization is structurally controlled in veinlets and fault breccias (Bronkhorst et al., 2012). A silicified paleoaquiclude extends laterally through the MFb and upper MFa sandstone, transected by east-dipping, upward splays off of the P2 fault, along which hydrothermal fluids propagated

(Jefferson et al., 2007; Ng et al., 2012). Several hundred meters west of the P2 fault, a large body of basement quartzite forms a ridge along the unconformity in the vicinity of the deposit.

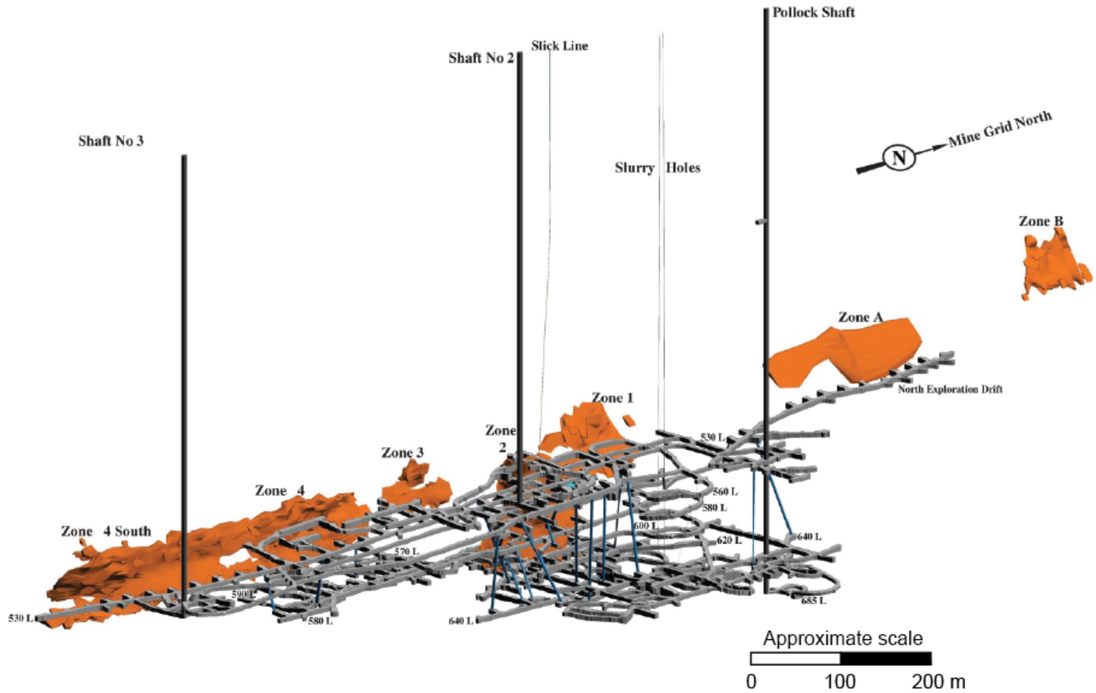

Figure 2. Underground development and mineralized zones at McArthur River; ore bodies are indicated by wireframe shells situated immediately west of the underground developments. Modified after Bronkhorst et al. (2012).

1.4 Deposit Models

Unconformity-related uranium mineralization is hosted primarily in the clastic sediments of the Athabasca Group at the unconformity with Proterozoic basement complexes, and in faulted basement rocks below the unconformity. Deposits are generally located proximal to large-scale basement fault structures, and are typically surrounded by extensive hydrothermal alteration halos. Genetic models suggest that dilatant, reactivated basement faults focused fluid flow along the unconformity, and provided conduits for reduced basement fluids to interact with oxidized basin-derived fluids across stationary redox fronts for protracted periods c. 1.59 Ga (Hoeve and Sibbald, 1978; Hoeve and Quirt, 1984, 1987; Alexandre et al., 2007; Hiatt and Kyser, 2007), trapping uranium by reducing mobile U^{6+}complex to insoluble U^{4+} complexes (Hoeve and Sibbald, 1978; Richard et al., 2011). Alteration halos in many unconformity-related systems narrow up from the base of the sandstone column, and can extend for several hundred meters in width, and several thousand meters along the strike of major basement structures (Hoeve and Quirt, 1984; Jefferson et al., 2007). However, the impermeable, silicified sandstones that overlie the deposit appear to have largely restricted the mineralogical and geochemical alteration footprints at McArthur River (Holk et al, 2003; Hiatt and Kyser, 2007; Ng et al., 2012). Conglomeratic lithologies, sandstones rich in clay matrix and with limited quartz cement, and fracture zones tend to contain elevated concentrations of U, radiogenic Pb and other pathfinder elements in the environs of most known deposits (Holk et al, 2003).

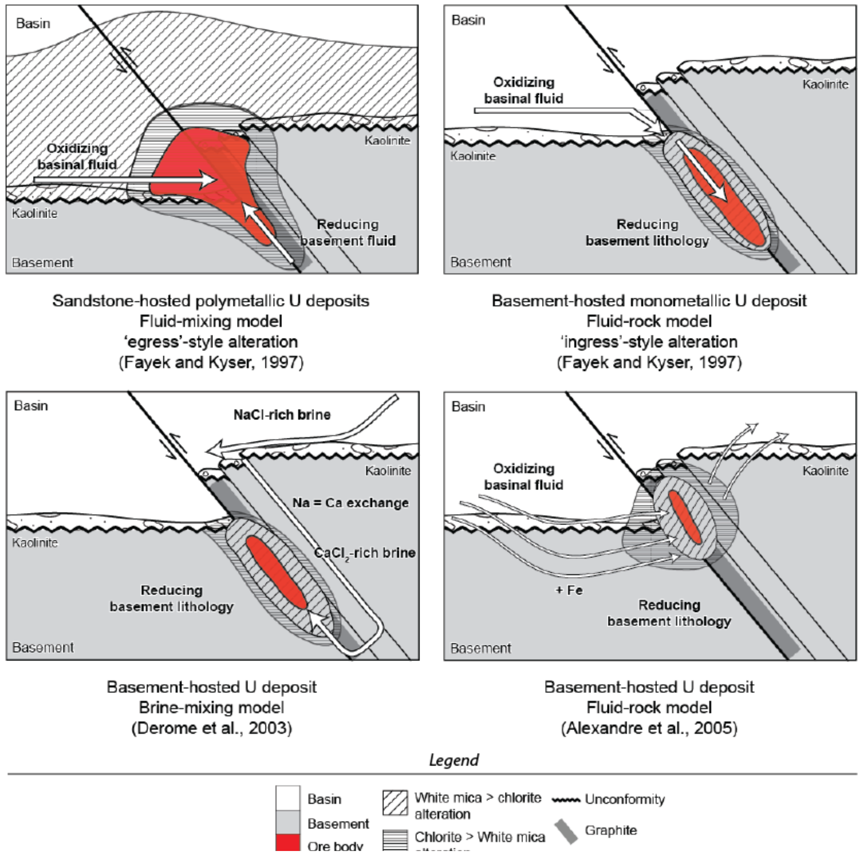

Figure 3. Simplified genetic models for unconformity-related U deposits in the Athabasca Basin showing general fluid circulation patterns, after Ng et al., 2012.

1.5 Thesis Objectives and Rationale

Previous studies of the sandstones at McArthur River have examined the stratigraphy of the host rocks (Ramaekers, 1980; Quirt, 2000; Ramaekers et al., 2007; Hiatt and Kyser, 2007; and others), diagenesis (Kotzer and Kyser, 1995; Hiatt et al., 2007; Alexandre et al., 2005), geochronology (Cumming and Krstic, 1992; Alexandre et al., 2009), deposit geology and mineral resources (McGill et al.,1993; Bronkhorst et al., 2012), alteration fluid physio-chemistry (Kotzer and Kyser, 1995; Derome et al., 2005; Kister et al., 2005; Richard et al., 2010, 2011, 2012), the mobility of radiogenic Pb about the deposit (Holk et al., 2003), the major and minor element chemistry, mineralogy, and paragenesis of silicate clay minerals in deposit-proximal sandstones (Ng et al., 2013) and APS minerals both in the sandstones and along the P2 fault (Quirt et al., 1991; Gaboreau et al., 2007; Adlakha and Hattori, 2015).

The objectives of this study were to 1) characterize the distribution of alteration minerals in the proximal and distal reaches of the deposit footprint, 2), characterize the spatial distribution of variations in the major, minor, and trace element characteristics of alteration minerals, and 3) construct an inventory of the mineralogical sources of pathfinder elements. The spatial distributions and chemical compositions of alteration minerals were characterized by a combination of optical and scanning electron microscopy (SEM), short wave infrared spectroscopy (SWIR), electron probe microanalysis (EPMA), and laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS). In-situ mineral chemistry was compared to whole rock lithogeochemical analyses of individual core samples to ascertain the degree to which individual alteration mineral populations account for lithogeochemical pathfinder element anomalies in the deposit footprint. The results of this study are directly applicable to exploration for unconformity-related uranium deposits by aiding the interpretation of lithogeochemical data sets. Specifically, these results provide a rationale for discriminating between background levels of trace elements in sandstones, and primary and secondary dispersion of pathfinder trace elements from mineralization on the basis of the metal inventories of alteration mineralogy.

This is a paper-format thesis, with Chapter 2 written as an article submitted for publication in Geochemistry: Exploration, Environment, Analysis (GEEA). Summary results are presented in the article manuscript; detailed analytical results are presented in data tables in the appendices. Host-rock sample photos and analytical point photomicrographs are presented in digital appendices. Chapter 3 is an extended discussion of the results that includes a summary list of significant contributions and recommendations for future work.

Chapter 2

ALTERATION MINERALOGY AND PATHFINDER ELEMENT INVENTORY IN THE FOOTPRINT OF THE MCARTHUR RIVER UNCONFORMITY-RELATED URANIUM DEPOSIT, CANADA

2.1 Abstract

The chemical compositions, modal mineralogy, and textural variability of interstitial minerals in sandstones of the Athabasca Group strata in the vicinity of the McArthur River unconformity-related uranium deposit were characterized using a combination of short wave infrared spectroscopy (SWIR), scanning electron microscopy (SEM), electron probe microanalysis (EPMA) and laser ablation mass spectrometry (LA-ICP-MS) to determine the residence sites of pathfinder trace elements. Located in the Athabasca Basin, Saskatchewan, Canada, the deposit is situated below ~ 550 m of quartz arenitic sandstones that are strongly silicified between depths of approximately 200-400 m. The silicified layer exhibits significant control on the distribution of alteration minerals, and appears to have restricted both the primary and secondary dispersion of pathfinder trace elements, which include U, radiogenic Pb isotopes, V, Ni, Co, Cu, Mo, As, Zn, and REEs.

Diagenetic background sandstones contain assemblages of illite, dickite, aluminum-phosphate-sulfate (APS) minerals, apatite, and Fe-Ti oxide minerals. Altered sandstones contain assemblages of Al-Mg chlorite (sudoite), alkali-deficient dravite, APS minerals, kaolinite, illite, and oxide minerals. Throughout the sandstones, APS minerals account for the majority of the Sr and LREE concentrations, whereas late pre-ore chlorite, containing up to 0.1 wt.% Ni, accounts for the majority of Ni concentrations. Cobalt, Cu, Mo, and Zn occur predominantly in cryptic

sub-micron sulfide and sulfarsenide inclusions in clay mineral aggregates and in association with Fe-Ti oxides. Uranium occurs predominantly in cryptic micro-inclusions associated with pyrite in late-stage quartz overgrowths, and with paragenetically late Fe-Ti oxide micro-inclusions in kaolinite. Additionally, up to 0.2 wt.% U is cryptically distributed in post-ore Fe-oxide veins. Early diagenetic apatite and monazite and apatite inclusions in detrital quartz and detrital zircon also contribute significant U and HREE to samples analyzed with an aggressive leach such as Aqua Regia. Detailed LA-ICP-MS chemical mapping of interstitial assemblages, detrital grains, and cements provides critical insight into the distribution and inventory of pathfinder elements, as part of the CMIC effort to characterize the 3D footprint of the McArthur River deposit.

2.2 Introduction

Unconformity-related mineralization in the Athabasca Basin, dated to ca. 1.59 Ga (Alexandre et al., 2007), is hosted in the clastic sediments of the Athabasca Group at the unconformity with Proterozoic basement complexes, and in faulted basement rocks below the unconformity. Genetic models suggest that dilatant, reactivated basement faults focused fluid flow, and provided conduits for reduced basement fluids to interact with oxidized, uraniferous basinal fluids along stationary redox fronts (Hoeve and Sibbald, 1987; Hoeve et al., 1980). Impermeable, silicified sandstones that overlie the McArthur River deposit appear to have largely restricted the mineralogical and geochemical alteration footprints (Holk et al, 2003; Hiatt and Kyser, 2007; Ng et al., 2012). Conglomeratic lithologies, sandstones rich in clay matrix and with limited quartz cement, and fracture zones tend to contain elevated concentrations of U, radiogenic Pb and other pathfinder elements in the environs of known deposits (Holk et al, 2003).

Previous studies of the sandstones at McArthur River have examined the stratigraphy of the host rocks (Ramaekers, 1980; Ramaekers et al., 2007; Hiatt and Kyser, 2007; and others), diagenesis (Kotzer and Kyser, 1995; Hiatt et al., 2007; Alexandre et al., 2005), geochronology (Cumming and Krstic, 1992; Alexandre et al., 2009), deposit geology and mineral resources (McGill et al., 1993; Bronkhorst et al., 2012), alteration fluid physio-chemistry (Kotzer and Kyser, 1995; Derome et al., 2005; Kister et al., 2005; Richard et al., 2010, 2011, 2012), the mobility of radiogenic Pb about the deposit (Holk et al., 2003), the mineralogy and paragenesis of silicate clay minerals in deposit-proximal sandstones (Ng et al., 2013) and APS minerals both in the sandstones and along the P2 fault (Quirt et al., 1991; Gaboreau et al., 2007; Adlakha and Hattori, 2015). The objectives of this study were to 1) characterize the distribution of alteration minerals in the proximal and distal reaches of the deposit footprint, 2), characterize the spatial distribution of variations in the major, minor, and trace element characteristics of alteration minerals, and 3) construct an inventory of the mineralogical sources of pathfinder elements. Metal inventories of alteration mineralogy are critical for the interpretation of lithogeochemical data sets by providing rationale for discriminating between background levels of trace elements in sandstones, and primary and secondary dispersion of pathfinder trace elements from mineralization.

2.3 Geological Setting

2.3.1 Regional Geology

The Late-Paleoproterozoic Athabasca Basin (Fig. 1A) is one of several extensive intracrustal basins, including the Thelon and Hornby Bay basins, that formed on the Canadian Shield following the Trans-Hudson orogeny (Ramaekers, 1981; Kotzer et al., 1992). The basement to the

Eastern Athabasca Basin comprises Archean plutons and Paleoproterozoic (Aphebian) metasedimentary rocks of the Wollaston Domain of the Hearn Province. In the vicinity of McArthur River, high proportions of pelitic, quartzose, and arkosic paragneiss are isoclinally folded and interleaved with Archean orthogniess, and intruded by abundant Proterozoic pegmatites and leucogranites (Lewry and Sibbald, 1980; Jefferson et al., 2007). The Athabasca Basin currently contains over 1.5 km of preserved sedimentary strata from a maximum estimated thickness of 5-7 km in the mid-Proterozoic (Pagel et al., 1980; Kotzer & Kyser, 1995).

2.3.2 Manitou Falls and Read Formations

In the eastern Athabasca Basin, the Athabasca Group is comprised of four lithofacies members of the Manitou Falls and Read Formations (Fig. 1), deposited between approximately 1710-1690 Ma in three upward-fining stratigraphic sequences (Armstrong and Ramaekers, 1985; Kotzer et al., 1992; Ramaekers & Catuneanu, 2004; Hiatt and Kyser, 2007). Sandstones are flat lying, unmetamorphosed, mature, medium to coarse-grained quartz arenites that generally contain between 2-20% clay matrix.

The basal sediments in the vicinity of McArthur River belong to the <200 m-thick Read Formation (MFa), which includes matrix-supported conglomerates and matrix-rich sandstones of variable thickness. The Manitou Falls Formation is composed of medium to coarse-grained quartz arenite with minor conglomerate beds (Ramaekers, 1979; 1980; 1990). From oldest to youngest (Fig. 1), the overlying sandstones include the ~100 m thick Bird member (MFb), the ~100 m thick Collins member (MFc), and the ~200 m thick Dunlop member (MFd).

The lowermost stratigraphic sequence contains paleosol horizons, alluvial fans, braided stream deposits rich in clay matrix. Sequence 2 contains high-energy braided stream deposits of the upper MFa, MFb, and distal braided stream deposits of the lower MFc. Sequence 3 contains coarse-grained channelized deposits of the MFc, that grade upwards into fine-grained fluvial-marine sediments of the MFd (Hiatt and Kyser, 2007). Quartz cementation was inhibited during burial diagenesis in the coarse-grained basal sediments of each stratigraphic sequence by the matrix support of interstitial clays; conversely quartz cementation was preferentially developed in the overlying fine-grained, compositionally and texturally mature sediments (Hiatt and Kyser, 2007).

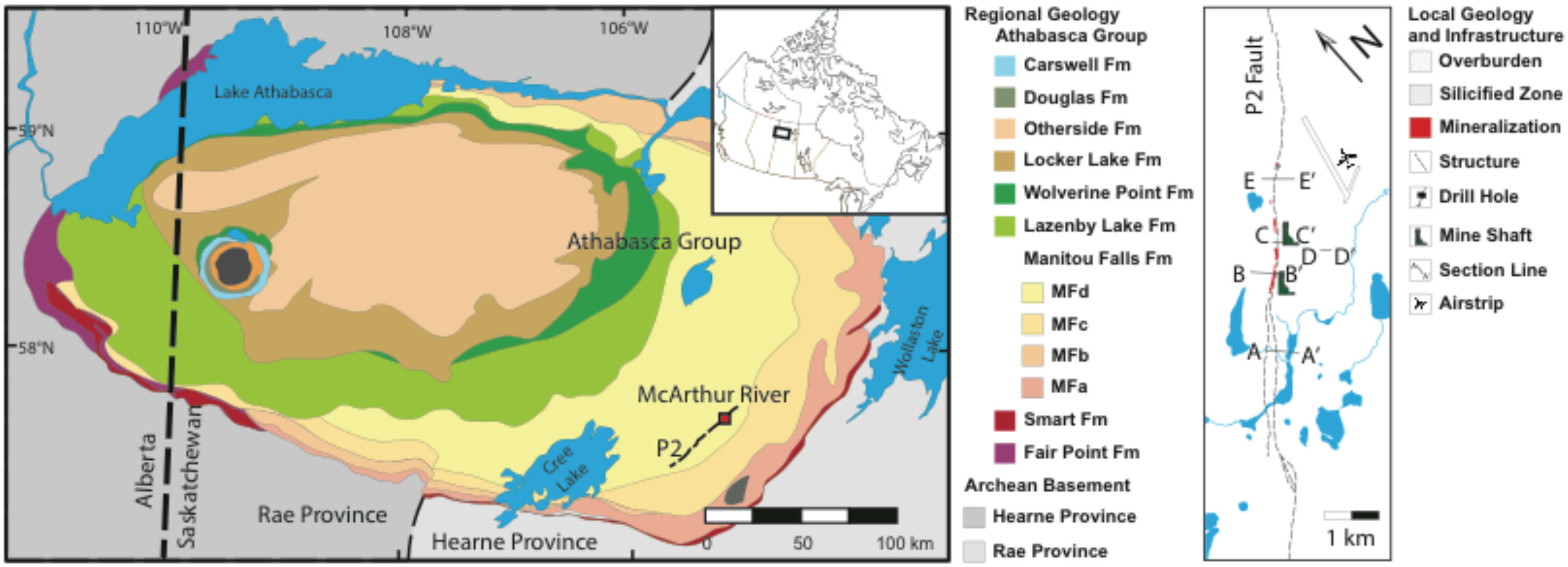

Figure 4. (A) Regional map of the Athabasca Basin and general stratigraphy showing the location of the McArthur River deposit and trace of the P2 fault (modified after Hiatt and Kyser, 2005). (B) The McArthur River project area, P2 fault trace and section lines where sampling was conducted (after Bronkhorst et al., 2012).

2.3.3 McArthur River

Mineralization at McArthur River is contained within nine distinct mineralized zones and several underexplored mineral occurrences at depths of 500 m to 570 m along a 1.7 km-long segment of the P2 fault in the Eastern Athabasca Basin (Fig. 1B) (McGill et al., 1993; Bronkhorst et al., 2012). The P2 structure is a ~13 km-long reverse faulted offset in the unconformity oriented approximately 050°/45-60° SE with a vertical offset of up to 80 m (McGill et al., 1993; Adlakha and Hattori, 2015). Minor lateral displacement across the P2 fault is accommodated by several sets of steeply dipping faults striking 100-110° (Adlakha and Hattori, 2015). Mineralization lenses at McArthur River occurs primarily in sandstone replacement bodies and fault-related breccias in the faulted wedge along post-basinal reverse faults as uraninite with lesser coffinite; basement mineralization is structurally controlled in veinlets and fault breccias (Bronkhorst et al., 2012). Pathfinder elements include Ag, As, Au, Co, Cu, Ni, Mo, Pb, Pt group elements (PGEs), Se, Zn and radiogenic Pb isotopes (Hoeve and Sibbald, 1987; Hoeve et al., 1980; Sopuck et al., 1983; and others). A silicified paleoaquiclude extends laterally through the MFb and upper MFa sandstone, transected by East-dipping, upward splays off of the P2 fault, along which hydrothermal fluids propagated (Jefferson et al., 2007; Ng et al., 2012). Several hundred meters west of the P2 fault, a large body of quartzite is inferred to form a ridge along the unconformity in the vicinity of the deposit. Geological interpretations of the McArthur River area are inferred from an extensive collection of vertical and sub-vertical, NW-dipping diamond drill holes along the strike of graphitic conductors in the Aphebian basement.

2.4 Methodology

2.4.1 Sample Collection

Over 4,000 m of drill core from four drill fences were examined, and a representative suite of 233 core samples of 10-30 cm lengths from 12 drill holes were collected for analysis. The selected drill fences, oriented perpendicular to the P2 structural trend along a 4 km transect, crosscut areas that are strongly mineralized (Zone 4), moderately mineralized (Zone C), between zones of economic mineralization (Gap Zone) and very weakly mineralized (Southwest Distal Zone) (Fig. 1B). Three-dimensional coverage of the alteration system is limited by the scarcity of distal footwall, and background hanging wall drill holes along the P2 trend. However, one drill hole, MC-434, is located approximately 500 m East of the Gap zone in the hanging wall, and was selected to represent a local background to the hydrothermal system.

2.4.2 Sample Preparation

Samples were cut along the core axis using a diamond bladed wet saw at Memorial University of Newfoundland, and half of the sample splits were analyzed for lithogeochemistry at the Saskatchewan Research Council (SRC). The remaining sample splits were taken to Queen's University for mineralogical analysis. A representative sub-suite of 123 polished thin sections was made and selected thin sections were then carbon-coated with a 20-25 nm-thick carbon layer for high-vacuum SEM analysis and EPMA. Sixty μm-thick polished "thick"-sections were preferred over 30 μm-thick thin sections for mineralogical analysis due to the propensity for interstitial clays to be plucked from the sections during sample preparation.

2.4.3 Petrology – Optical and Scanning Electron Microscopy (SEM)

Polished thin sections and sample offcuts were inspected using a combination of optical microscopy (Olympus BX51 petrographic microscope) and scanning electron microscopy (SEM) (FEI Quanta 650 Field Emission Gun (FEG) Environmental SEM (ESEM) at the Queen's Facility for Isotopic Research (QFIR) at Queen's University). Operating conditions for the ESEM were an accelerating voltage of 25 kV and a 4.5 spot size, under low vacuum conditions of 0.45 torr (water vapour pressure) on uncoated polished thin sections, and high vacuum conditions of approximately 5E-5 torr on carbon-coated polished thin sections. The SEM images were acquired using a backscatter electron detector (BSED).

2.4.4 Short Wave Infrared Spectroscopy (SWIR)

Relative proportions of clay minerals were determined by short wave infrared spectroscopy (SWIR). Spectral data was collected from the same 2 x 3 cm thin section blocks from which thin sections were made, using an ASD Inc. TerraSpec 4 contact probe analyzer. Operating conditions were a 10 mm spot diameter, over a 100 ms scanning time, with 3-10 μm spectral resolution across a 350-2500 nm wavelength range. SWIR spectral data was interpreted using MinSpec 4 software, calibrated to report relative abundances of illite, chlorite, kaolinite, dickite and dravite. Low signal-to-noise ratios (determined by MinSpec 4) correlated with high abundances of Fe-oxyhydroxide minerals in the samples. Data with a signal-to-noise ratio of less than 10 were deemed unreliable. Optical microscopy and SEM verified SWIR results. In some cases SWIR analysis failed to recognize clay minerals occurring in trace abundances (<1%). SWIR mineral proportions are detailed in appendix D.

2.4.5 Electron Probe Microanalysis (EPMA)

Wavelength dispersive analyses of silicate clay and APS minerals were performed using a JEOL JXA-8230 electron probe micro-analyzer equipped with five wavelength dispersive spectrometers (WDS) at the Queen's Facility for Isotopic Research (QFIR) at Queen's University. The accelerating potential was 15 kV and the beam current was 10 nA. The beam was defocused to 3-5 μm for silicate clay minerals and 2-2.5 μm for APS minerals. The fine grain sizes (<1-5 μm) restricted the degree to which the beam could be defocused. Inter-grown mineral grains were often analyzed simultaneously and very fine (<1 μm) overgrowths on some APS minerals could not be analyzed separately. Significant beam damage was noted on APS minerals. Counting times were 20-40 seconds each, for peak and background measurements. The mineral standards used were anhydrite (S), anorthite (Al, Ca), barite (Ba), muscovite (Si, K), albite (Na), tugtupite (Cl), anorthite (Al, Ca), rutile (Ti), rhodonite (Mn), olivine (Mg), hematite (APS analyses) and synthetic fayalite (silicate clay analyses) (Fe), synthetic calcium pyrophosphate $Ca_2P_2O_7$ (P), synthetic loellingite $FeAs_2$ (As), synthetic composites XPO_4 for REE (La, Ce, Nd, Pr), synthetic $SrTiO_3$ (Sr), and synthetic fluorphlogopite (F), synthetic ThO_2 (Th), and synthetic V_2O_3 (V). Atomic number and absorption corrections used the PAP algorithm of Pouchou and Pichoir (1991) in conjunction with the mass absorption coefficients of Heinrich (1987). Continuum and secondary fluorescence corrections were applied according to the respective methods of Springer (1971) and Reed (1990). Relative analytical errors (1σ) in silicate clay mineral analyses were generally < 1 % for major elements (> 2 wt. %) and < 10 % for minor elements (0.1-2 wt. %). Relative analytical errors in APS mineral analyses were generally < 2 % for major elements (>2 wt. %) and < 13 % for minor elements (<2 wt. %). Detection limits (LOD) were calculated (three standard deviations above the average background) according to the method of Williams (1987) with matrix corrections applied. Respective LOD values for TiO_2, V_2O_3, MnO, Na_2O, K_2O, As_2O_5, and Pr_2O_3 were 0.03, 0.09, 0.07, 0.07, 0.03, 0.10, 0.41 wt. %. All other elements were present in concentrations well in excess of LOD. APS mineral formulas were calculated on the basis of six cations, assuming the general formula $AB_3(XO_4)_2(OH)_6$. Silicate clay mineral formulas were calculated based on anion normalization for muscovite (11 oxygen equivalents) and chlorite (14 oxygen equivalents). Alkali-deficient dravite structural formulae were calculated on a 31 anion basis, according to the method of Tindle et al. (2002), based on ideal formula $XY_3Z_6(T_6O_{18})(BO_3)_3V_3W$, which assumes 3 B atoms in the B-site, 18 O associated with the T-site and 3 OH in the V-site.

2.4.6 Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS)

Trace element concentrations were analyzed by laser ablation inductively couple laser mass spectrometry (LA-ICP-MS) using a Thermo X Series II quadrupole ICP-MS coupled to a Resonetics RESOlution M-50 193 nm ArF excimer laser ablation system at Laurentian University. Following 10-40 seconds of background acquisition of the gas blank, lines were ablated by across selected mineral clusters (Fig. 2). Analyses were performed at 70% power output with a 10 Hz laser pulse rate on a 55 μm spot and a stage speed of at 5 μm/s. For select targets, mineral aggregates were mapped by stacking laser ablation lines spaced 55 μm apart. The measured isotopes suite included ^{7}Li, ^{9}Be, ^{11}B, ^{23}Na, ^{24}Mg, ^{27}Al, ^{29}Si, ^{31}P, ^{33}S, ^{39}K, ^{43}Ca, ^{44}Ca, ^{45}Sc, ^{47}Ti, ^{51}V, ^{52}Cr, ^{55}Mn, ^{57}Fe, ^{59}Co, ^{60}Ni, ^{63}Cu, ^{66}Zn, ^{71}Ga, ^{72}Ge, ^{75}As, ^{77}Se, ^{82}Se, ^{85}Rb, ^{88}Sr, ^{89}Y, ^{90}Zr, ^{93}Nb, ^{95}Mo, ^{101}Ru, ^{103}Rh, ^{105}Pd, ^{107}Ag, ^{111}Cd, ^{115}In, ^{118}Sn, ^{121}Sb, ^{125}Te, ^{133}Cs, ^{137}Ba, ^{139}La, ^{140}Ce, ^{141}Pr, ^{146}Nd, ^{147}Sm, ^{153}Eu, ^{155}Gd, ^{157}Gd, ^{159}Tb, ^{163}Dy, ^{165}Ho, ^{166}Er, ^{169}Tm, ^{172}Yb, ^{175}Lu, ^{178}Hf, ^{181}Ta, ^{182}W, ^{185}Re, ^{189}Os, ^{193}Ir, ^{195}Pt, ^{197}Au, ^{202}Hg, ^{205}Tl, ^{206}Pb, ^{207}Pb, ^{208}Pb, ^{209}Bi, ^{232}Th, and ^{238}U.

Analytical runs were bracketed with standard reference material suites consisting of five synthetic glass standards, GSC-1G, GSD-1G, GSE-1G, NIST-SRM-612, and a basalt glass standard, BHVO-2G. Standard reference material concentration values were sourced from GeoReM (Jochum et al., 2005).

Transient signals produced by the laser ablation lines were cropped for analytical integration according to the method of Heinrich et al. (2003). Major and minor element concentrations were monitored over the transient signal lengths to discriminate inclusion-free portions of the targeted mineral phases. Integration lengths between 2.4-96.6 seconds (12-483 μm) were selected, averaging 18.9 ± 16.0 seconds (94 ± 80 μm).

Concentrations were calculated with PlasmaLab software using three-point calibration curves forced through the gas blank, using GSC-1G, GSD-1G, GSE-1G standard reference materials, for most elements. Four-point calibration curves forced through the gas blank using GSC-1G, GSD-1G, GSE-1G and NIST-SRM-612 were used for Na, Mg, Si, Al, Ti, Mn, and Fe; four-point calibration curves forced through the origin using GSC-1G, GSD-1G, GSE-1G and NIST-SRM -612 were used for Ca; three-point calibration curves forced through the gas blank using GSD-1G, GSE-1G and NIST-SRM-612 were used for P, and a one-point calibration curve forced through the origin using NIST-SRM-612 was used for S, Rh, Pd, and Cd.

Ablation efficiency corrections were applied using the method of Longerich (1996) to account for incident radiation absorption and for variations in the density of mineral aggregates. Ablation efficiency corrections were applied using BHVO-2G for isotopic masses 7, 11-72 (Li, B-Ge), and NIST-SRM-612 for isotopic masses 9, 75-238 (Be, As-U). For matrix corrections, Mg, Al, and Sr were used as naturally occurring internal standards (NOIS) for alkali-deficient dravite and chlorite; muscovite and kaolinite; and APS minerals respectively. Unless EPMA data was available for the specific sample, average concentrations of the NOIS element from comparable samples were used. In the absence of sample-specific EPMA data for APS minerals, a combination of Sr + LREE was used for the NOIS matrix correction, as required by the significant variability in APS mineral compositions as solid solution between svanbergite, florencite and goyazite in the McArthur River sandstones, and permitted by the linear A-site substitution of Sr for LREE observed in the APS minerals.

Detection limits (LOD) were calculated for all elements in all analyses after applying matrix and efficiency corrections. LOD were calculated, from the calibration curves as being three standard deviations of the difference in x-axis intercepts (concentration axis) greater than the larger of the two calibration curves x-axis intercepts. Median detection limits for most elements were <20 ppm; <30 ppm for Ba, Cu, Ni, and Zn; <50 ppm for Sr and Mn, <200 ppm for Mg and Ti, and < 2000 ppm for S and Fe. For most trace elements, the background instrumental noise was equivalent to <100-300 cps; <600 cps for Ni, Li and Ge, <1500 cps for Fe, Mg, B, and V. Elements with high background interferences >10,000 cps include Si, Al, P, S, Ca, K, Cr, Mn, and As.

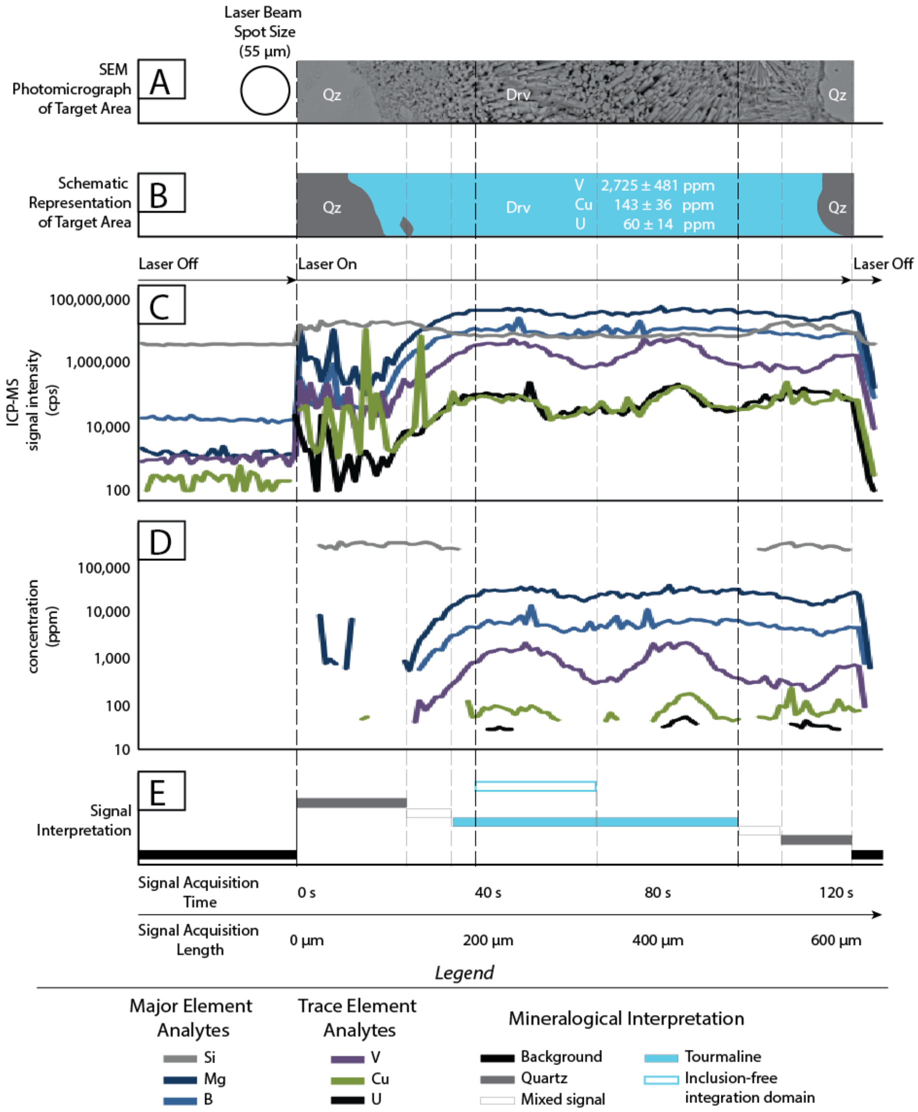

Figure 5. LA-ICP-MS signal processing. A) SEM photomicrograph of target area. B) Schematic representation of target area mineralogy based on SEM investigations. C) Time domain signal amplitudes (cps) are converted to D) concentrations by subtracting the instrument background noise, applying 3- or 4-point calibration curves based on GSC, GSD, and GSE standard reference materials, applying matrix corrections based on BHVO-2G or NIST-612 standard reference materials, and eliminating values below LOD. E) Mineral domains are interpreted based on major and minor element signals, with reference

to high-resolution SEM photomicrographs of the targeted areas. Inclusion-free areas are then selected from the signal as representative samples of the elemental concentrations and variances in the targeted mineral. The above schematic is based on a tourmaline vein bound by detrital quartz from Zone 4 MFa sample MAC-246-508.5.

2.4.7 Lithogeochemistry

Lithogeochemical analyses were performed at the Saskatchewan Research Council (SRC) commercial laboratories in Saskatoon, Saskatchewan. The same analytical packages were selected as are standard industry practice in modern Athabasca uranium exploration. Blanks, internal standards and sample duplicates were routinely inserted into analytical batches for quality assurance and quality control (QA/QC). Si was analyzed by ICP Whole Rock Assay Lithium Metaborate Fusion in which a 0.1 gram pulp was fused at 1000 °C with lithium metaborate then dissolved in dilute HNO3. The standard was SY3. Loss on ignition (LOI) was analyzed by heating a 1.00 gram pulp at 1000 °C overnight and measuring the weight loss. The standard was DCB01. Total C and S were analyzed by LECO induction furnace in which a 0.2 g pulp was analyzed in a LECO SC144DR C/S analyzer for Carbon and Sulfur using MA1B as a standard. Total B was analyzed by fusion ICP-OES in which a 0.1 gram pulp was fused at 650 °C in a mixture of Na_2O_2/Na_2CO_3. The B standards were BL and BSM. Al, Ba, Ca, Ce, Cr, Fe, K, La, Li, Mg, Mn, Na, P, Sr, Ti, Zr were analyzed by ICP Total Digestion in which a 0.250 g pulp was gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in dilute ultrapure HNO3. The standards were ASR109 and ASR209. Ag, As, Be, Bi, Cd, Co, Cs, Cu, Dy, Er, Eu, Ga, Gd, Ge, Hf, Hg, Ho, Mo, Nb, Nd, Ni, ^{204}Pb, ^{206}Pb, ^{207}Pb, ^{208}Pb, Pb, Pr, Rb, Sb, Sc, Se, Sm, Sn, Ta, Tb, Te, Th, U, V, W, Y, Yb, Zn, Zr were analyzed by ICP-MS Partial Digestion in which a 2.00 g pulp was digested with 2.25 ml of 8:1 ultrapure HNO3:HCl for 1 hour at 95 °C. The standards were ASR109 and ASR209. Ag, Be, Bi, Cd, Co, Cs, Cu, Dy, Er, Eu, Ga, Gd, Hf, Ho, Mo, Nb, Nd, Ni, ^{204}Pb, ^{206}Pb, ^{207}Pb, ^{208}Pb, Pb, Pr, Rb, Sc, Sm, Sn, Ta, Tb, Th, U, V, W, Y, Yb, Zn were analyzed by ICP-MS Total Digestion in which a 0.250 g pulp was gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in dilute ultrapure HNO3. The standards were ASR109 and ASR209.

2.4.8 Normative Mineralogy Calculations

Normative abundances of alkali-deficient dravite, illite, di,trioctahedral chlorite, kaolin and total clays were estimated using Al_2O_3, Fe_2O_3, K_2O, MgO, and B from whole rock total digestion data according to the method of Quirt (1995). Normative kaolin was further segmented into kaolinite and dickite by normalizing the relative amount of each kaolin polymorph as determined by SWIR to the total normative abundance of clays in the sample. Similarly, normative amounts of dravite, illite, and di, trioctahedral chlorite were verified using SWIR-normalized total normative clay abundances: R^2 values comparing the estimation methods were 0.90 (dravite), 0.70 (illite) and 0.67 (chlorite), and 0.74 (kaolin). Normative abundances of APS minerals were calculated using Sr and LREE concentrations from whole rock lithogeochemistry. The calculations and the rational behind them are presented in the discussion to this paper.

2.5 Results

2.5.1 Mineral Paragenesis

Four main stages of mineral paragenesis can be described for the McArthur River sandstones, including detrital sedimentation, pre-ore alteration (subdivided into diagenetic, early pre-ore, and late pre-ore events), ore-stage alteration, and post-ore alteration (Fig. 3). Diagenetic and hydrothermal alteration assemblages of quartz, Fe-Ti-(Mn) oxy-hydroxide minerals, APS minerals, silicates and clay minerals, occurring in secondary porosity and in fractures define the alteration footprint to the system.

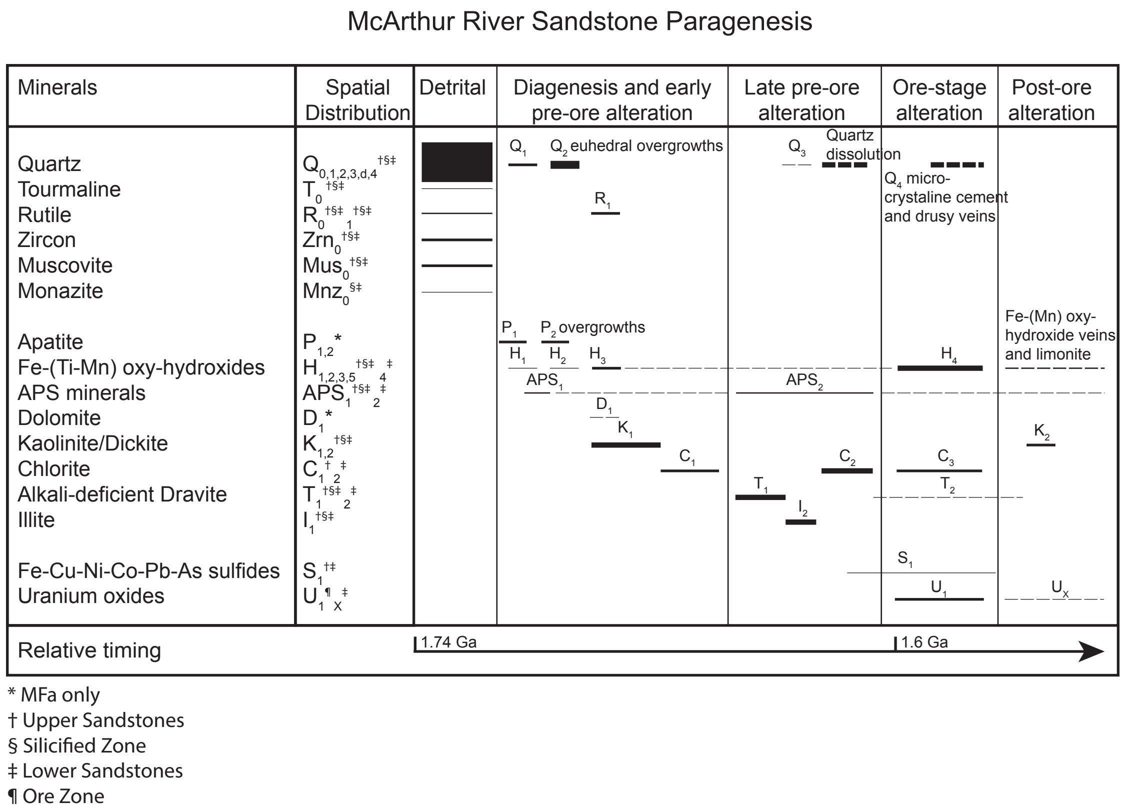

Figure 6. Paragenetic sequence for the Manitou Falls Formation in the alteration footprint of the McArthur River deposit indicating diagenesis, early- and late pre-ore alteration, ore-stage alteration and post-ore alteration. Line thickness indicates the relative abundance of each mineral and dashed lines represent uncertainty in the timing of mineral formation. Modified after Ng et al. (2012), Fayek and Kyser (1997), and Kotzer and Kyser (1995).

The detrital minerals, listed in order of relative abundance, include quartz (Q_0), muscovite (Mus_0), zircon (Z_0), rutile (R_0), and schorl tourmaline (T_0) (Cloutier et al. 2010; Ng. et al., 2012).

MFa and MFb sandstones also contain trace amounts of detrital monazite (Mnz_0), and apatite (Ap_0), often encased in detrital quartz grains. Zircon is largely preserved in the sandstones, but is highly fractured and occasionally rimmed by xenotime overgrowths (Fig. 4A).

Early quartz overgrowths (Q_1) contain very fine-grained hematite (H_1), and less frequent APS (APS_1) mineral inclusions, and are best preserved in the MFa and MFb sandstones where they occur as <20 µm-thick, syntaxial rims on detrital grains (Fig. 4B). Rare diagenetic apatite occurs as tabular euhedra, approximately 300 µm in length and 100 µm in width encased in up to 10 µm-thick apatite overgrowths (Fig. 4C). The (Q_2) quartz overgrowths are thicker – up to 200 µm-thick – and euhedral, with rare oxide inclusions (Fig. 4B). Subsequent recrystallization of detrital Fe-Ti oxides resulted in fine-grained aggregates of bladed hematite (Hem_2) and rutile (Rt_1) (Fig. 5E). Diagenetic kaolinite, converted to dickite (K_1) (Quirt, 2001), occurs as euhedral booklets, with platy crystals of approximately 5-20 µm in width, and approximately 0.5-1 µm thick (Fig. 5C). Vermiform dickite aggregates up to 200 µm in length were observed in the silicified sandstones.

Above the silicified zone, K_1 dickite is partially altered to fine-grained chlorite (C_1). Subsequent illite (I_1) alteration produced an illite-chlorite mixed-layer (ICML) clay assemblage (Quirt, 1999) that is particularly abundant along the MFb-MFc transition (Ng. et al., 2012) (Fig. 4E). Beaufort et al. (2015) report that the ICML at McArthur River is a three-component mixed layer clay composed of 40-60% illite, 33-50% sudoite, and 3-10% smectite. Pale green to white C1 chlorite (ICML) is sparsely packed in pore spaces in loosely stacked aggregates of fine-grained platy crystals approximately 3 µm in width. Illite crystals are platy, with grain sizes ranging from approximately 3-20 µm in width, and averaging approximately 10 µm in width (Fig. 5F). Spherulitic aggregates of acicular alkali-deficient dravite tourmaline (T_1) occur on the edges of quartz grains and euhedral overgrowths (Fig. 5G), and veinlets crosscut earlier generations of interstitial clay minerals.

Alkali-deficient dravite aggregates vary from sparsely packed to densely intergrown, and individual crystals show significant size variability between 0.1-10 µm in width and up to 300 um in length. The thickest alkali-deficient dravite crystals occur in veins, whereas the finest-grained alkali-deficient dravite occurs as disordered interstitial aggregates. All alkali-deficient dravite crystals are euhedral and acicular. Spherulitic dravite aggregates are usually <200 um across, with individual crystals between 2-5 um in width. Minor quartz overgrowths encasing spherulitic alkali-deficient dravite are observed in some lower MFa samples.

Below the silicified zone, chlorite (C_2) follows a quartz dissolution event, and replaces illite (Fig. 4G) and crosscuts alkali-deficient dravite (Fig. 4I), occasionally filling reactivated alkali-deficient dravite veins. Pale to dark green C_2 chlorite occurs in densely packed aggregates of fine-grained platy crystals approximately 5 µm in width, and is commonly associated with fine-grained, disseminated Fe-Cu-Ni-Co-As sulfides and LREE-rich APS minerals (Fig. 5I). Fine grained, pseudocubic APS minerals, commonly <1-2 µm and rarely up to 10 µm in diameter, commonly occur in stylolites with illite and muscovite (Fig. 5D). Less commonly, where APS minerals appear to have replaced detrital phosphate and rare monazite grains, APS minerals occur in dense clusters up to 300 µm across (Fig. 4D). APS mineral growth appears to have been most significant during early diagenesis and during late pre-ore alteration.

Previous studies characterize ore-stage alteration in the ore zone with a coeval suite of uraninite (U_1), chlorite (Chl_3), hematite (Hem_3), pyrite, chalcopyrite, Ni-Fe sulfide, Co-Fe sulfide, and Ni-Co-As sulfides (Ng et al., 2012). The occurrence of <1-50 µm-wide anhedral (S_1) Fe-Cu-Ni-Co-As sulfides intergrown with C_2 chlorite suggests some temporal overlap between C_2

chlorite growth and the ore-stage of paragenesis. Pore-filling Fe-oxides (H_4) and very-fine-grained Fe-oxides in microcrystalline quartz (Q_4) occur sporadically near the faulted unconformity and are inferred to have precipitated during ore-stage alteration. Microcrystalline quartz-filled fractures and drusy quartz veins (Q_4) contain trace amounts of euhedral Fe-Cu-Ni-Co-As sulfides (S_1). Cryptic disseminations of U-oxide are commonly observed in association with pyrite (S_1).

Post-ore alteration is largely restricted to fracture zones in the upper sandstones and near the faulted unconformity, and is dominated by late-stage kaolinite (K_2) replacing clay minerals, and filling open fractures in microcrystalline quartz veinlets (Fig. 4K). Kaolinite occurs as subhedral booklets approximately 3-5 μm in width and in fine-grained platy aggregates. Minor Fe-(Ti)-oxyhydroxide occur in some kaolinite veins as <1 μm globular aggregates (Fig. 5K). Minor syntaxial Fe- and Mn-oxyhydroxide veinlets composed of very fine-grained, acicular crystals crosscut all mineral assemblages (Fig. 4C, Fig. 5C). Cryptic occurrences of remobilized sulfide, sulfarsenide and uranium minerals are observed on the surfaces of drusy quartz veins in the lower sandstones (Fig. 5J).

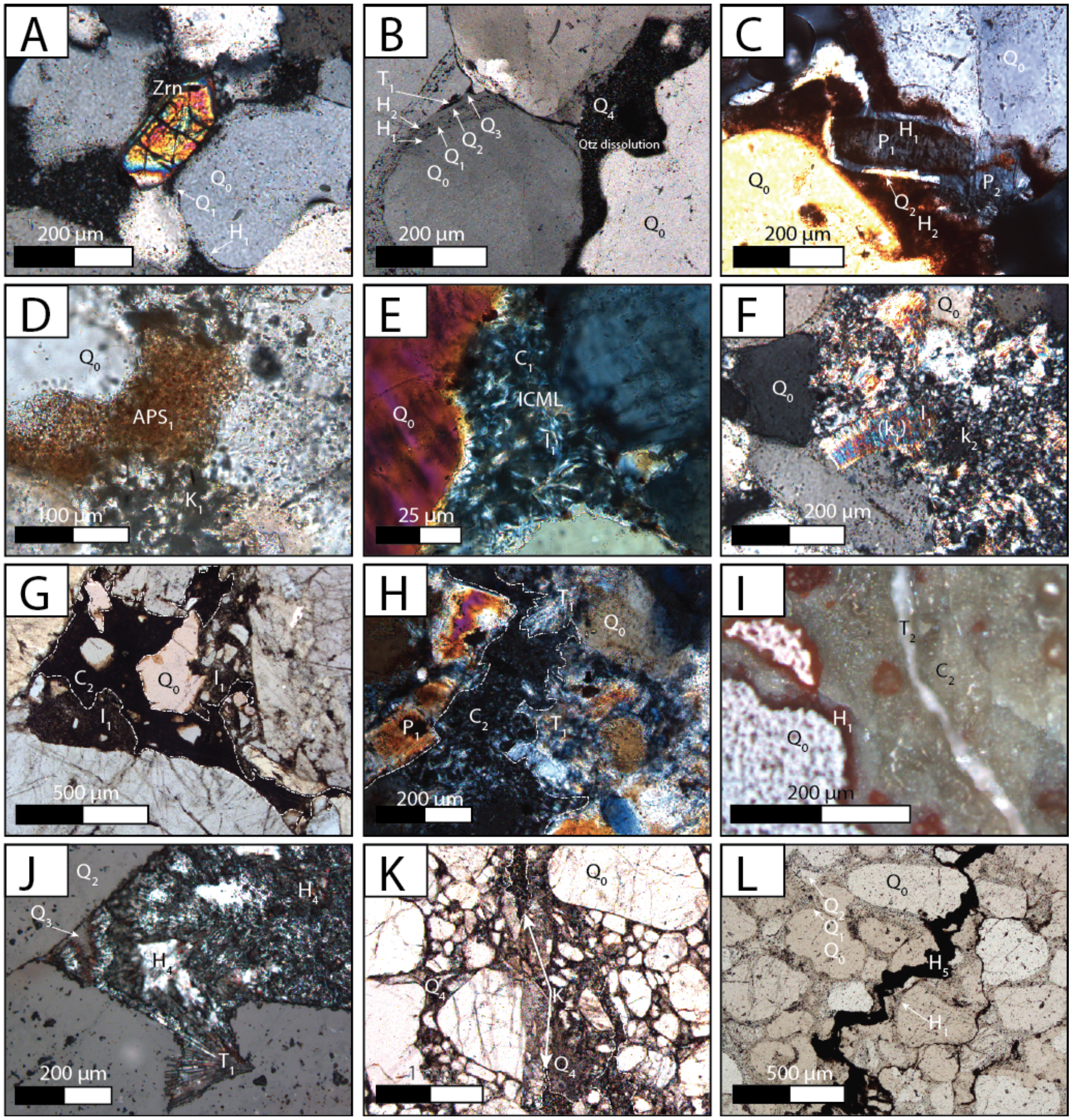

Figure 7. Photomicrographs of McArthur River sandstones in ~30 m-thick polished thin sections (tS) and ~60 m-thick thick sections (TS) under plane polarized (PPL), crossed polarized (XPL), and reflected (RL) light. A) Fractured detrital zircon (Zrn) from Southwest Distal Zone MFa sample MC-338-537 (XPL). B) Multiple generations of quartz: (H1) hematite dusting on (Q0) detrital quartz, with (H2) hematite-included (Q1) quartz

overgrowths, followed by syntaxial, euhedral (Q2) quartz overgrowths and (T1) alkali-deficient dravite encased in (Q3) quartz, preceding a quartz dissolution event, followed by (Q4) microcrystalline quartz cementation from Southwest Distal Zone MFa sample MC-338-537 (XPL). C) Early diagenetic apatite (P1) with (H1) hematite inclusions surrounded by (P2) apatite and (Q2) quartz overgrowths and from Zone 4 MFa sample MAC-255-564.36 (XPL). D) Cluster of pseudocubic APS minerals surrounded by dickite from Background Hole MFb sample MC-434-328.83 (PPL). E) Chlorite (C1) partially replaced by (I1) illite to form an illite-sudoite-smectite mixed layer clay (ICML) from Zone 4 MFc sample MAC-252-271.2 (XPL). F) Vermiform dickite (K1) pseudomorphically replaced by (I1) illite, altered by late (K2) kaolinite from Southwest Distal Zone MFa sample MC-338-557.5 XPL. G) Chlorite (C2) replacing illite (I1) from Zone C MFa sample MC-413-603.83 (PPL). H) Chlorite (C2) replacing spherulitic alkali-deficient dravite (T1) from Gap Zone MFa sample MAC-208-572 (XPL). I) Alkali-deficient dravite (T2) veins crosscutting (C2) chlorite from Zone 4 MFa sample MAC-255-564.36 (PPL). J) Pore-filling hematite (H4) after alkali-deficient dravite (T1) and overgrowth quartz (Q2, Q3) from Zone C MFa sample MC-413-623.78 TS RL. K) Kaolinite (K2) filling reactivated microcrystalline quartz (Q4) veins from Zone 4 MFa sample MAC-255-479.17 (PPL). L) Late Fe-oxyhydroxide (H5) vein crosscutting silicified sandstone from Southwest Distal Zone MFa sample MC-336-564.36 (PPL).

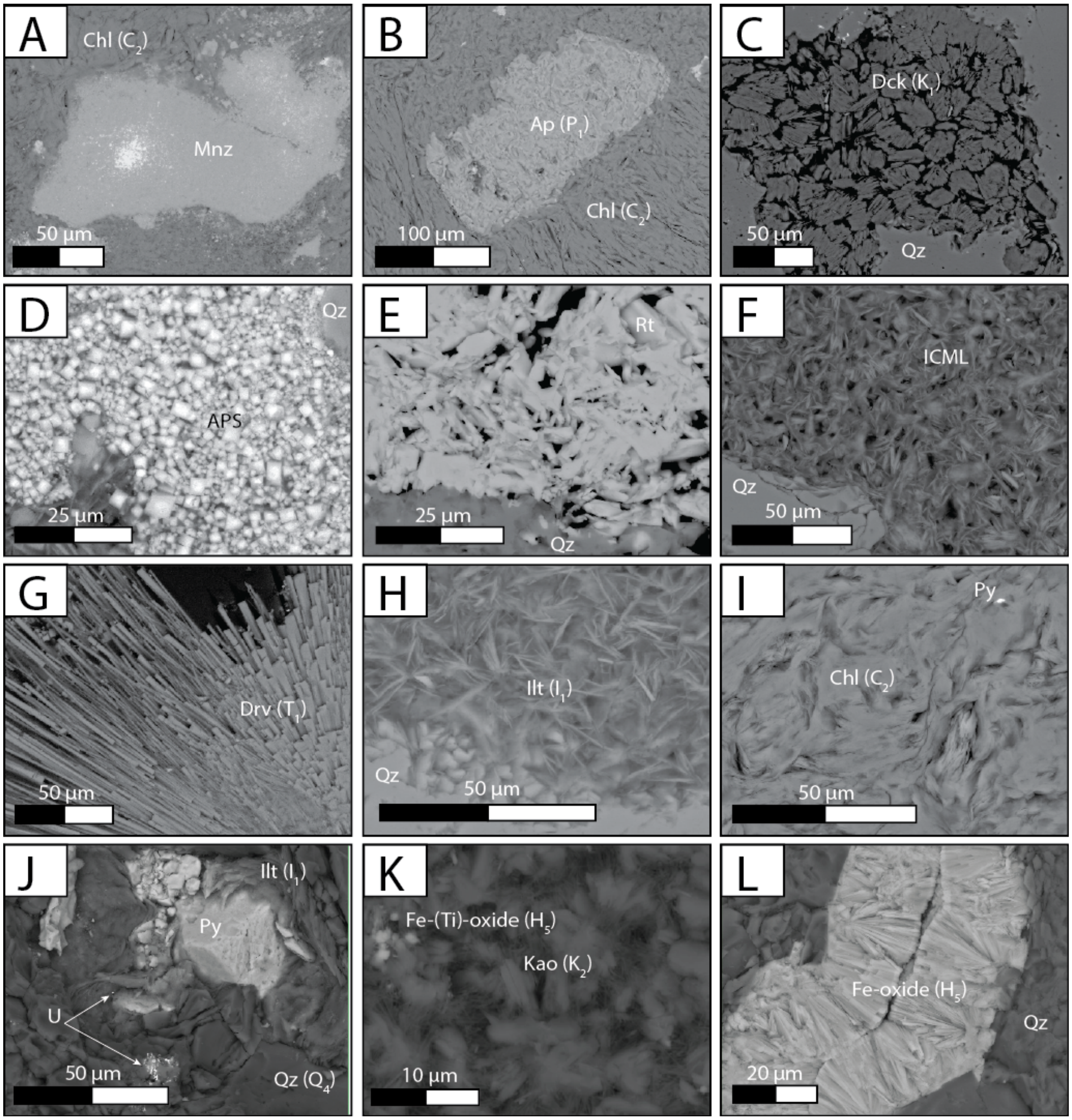

Figure 8. ESEM BSED photomicrographs of alteration minerals from the McArthur River sandstones. A) Detrital monazite (Mnz) with Th-rich inclusions altered by APS minerals from Zone C MFa sample MC-413-603.83. B) Early diagenetic apatite (Ap) surrounded by chlorite (Chl) from Zone 4 MFa sample MAC-255-564.36. C) Diagenetic dickite (Dck) from Zone 4 MFa sample MAC-255-543. D) Cluster of pseudocubic APS minerals from Background Hole MFb sample MC-434-328.83. E) Bladed rutile (Rt) from Zone 4 MFb sample MAC-252-342.5. F) Illite-sudoite-smectite mixed layer clay (ICML) from Zone 4

MFc sample MAC-252-271.2. G) Spherulitic alkali-deficient dravite (Drv) from Zone 4 MFa sample MAC-246-499.02. H) Illite (Ilt) from Zone 4 MFc sample MAC-255-293.4. I) Chlorite (Chl) with Fe-Cu-Ni-Co-As-S microinclusions (Py) from Zone 4 MFa sample MAC-255-559. J) Uranium oxide (U) microinclusions in microcrystalline quartz (Qz) and illite (Ilt) associated with euhedral pyrite (Py) in drusy quartz vein from Southwest Distal Zone MFa sample MC-336-557. K) Kaolinite (Kao) and Fe-(Ti)-oxyhydroxides filling fracture from Zone 4 MFa sample MAC-246-508.8. L) Late Fe-oxyhydroxide (H5) vein crosscutting silicified sandstone from Southwest Distal Zone MFa sample MC-336-564.36.

2.5.2 Spatial Distribution of Alteration Minerals

The distribution of alteration mineral assemblages along the P2 trend and within the footprint of the McArthur River system appear to be controlled by the occurrence of a silicified layer between approximately 200-400 m depth in the lower MFc, MFb, and upper MFa sandstones. The fine-grained upper sandstones of the MFd and upper MFc units contain assemblages of I_1 illite, T_1 alkali-deficient dravite, APS minerals and minor C_1 chlorite, overprinted by minor K_2 kaolinite along paragenetically-late fractures (Fig. 6). The ICML clay is most abundant in the MFc sandstones immediately above the silicified layer. Mineral chemistry and mineral assemblages show greater variability and complexity vertically, relative to the silicified zone (between upper and lower sandstones), than laterally along the P2 trend relative to ore zone proximity. Average MFd sandstones contain 0.55 wt.% illite, 0.05 wt.% chlorite, 0.63 wt.% kaolinite, 1.58 wt.% alkali-deficient dravite, 0.05 wt.% APS minerals and 90-99% quartz. Average MFc sandstones contain 2.32 wt.% illite, 0.34 wt.% chlorite, 0.55 wt.% dickite, 0.41 wt.% kaolinite, 0.73 wt.% alkali-deficient dravite, 0.10 wt.% APS minerals and 89-99% quartz. Within the silicified layer, minor I_1 illite and Sr-rich APS minerals occur along stylolitic seams, and diagenetic K_1 dickite – preserved from subsequent hydrothermal alteration by the silicification event – contains non-quartz mineral assemblages similar to those observed in the digenetic background to the hydrothermal system. Lower sandstones contain significantly more complex assemblages of I_1 illite, T_1 and T_2 alkali-deficient dravite, APS minerals, C_1 and C_2 chlorite, sulfide and oxide minerals. Ore-stage microcrystalline quartz flooding occurs predominantly in the lower sandstones, effectively creating a lower silicified zone in the sandstone column (Fig. 4B). Detrital monazite, zircon, and muscovite are particularly abundant in the coarser-grained sandstones and pebble conglomerates of the MFb and MFa. Within the basal conglomerate, early diagenetic apatite occurs in trace abundance. Chlorite and LREE-rich APS minerals are particularly abundant at the unconformity and along fracture corridors where the P2 fault splays into the sandstone. Paragenetically-late and reactivated fracture networks in the lower sandstones contain oxide minerals, and or kaolinite. Average MFb sandstones contain 2.66 wt.% illite, 0.08 wt.% chlorite, 1.61 wt.% dickite, 0.30 wt.% kaolinite, 1.00 wt.% alkali-deficient dravite, 0.20 wt.% APS minerals and 85-97% quartz. Average MFa sandstones contain 2.21 wt.% illite, 0.31 wt.% chlorite, 1.54 wt.% dickite, 0.80 wt.% kaolinite, 0.99 wt.% alkali-deficient dravite, 0.09 wt.% APS minerals and 82-99% quartz.

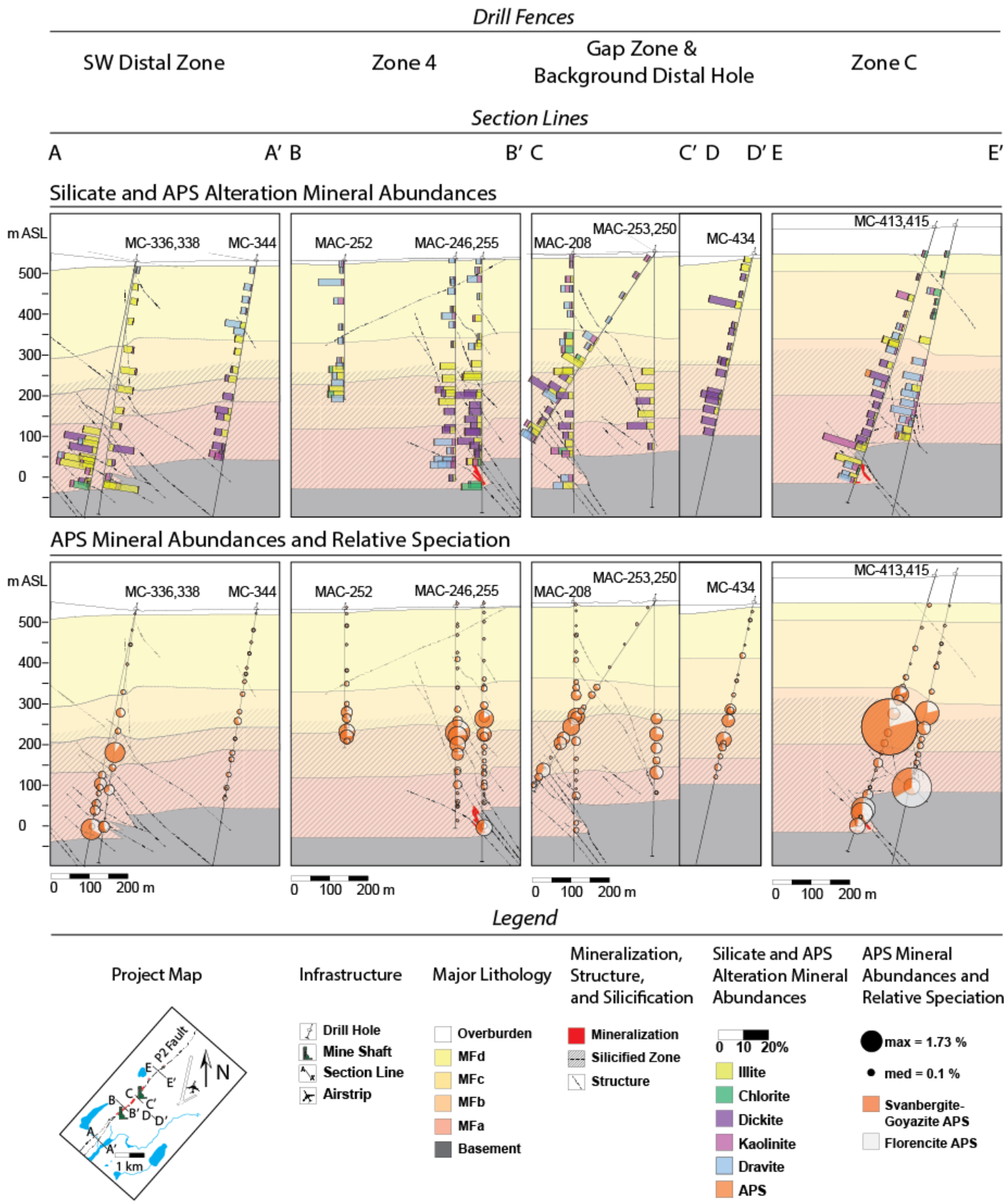

Figure 9. Distribution of alteration minerals in the sandstones surrounding the McArthur River uranium deposit. Drill hole MC-434, located approximately 500 m SE of the P2 fault in the hanging wall, represents a local background to the hydrothermal system. Stacked

horizontal bars are proportional to normative mineral abundances, indicating that normative clay abundances and mineral assemblage complexity are generally greatest proximal to the unconformity and along fracture networks. Pie chart diameters are proportional to APS mineral normative abundances; slices indicate the relative proportion of svanbergite-goyazite vs. florencite compositions. APS minerals are most abundant in the MFb unit and along the unconformity; the proportion of florencitic APS minerals is greatest along the unconformity and along some fracture networks.

2.5.3 Mineral Chemistry – Major Elements

Kaolin Minerals. Dickite has an average chemical composition of 46.31 wt.% SiO_2 and 39.70 wt.% Al_2O_3, with <1 wt.% other cations and <0.1 wt.% F, Cl. The average structural formula of $(Al_{3.99}Fe_{0.01}Mg_{0.01})^{vi}(Si_{3.97}Al_{0.03})^{iv}O_{9.98}[(OH)_{8.02}F_{0.08}Cl_{0.01}]$ is based on an ideal structural formula of $Al_4Si_4O_{10}(OH_8)$ with trace substitution of Fe^{2+} and Mg^{2+} in the octahedral site. Trace concentrations of alkali cations were also detected.

Illite. Illite has an average composition of 33.7 wt.% Al_2O_3, 9.31 wt. % K_2O, 1.00 wt.% MgO and 0.87 wt.% FeO, with <1 wt.% other cations and <0.1 wt.% F, Cl. Based on a structural formula for illite of $XY_2(T_4O_{10})(OH)_2$, the average illite has a structural formula of ${}^{X}(K_{0.82},Ca_{0.01},Na_{0.02})^{Y}(Mg_{0.10},Fe_{0.05},Ti_{0.01},Al_{1.89})^{T}(Si_{3.14}Al_{0.86},O_{10})(OH)_2$. The chemical composition of pre-ore alteration-stage white mica in this study is more similar to the theoretical composition of muscovite than to illite or phengite based on SiO_2, K_2O, Al_2O_3, MgO and FeO discrimination plots (Fig. 7). Their compositions are similar to the $Ms1_k$ muscovites reported by Cloutier et al. (2010) at Wheeler River Zone K, and to white micas referred to as "illites" in industry reports and previous studies of the Athabasca basin (e.g., Hoeve and Sibbald, Hoeve and Quirt, 1984; 1978; Kotzer and Kyser, 1995; Fayek and Kyser, 1997; Ng et al., 2012; and others). Texturally however, white micas are fine-grained, platy and occasionally wispy, resemble illite and are therefore referred to in this study as such.

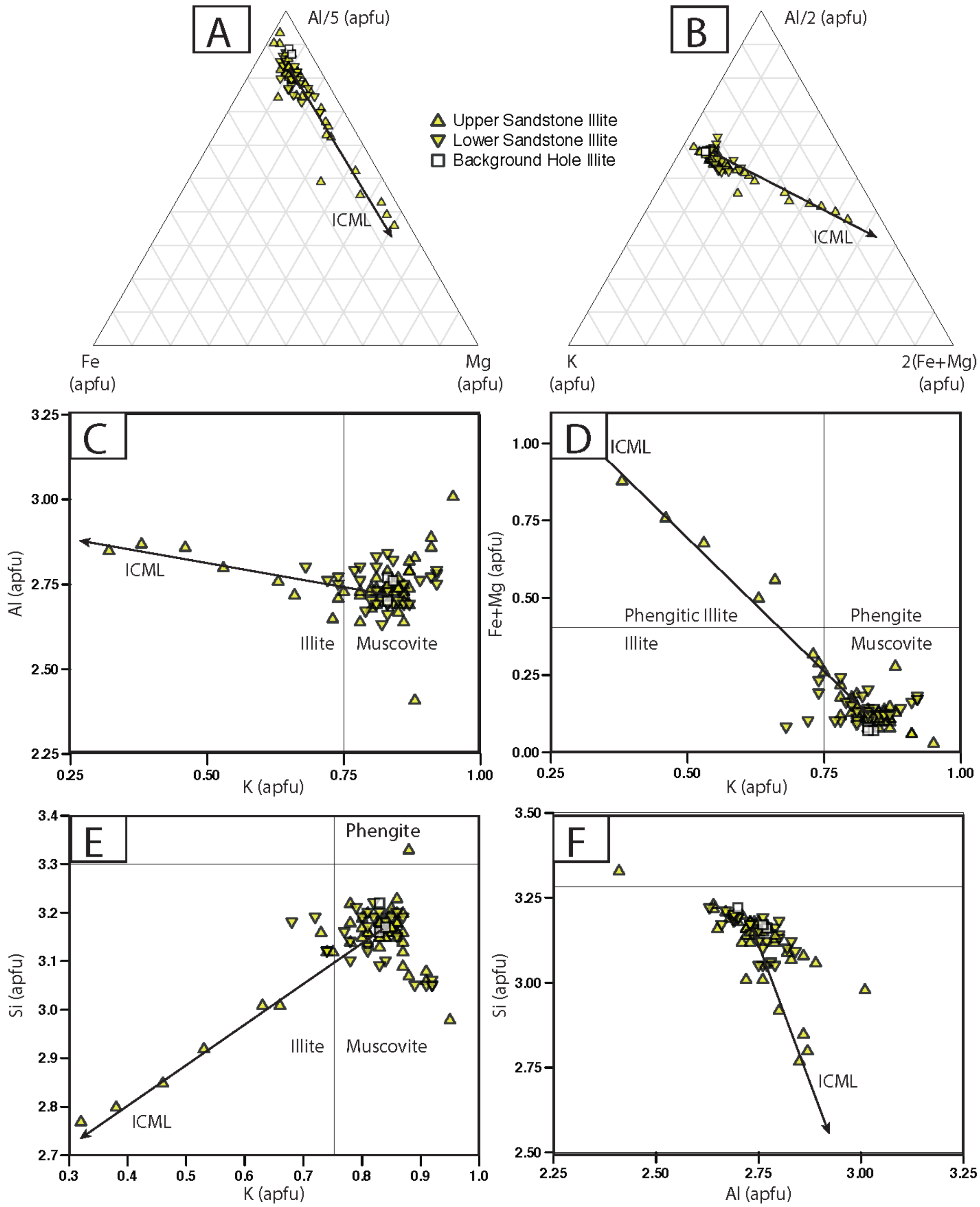

Figure 10. Ternary diagrams and molar discrimination plots for interstitial illite from the McArthur River sandstones above (upper) and below (lower) the silicified layer that occurs

between depths of approximately 200-400 m. Interstitial white micas are chemically similar to muscovite, but are texturally similar to 1Mt and 1Mc illite. Interlayer mixing with chlorite is responsible for the trends in Fe, Mg, and Al enrichments. A) Modified Al-Mg-Fe molar ternary diagram. B) Modified Al-Fe + Mg-K ternary diagram. C) K vs. Al molar plot. D) K vs. Fe + Mg molar plot. E) K vs. Si molar plot. F) Al vs. Si molar plot.

Chlorite. C_1 chlorite has an average composition of 36.88 wt.% SiO_2, 30.62 wt.% Al_2O_3, 1.60 wt.% FeO, 6.66 wt.% MgO, and 3.07 wt.% K_2O, with <1 wt.% other cations and <0.1 wt.% F, Cl. Based on a structural formula for sudoite of $X_2Y_3(T_4O_{10})(OH)_8$, the average C_2 chlorite has a structural formula of $^{X}(K_{0.38},Ca_{0.02},Na_{0.02},Mg_{1.00})^{Y}(Al_{3.21},Fe^{3+}{}_{0.14})^{T}(Si_{3.65}Al_{0.35}O_{10})(OH)_8$. The composition of C_1 chlorite from this study plots between the C_1 chlorite (sudoite) and ICML compositions reported by Ng et al. (2012) (Fig. 8).

The C_2 chlorite has an average composition of 35.46 wt.% SiO_2, 32.37 wt.% Al_2O_3, 2.60 wt.% FeO, 13.34 wt.% MgO, and 0.90 wt.% K_2O, with <1 wt.% other cations and <0.1 wt.% F, Cl. Based on a structural formula for sudoite of $X_2Y_3(T_4O_{10})(OH)_8$, the average C_2 chlorite has a structural formula of $^{X}(K_{0.11},Ca_{0.03},Na_{0.01},Mg_{1.84})^{Y}(Al_{2.82},Fe^{3+}{}_{0.20})^{T}(Si_{3.29}Al_{0.71}O_{10})(OH)_8$, which corresponds with sudoite.

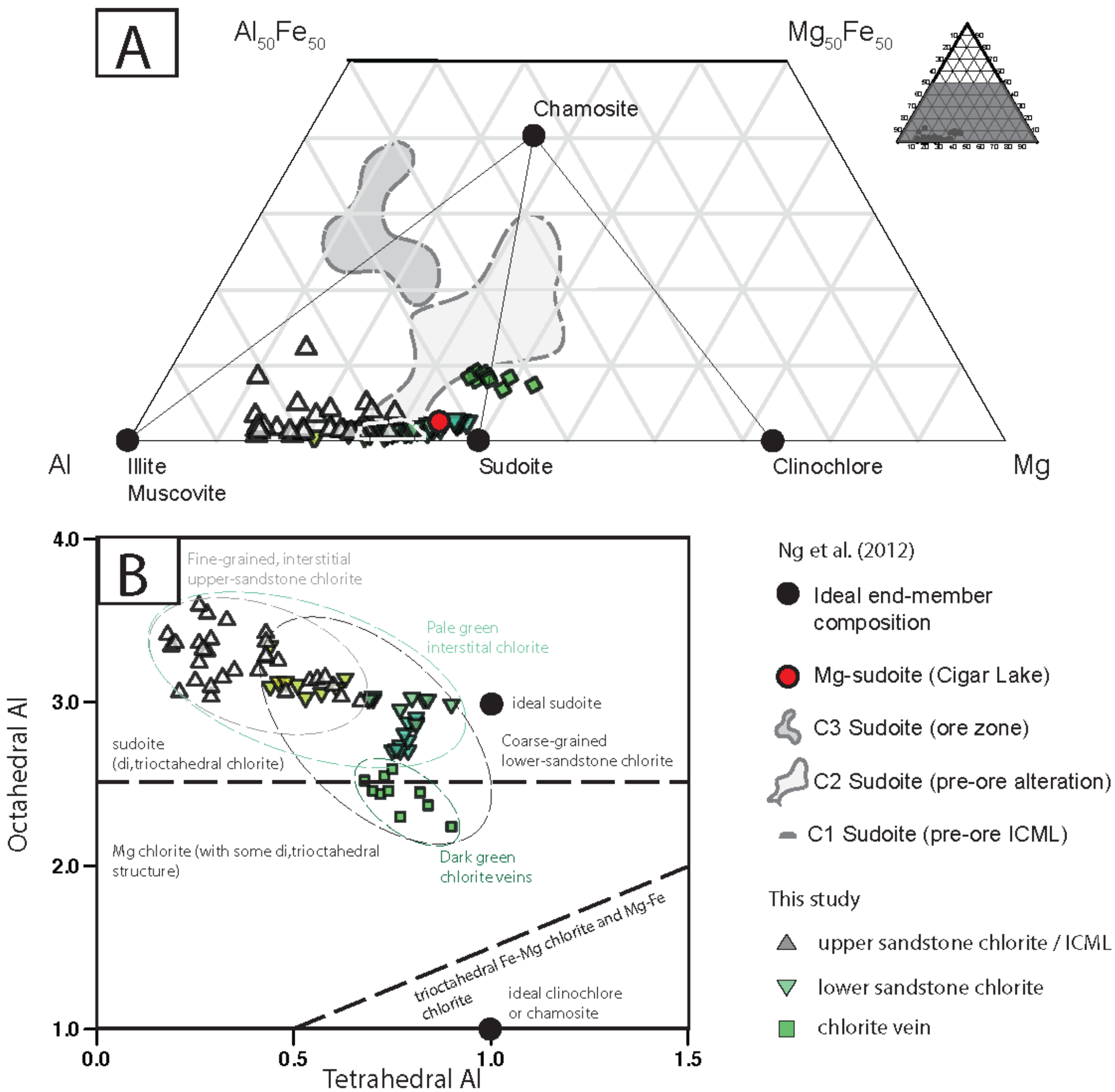

Figure 11. Ternary diagram and Al-site occupancy molar discrimination plot for interstitial and vein-hosted chlorite from the McArthur River sandstones. Mineral chemical data is compared to results from Zone 4 obtained by Ng et al. (2012). Interlayer mixing with illite and smectite is primarily responsible for the trend in Al enrichments. A) Al-Mg-Fe ternary diagram. C) K vs. Al molar plot. B) Tetrahedral Al vs. octahedral Al molar plot.

Alkali-deficient Dravite. Alkali-deficient dravite shows minimal compositional variability along the P2 trend (Fig. 9), and is largely absent in the hanging wall background to the system. However, slight differences in the concentrations of V, Na, and K were observed between interstitial alkali-deficient dravite aggregates throughout the sandstone column, and one alkali-deficient dravite vein located proximal to mineralization in Zone 4. Alkali-deficient dravite from interstitial aggregates has an average composition of 37.04 wt.% SiO_2, 38.26 wt.% Al_2O_3, 7.86 wt.% MgO, 0.73 wt.% FeO, <0.09 wt.% V, 0.74 wt.% Na_2O, 0.30 wt.% K_2O, 0.17 wt.% CaO, and 0.25 wt.% F, with <1 wt.% other cations and <0.1 wt.% Cl. Based on a structural formula for alkali-deficient dravite of $XY_3Z_6(T_6O_{18})(BO_3)_3[(OH),F]_4$ the average interstitial alkali-deficient dravite has a structural formula of

$^{X}(\square_{0.70},Na_{0.23},K_{0.04},Ca_{0.03})^{Y}(Mg_{1.85},Fe^{2+}_{0.10},Al_{0.98})^{Z}(Al_{6.00})^{T}(Si_{5.85}Al_{0.15}O_{10})(BO_3)_3[(OH)_{3.97},F_{0.02}]$.

The alkali-deficient dravite vein with the anomalous chemistry from Zone 4 has an average composition of 35.33 wt.% SiO_2, 39.49 wt.% Al_2O_3, 8.18 wt.% MgO, 0.38 wt.% V, 0.14 wt.% FeO, 0.50 wt.% Na_2O, 0.18 wt.% CaO, 0.03 wt.% K_2O, and <0.24 wt.% F, with <1 wt.% other cations and <0.1 wt.% Cl. Based on a structural formula for alkali-deficient dravite of $XY_3Z_6(T_6O_{18})(BO_3)_3[(OH),F]_4$ vein-hosted alkali-deficient dravite proximal to mineralization in the MFa unit of Zone 4 has a structural formula of

$^{X}(\square_{0.82},Na_{0.16},Ca_{0.03})^{Y}(Mg_{1.94},V_{0.04},Fe^{2+}_{0.02},Al_{1.04})^{Z}(Al_{6.00})^{T}(Si_{5.63}Al_{0.37}O_{10})(BO_3)_3[(OH)_{4.00}]$.

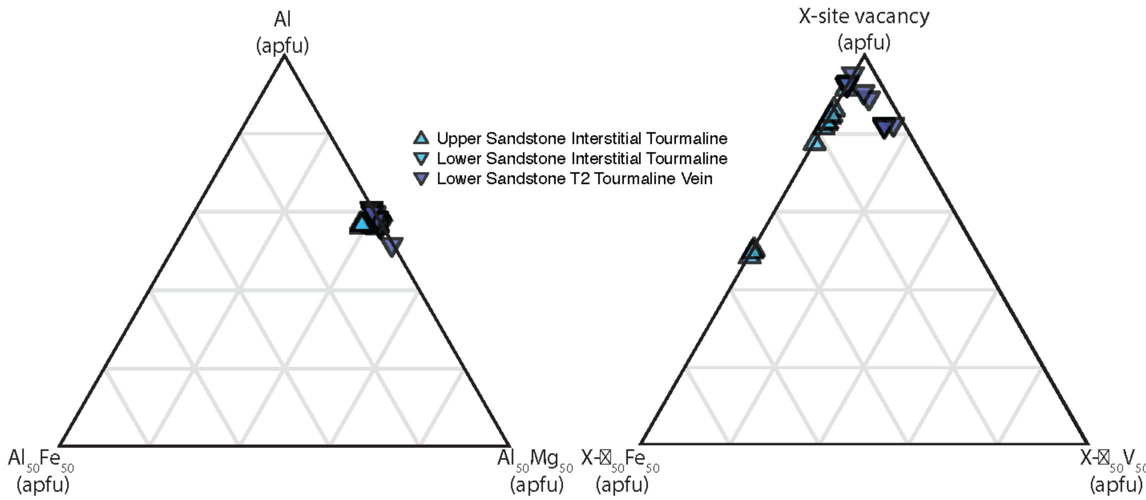

Figure 12. Ternary diagrams for interstitial and vein-hosted alkali-deficient dravite tourmaline from the McArthur River sandstones. A) Al-Mg-Fe molar ternary diagram. B) X-site vacancy-V-Fe molar ternary diagram.

APS Minerals. APS mineral compositions throughout the sandstones occur in solid solution between florencite [(REE)$Al_3(PO_4)_2(OH)_6$], svanbergite [(Sr)$Al_3(PO_4)(SO_4)(OH)_6$], goyazite [(Sr)$Al_3(PO_4)_2(OH)_6$], and crandallite [(Ca)$Al_3(PO_4)_2(OH)_6$], with minor arseno-florencite [(REE)$Al_3(AsO_4)_2(OH)_6$] (Fig. 13). Given the six-cation ideal formula of $AB_3(XO_4)_2(OH)_6$, the A-site was filled by Sr (0.37-0.66 apfu), Ca (0.14-0.28 apfu), Ce (0.07-0.24 apfu), La (0.03-0.23 apfu), Nd (0.02-0.09 apfu), Pr (0-0.02 apfu), Ba (0-0.06 apfu), and Th (0-0.03); the B-site was filled by Al (2.88-3.01 apfu); the X-site was filled by P (1.50-1.70 apfu), S (0.19-0.49 apfu) and As (0.01-0.02 apfu). The compositional variability of APS minerals in the sandstones is similar to the APS minerals described by Adlakha and Hattori (2015) in the basement rocks of the P2 fault at McArthur River.

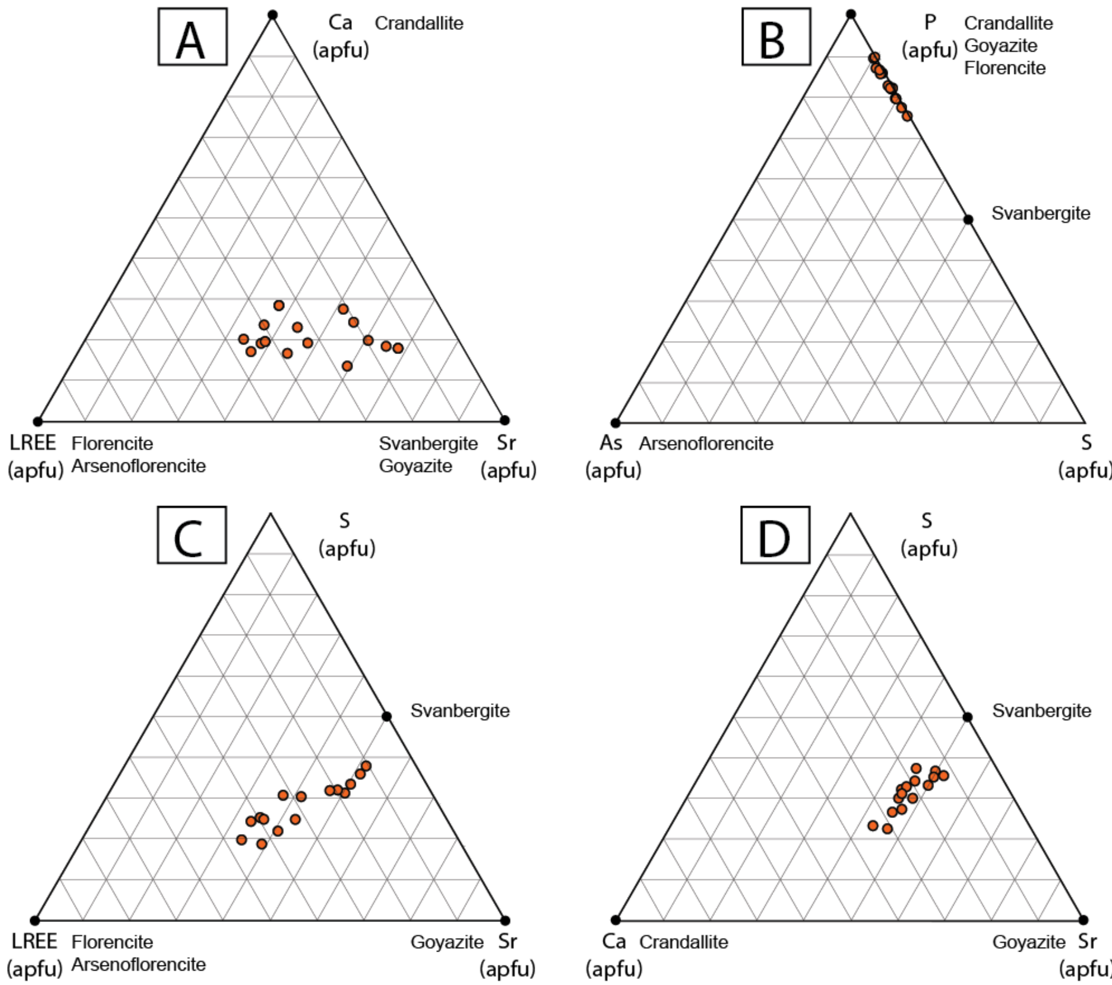

Figure 13. APS ternary diagrams.

2.5.4 Mineral Chemistry – Trace Elements

Trace element concentrations were calculated for interstitial minerals in the sandstones within the footprint. Quantitative analyses include illite (n=52), C_1 chlorite (n=14), and C_2 chlorite (N=34)

(Table 1); vein-hosted alkali-deficient dravite (n=25), alkali-deficient dravite interstitial aggregates (n=88), detrital tourmaline (n=4) (Table 2); APS minerals (n=21), APS-altered detrital monazite (n=6), early-diagenetic apatite (n=5) (Table 3); pyrite (n=4), pore-filling hematite (n=5), recrystallized rutile (n=5) (Table 4); Fe-oxyhydroxide veins (n=3), Fe(Ti)-oxyhydroxides within kaolinite aggregates (n=3), and an Mn(Fe)-oxyhydroxide vein (n=1) (Table 5). LA-ICP-MS chemical mapping of interstitial assemblages, detrital grains, and cements provides additional insight into the distribution and inventory of pathfinder elements. Detailed semi-quantitative LA-ICP-MS chemical maps of representative mineral assemblages are provided for phyllosilicate assemblages (Fig. 12), APS and phosphate minerals (Fig. 13), and oxide minerals (Fig. 14).

Illite. Pre-ore alteration illite contains significant, concentrations of Li, V, Cr, Cu, Ga, Rb, Sr, Zr, Ba, and Ce, with Sc, Ti, Ni, Zn, Sn, La, and Nd close to detection limits (Table 1).

Chlorite. The C1 chlorite contains significant concentrations of Ni (54-200 ppm), Li (39-82 ppm), V, Cr, Cu, Ga, and Zr, with Sc, Zn, Ti, and Sr close to detection limits (Table 1). The C2 chlorite contains highly elevated concentrations of Ni (80-972 ppm) and Li (82-714 ppm), and significant concentrations of V, Cr, Cu, Ga, Zr, La, and Ce, with Co, Zn, Rb, Sr, Y, and Sn close to detection limits (Fig. 12B).

Table 1

Trace element concentrations in interstitial silicate clay mineral aggregates measured by LA-ICP-MS

Mineral	C1 Chlorite			N=14	C2 Chlorite			N=34	Illite			N=52
Element (ppm)	Med	Min	Max	%>DL	Med	Min	Max	%>DL	Med	Min	Max	%>DL
Li	68	39	82	93%	311	82	714	100%	73	12	191	83%
Be	<DL	<DL	<DL	0%	24	11	30	21%	<DL	<DL	<DL	0%
Sc	9	4	42	64%	15	11	25	29%	15	6	33	69%
Ti	149	84	470	64%	128	103	338	29%	181	61	3,166	63%
V	32	22	87	93%	142	41	299	100%	79	25	476	100%
Cr	42	16	113	100%	118	19	455	100%	73	19	1,495	98%
Mn	41	35	133	36%	95	93	97	6%	36	25	124	35%
Fe	5,673	1,759	29,451	93%	14,084	5,995	64,981	100%	7,571	3,841	37,329	100%
Co	11	11	11	14%	24	8	170	76%	21	12	28	13%
Ni	86	54	200	100%	153	80	972	100%	38	20	111	21%
Cu	63	23	185	100%	68	32	175	79%	54	26	765	79%
Zn	25	6	165	93%	34	14	229	68%	25	16	620	29%
Ga	50	37	84	93%	64	40	120	100%	47	30	76	92%
Rb	39	23	49	50%	17	4	68	50%	63	42	114	100%
Sr	145	58	590	43%	60	27	222	41%	70	19	462	58%
Y	15	13	23	21%	23	23	23	3%	17	14	37	12%
Zr	47	8	288	100%	32	12	354	71%	52	10	260	88%
Sn	<DL	<DL	<DL	0%	12	7	16	47%	18	10	26	19%
Ba	401	228	655	29%	44	15	233	18%	56	1	337	31%
LREE	77	54	153	36%	103	43	352	38%	83	35	246	38%
Th	21	10	38	21%	11	9	19	15%	17	11	82	23%
U	30	20	36	21%	20	4	100	38%	31	8	100	12%

Table 1. Trace element concentrations in interstitial silicate clay mineral aggregates measured by LA-ICP-MS.

Alkali-deficient Dravite. Alkali-deficient dravite veins contain significant concentrations of V (26-2867 ppm), Cr, Cu, Ga, and Zr, with Be, Mn, Ni, Zn, Ge, Rb, Sr, and U close to detection limits. Two vein-hosted alkali-deficient dravite samples contained significantly higher-than-average concentrations of V. Interstitial aggregates contain significant concentrations of V (18-397 ppm), Cr, Cu, Ga, and Zr, with Li, Co, Ni, Cu, Zn, Rb, Sr, Y, Ce and U close to detection limits (Fig. 11A). Detrital schorl tourmaline contains highly elevated concentrations of Ti (1395-2175 ppm), significant concentrations of V, and Cu, with Sc close to detection limits (Table 2).

Table 2

Trace element concentrations in tourmaline veins, interstital aggregates, and detrital fragments measured by LA-ICP-MS

Mineral	Alkali-deficient Dravite Veins			N=25	Interstitial Alkali-deficient Dravite			N=88	Detrital Tourmaline			N=4
Element (ppm)	Med	Min	Max	%>DL	Med	Min	Max	%>DL	Med	Min	Max	%>DL
Li	9	8	16	48%	15	8	90	64%	26	24	27	100%
Sc	9	4	24	68%	10	3	39	43%	19	16	20	100%
Ti	<DL	0	0	0%	233	84	3059	9%	2624	2564	2931	100%
V	72	26	2867	92%	73	18	397	76%	83	80	89	100%
Cr	28	15	101	84%	37	8	185	82%	36	30	47	100%
Mn	55	55	55	4%	2268	17	3674	15%	201	201	202	50%
Fe	5590	2252	14610	64%	9381	1348	17490	70%	9343	9033	9736	100%
Co	10	4	31	68%	14	4	65	35%	25	23	26	75%
Ni	33	12	58	80%	37	10	64	80%	56	47	67	100%
Cu	56	23	183	100%	43	24	307	86%	119	115	138	100%
Zn	36	10	431	44%	53	16	119	25%	48	29	70	100%
Ga	69	41	109	80%	57	28	115	85%	53	50	55	100%
Ge	10	3	32	36%	8	1	41	23%	<DL	0	0	0%
Rb	17	10	31	32%	19	5	90	25%	<DL	0	0	0%
Sr	42	15	75	80%	50	20	249	64%	39	37	40	100%
Zr	66	17	152	100%	47	9	606	82%	17	17	30	75%
Sn	5	4	10	16%	5	2	14	15%	<DL	0	0	0%
Ba	158	60	341	48%	137	23	323	9%	<DL	0	0	0%
LREE	19	9	58	40%	55	17	233	38%	<DL	0	0	0%
Th	6	5	8	28%	13	5	103	19%	<DL	0	0	0%
U	16	8	38	48%	13	4	56	25%	<DL	0	0	0%

Table 2. Trace element concentrations in tourmaline veins, mineral aggregates, and detrital fragments measured by LA-ICP-MS.

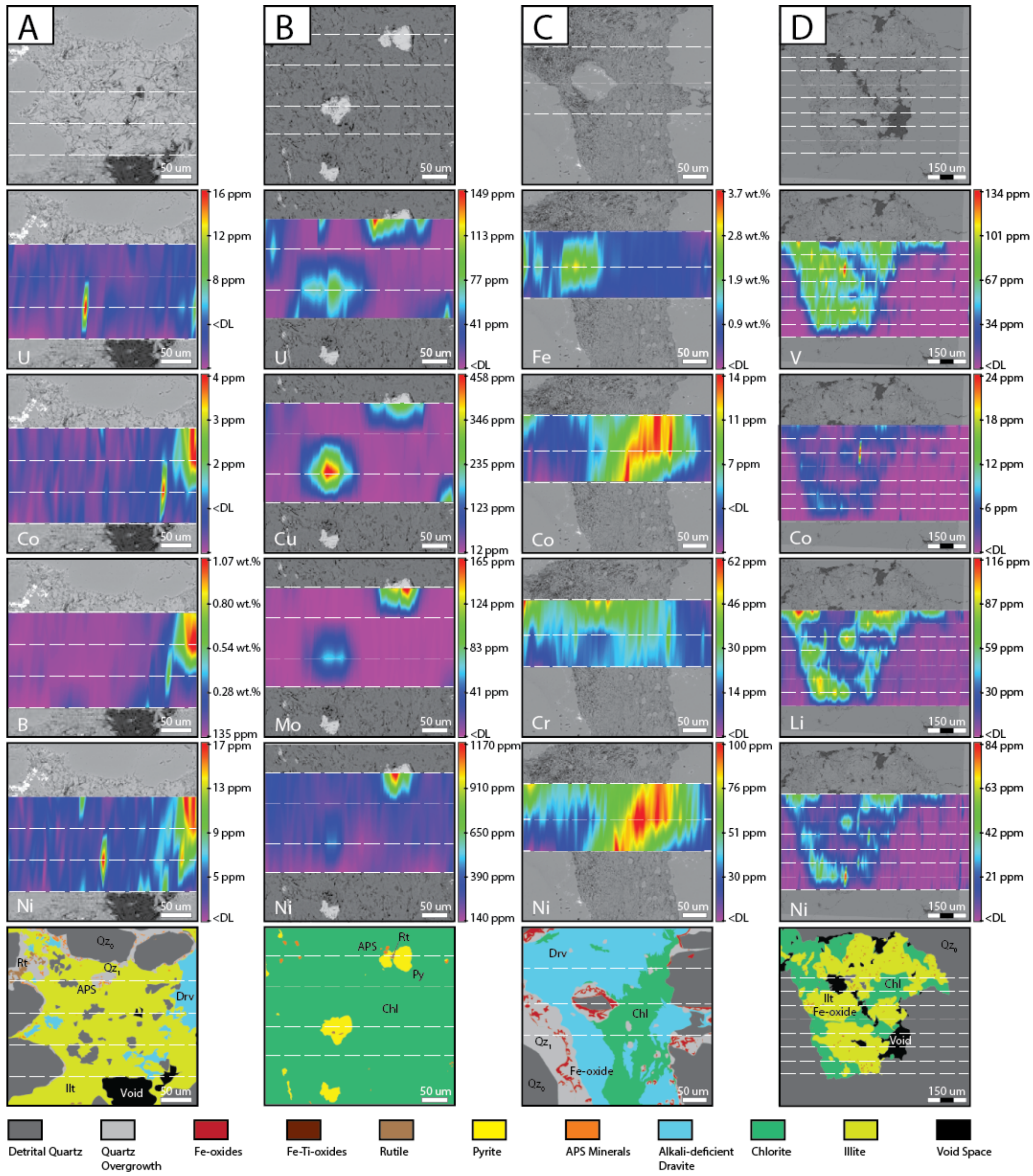

Figure 14. LA-ICP-MS elemental and interpretive maps of interstitial alteration mineral assemblages superimposed upon SEM-BSE images of polished thin sections. White dashed lines indicate the laser ablation tracks, running from left to right. A) Syntaxial alkali-deficient dravite vein from reactivated fracture zone proximal to mineralization in Zone 4 MFa; sample MAC-246-508.8. B) Pyrite and APS micro-inclusions hosting highly elevated

pathfinder trace element concentrations in late-pre-ore fracture-filling chlorite from Zone 4 MFa sample MAC-255-559. C) Late-pre-ore fracture-filling chlorite after alkali-deficient dravite and Fe-oxide micro-inclusion bearing quartz overgrowths from Gap Zone MFa sample MAC-208-572. D) Differential partitioning of trace elements between chlorite and illite from Southwest Distal Zone 4 MFa sample MC-336-570.5.

APS and Phosphate Minerals. APS minerals – particularly the more florencitic clusters proximal to the unconformity – contain highly elevated concentrations of U (22-526 ppm), and significant concentrations of Li, Ti, V, Cr, Mn, Cu, Zn, Ga, Ge, As, Y, Zr, Sn, and Ba, with Be close to detection limits (Fig. 13D). Early diagenetic apatite contains highly elevated concentrations of U (209-455 ppm), LREE (24-469 ppm) and HREE (27-135 ppm), and significant concentrations of Th, Li, V, Cr, Ga, As, Y, and Zr, with Ba, Cu, and Mo close to detection limits (Fig. 14A). Detrital monazites – both partially encased in quartz cement or supported by clay matrix, and partially altered by APS minerals – contain a wide variety of trace elements, including highly elevated concentrations of U (540 ppm – 1.02 wt.%), Th (0.58-28.63 wt.% ppm), LREE (258 ppm – 7.37 wt.%) and HREE (72-1630 ppm), and significant concentrations of Ba, As, Co, Ni, Cu, Cr, V, and Mn (Table 3, Fig. 14C, Fig. 14B).

Table 3

Trace element concentrations in APS minerals, altered detrital monazite, and early-diagenetic apatite measured by LA-ICP-MS

Mineral	APS Minerals			N=21	Monazite			N=6	Apatite			N=5
Element (ppm)	Med	Min	Max	%>DL	Med	Min	Max	%>DL	Med	Min	Max	%>DL
Li	45	26	297	86%	56	24	336	83%	38	31	74	100%
Be	21	8	144	81%	286	8	365	83%	<DL	<DL	<DL	0%
Sc	9	7	69	33%	228	69	687	100%	<DL	<DL	<DL	0%
Ti	727	76	3,744	62%	1,445	1,020	2,461	100%	207	168	251	100%
V	134	24	509	100%	305	42	456	100%	681	499	816	100%
Cr	112	21	285	100%	246	14	325	83%	38	28	62	100%
Mn	125	37	527	95%	640	238	1,052	67%	<DL	<DL	<DL	0%
Fe (wt.%)	1	0	10	100%	8	4	12	100%	1	1	3	100%
Co	21	6	57	43%	367	61	3,856	100%	21	21	21	20%
Ni	94	80	152	14%	398	150	1,822	100%	118	85	162	100%
Cu	163	30	754	100%	224	49	1,036	100%	31	28	48	80%
Zn	41	17	580	100%	162	44	305	100%	18	18	18	20%
Ga	735	320	1,718	100%	1,500	477	4,017	100%	44	28	45	60%
Ge	95	37	292	100%	192	51	741	100%	<DL	<DL	<DL	0%
As	1,977	732	18,861	100%	1,797	266	3,428	100%	53	33	95	100%
Rb	14	10	100	33%	<DL	<DL	<DL	0%	<DL	<DL	<DL	0%
Sr (wt.%)	12	1	14	100%	6	0	9	100%	0	0	0	100%
Y	193	59	556	100%	1,946	1,755	19,050	100%	670	662	851	100%
Zr	381	34	4,593	100%	25,910	5,643	90,090	100%	29	18	74	80%
Mo	<DL	<DL	<DL	0%	50	12	144	100%	17	13	21	100%
Sn	24	13	63	62%	<DL	<DL	<DL	0%	<DL	<DL	<DL	0%
Ba	5,217	397	10,659	100%	5,015	363	16,655	100%	29	22	88	60%
La	11,836	1,914	68,090	100%	34,627	23,823	72,309	100%	134	35	647	100%
Ce	28,637	8,054	69,841	100%	61,368	25,101	137,311	100%	333	164	1,021	100%
Pr	2,745	1,129	7,175	100%	5,611	2,091	16,659	100%	48	21	146	100%
Nd	9,222	3,589	33,566	100%	16,599	4,452	60,543	100%	229	96	592	100%
Sm	1,196	539	6,430	100%	1,988	270	10,488	100%	92	47	189	100%
Eu	155	44	364	100%	242	34	554	100%	22	15	39	100%
Gd	654	305	2,249	100%	1,215	426	8,714	100%	142	83	249	100%
Tb	59	26	170	86%	115	51	1,129	100%	28	20	41	100%
Dy	92	39	348	95%	460	318	5,500	100%	138	102	187	100%
Ho	28	13	51	33%	92	76	855	100%	29	27	39	100%
Er	35	10	60	81%	239	195	1,763	100%	79	68	92	100%
Tm	<DL	<DL	<DL	0%	72	52	162	50%	<DL	<DL	<DL	0%
Yb	17	13	46	19%	258	143	798	100%	70	49	72	100%
Lu	<DL	<DL	<DL	0%	54	37	84	50%	<DL	<DL	<DL	0%
Hf	43	9	125	62%	774	142	1,891	100%	<DL	<DL	<DL	0%
Th	1,151	73	5,647	100%	63,821	5,819	286,332	100%	422	157	545	100%
U	92	22	526	100%	3,702	540	10,179	100%	357	209	455	100%

Table 3. Trace element concentrations in APS minerals throughout the sandstone column, APS-altered monazite near the unconformity, and early diagenetic apatite supported by clay matrix near the unconformity, measured by LA-ICP-MS.

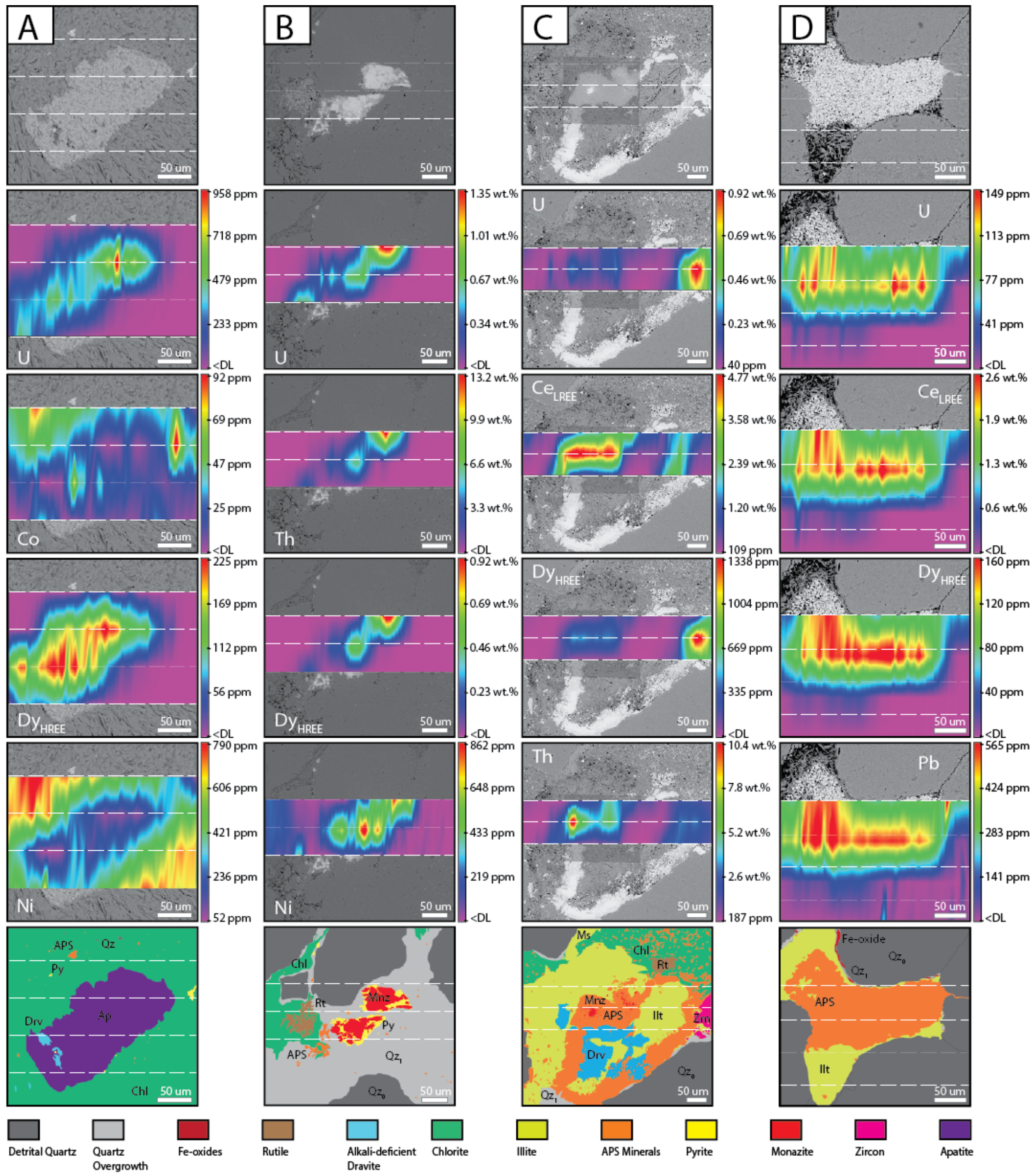

Figure 15. LA-ICP-MS elemental and interpretive maps of interstitial alteration mineral assemblages superimposed upon SEM-BSE images of polished thin sections. White dashed lines indicate the laser ablation tracks, running from left to right. A) Elevated concentrations of U and HREE in pre-ore apatite, surrounded by Ni-bearing chlorite and Co-bearing micro-inclusions in chlorite from Zone 4 MFa sample MAC-255-564.36. B)

Pyrite and APS replacing U-bearing monazite in silicified overgrowths adjacent to chlorite vein from Zone 4 MFa sample MAC-255-559. C) APS minerals replacing monazite adjacent to U- and HREE-bearing detrital zircon and chlorite replacing alkali-deficient dravite from Zone C MFa sample MC-413-603.83. D) Pseudocubic svanbergite APS minerals after illite filling interstitial void from Zone 4 MFb sample MAC-246-333.8.

Sulfide Minerals. Analysis of sulfide, arsenide and sulfarsenide minerals was restricted by the fine grain nature of the mineral grains. Analysis of pyrite grains >50 μm in diameter, from within aggregates of C2 chlorite, show highly elevated concentrations of Co (136-483 ppm) Ni (357-844 ppm), Cu (198-553 ppm), Mo (38-244 ppm), and As (316-1506 ppm), and significant concentrations of Ti, V, Cr, Tl, Th, and U, with Zn close to detection limits (Table 4). The SEM observation and LA-ICP-MS mapping of sulfide-bearing interstitial mineral assemblages demonstrates a strong spatial association between sulfide grains and cryptic U mineralization, particularly on the surfaces of drusy quartz veins (Fig. 5J).

Table 4

Trace element concentrations in pyrite, hematite, and rutile measured by LA-ICP-MS

Mineral		Pyrite		N=4		Hematite		N=13		Rutile		N=5
Element (ppm)	Med	Min	Max	%>DL	Med	Min	Max	%>DL	Med	Min	Max	%>DL
Li	139	15	300	100%	<DL	<DL	<DL	0%	0	0	0	0%
Be	10	8	13	75%	14	14	14	8%	0	0	0	0%
Sc	26	25	26	50%	<DL	<DL	<DL	0%	21	13	29	60%
Ti	51,234	1,913	193,404	100%	501	60	638	54%	584,280	584,280	584,280	100%
V	501	206	843	100%	49	35	217	77%	514	116	611	100%
Cr	225	176	249	100%	57	46	68	15%	862	72	1,659	100%
Mn	<DL	<DL	<DL	0%	87	72	102	15%	119	72	197	80%
Co	376	136	483	100%	4	4	31	54%	0	0	0	0%
Ni	790	357	844	100%	7	5	66	54%	0	0	0	0%
Cu	342	198	553	100%	17	10	245	85%	37	31	49	100%
Zn	43	30	47	75%	12	9	120	46%	31	29	36	100%
Ga	34	30	38	50%	6	6	6	31%	0	0	0	0%
Ge	<DL	<DL	<DL	0%	3	2	7	85%	0	0	0	0%
As	567	316	1,506	100%	36	11	400	92%	30	15	42	100%
Rb	<DL	<DL	<DL	0%	7	3	19	69%	0	0	0	0%
Sr	87	52	130	100%	22	12	44	54%	57	31	169	100%
Y	18	17	21	75%	13	12	13	15%	16	14	18	40%
Zr	182	62	230	100%	163	18	221	77%	238	129	380	100%
Nb	681	454	909	50%	<DL	0	0	0%	4,707	2,492	4,807	100%
Mo	101	38	224	100%	13	4	34	92%	14	13	14	60%
Sn	152	125	179	50%	<DL	0	0	0%	321	289	373	80%
Sb	17	16	18	50%	<DL	0	0	0%	311	133	467	80%
Ba	<DL	<DL	<DL	0%	88	17	149	46%	30	30	30	20%
LREE	21	18	24	50%	0	0	0	0%	<DL	<DL	<DL	60%
HREE	<DL	<DL	<DL	0%	<DL	<DL	<DL	0%	<DL	<DL	<DL	0%
Hf	<DL	<DL	<DL	0%	8	8	8	15%	16	14	18	60%
Ta	37	20	53	50%	<DL	<DL	<DL	0%	182	80	219	100%
W	267	229	305	50%	16	5	17	38%	271	37	322	100%
Tl	14	8	135	100%	<DL	<DL	<DL	0%	<DL	<DL	<DL	20%
Bi	32	27	36	50%	<DL	<DL	<DL	0%	<DL	<DL	<DL	0%
Th	69	37	230	100%	7	7	7	8%	28	16	90	100%
U	78	38	928	100%	15	6	1,116	77%	22	17	73	60%

Table 4. Trace element concentrations in pyrite, specular hematite, and bladed rutile measured by LA-ICP-MS.

Oxide and Hydroxide Minerals. Bladed rutile contains highly elevated concentrations of Nb (2492-4807 ppm) and Sn (289-373 ppm), and significant concentrations of V, Cr, Mn, Sb, W and Th with Cu and Zn close to detection limits (Table 4). Pore filling H4 hematite contains significant concentrations of V, As, and Zr, with Cu, Ge, and Mo close to detection limits. An aggregate of Fe-(Ti) oxyhydroxides in fracture-filling post-ore kaolinite was found to contain highly elevated concentrations of U (240-425 ppm) and V (1078-1566 ppm) (Fig. 14A). Post-ore H5 Fe-oxyhydroxide veins contain highly elevated concentrations of U (528-697 ppm) and As (594-639 ppm), and significant concentrations of V, Cr, Mn, Co, Ni, Cu, Mo, and Zr with Be close to detection limits (Table 5, Fig. 15C). A single post-ore H5 Mn-(Fe)-oxide vein was found to contain highly elevated concentrations of Cu (1931 ppm) and Tl (812 ppm), and significant concentrations of V and U (Fig. 15D).

Table 5

Trace element concentrations in Fe-Mn-Ti oxide and hydroxide veins measured by LA-ICP-MS

Mineral	Fe oxyhydroxide veins			N=3	Fe-(Ti) aggregates in kaolinite veins			N=3	Mn-(Fe) oxyhydroxide veins			N=1
Element (ppm)	Med	Min	Max	%>DL	Med	Min	Max	%>DL	Conc.	SD	LOD	%>DL
Li	<DL	<DL	<DL	0%	71	60	96	100%	9	14	14	100%
Be	16	14	18	100%	<DL	<DL	<DL	0%	<DL	<DL	12	0%
Sc	<DL	<DL	<DL	0%	15	13	16	100%	<DL	1	11	0%
Ti	53	50	68	100%	13,779	10,950	18,822	100%	<DL	1,412	100	0%
V	170	155	213	100%	1,132	1,078	1,566	100%	1,619	154	14	100%
Cr	28	17	49	100%	329	249	353	100%	<DL	29	5	0%
Mn	102	85	106	100%	103	71	115	100%	416,457	4	35	100%
Co	32	23	37	100%	13	12	14	67%	112	<DL	11	100%
Ni	65	43	82	100%	21	20	26	100%	76	3	14	100%
Cu	199	126	215	100%	205	169	225	100%	1,931	13	18	100%
Zn	132	125	160	100%	24	23	25	67%	212	3	20	100%
Ga	<DL	<DL	<DL	0%	26	25	26	100%	20	3	16	100%
As	629	594	639	100%	116	75	146	100%	161	6	2	100%
Sr	<DL	<DL	<DL	0%	<DL	<DL	<DL	0%	119	<DL	29	100%
Y	<DL	<DL	<DL	0%	35	29	44	100%	116	2	14	100%
Zr	73	42	135	100%	905	745	1,237	100%	24	44	10	100%
Nb	<DL	<DL	<DL	0%	57	34	62	100%	<DL	6	8	0%
Mo	34	24	36	100%	42	32	65	100%	145	4	11	100%
Sn	<DL	<DL	<DL	0%	23	16	24	100%	<DL	1	7	0%
Ba	18	14	41	100%	<DL	<DL	<DL	0%	68,943	<DL	16	100%
LREE	0	0	0	0%	14	14	14	33%	103	<DL	14	100%
HREE	0	0	0	0%	0	0	0	0%	97	<DL	14	100%
Hf	<DL	<DL	<DL	0%	27	22	33	100%	<DL	2	7	0%
W	<DL	<DL	<DL	0%	51	39	62	100%	<DL	5	10	0%
Th	<DL	<DL	<DL	0%	13	10	15	100%	<DL	1	7	0%
U	540	528	697	100%	330	240	425	100%	72	22	11	100%

Table 5. Trace element concentrations in paragenetically-late oxide and oxyhydroxide veins measured by LA-ICP-MS.

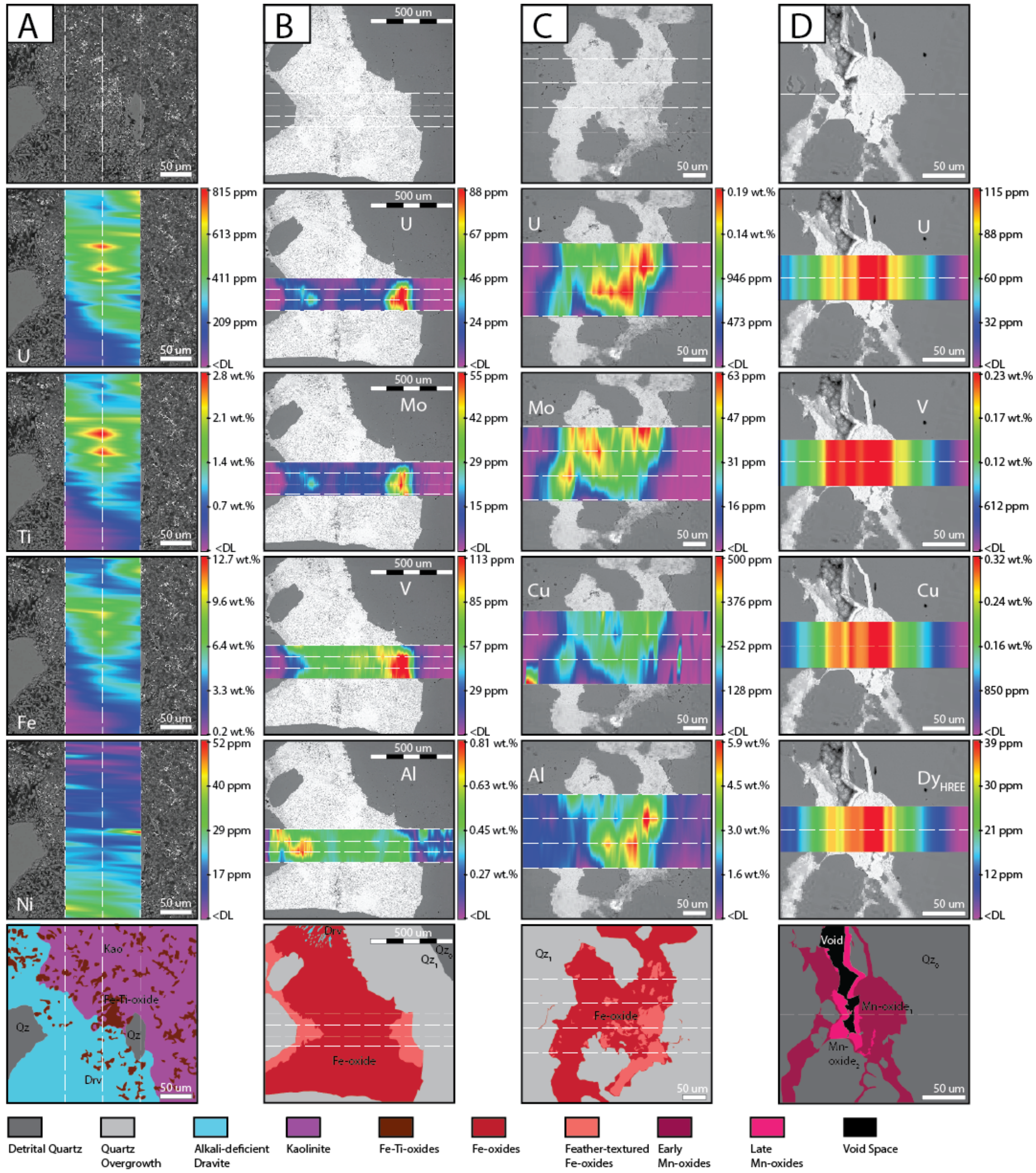

Figure 16. LA-ICP-MS elemental and interpretive maps of interstitial alteration mineral assemblages superimposed upon SEM-BSE images of polished thin sections. White dashed lines indicate the laser ablation tracks, running from left to right, except for figure A) which runs from top to bottom. A) Elevated concentrations of U associated with cryptic Fe-Ti-oxides in late, fracture-filling kaolinite from Zone 4 MFa sample MAC-246-508.8. B)

Massive, post-alkali-deficient dravite, post-euhedral quartz overgrowths, pore-filling hematite. Elevated concentrations of V, Mo and U occur in association with feather-textured hematite along interstitial margins. Zone C MFa sample MC-413-623.78. C) Late-post-ore Fe-oxide vein containing highly elevated concentrations of U, Mo and Cu in association with feather-textured Fe-oxides from Southwest Zone MFa sample MC-336-564. D) Reactivated Mn-oxide vein containing elevated concentrations of U and HREE, and highly elevated concentrations of V and Cu from Zone C MFc sample MC-415-197.

2.6 Discussion

2.6.1 Refined paragenesis

Early diagenetic fluorapatite in basal sandstones: Petrographic examination of polished thin suggest that euhedral apatite formed during early diagenesis in the basal MFa conglomerates. Apatite crystals occur as tabular, 300 μm euhedra with hematite rims and are encased in up to 10 μm-thick apatite overgrowths. The euhedral habit suggests that apatite was not deposited contemporaneous to the much larger detrital quartz grains, and the early hematite dustings, combined with the apatite overgrowths is evidence of the paragenetic timing.

Evidence for two generations of hydrothermal tourmaline: Petrographic and mineral chemical evidence suggest that at least two generations of hydrothermal tourmaline veins crosscut the altered sandstones. The C_2 chlorite is often observed corroding earlier T_1 alkali-deficient dravite in the lower sandstones (Fig. 4H); however, rare examples show C_2 chlorite being crosscut by T_2 alkali-deficient dravite veinlets (Fig. 4I). Chemical analysis suggests that two populations of tourmaline veins can be distinguished primarily on the basis of V, and also on the basis of Cu, and Sr content (Fig. 11B, Fig.11D). The trace element chemistry of interstitial T_1 alkali-deficient dravite is similar to that of T_1 alkali-deficient dravite veins, with slight increases in Sr, LREE, Cu, and Ti likely attributable to cryptic APS and oxide mineral and inclusions in sparsely packed interstitial aggregates (Fig. 11A, Fig. 11C). Low-V T_1 tourmaline veins generally contain less than 500 ppm V, whereas a high-V population of tourmaline veins contains between 500-3400 ppm V. LA-ICP-MS mapping of high-V tourmaline sample MAC-246-508.8 from the MFa of Zone 4, proximal to mineralization, show that the highest concentrations of V occur in the center of the reactivated syntaxial alkali-deficient dravite vein (Fig. 12A). This would suggest that the high-V tourmaline population corresponds to late pre-ore T_2 alkali-deficient dravite. The paragenetic timing of T_2 tourmaline suggests that it precipitated from ore forming fluids. High-V tourmaline veins were also found in the MFd from the Southwest Distal Zone in sample MC-344-100.1, which suggests that primary dispersion of V, Sr, and Cu in alkali-deficient dravite can be detected at distances over 400 m above the unconformity, and several thousand meters along strike from the ore zones.

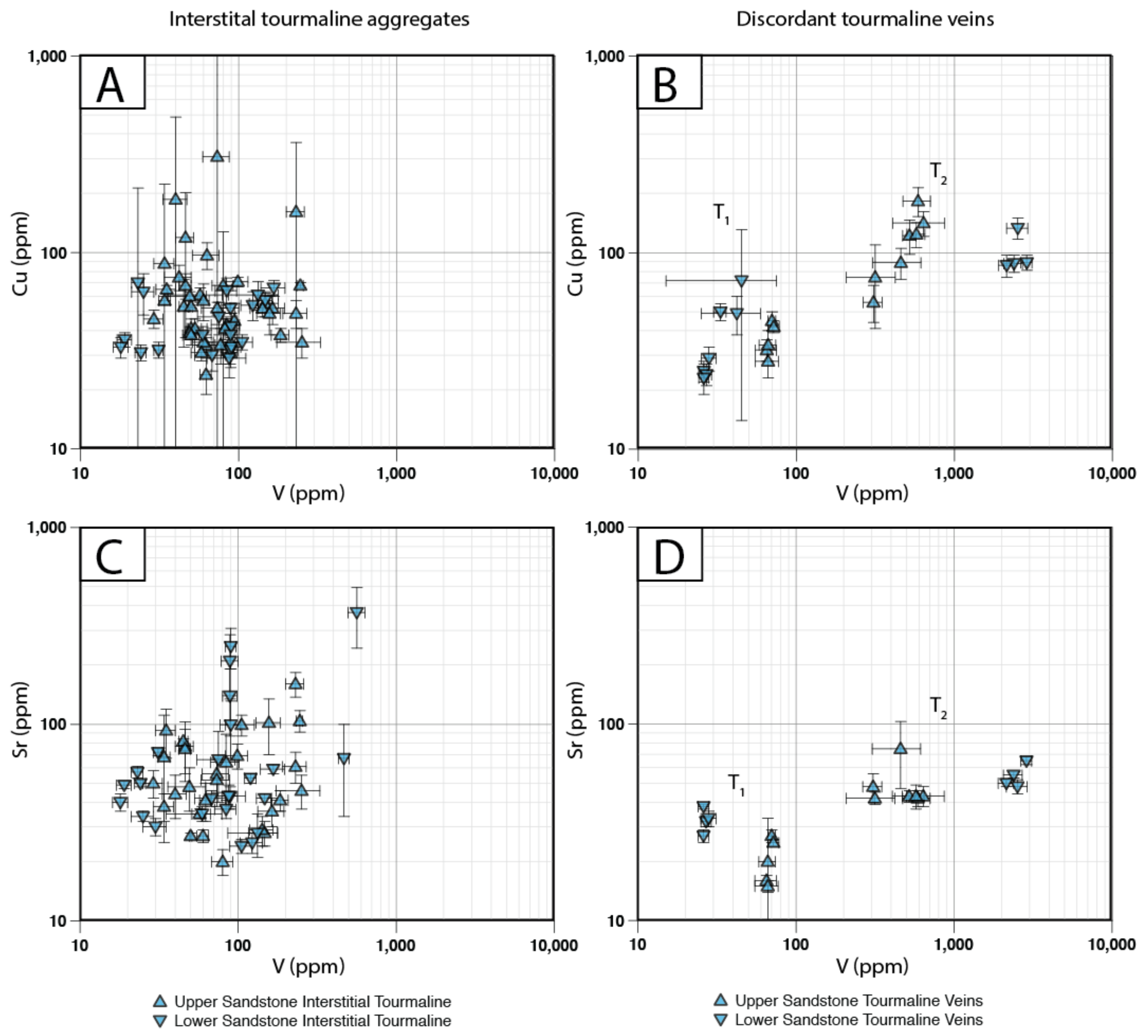

Figure 17. Comparison between trace element concentrations in interstitial and vein-hosted alkali-deficient dravite from the McArthur River sandstones. Two distinct populations of interstitial alkali-deficient dravite veins are inferred on the basis of differences in V, Cu, and Sr contents, and supported by petrographic evidence. T1 veins have chemistry similar to interstitial alkali-deficient dravites. The greater variance and positive concentration bias observed in interstitial tourmaline chemistry relative to T1 veins may be caused by cryptic APS mineral, oxide, and sulfide micro-inclusions amongst sparse tourmaline aggregates that are occasionally observed under SEM. A) V vs. Cu in interstitial tourmaline

aggregates. B) V vs. Cu in discordant tourmaline veins. C) V vs. Sr in interstitial tourmaline aggregates. D) V vs. Sr in discordant tourmaline veins.

Chemical distinction between early- and late-pre-ore chlorite: Two distinct populations of chlorite can also be distinguished based on their trace element chemistry. The C_2 chlorite contains higher concentrations of Ni and Li. Although C_1 chlorite is largely altered to illite-sudoite-smectite, the concentrations of Ni and Li relative to Mg are less than those concentrations in C_2 chlorite. Lithium concentrations are comparable in C_1 chlorite and I_1 muscovite, and slightly elevated relative to alkali-deficient dravite. It is therefore inferred that sandstones altered by C_2 chlorite can be identified by lithogeochemical analysis on the basis of Li:Al,Mg,K molar ratios in addition to the Mg,K:Al molar ratios commonly used to discriminated between kaolin, illite and chlorite or dravite alteration (e.g.: Sopuck et al., 1983).

Illite textural variability: Previous studies at Shea Creek distinguish between regional diagenetic cis-vacant 1Mc illite and authigenic hydrothermal trans-vacant 1Mt hydrothermal illite, which have similar chemical composition but different crystal textures and structures (Kister et al., 2006; Laverret et al., 2006). At Shea Creek, 1Mc illite is coarser grained and platy, whereas 1Mt illite is more fine-grained and wispy (Laverret et al., 2006). Although a range of illite textures were observed, petrographic examination of illite in the sandstones at McArthur River did not reveal any clear textural variations that corresponded with proximity to the deposit, or to the unconformity. However, during the preparation of polished thin sections, significant plucking of fine-grained interstitial minerals occurred, and may have obscured such fine-grained textural relationships as wispy 1Mt illite overgrowths on platy diagenetic-hydrothermal illite.

2.6.2 APS Mineral Evolution and Basis for Normative Estimations

The occurrence of APS minerals intergrown with a variety of mineral assemblages suggests that APS minerals record continuous episodes of dissolution and re-precipitation throughout the evolution of the basin (Quirt et al., 1991). APS minerals have been demonstrated to be useful in the identification of fluid alteration footprints, and occur in spatial association to both uranium deposits and barren alteration systems in the Athabasca Basin (Quirt et al., 1991; Gaboreau et al., 2007; Cloutier et al., 2009; Adlakha and Hattori, 2015). Early hydrothermal florencitic overgrowths have been documented in proximity to alteration systems (Cloutier et al., 2009; Adlakha and Hattori, 2015). Euhedral overgrowths on anhedral APS minerals are common in the McArthur River sandstones especially where APS minerals have grown to over 5 μm in diameter (Fig. 5D), yet no significant differences in APS mineral chemistry were observed between aggregates containing APS mineral overgrowths and aggregates without overgrowths. Florencitic APS minerals occur in the lower sandstones, along fracture networks associated with chlorite, and proximal to the unconformity. SEM-EDS analysis of APS mineral grains suggests that APS minerals are often cored by Th-rich inclusions. The partial replacement of detrital Th-monazite grains by APS minerals, as observed in sample MC-413-603.83, supports the findings of Mwenifumbo et al. (2007), which suggest that the large interstitial aggregates of APS minerals and elevated concentrations of Th in the MFb unit are inherited from the breakdown of detrital phosphate minerals. Similarly, elevated concentrations of REE and U in APS minerals are likely to be partially attributable to detrital phosphate minerals.

Normative abundances of APS mineral were estimated using a combination of elemental factors to account for the local variability observed in Sr-LREE APS mineral chemistry. Given that the

Sr and LREE concentrations attributed to illite, chlorite and alkali-deficient dravite in LA-ICP-MS microanalysis were commonly below LOD, all Sr and LREE in whole rock analyses were assumed to be attributable to APS minerals. A linear (A-site substitution) relationship between Sr and LREE in the APS mineral analyzed by EPMA was quantified (R^2 = 0.81) (Fig. 13). Assuming that the sum of Sr and LREE concentrations in APS minerals is normally distributed about the mean (15.6 wt. % Sr + LREE), the quotient of total Sr + LREE observed in whole rock lithogeochemistry and the fraction of Sr + LREE in APS minerals provides an estimate to the normative mass abundance of APS minerals in the sample (Equation 1).

$$APS_{Norm\%} = \left[\frac{\Sigma(Sr,LREE)wt.\%_{WR}}{(\Sigma(Sr,LREE)wt.\%_{APS})} \times 100\right] \quad (1)$$

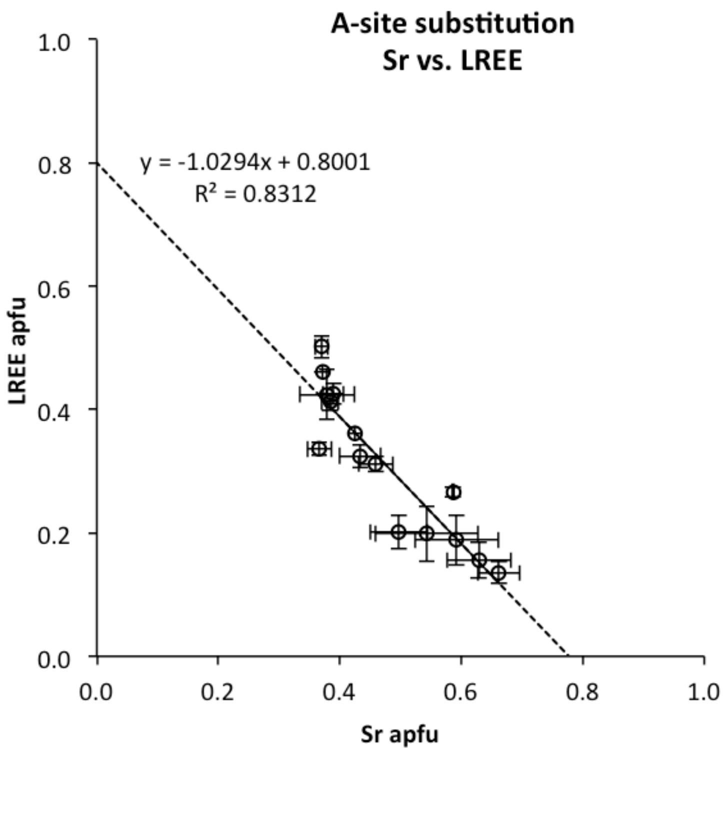

Figure 18. A-site substitution between Sr and LREE in APS minerals in solid solution between svanbergite-goyazite and florencite in the McArthur River sandstones.

Concentrations of P and S were not used in the normative calculation because P occurs in other phosphate minerals including apatite and monazite, and S occurs in sulfide minerals, all of which were observed in variable trace abundances in the altered sandstones. Although LREEs occur in other phosphate minerals and sulfides as well as in APS minerals, APS minerals are generally far more abundant in the McArthur River sandstones.

2.6.3 Mineralogical Sources of Trace Elements

Mineral abundance estimates used a combination of normative calculations to determine the total non-quartz mineral fraction, and the relative mineral proportions derived from SWIR spectral analysis. In determining the concentrations of pathfinder elements attributable to APS minerals, only normative estimates were used. Imperfect agreement between SWIR and normative estimates of alteration mineralogy is likely caused by a combination of factors. Hematite alteration causes significant absorption of incident light, and reduces the spectral resolution on the absorption peaks of other alteration minerals, which impairs the accuracy of spectral estimates. Additionally, the lack of control on the speciation of Fe may result in normative overestimation of chlorite in strongly hematitic samples. All boron was attributed to alkali-deficient dravite in normative calculations, however, B may reside in both trigonal coordination within tourmalines, and in tetrahedral coordination, substituting for Si in phyllosilicates (Kope et al, 2016; Kandasamy, 2015; Williams et al., 2001). Boron mapping of interstitial aggregates supports the hypothesis that a portion of the B observed in whole rock lithogeochemistry resides in phyllosilicate structures (Fig. 12B), and suggests that normative calculations may overestimate the proportions of alkali-deficient dravite. Similarly, with respect to K, no normative or spectral distinction was made between detrital muscovite and hydrothermal-diagenetic illite. Spot measurements on sample offcuts are only representative of the sample to degree that the alteration mineralogy is evenly distributed throughout the sample volume. Significant bedding control on alteration mineral speciation was observed, and can be attributed to the relative permeability of the strata and the distribution of detrital components. Silicified cross-beds are more likely to contain dickite, whereas planar beds within the same samples are more likely to have been altered to illite; coarse beds and heavy mineral bands are more likely to have contained detrital phosphate minerals that were subsequently altered to APS mineral aggregates. The trace concentrations of Sr and LREE in tourmaline and LREE concentrations in early diagenetic apatite, detrital phosphates and zircon may have resulted in local overestimation of normative APS mineral abundances.

The concentrations of pathfinder trace elements in total digestion analyses were compared with the concentrations of pathfinder trace elements attributed to alteration minerals in the same sample where mineral chemical data and normative estimates were available. Concentrations were attributed to individual minerals by normalizing elemental concentrations to the abundance of the targeted mineral in each sample, such that $X_{ij} = \left(Y_{ij} \times Z_{ij}\right)$ where X is the concentration of element i attributed to mineral j, Y is the estimated abundance of mineral j, and Z is the concentration of element i in mineral j, as determined by LA-ICP-MS. Fig. 16 and Fig. 17 display these comparisons in log-log binary plots. Data points represent individual LA-ICP-MS analyses of monomineralic interstitial aggregates of alkali-deficient dravite, chlorite, illite, or APS minerals. Due to the nature of the interstitial assemblages, analyses of multiple mineral phases could seldom be performed on the same sample. It was therefore not possible to obtain reliable sums for the concentrations of trace elements across all mineral phases in a sample. Rather, this form of analysis is useful in assessing the degree to which trace elements can be accounted for by an individual mineral phase in a particular sample. Where mineral-specific data points plot along the 1:1 line, the element in question is considered to be fully accounted for in that mineral in that sample, as in the case of Ni in certain chlorite samples (Fig. 16); where it plots below the 1:1 line, it is considered to be only partially accounted for, as in the case of V (Fig. 16). In rare cases where data plots above the 1:1 line, the element in question is over-accounted for in the mineral in the sample, which would suggest that the element resides in unevenly-distributed microinclusions within the mineral aggregate, as in the case of Cu (Fig. 16).

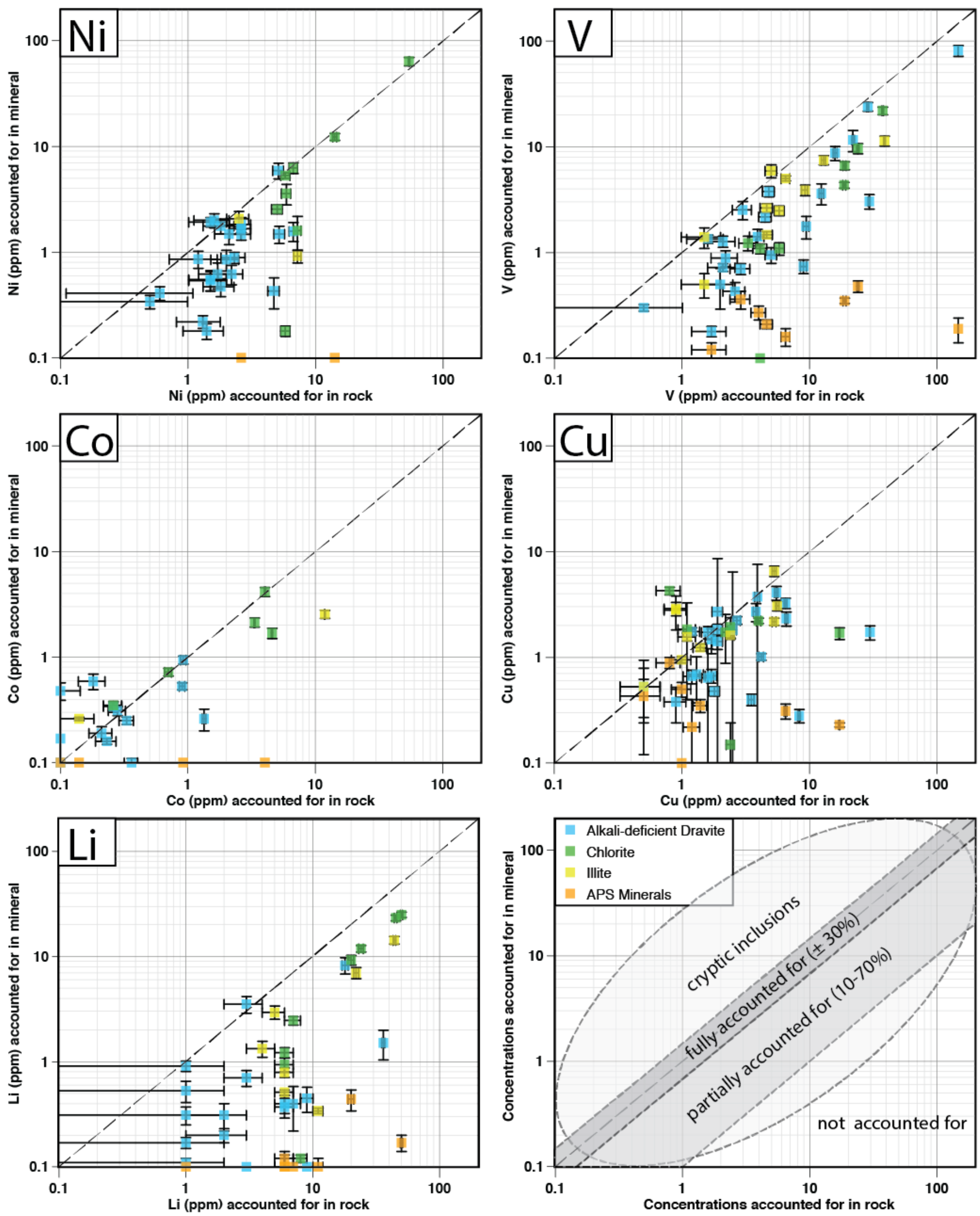

Figure 19. Comparison between pathfinder trace element concentrations measured in total digestion and the concentrations of pathfinder elements attributed to alkali-deficient

dravite, chlorite, illite-muscovite, and APS minerals from LA-ICP-MS analysis. Vertical error bars represent 1-σ of averages for the ablation lines in each sample. Horizontal error bars represent the average 1-σ on duplicate standard reference materials in lithogeochemical analyses.

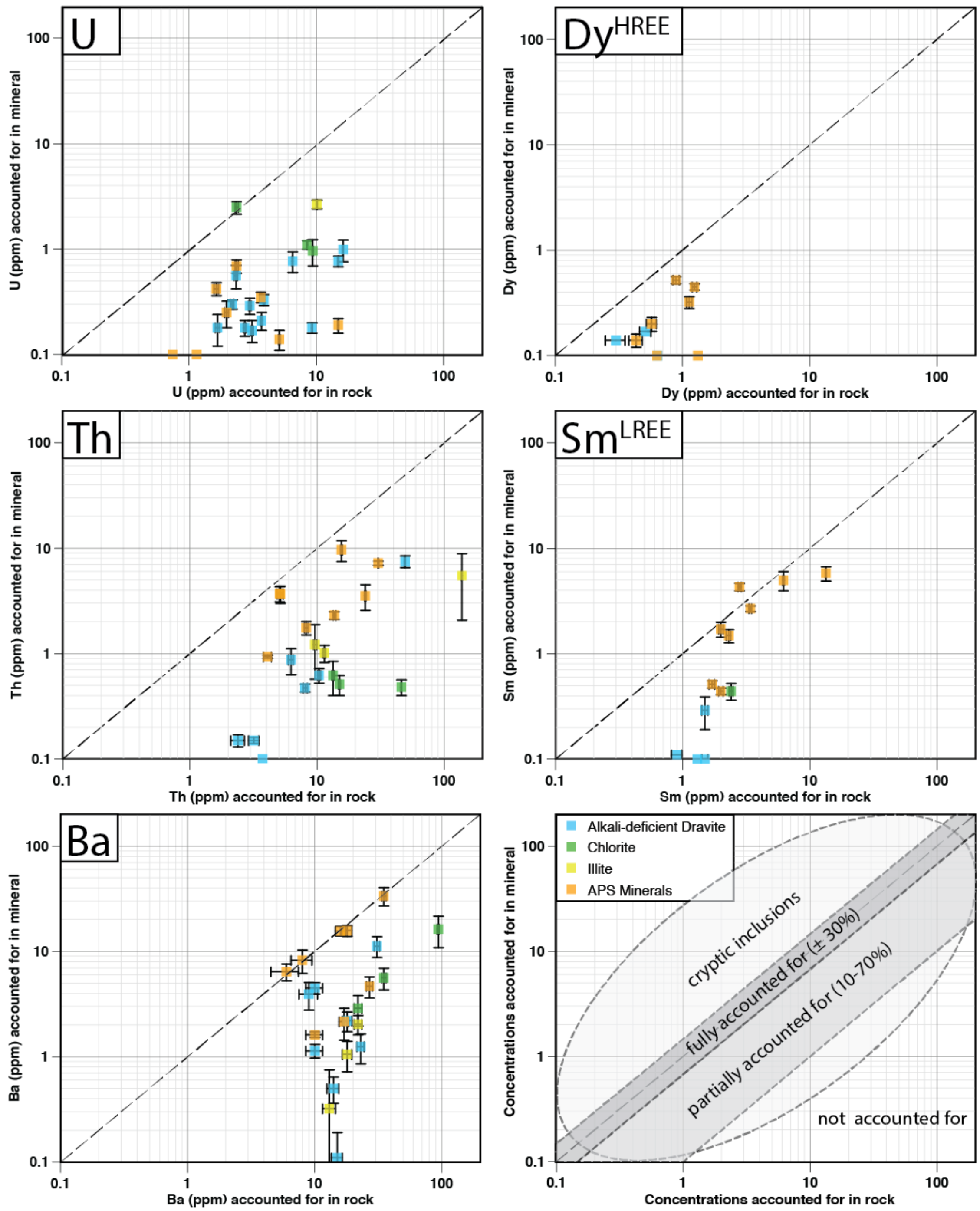

Figure 20. Comparison between pathfinder trace element concentrations measured in total digestion and the concentrations of pathfinder elements attributed to alkali-deficient dravite, chlorite, illite-muscovite, and APS minerals from LA-ICP-MS analysis. Vertical

error bars represent 1-σ of averages for the ablation lines in each sample. Horizontal error bars represent the average 1-σ on duplicate standard reference materials in lithogeochemical analyses.

Nickel. Altered sandstones from this study contain between 0.2-54.1 ppm Ni; sandstones containing highly elevated concentrations of Ni (>10 ppm) often contain significant chlorite (Fig. 22). The association between elevated concentrations of Ni and chlorite is supported by inventory calculations that suggest that a significant portion of Ni can be accounted for in C_2 chlorite, either in the silicate structure, or in cryptic micro-inclusions within chlorite aggregates (Fig. 16). At low concentrations in whole rock, however, significant portions of Ni in sandstone samples can be attributed to alkali-deficient dravite. Samples containing drusy quartz veins, particularly in the lower sandstones, often also contain elevated concentrations of Ni, which are likely accounted for by Fe-Ni sulfide minerals observed under SEM analysis.

Cobalt, Copper, Zinc, and Arsenic. Fine-grained Fe-Cu-Ni-Co-Zn-As sulfide minerals were often observed in association with chlorite, APS minerals, altered phosphates, and drusy quartz, but occasionally also with alkali-deficient dravite and illite. It is therefore likely that similar mineral occurrences are responsible for the cryptic inclusions of these elements often observed in LA-ICP-MS trace element maps of interstitial assemblages, and could explain why these elements are not fully accounted for in the primary alteration minerals presented in this study (Fig. 16). Nickel, Co, As and S are positively correlated with each other and with normative chlorite abundance, consistent with significant concentrations of pathfinder trace metals reside in cryptic sulfide and arsenide inclusions within chlorite aggregates (Fig. 18).

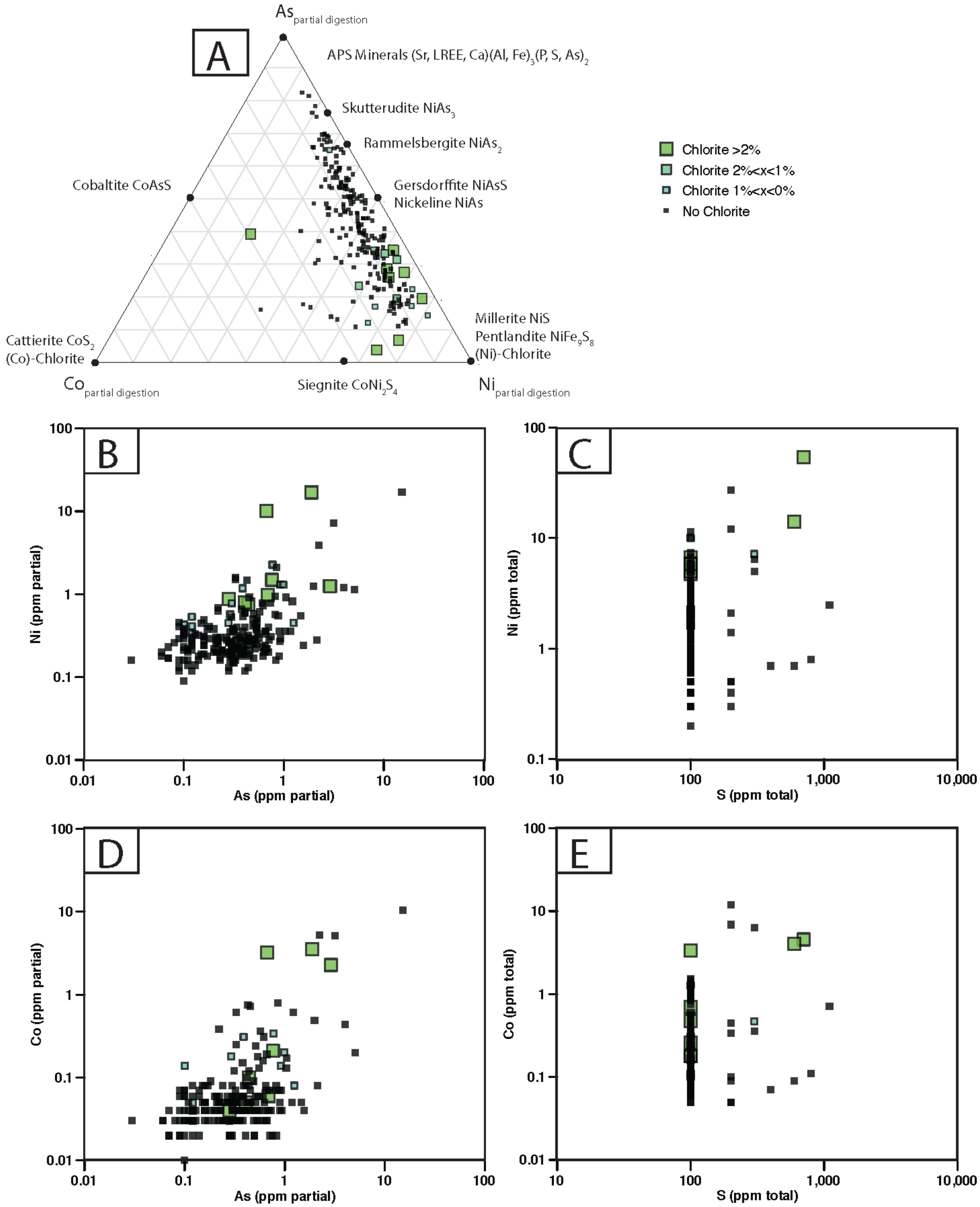

Figure 21. Ternary diagrams and scatter plots of Ni-Co-As-S partial and total lithogeochemical data from the McArthur River sandstones. SWIR-normalized total clay

abundances from whole rock lithogeochemical normative calculations show the relationships between Ni-Co-As-S and chlorite. Partial digestion data was used because total As was not analyzed. S was analyzed by LECO. A) As-Ni-Co molar ternary diagram. B) As-Ni partial digestion binary plot. C) S-Ni total digestion binary plot D) As-Co partial digestion binary plot. E) S-Co total digestion binary plot.

Rare Earth Elements. APS, apatite, detrital monazite and detrital zircons all contain significant concentrations of rare earth elements (Fig. 19). The LREE-enriched REE patterns commonly observed in the sandstones are predominantly controlled by the REE ratios in APS minerals, with some contribution from detrital zircons. No other REE-bearing mineral phases were observed in abundances sufficient to significantly contribute to the overall REE patterns in average host rocks; however, elevated HREE concentrations were observed in early diagenetic apatite and altered detrital monazite. A late-stage Mn-oxide fracture also contained significant concentrations of HREE, which would suggest that HREE are mobile in the system and have been redistributed by secondary dispersive processes. Although HREE-enrichment may be related to mineralization, detrital and early diagenetic minerals – particularly in the coarser-grained lower sandstones – can generate false anomalies in whole rock lithogeochemical analyses.

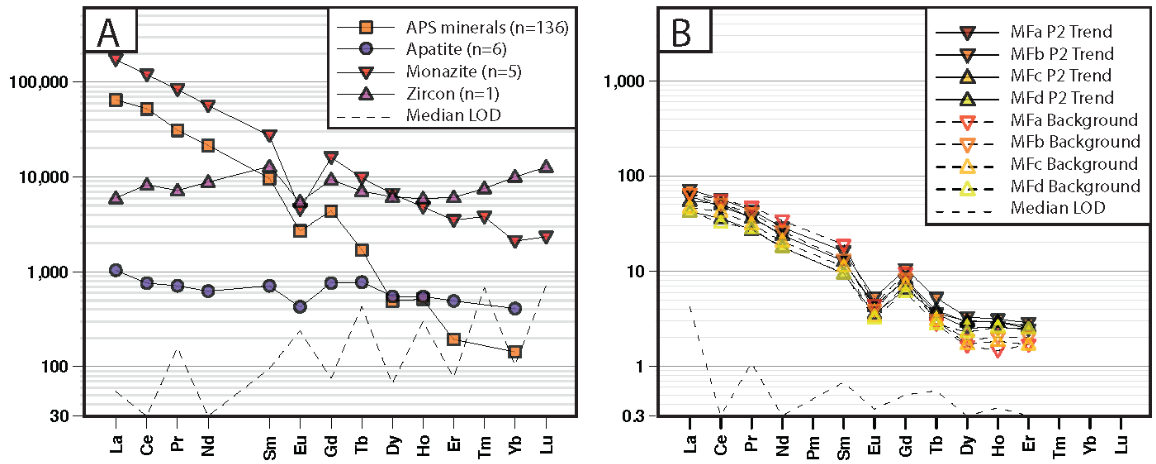

Figure 22. C1 Chondrite-normalized spider diagrams (McDonough & Sun, 1995). A) Median REE concentrations in APS minerals, apatite, APS-altered monazite, and detrital zircon from LA-ICP-MS. B) Median REE concentrations in Manitou Falls Formation sandstones from total digestion.

Vanadium. Altered sandstones from this study contain between 0.5-147 ppm V. The highest concentrations of V were measured in alkali-deficient dravite veins (up to 2867 ppm), Fe(Ti)-oxyhydroxide aggregates in late-stage kaolinite crosscutting a high-V alkali-deficient dravite vein (up to 1566 ppm), and bladed interstitial Ti-oxides (up to 1019 ppm). Significant concentrations of V were also measured in phyllosilicate, tourmaline, APS, phosphate, oxide and hydroxide minerals. In most cases, V concentrations cannot be fully accounted for by a single mineral phase in a sample (Fig. 15), which would suggest that significant V was remobilized in the later stages of the system. Primary dispersive processes are likely responsible for the V concentrations observed in late-hydrothermal (T_2) alkali-deficient dravite veins (Fig. 12A), which account for the majority of V observed in those samples (Fig. 11). Elevated concentrations of V in detrital and early diagenetic Ti-oxides suggest that locally significant V concentrations in whole rock analyses are either products of secondary dispersion, or in fact not related to the hydrothermal system.

Uranium. Altered sandstones from this study contain between 0.59-124 ppm U. The highest concentrations of U were measured in APS-altered detrital monazite grains (up to 1.02 wt.%) (Fig. 13), pyrite (<928 ppm), late-stage Fe-oxyhydroxide veins (up to 697 ppm), and Fe(Ti)-oxyhydroxide aggregates in late-stage kaolinite crosscutting a high-V alkali-deficient dravite vein (up to 425 ppm) (Fig. 14). Cryptic disseminations of U-oxide are commonly observed in association with pyrite (S_1), particularly along the surfaces of drusy quartz veins. The spatial association between pyrite and U-oxide suggests that oxidized fluids carrying remobilized U along fracture networks reacted with sulfides and precipitated U-oxides as cryptic disseminations on fracture surfaces. Highly elevated concentrations of U observed in association with Fe- and Ti-oxides and hydroxides are supported by previous studies that demonstrate the effectiveness of uranyl ion adsorption onto the surfaces of Fe- and Ti-oxides and hydroxides at pH ranges above 5 (Lefevre et al., 2008; Lieser and Thybusch, 1988; Hsi and Langmuir, 1985). Similarly, the observation that U concentrations were greater in oxides with high surface area to volume ratios than in specular hematite (Fig. 15) is consistent with previous studies that generally show a negative correlation between sorption efficiency and oxide crystallinity (Hsi and Langmuir, 1985). Furthermore, Hsi and Langmuir (1985) suggest that in low temperature oxidizing environments similar to the McArthur River sandstones, sorption is generally a more important control on uranium mobility than uranium mineral precipitation.

2.7 Conclusions

Pathfinder trace element concentrations in lithogeochemical datasets cannot be accurately interpreted without petrographic and mineralogical context. Given that the sandstones in the Athabasca Group are comprised of approximately 80-98 wt.% quartz, and that the chemical signature of the hydrothermal system resides in the interstitial assemblages, even minor variations in the total quartz content of a sample have significant implications on the lithogeochemical expression. When coupled with trace element analysis of the host rock mineralogy, major and minor element ratios from whole rock lithogeochemistry are useful in distinguishing between primary dispersion, secondary dispersion, and background anomalies related to detrital and early diagenetic minerals.

Trace element mapping of entire interstitial mineral aggregates by LA-ICP-MS is particularly useful in determining where trace elements are located in the mineralogy of a sample. However, trace element analysis of alteration minerals in the footprint to unconformity related uranium deposits is limited by the distribution of the alteration minerals, their fine grain sizes, the scarcity of inclusion-free, monomineralic crystal aggregates, and the unavailability of matrix-matched standard reference materials.

Detrital zircon and monazite, and early-diagenetic apatite likely control the background concentrations of U, and to a lesser extent Th, and HREE, in the sandstones. Diagenetic APS mineral replacement of detrital phosphate minerals, and hydrothermal neoformation of APS minerals largely accounts for the concentrations of Ba and LREE, and to a lesser extent Th, in the sandstones. The primary dispersion of Ni is largely controlled by the abundance of C_2 chlorite and associated sulfide mineral inclusions when Ni is present at elevated concentrations in whole rock analyses. Similarly, at lower concentrations in whole rock analyses, Ni is largely accounted for in alkali-deficient dravite. Co, Cu, Zn and As are strongly associated with sulfide micro-inclusions in the clay matrix that are likely the product of both primary and secondary dispersion of elements from the hydrothermal system and resulting mineralization. The primary dispersion of V can be fully accounted for in a small population of T_2 alkali-deficient dravite veins, however, elevated concentrations of V in detrital and early diagenetic Ti-oxides suggest that locally significant V concentrations in whole rock analyses are either products of secondary dispersion, or are detrital in origin. In the deposit footprint, U can rarely be accounted for within a single mineral phase in a sandstone sample and appears to be dominantly controlled by secondary dispersion processes.

Given the significant variability in pathfinder trace element concentrations within alteration mineral species, and the variety of alteration minerals that appear to host significant concentrations of pathfinder trace elements, our study suggests that the distribution of pathfinder trace elements in the deposit footprint appears to be less related to the primary dispersion of alteration minerals from the hydrothermal system than to the secondary dispersion of elements post-mineralization. In turn, the secondary dispersion of pathfinder trace elements appears to be controlled by the adsorption capacity of mineral aggregates, the availability of reducing agents (particularly Fe^{2+}), and to the horizontal and vertical permeability of the sandstones.

Chapter 3

General Discussion on the Limitations of Chosen Analytical Methods, and Summary of Significant Contributions

3.1 General Discussion

Drill core samples were selected on the basis of macroscopic characteristics, including lithofacies and colour, in an effort to collect a representative sample suite from the sandstones in the deposit footprint. Similarly, thin section blocks were cut from the samples in accordance to the same guidelines, before any assessment was made of the interstitial mineralogy. The resulting sample suite was therefore representative of the system as a whole, but of limited use in the study of individual mineral populations, particularly in the case of minerals such as chlorite and apatite that occur in low abundance in the system. Additionally, the general lack of veined and fractured samples limited the utility of the sample suite to characterize the mineralogy of veins, which appear to be major conduits for the dispersion of pathfinder elements in the deposit footprint.

Given the exploratory nature of this study in constructing an inventory of trace elements across a range of interstitial mineral assemblages, up to 80 mass numbers were measured in sequence using a Thermo X Series II quadrupole ICP-MS. Spot size, laser ablation scroll rate, and beam intensity had to be optimized to prevent the beam from cutting through the thin section, and trade offs were made with respect to targeting precision and detection limits. Due to the fine grained nature of the alteration mineralogy, and the cryptic occurrence of most pathfinder trace elements, some questions regarding the residence sites of trace elements could not be answered with the chosen operating parameters. At 50 µm spot size, and a median detection limits of <20 ppm, no distinction could be made between adsorption of trace elements on mineral surfaces and their incorporation within crystal structures. Similarly, Pb concentrations could not be determined quantitatively due to the extreme variability in relative isotope abundances relative to the standard reference materials used to quantify them, the low concentrations of Pb in the targeted mineral samples, and the short duration of laser ablation relative to the time require for isotopic ratios to stabilize. However, elevated signal responses to radiogenic Pb isotopes were observed in a variety of mineral species, particularly in the samples located proximal to the unconformity, which would suggest that radiogenic Pb is highly mobile throughout the system. Further work on Pb isotopes using a high-resolution LA-ICP-MS would likely yield useable results.

The focus of the study was the characterization of chlorite, alkali-deficient dravite, illite and APS minerals; only limited attempts were made to explore the trace element inventories of oxide minerals, other phosphate minerals, and detrital phases. No attempt was made to characterize the mineral speciation of Fe-, Ti-, and Mn-oxides and hydroxides. Some ambiguity is therefore inherent in the interpretation of oxide mineral trace element data. It was however observed that coarse, bladed specular hematite generally appeared reddish-purple in core photos, whereas hematite dusting on detrital grains produced pinkish hues, and ultra-fine grained hematite in microcrystalline quartz appeared reddish-orange. Kaolin minerals were generally not targeted for analysis and are therefore not included in the discussion of trace element distributions. Given the sorptive capacity of clay minerals and oxides demonstrated by Langmuir (1978), Bradl (2004) and others, this may represent a future opportunity for understanding the late-stage remobilization of elements throughout the deposit footprint.

3.2 Significant Contributions

- The refined paragenesis for McArthur River includes the occurrence of early diagenetic apatite in the basal sandstones, the occurrence of rare, late-pre-ore (V-rich) tourmaline veins, and demonstrates the chemical distinction between early- and late-pre-ore (Li-rich) chlorite.
- The association between elevated concentrations of Ni and chlorite is supported by inventory calculations that suggest that a significant portion of Ni can be accounted for in C_2 chlorite, either in the silicate structure, or in cryptic micro-inclusions within chlorite aggregates. At the whole-rock scale with low concentrations of Ni in sandstone samples, however, significant portions of Ni can be attributed to alkali-deficient dravite.
- Fine-grained Fe-Cu-Ni-Co-Zn-As sulfide minerals were often observed in association with chlorite, APS minerals, altered phosphates, and in drusy quartz veins, but occasionally also with alkali-deficient dravite and illite.
- APS, apatite, detrital monazite and detrital zircons all contain significant concentrations of rare earth elements (Fig. 19). The LREE-enriched patterns commonly observed in the sandstones are predominantly controlled by the REE ratios in APS minerals, with some contribution of REE from detrital zircons.
- Early diagenetic apatite, monazite and apatite inclusions in detrital quartz, and detrital zircon also contribute significant U and HREE, and early-diagenetic Ti-oxides contain significant V.
- In most cases, V concentrations cannot be fully accounted for by a single mineral phase in a sample (Fig. 15), which would suggest that significant V was remobilized in the later stages of the system. However, primary dispersive processes are likely responsible for the

V concentrations observed in late-hydrothermal (T_2) alkali-deficient dravite veins (Fig. 12A).

- Cryptic secondary disseminations of U-oxide are commonly observed in association with pyrite (S_1), particularly along the surfaces of drusy quartz veins.
- Highly elevated concentrations of U observed in association with Fe- and Ti-oxides and hydroxides suggest that uranyl ion adsorption onto the surfaces of Fe- and Ti-oxides and hydroxides represents a significant control on the secondary mobility of U in the deposit footprint.
- A database of LA-ICP-MS trace element maps of interstitial assemblages, detrital grains and quartz overgrowths, with corresponding high-resolution SEM photomicrographs.

3.2.1 Recommendations for future work

The results of this study suggest that future work should concentrate on the secondary dispersion of pathfinder trace elements, particularly associated with the surfaces of oxide and sulfide minerals along paragenetically-late fracture networks. Lower detection limits for As and S in lithogeochemical studies would provide insight into Fe-Cu-Ni-Co-Zn-Pb-As sulfide mineral inventories. Additionally, precise mineral speciation of cryptic inclusions will likely require detailed analysis by methods such as electron energy-loss spectroscopy (EELS) and energy dispersive spectroscopy (EDS) under transmitted electron microscopy (TEM).

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Appendix A

Sample Coordinates

Appendix A

Sample Coordinates

CMIC Sample Name	Drill Fence	Drill Hole ID	FROM	UTM NAD 83 Zone 13 N		Elevation	Lithological Unit
			(m)	(mE)	(mN)	(m ASL)	
MC-336-433	SW-Distal Zone	MC-336	433.0	495463.57	6400834.67	105.01	MFa
MC-336-455	SW-Distal Zone	MC-336	455.0	495461.09	6400838.32	82.95	MFa
MC-336-465	SW-Distal Zone	MC-336	465.0	495460.07	6400839.85	73.74	MFa
MC-336-479.5	SW-Distal Zone	MC-336	479.5	495458.51	6400842.26	59.40	MFa
MC-336-500.43	SW-Distal Zone	MC-336	500.43	495456.29	6400845.69	38.92	MFa
MC-336-506.55	SW-Distal Zone	MC-336	506.55	495455.63	6400846.70	32.89	MFa
MC-336-506.8	SW-Distal Zone	MC-336	506.8	495455.60	6400846.74	32.66	MFa
MC-336-517	SW-Distal Zone	MC-336	517.0	495454.52	6400848.43	22.66	MFa
MC-336-522.86	SW-Distal Zone	MC-336	522.86	495453.90	6400849.41	16.92	MFa
MC-336-532.73	SW-Distal Zone	MC-336	532.73	495452.85	6400851.09	7.24	MFa
MC-336-557	SW-Distal Zone	MC-336	557.0	495450.35	6400855.26	(16.5)	MFa
MC-336-560.46	SW-Distal Zone	MC-336	560.46	495449.99	6400855.87	(19.93)	MFa
MC-336-564	SW-Distal Zone	MC-336	564.0	495449.64	6400856.50	(23.43)	MFa
MC-336-570.5	SW-Distal Zone	MC-336	570.5	495448.99	6400857.63	(29.81)	MFa
MC-338-23	SW-Distal Zone	MC-338	23.0	495522.16	6400773.56	506.07	MFd
MC-338-65	SW-Distal Zone	MC-338	65.0	495517.44	6400778.32	464.66	MFd
MC-338-101	SW-Distal Zone	MC-338	101.0	495513.51	6400782.46	429.03	MFd
MC-338-150.4	SW-Distal Zone	MC-338	150.4	495508.41	6400788.08	380.22	MFd
MC-338-220.2	SW-Distal Zone	MC-338	220.2	495501.44	6400796.10	311.22	MFc
MC-338-272	SW-Distal Zone	MC-338	272.0	495496.79	6400802.42	260.11	MFc
MC-338-319	SW-Distal Zone	MC-338	319.0	495492.94	6400808.35	213.67	MFb
MC-338-372.17	SW-Distal Zone	MC-338	372.17	495488.87	6400815.28	161.02	MFb
MC-338-410.8	SW-Distal Zone	MC-338	410.8	495485.96	6400820.25	122.84	MFb
MC-338-466	SW-Distal Zone	MC-338	466.0	495481.58	6400826.91	68.21	MFa
MC-338-502.37	SW-Distal Zone	MC-338	502.37	495478.87	6400831.27	32.25	MFa
MC-338-537.64	SW-Distal Zone	MC-338	537.64	495476.45	6400835.57	(2.72)	MFa
MC-338-554.73	SW-Distal Zone	MC-338	554.73	495475.31	6400837.68	(19.62)	MFa
MC-338-557.5	SW-Distal Zone	MC-338	557.5	495475.13	6400838.02	(22.33)	MFa
MC-338-559	SW-Distal Zone	MC-338	559.0	495475.03	6400838.20	(23.77)	MFa
MC-344-26.1	SW-Distal Zone	MC-344	26.1	495724.42	6400555.24	507.42	MFd
MC-344-69	SW-Distal Zone	MC-344	69.0	495718.82	6400559.81	465.08	MFd
MC-344-100.1	SW-Distal Zone	MC-344	100.1	495714.79	6400563.10	434.52	MFd
MC-344-128	SW-Distal Zone	MC-344	128.0	495711.20	6400566.19	407.03	MFd
MC-344-164	SW-Distal Zone	MC-344	164.0	495706.61	6400570.23	371.50	MFd
MC-344-179.8	SW-Distal Zone	MC-344	179.8	495704.59	6400571.97	355.92	MFd
MC-344-199	SW-Distal Zone	MC-344	199.0	495702.19	6400574.01	337.04	MFd
MC-344-230	SW-Distal Zone	MC-344	230.0	495698.36	6400577.38	306.42	MFc
MC-344-275	SW-Distal Zone	MC-344	275.0	495692.90	6400582.32	262.05	MFc
MC-344-298.82	SW-Distal Zone	MC-344	298.82	495690.12	6400585.04	238.57	MFb
MC-344-343	SW-Distal Zone	MC-344	343.0	495684.98	6400590.04	194.99	MFb
MC-344-378.45	SW-Distal Zone	MC-344	378.45	495680.94	6400594.28	159.99	MFa
MC-344-394.34	SW-Distal Zone	MC-344	394.34	495679.12	6400596.27	144.32	MFa
MC-344-433	SW-Distal Zone	MC-344	433.0	495674.69	6400601.16	106.22	MFa
MC-344-467	SW-Distal Zone	MC-344	467.0	495670.87	6400605.45	72.76	MFa
MC-344-468.8	SW-Distal Zone	MC-344	468.8	495670.67	6400605.68	70.97	MFa
MC-344-485.76	SW-Distal Zone	MC-344	485.76	495668.79	6400607.87	54.22	MFa
MC-344-488	SW-Distal Zone	MC-344	488.0	495668.55	6400608.16	52.05	MFa
MC-344-492.93	SW-Distal Zone	MC-344	492.93	495668.00	6400608.78	47.19	MFa
MAC-208-10.2	Gap Zone	MAC-208	10.2	496857.26	6402263.71	529.26	MFd
MAC-208-27	Gap Zone	MAC-208	27.0	496857.25	6402263.76	512.58	MFd
MAC-208-63.5	Gap Zone	MAC-208	63.5	496857.18	6402263.86	476.00	MFd
MAC-208-86.5	Gap Zone	MAC-208	86.5	496857.12	6402263.91	453.03	MFd
MAC-208-88	Gap Zone	MAC-208	88.0	496857.11	6402263.91	451.49	MFd
MAC-208-128.4	Gap Zone	MAC-208	128.4	496856.98	6402264.05	411.16	MFd
MAC-208-149	Gap Zone	MAC-208	149.0	496856.94	6402264.11	390.54	MFd
MAC-208-203	Gap Zone	MAC-208	203.0	496856.93	6402264.18	336.50	MFc
MAC-208-217.7	Gap Zone	MAC-208	217.7	496856.91	6402264.18	321.85	MFc
MAC-208-237	Gap Zone	MAC-208	237.0	496856.89	6402264.19	302.50	MFb
MAC-208-289.2	Gap Zone	MAC-208	289.2	496856.94	6402264.24	250.37	MFb
MAC-208-290.5	Gap Zone	MAC-208	290.5	496856.94	6402264.24	249.07	MFb
MAC-208-350.5	Gap Zone	MAC-208	350.5	496857.06	6402264.65	189.01	MFb
MAC-208-395	Gap Zone	MAC-208	395.0	496857.01	6402265.13	144.56	MFb
MAC-208-425.1	Gap Zone	MAC-208	425.1	496857.01	6402265.36	114.44	MFa
MAC-208-447.3	Gap Zone	MAC-208	447.3	496857.01	6402265.52	92.26	MFa
MAC-208-468.4	Gap Zone	MAC-208	468.4	496857.00	6402265.66	71.15	MFa
MAC-208-487	Gap Zone	MAC-208	487.0	496856.98	6402265.78	52.98	MFa
MAC-208-493	Gap Zone	MAC-208	493.0	496856.98	6402265.82	46.55	MFa
MAC-208-553.3	Gap Zone	MAC-208	553.3	496856.90	6402266.08	(13.83)	MFa
MAC-208-572	Gap Zone	MAC-208	572.0	496856.86	6402266.20	(32.46)	MFa
MAC-250-297.8	Gap Zone	MAC-250	297.8	496940.94	6402067.75	244.58	MFb
MAC-250-335.1	Gap Zone	MAC-250	335.1	496941.07	6402067.79	207.29	MFb
MAC-250-370.8	Gap Zone	MAC-250	370.8	496941.13	6402067.88	171.60	MFb
MAC-250-401.43	Gap Zone	MAC-250	401.43	496941.03	6402068.09	141.01	MFb
MAC-250-431.78	Gap Zone	MAC-250	431.78	496940.93	6402068.35	110.55	MFa
MAC-250-481.75	Gap Zone	MAC-250	481.75	496940.99	6402068.73	60.66	MFa
MC-253-26	Gap Zone	MC-253	26.0	496986.20	6402127.83	520.64	MFd
MC-253-76	Gap Zone	MC-253	76.0	496968.82	6402150.59	479.66	MFd
MC-253-136	Gap Zone	MC-253	136.0	496948.93	6402178.19	430.22	MFd
MC-253-205	Gap Zone	MC-253	205.0	496927.14	6402210.45	373.23	MFd
MC-253-265.3	Gap Zone	MC-253	265.3	496909.07	6402238.56	322.98	MFc
MC-253-287.5	Gap Zone	MC-253	287.5	496902.56	6402248.76	304.45	MFc

Appendix A

Sample Coordinates

CMIC Sample Name	Drill Fence	Drill Hole ID	FROM	UTM NAD 83 Zone 13 N		Elevation	Lithological Unit
			(m)	(mE)	(mN)	(m ASL)	
MC-253-325	Gap Zone	MC-253	325.0	496891.44	6402265.93	272.93	MFc
MC-253-336.2	Gap Zone	MC-253	336.2	496888.16	6402270.97	263.55	MFc
MC-253-382	Gap Zone	MC-253	382.0	496875.01	6402291.56	224.82	MFb
MC-253-416	Gap Zone	MC-253	416.0	496865.72	6402306.78	195.87	MFb
MC-253-430.1	Gap Zone	MC-253	430.1	496861.78	6402312.99	183.77	MFb
MC-253-440.1	Gap Zone	MC-253	440.1	496858.97	6402317.30	175.27	MFb
MC-253-472.5	Gap Zone	MC-253	472.5	496849.73	6402331.21	147.51	MFb
MC-253-501	Gap Zone	MC-253	501.0	496841.83	6402343.59	123.06	MFb
MC-253-507.5	Gap Zone	MC-253	507.5	496840.05	6402346.45	117.45	MFb
MC-253-528	Gap Zone	MC-253	528.0	496834.45	6402355.40	99.88	MFb
MC-253-538	Gap Zone	MC-253	538.0	496831.74	6402359.74	91.37	MFb
MC-253-550.1	Gap Zone	MC-253	550.1	496828.44	6402365.02	81.00	MFb
MC-253-552	Gap Zone	MC-253	552.0	496827.90	6402365.89	79.30	MFb
MAC-246-4.33	Zone 4	MAC-246	04.33	496425.59	6401947.89	531.20	MFd
MAC-246-54.7	Zone 4	MAC-246	54.7	496425.98	6401948.04	480.80	MFd
MAC-246-60.6	Zone 4	MAC-246	60.6	496426.02	6401948.04	474.93	MFd
MAC-246-82.75	Zone 4	MAC-246	82.75	496426.13	6401948.01	452.76	MFd
MAC-246-126.15	Zone 4	MAC-246	126.15	496426.13	6401947.85	409.37	MFd
MAC-246-142.86	Zone 4	MAC-246	142.86	496426.04	6401947.74	392.67	MFd
MAC-246-165.4	Zone 4	MAC-246	165.4	496425.89	6401947.57	370.12	MFd
MAC-246-213.43	Zone 4	MAC-246	213.43	496425.67	6401947.14	322.10	MFc
MAC-246-267.05	Zone 4	MAC-246	267.05	496425.16	6401946.87	268.46	MFc
MAC-246-297.33	Zone 4	MAC-246	297.33	496424.81	6401946.90	238.18	MFc
MAC-246-324.5	Zone 4	MAC-246	324.5	496424.51	6401946.97	211.00	MFb
MAC-246-333.8	Zone 4	MAC-246	333.8	496424.42	6401946.97	201.71	MFb
MAC-246-354.17	Zone 4	MAC-246	354.17	496424.24	6401946.96	181.34	MFb
MAC-246-378.25	Zone 4	MAC-246	378.25	496424.23	6401946.98	157.27	MFb
MAC-246-418.13	Zone 4	MAC-246	418.13	496424.70	6401947.11	117.40	MFa
MAC-246-423.8	Zone 4	MAC-246	423.8	496424.74	6401947.10	111.76	MFa
MAC-246-454.11	Zone 4	MAC-246	454.11	496424.71	6401946.89	81.39	MFa
MAC-246-475.33	Zone 4	MAC-246	475.33	496424.52	6401946.69	60.20	MFa
MAC-246-496.42	Zone 4	MAC-246	496.42	496424.28	6401946.51	39.06	MFa
MAC-246-499.02	Zone 4	MAC-246	499.02	496424.24	6401946.49	36.49	MFa
MAC-246-508.8	Zone 4	MAC-246	508.8	496424.11	6401946.42	26.78	MFa
MAC-246-510.2	Zone 4	MAC-246	510.2	496424.10	6401946.41	25.36	MFa
MAC-246-543	Zone 4	MAC-246	543.0	496423.82	6401946.13	(7.5)	MFa
MAC-252-10.15	Zone 4	MAC-252	10.15	496204.32	6402114.52	521.68	MFd
MAC-252-25.7	Zone 4	MAC-252	25.7	496204.36	6402114.62	506.13	MFd
MAC-252-55.65	Zone 4	MAC-252	55.65	496204.39	6402114.82	476.18	MFd
MAC-252-102.48	Zone 4	MAC-252	102.48	496204.39	6402115.18	429.31	MFd
MAC-252-167.2	Zone 4	MAC-252	167.2	496204.61	6402115.68	364.59	MFd
MAC-252-199.86	Zone 4	MAC-252	199.86	496204.80	6402116.03	331.92	MFd
MAC-252-249.43	Zone 4	MAC-252	249.43	496205.13	6402116.71	282.42	MFc
MAC-252-261.91	Zone 4	MAC-252	261.91	496205.24	6402116.89	269.92	MFc
MAC-252-271.2	Zone 4	MAC-252	271.2	496205.33	6402117.02	260.64	MFc
MAC-252-286.2	Zone 4	MAC-252	286.2	496205.47	6402117.25	245.63	MFc
MAC-252-305.3	Zone 4	MAC-252	305.3	496205.68	6402117.55	226.52	MFc
MAC-252-319.44	Zone 4	MAC-252	319.44	496205.83	6402117.77	212.40	MFc
MAC-252-331.7	Zone 4	MAC-252	331.7	496205.97	6402117.96	200.10	MFc
MAC-252-342.5	Zone 4	MAC-252	342.5	496206.09	6402118.13	189.35	MFc
MAC-255-6.13	Zone 4	MAC-255	06.13	496452.76	6401881.18	531.78	MFd
MAC-255-29.21	Zone 4	MAC-255	29.21	496452.84	6401881.27	508.70	MFd
MAC-255-51.63	Zone 4	MAC-255	51.63	496452.81	6401881.32	486.26	MFd
MAC-255-95	Zone 4	MAC-255	95.0	496452.67	6401881.37	442.89	MFd
MAC-255-132.3	Zone 4	MAC-255	132.3	496452.57	6401881.35	405.60	MFd
MAC-255-149	Zone 4	MAC-255	149.0	496452.54	6401881.31	389.41	MFd
MAC-255-194.47	Zone 4	MAC-255	194.47	496452.58	6401881.23	343.42	MFc
MAC-255-209.83	Zone 4	MAC-255	209.83	496452.64	6401881.24	328.06	MFc
MAC-255-217.68	Zone 4	MAC-255	217.68	496452.67	6401881.24	320.16	MFc
MAC-255-259.93	Zone 4	MAC-255	259.93	496452.98	6401881.21	278.02	MFc
MAC-255-288.82	Zone 4	MAC-255	288.82	496453.24	6401881.27	249.08	MFc
MAC-255-293.4	Zone 4	MAC-255	293.4	496453.28	6401881.29	244.55	MFc
MAC-255-332.33	Zone 4	MAC-255	332.33	496453.67	6401881.44	205.57	MFc
MAC-255-338	Zone 4	MAC-255	338.0	496453.73	6401881.45	199.91	MFc
MAC-255-362.46	Zone 4	MAC-255	362.46	496454.03	6401881.47	175.44	MFc
MAC-255-378.33	Zone 4	MAC-255	378.33	496454.26	6401881.51	159.55	MFc
MAC-255-397.78	Zone 4	MAC-255	397.78	496454.57	6401881.58	140.12	MFb
MAC-255-412.58	Zone 4	MAC-255	412.58	496454.81	6401881.65	125.30	MFb
MAC-255-426.3	Zone 4	MAC-255	426.3	496455.02	6401881.75	111.57	MFa
MAC-255-429.5	Zone 4	MAC-255	429.5	496455.06	6401881.77	108.45	MFa
MAC-255-451.78	Zone 4	MAC-255	451.78	496455.34	6401881.98	86.15	MFa
MAC-255-462.07	Zone 4	MAC-255	462.07	496455.47	6401882.08	75.87	MFa
MAC-255-469.36	Zone 4	MAC-255	469.36	496455.57	6401882.15	68.53	MFa
MAC-255-479.17	Zone 4	MAC-255	479.17	496455.72	6401882.23	58.73	MFa
MAC-255-483.68	Zone 4	MAC-255	483.68	496455.79	6401882.27	54.22	MFa
MAC-255-501.32	Zone 4	MAC-255	501.32	496456.09	6401882.39	36.62	MFa
MAC-255-503.26	Zone 4	MAC-255	503.26	496456.13	6401882.41	34.65	MFa
MAC-255-559	Zone 4	MAC-255	559.0	496456.93	6401883.28	(21.01)	MFa
MAC-255-564.36	Zone 4	MAC-255	564.36	496456.98	6401883.41	(26.39)	MFa
MC-413-71.64	MCA North 4 Zone C	MC-413	71.64	497701.92	6403048.57	527.47	MFd
MC-413-130	MCA North 4 Zone C	MC-413	130.0	497687.37	6403056.53	471.49	MFc
MC-413-183.26	MCA North 4 Zone C	MC-413	183.26	497674.24	6403063.78	420.41	MFc

Appendix A

Sample Coordinates

CMIC Sample Name	Drill Fence	Drill Hole ID	FROM	UTM NAD 83 Zone 13 N		Elevation	Lithological Unit
			(m)	(mE)	(mN)	(m ASL)	
MC-413-224	MCA North 4 Zone C	MC-413	224.0	497664.70	6403069.65	381.17	MFc
MC-413-258.26	MCA North 4 Zone C	MC-413	258.26	497656.81	6403074.78	348.26	MFc
MC-413-282.17	MCA North 4 Zone C	MC-413	282.17	497651.16	6403078.88	325.40	MFc
MC-413-299	MCA North 4 Zone C	MC-413	299.0	497647.18	6403081.97	309.38	MFb
MC-413-303.5	MCA North 4 Zone C	MC-413	303.5	497646.09	6403082.85	305.03	MFb
MC-413-317.96	MCA North 4 Zone C	MC-413	317.96	497642.44	6403085.74	291.39	MFb
MC-413-354.67	MCA North 4 Zone C	MC-413	354.67	497633.22	6403093.05	256.60	MFb
MC-413-388.82	MCA North 4 Zone C	MC-413	388.82	497625.51	6403100.24	224.15	MFb
MC-413-404	MCA North 4 Zone C	MC-413	404.0	497622.38	6403103.64	209.65	MFb
MC-413-430.57	MCA North 4 Zone C	MC-413	430.57	497616.30	6403109.25	184.42	MFa
MC-413-456.68	MCA North 4 Zone C	MC-413	456.68	497609.98	6403114.62	159.64	MFa
MC-413-482.25	MCA North 4 Zone C	MC-413	482.25	497603.72	6403119.83	135.45	MFa
MC-413-501.66	MCA North 4 Zone C	MC-413	501.66	497598.96	6403123.79	117.05	MFa
MC-413-527.67	MCA North 4 Zone C	MC-413	527.67	497592.67	6403129.23	92.37	MFa
MC-413-547.3	MCA North 4 Zone C	MC-413	547.3	497587.92	6403133.37	73.80	MFa
MC-413-559.73	MCA North 4 Zone C	MC-413	559.73	497584.91	6403136.00	62.05	MFa
MC-413-566.28	MCA North 4 Zone C	MC-413	566.28	497583.32	6403137.40	55.82	MFa
MC-413-603.83	MCA North 4 Zone C	MC-413	603.83	497574.29	6403145.40	20.24	MFa
MC-413-614.83	MCA North 4 Zone C	MC-413	614.83	497571.64	6403147.74	9.85	MFa
MC-413-623.78	MCA North 4 Zone C	MC-413	623.78	497569.47	6403149.68	1.34	MFa
MC-413-638.86	MCA North 4 Zone C	MC-413	638.86	497565.85	6403152.96	(12.94)	MFa
MC-413-649	MCA North 4 Zone C	MC-413	649.0	497563.45	6403155.18	(22.47)	MFa
MC-415-76.73	MCA North 4 Zone C	MC-415	76.73	497747.89	6403018.88	526.10	MFd
MC-415-127.56	MCA North 4 Zone C	MC-415	127.56	497739.25	6403025.30	476.43	MFc
MC-415-173.74	MCA North 4 Zone C	MC-415	173.74	497731.53	6403031.13	431.28	MFc
MC-415-197	MCA North 4 Zone C	MC-415	197.0	497727.69	6403034.15	408.51	MFc
MC-415-222.34	MCA North 4 Zone C	MC-415	222.34	497723.59	6403037.50	383.79	MFc
MC-415-232.5	MCA North 4 Zone C	MC-415	232.5	497721.94	6403038.88	373.81	MFc
MC-415-295.67	MCA North 4 Zone C	MC-415	295.67	497711.81	6403047.61	312.08	MFc
MC-415-350.35	MCA North 4 Zone C	MC-415	350.35	497703.25	6403055.19	258.62	MFb
MC-415-389	MCA North 4 Zone C	MC-415	389.0	497697.31	6403060.86	220.81	MFb
MC-415-416.08	MCA North 4 Zone C	MC-415	416.08	497693.20	6403064.88	194.37	MFb
MC-415-432.38	MCA North 4 Zone C	MC-415	432.38	497690.74	6403067.27	178.42	MFb
MC-415-455.72	MCA North 4 Zone C	MC-415	455.72	497687.23	6403070.71	155.62	MFa
MC-415-477	MCA North 4 Zone C	MC-415	477.0	497684.05	6403073.93	134.82	MFa
MC-415-490.78	MCA North 4 Zone C	MC-415	490.78	497681.98	6403076.05	121.40	MFa
MC-415-497.66	MCA North 4 Zone C	MC-415	497.66	497680.95	6403077.12	114.67	MFa
MC-415-503.32	MCA North 4 Zone C	MC-415	503.32	497680.09	6403078.00	109.11	MFa
MC-415-520.15	MCA North 4 Zone C	MC-415	520.15	497677.57	6403080.60	92.69	MFa
MC-415-537	MCA North 4 Zone C	MC-415	537.0	497675.05	6403083.17	76.25	MFa
MC-415-539.69	MCA North 4 Zone C	MC-415	539.69	497674.65	6403083.58	73.63	MFa
MC-434-11.1	Background Distal Hole	MC-434	11.1	497478.42	6401540.44	510.85	MFd
MC-434-31.63	Background Distal Hole	MC-434	31.63	497478.42	6401540.44	490.32	MFd
MC-434-54.07	Background Distal Hole	MC-434	54.07	497478.42	6401540.44	467.88	MFd
MC-434-93.9	Background Distal Hole	MC-434	93.9	497478.42	6401540.44	428.05	MFd
MC-434-119.66	Background Distal Hole	MC-434	119.66	497478.42	6401540.44	402.29	MFd
MC-434-168.25	Background Distal Hole	MC-434	168.25	497478.42	6401540.44	353.70	MFc
MC-434-183.4	Background Distal Hole	MC-434	183.4	497478.42	6401540.44	338.55	MFc
MC-434-217.84	Background Distal Hole	MC-434	217.84	497478.42	6401540.44	304.11	MFc
MC-434-253.64	Background Distal Hole	MC-434	253.64	497478.42	6401540.44	268.31	MFc
MC-434-256.65	Background Distal Hole	MC-434	256.65	497478.42	6401540.44	265.30	MFc
MC-434-282.2	Background Distal Hole	MC-434	282.2	497478.42	6401540.44	239.75	MFc
MC-434-328.83	Background Distal Hole	MC-434	328.83	497478.42	6401540.44	193.12	MFb
MC-434-338.05	Background Distal Hole	MC-434	338.05	497478.42	6401540.44	183.90	MFb
MC-434-348.28	Background Distal Hole	MC-434	348.28	497478.42	6401540.44	173.67	MFb
MC-434-370.63	Background Distal Hole	MC-434	370.63	497478.42	6401540.44	151.32	MFb
MC-434-397.53	Background Distal Hole	MC-434	397.53	497478.42	6401540.44	124.42	MFa
MC-434-421.67	Background Distal Hole	MC-434	421.67	497478.42	6401540.44	100.28	MFa

Appendix B

Lithogeochemical Data

Appendix B

Lithogeochemical Data

		Boron by Fusion	LECO Induction Furnace		Lithium Metaborate Fusion	
CMIC Sample Name	SGS Sample Name	B	C	S	SiO2	LOI
		ppm	wt %	wt %	wt %	wt %
MC-336-433	SG1	48	0.08	0.01	95.4	0.50
MC-336-455	SG2	166	0.08	0.01	90.5	2.00
MC-336-465	SG3	428	0.18	0.01	95.1	0.90
MC-336-479.5	SG4	102	0.11	0.01	93.0	1.80
MC-336-500.43	SG5	143	0.17	0.01	96.0	0.50
MC-336-506.55	SG6	394	0.05	0.01	96.1	0.60
MC-336-506.8	SG7	1,490	0.10	0.01	91.2	1.20
MC-336-517	SG8	219	0.08	0.01	96.4	0.70
MC-336-522.86	SG9	629	0.08	0.01	90.3	1.80
MC-336-532.73	SG10	393	0.08	0.01	98.0	0.50
MC-336-557	SG11	18	0.19	0.03	98.4	0.40
MC-336-560.46	SG12	17	0.20	0.01	96.7	0.60
MC-336-564	SG13	9	0.07	0.01	99.0	0.30
MC-336-570.5	SG14	152	0.28	0.01	92.5	1.60
MC-338-23	SG15	351	0.06	0.01	98.5	0.20
MC-338-65	SG16	20	0.04	0.01	98.4	0.20
MC-338-101	SG17	20	0.08	0.01	98.1	0.30
MC-338-150.4	SG18	20	0.06	0.01	98.3	0.20
MC-338-220.2	SG19	67	0.07	0.01	97.2	0.40
MC-338-272	SG20	47	0.01	0.01	95.5	0.70
MC-338-319	SG21	46	0.06	0.01	96.8	0.50
MC-338-372.17	SG22	20	0.02	0.02	97.2	0.40
MC-338-410.8	SG23	23	0.02	0.01	97.6	0.40
MC-338-466	SG24	61	0.06	0.01	93.6	1.60
MC-338-502.37	SG25	39	0.10	0.01	98.1	0.40
MC-338-537.64	SG26	374	0.04	0.01	98.2	0.40
MC-338-554.73	SG27	15	0.01	0.01	98.1	0.30
MC-338-557.5	SG28	38	0.06	0.01	96.0	0.70
MC-338-559	SG29	425	0.08	0.01	91.9	0.90
MC-344-26.1	SG30	469	0.04	0.01	99.2	0.20
MC-344-69	SG31	861	0.02	0.01	97.8	0.30
MC-344-100.1	SG32	741	0.01	0.01	98.2	0.30
MC-344-128	SG33	268	0.08	0.01	97.7	0.40
MC-344-164	SG34	2,160	0.09	0.01	95.2	0.50
MC-344-179.8	SG35	1,110	0.06	0.01	97.4	0.40
MC-344-199	SG36	72	0.10	0.01	97.7	0.30
MC-344-230	SG37	58	0.06	0.01	98.0	0.30
MC-344-275	SG38	52	0.08	0.01	98.0	0.30
MC-344-298.82	SG39	83	0.08	0.01	96.7	0.50
MC-344-343	SG40	20	0.07	0.01	96.7	0.70
MC-344-378.45	SG41	33	0.08	0.01	95.5	1.00
MC-344-394.34	SG42	64	0.09	0.01	96.2	0.70
MC-344-433	SG43	36	0.06	0.01	96.3	0.70
MC-344-467	SG44	19	0.08	0.01	95.9	0.90
MC-344-468.8	SG45	<2	0.09	0.01	98.1	0.40
MC-344-485.76	SG46	5	0.08	0.01	98.2	0.40
MC-344-488	SG47	7	0.07	0.01	96.1	0.90
MC-344-492.93	SG48	7	0.11	0.01	96.9	0.70
MAC-208-10.2	SG49	75	0.09	0.01	98.6	0.40
MAC-208-27	SG50	171	0.07	0.01	98.8	0.30
MAC-208-63.5	SG51	257	0.11	0.01	97.6	0.50
MAC-208-86.5	SG52	677	0.08	0.01	96.2	0.70
MAC-208-88	SG53	233	0.28	0.01	98.0	0.20
MAC-208-128.4	SG54	636	0.16	0.01	97.4	0.40
MAC-208-149	SG55	493	0.01	0.01	98.3	0.30
MAC-208-203	SG56	143	0.09	0.01	98.2	0.50
MAC-208-217.7	SG57	584	0.08	0.01	95.8	0.60
MAC-208-237	SG58	27	0.07	0.01	97.1	0.60
MAC-208-289.2	SG59	22	0.08	0.01	96.8	0.40
MAC-208-290.5	SG60	46	0.09	0.04	95.5	0.60
MAC-208-350.5	SG61	180	0.16	0.01	96.0	1.10
MAC-208-395	SG62	9	0.38	0.01	97.5	0.70
MAC-208-425.1	SG63	8	0.12	0.01	95.8	1.10
MAC-208-447.3	SG64	13	0.07	0.01	97.0	0.50
MAC-208-468.4	SG65	25	0.08	0.01	97.2	0.40
MAC-208-487	SG66	18	0.07	0.01	94.4	1.00
MAC-208-493	SG67	5	0.09	0.01	96.1	0.90
MAC-208-553.3	SG71	866	0.08	0.01	96.5	0.50
MAC-208-572	SG72	1,240	0.09	0.01	95.2	0.90
MAC-250-297.8	SG73	25	0.10	0.01	97.1	0.40
MAC-250-335.1	SG74	29	0.13	0.01	95.8	0.60

Appendix B

Lithogeochemical Data

		Boron by Fusion	LECO Induction Furnace		Lithium Metaborate Fusion	
CMIC Sample Name	SGS Sample Name	B	C	S	SiO2	LOI
		ppm	wt %	wt %	wt %	wt %
MAC-250-370.8	SG75	27	0.08	0.01	94.9	0.90
MAC-250-401.43	SG76	28	0.06	0.01	96.3	0.60
MAC-250-431.78	SG77	469	0.07	0.01	93.4	1.10
MAC-250-481.75	SG78	11	0.07	0.01	97.7	0.40
MC-253-26	SG79	149	0.08	0.01	98.4	0.40
MC-253-76	SG80	161	0.11	0.01	98.2	0.50
MC-253-136	SG82	377	0.14	0.01	98.3	0.30
MC-253-205	SG84	332	0.09	0.01	98.9	0.30
MC-253-265.3	SG85	517	0.08	0.01	95.8	0.80
MC-253-287.5	SG86	222	0.10	0.01	97.8	0.50
MC-253-325	SG87	43	0.09	0.01	96.9	0.60
MC-253-336.2	SG88	168	0.24	0.03	94.5	0.90
MC-253-382	SG89	25	0.62	0.06	96.7	0.60
MC-253-416	SG90	20	0.08	0.01	95.6	0.90
MC-253-430	SG91	137	0.07	0.01	91.1	1.60
MC-253-440.1	SG92	2,000	0.01	0.01	95.7	0.50
MC-253-472.5	SG93	43	0.07	0.01	97.2	0.50
MC-253-501	SG94	9	0.09	0.01	97.8	0.60
MC-253-507.5	SG95	160	0.09	0.01	97.2	0.40
MC-253-528	SG96	195	0.08	0.01	95.6	0.60
MC-253-538	SG97	39	0.06	0.01	96.8	0.50
MC-253-550.1	SG99	746	0.07	0.01	96.5	0.60
MC-253-552	SG100	1,540	0.09	0.01	96.3	0.50
MAC-246-4.33	SG101	658	0.14	0.01	98.7	0.30
MAC-246-54.7	SG102	377	0.07	0.01	98.7	0.30
MAC-246-60.6	SG103	307	0.41	0.01	98.7	0.30
MAC-246-82.75	SG104	799	0.13	0.01	98.1	0.40
MAC-246-126.15	SG105	226	0.13	0.01	98.7	0.30
MAC-246-142.86	SG106	1,180	0.07	0.01	96.8	0.50
MAC-246-165.4	SG107	485	0.07	0.01	98.0	0.30
MAC-246-213.43	SG108	163	0.07	0.01	98.8	0.30
MAC-246-267.05	SG109	32	0.06	0.01	96.6	0.50
MAC-246-297.33	SG110	25	0.10	0.01	96.7	0.40
MAC-246-324.5	SG111	45	0.07	0.01	95.2	0.80
MAC-246-333.8	SG112	32	0.07	0.01	96.0	0.60
MAC-246-354.17	SG113	44	0.06	0.01	96.2	0.60
MAC-246-378.25	SG114	11	0.04	0.01	97.0	0.80
MAC-246-418.13	SG115	10	0.05	0.01	96.1	0.80
MAC-246-423.8	SG116	24	0.07	0.01	96.4	0.80
MAC-246-454.11	SG117	2,340	0.08	0.01	95.3	0.50
MAC-246-475.33	SG118	710	0.01	0.01	97.6	0.40
MAC-246-496.42	SG119	1,930	0.10	0.01	95.1	0.80
MAC-246-499.02	SG120	1,110	0.06	0.01	96.8	0.60
MAC-246-508.8	SG121	1,930	0.08	0.01	96.2	0.60
MAC-246-510.2	SG122	2,930	0.08	0.01	94.8	0.70
MAC-246-543	SG123	153	0.06	0.01	97.6	0.40
MAC-252-10.15	SG124	309	0.09	0.01	99.8	0.20
MAC-252-25.7	SG125	154	0.09	0.01	99.2	0.30
MAC-252-55.65	SG126	2,600	0.07	0.01	94.2	0.80
MAC-252-102.48	SG127	567	0.07	0.01	97.5	0.50
MAC-252-167.2	SG128	439	0.04	0.01	99.1	0.20
MAC-252-199.86	SG129	219	0.08	0.01	98.7	0.30
MAC-252-249.43	SG130	455	0.26	0.01	98.4	0.30
MAC-252-261.91	SG131	696	0.20	0.01	98.0	0.30
MAC-252-271.2	SG132	101	0.32	0.03	93.6	0.60
MAC-252-286.2	SG133	626	0.11	0.01	97.0	0.50
MAC-252-305.3	SG134	1,410	0.08	0.01	97.5	0.30
MAC-252-319.44	SG135	163	0.02	0.02	96.0	0.50
MAC-252-331.7	SG136	256	0.03	0.01	95.1	0.70
MAC-252-342.5	SG137	941	0.09	0.01	97.2	0.40
MAC-255-6.13	SG138	527	0.07	0.01	98.6	0.20
MAC-255-29.21	SG139	315	0.07	0.02	97.6	0.60
MAC-255-51.63	SG140	1,220	0.09	0.01	96.7	0.50
MAC-255-95	SG141	278	0.06	0.01	98.9	0.20
MAC-255-132.3	No Data					
MAC-255-149	SG143	301	0.06	0.01	97.3	0.50
MAC-255-194.47	SG144	268	0.05	0.01	98.5	0.30
MAC-255-209.83	SG145	53	0.06	0.01	98.2	0.40
MAC-255-217.68	SG146	423	0.05	0.01	96.6	0.60
MAC-255-259.93	SG147	37	0.04	0.01	97.6	0.40
MAC-255-288.82	SG148	30	0.05	0.01	96.0	0.50

Appendix B

Lithogeochemical Data

		Boron by Fusion	LECO Induction Furnace		Lithium Metaborate Fusion	
CMIC Sample Name	SGS Sample Name	B	C	S	SiO2	LOI
		ppm	wt %	wt %	wt %	wt %
MAC-255-293.4	SG149	31	0.05	0.01	95.4	0.70
MAC-255-332.33	SG150	23	0.06	0.01	96.0	0.80
MAC-255-338	SG151	27	0.06	0.01	93.8	1.30
MAC-255-362.46	SG152	19	0.06	0.01	96.7	0.70
MAC-255-378.33	SG153	12	0.05	0.01	96.7	0.80
MAC-255-397.78	SG154	9	0.04	0.01	95.1	1.10
MAC-255-412.58	SG155	3	0.04	0.01	96.8	0.80
MAC-255-426.3	SG156	7	0.05	0.02	95.2	1.20
MAC-255-429.5	SG157	3	0.03	0.01	95.3	1.20
MAC-255-451.78	SG158	45	0.04	0.01	93.6	1.40
MAC-255-462.07	SG159	5	0.04	0.01	96.2	0.80
MAC-255-469.36	SG160	3	0.03	0.01	98.5	0.30
MAC-255-479.17	SG161	2	0.04	0.01	97.3	0.50
MAC-255-483.68	SG162	8	0.06	0.01	97.5	0.50
MAC-255-501.32	SG163	31	0.06	0.11	95.4	1.00
MAC-255-503.26	SG164	10	0.07	0.01	97.0	0.60
MAC-255-559	SG165	34	0.08	0.06	96.2	0.90
MAC-255-564.36	SG166	265	0.10	0.07	92.8	1.40
MC-413-71.64	SG167	141	0.05	0.01	98.2	0.30
MC-413-130	SG168	38	0.04	0.01	98.4	0.30
MC-413-183.26	SG169	168	0.05	0.01	95.2	1.00
MC-413-224	SG170	81	0.04	0.01	98.3	0.30
MC-413-258.26	SG171	371	0.05	0.01	97.2	0.40
MC-413-282.17	SG172	617	0.05	0.01	97.1	0.40
MC-413-299	SG173	169	0.08	0.01	95.3	0.60
MC-413-303.5	SG174	104	0.05	0.01	97.7	0.30
MC-413-317.96	SG175	1,150	0.05	0.01	97.6	0.30
MC-413-354.67	SG177	32	0.06	0.01	96.8	0.60
MC-413-388.82	SG178	118	0.07	0.08	93.7	1.40
MC-413-404	SG179	806	0.04	0.01	96.4	0.50
MC-413-430.57	SG180	48	0.06	0.01	96.3	0.80
MC-413-456.68	SG181	130	0.08	0.01	98.0	0.50
MC-413-482.25	SG182	40	0.04	0.01	97.2	0.60
MC-413-501.66	SG183	9	0.04	0.01	98.1	0.50
MC-413-527.67	SG184	6	0.06	0.01	97.1	0.70
MC-413-547.3	SG185	8	0.05	0.01	96.2	0.90
MC-413-559.73	SG187	6	0.06	0.01	96.5	0.80
MC-413-566.28	SG188	87	0.05	0.01	89.2	1.40
MC-413-603.83	SG189	225	0.05	0.02	92.8	1.10
MC-413-614.83	SG190	1,480	0.07	0.02	95.6	0.70
MC-413-623.78	SG191	136	0.05	0.01	97.3	0.20
MC-413-638.86	SG192	244	0.07	0.01	93.7	0.50
MC-413-649	SG193	747	0.07	0.01	94.2	0.60
MC-415-76.73	SG194	58	0.05	0.01	98.4	0.30
MC-415-127.56	SG195	27	0.15	0.01	98.8	0.30
MC-415-173.74	SG196	247	0.05	0.01	96.3	0.70
MC-415-197	SG197	31	0.06	0.01	98.7	0.30
MC-415-222.34	SG198	72	0.05	0.01	98.7	0.30
MC-415-232.5	SG199	66	0.05	0.01	98.2	0.40
MC-415-295.67	SG200	177	0.05	0.01	97.2	0.40
MC-415-350.35	SG203	1,410	0.04	0.01	96.9	0.40
MC-415-389	SG205	2,220	0.05	0.01	95.6	0.50
MC-415-416.08	SG206	1,160	0.05	0.01	96.5	0.40
MC-415-432.38	SG207	1,850	0.06	0.01	95.5	0.50
MC-415-455.72	SG208	1,940	0.06	0.01	95.9	0.40
MC-415-477	SG209	2,990	0.04	0.01	95.0	0.60
MC-415-490.78	SG210	331	0.03	0.01	98.8	0.30
MC-415-497.66	SG211	1,480	0.04	0.01	97.0	0.40
MC-415-503.32	SG212	506	0.04	0.01	98.7	0.30
MC-415-520.15	SG215	814	0.04	0.01	95.7	0.50
MC-415-537	SG216	51	0.04	0.01	96.9	0.50
MC-415-539.69	SG217	44	0.03	0.01	95.8	0.70
MC-434-11.1	SG218	99	0.04	0.01	97.7	0.30
MC-434-31.63	SG219	92	0.11	0.01	97.4	0.30
MC-434-54.07	SG220	109	0.06	0.01	98.2	0.30
MC-434-93.9	SG221	31	0.06	0.02	98.0	0.20
MC-434-119.66	SG222	33	0.06	0.01	91.8	1.80
MC-434-168.25	SG223	38	0.03	0.01	98.0	0.30
MC-434-183.4	SG224	45	0.03	0.01	97.4	0.30
MC-434-217.84	SG225	19	0.04	0.01	97.8	0.30
MC-434-253.64	SG226	32	0.03	0.01	97.2	0.60
MC-434-256.65	SG227	28	0.05	0.01	97.8	0.40

Appendix B

Lithogeochemical Data

		Boron by Fusion	LECO Induction Furnace		Lithium Metaborate Fusion	
CMIC Sample Name	SGS Sample Name	B	C	S	SiO2	LOI
		ppm	wt %	wt %	wt %	wt %
MC-434-282.2	SG228	39	0.04	0.02	96.8	0.50
MC-434-328.83	SG229	28	0.06	0.01	96.0	0.90
MC-434-338.05	SG230	22	0.04	0.01	94.2	1.20
MC-434-348.28	SG231	23	0.05	0.01	95.7	0.90
MC-434-370.63	SG232	34	0.06	0.01	95.4	0.90
MC-434-397.53	SG233	29	0.04	0.01	96.2	0.90
MC-434-421.67	SG234	22	0.08	0.01	96.8	0.70
Process Details		A pulp is fused in a mixture of $NaO_2/NaCO_3$ in a muffle oven, dissolved in DI water, and analyzed by ICP-OES.	Carbon and Sulfur: a 0.2 g pulp is analyzed in a Leco SC144DR C/S analyzer for Carbon and Sulfur.		SiO2 Analysis: A 0.1 gram pulp is fused at 1000 C with lithium metaborate then dissolved in dilute HNO3. LOI: A 1.00 gram pulp is heated at 1000 C overnight and the weight loss determined.	
Standard(s)			MA1B		SY3	DCB01

Appendix B

Lithogeochemical Data

		ICP Total Digestion							
CMIC Sample Name	SGS Sample Name	Al2O3	Ba	CaO	Ce	Cr	Fe2O3	K2O	La
		wt %	ppm	wt %	ppm	ppm	wt %	wt %	ppm
MC-336-433	SG1	2	14	0	46	4	0	1	28
MC-336-455	SG2	6	27	0	75	15	0	1	39
MC-336-465	SG3	3	11	0	36	5	0	0	19
MC-336-479.5	SG4	5	11	0	29	6	0	0	14
MC-336-500.43	SG5	2	17	0	24	7	0	1	11
MC-336-506.55	SG6	2	28	0	22	8	0	0	11
MC-336-506.8	SG7	6	44	0	43	19	1	1	23
MC-336-517	SG8	2	40	0	20	12	0	0	10
MC-336-522.86	SG9	6	60	0	55	16	0	1	30
MC-336-532.73	SG10	1	32	0	13	16	0	0	7
MC-336-557	SG11	1	24	0	11	10	0	0	6
MC-336-560.46	SG12	2	25	0	17	16	0	0	9
MC-336-564	SG13	0	21	0	32	22	0	0	16
MC-336-570.5	SG14	3	35	0	83	18	3	0	43
MC-338-23	SG15	1	9	<0.01	17	6	0	0	9
MC-338-65	SG16	1	7	<0.01	16	3	0	0	8
MC-338-101	SG17	1	13	<0.01	22	9	0	0	9
MC-338-150.4	SG18	1	13	<0.01	24	8	0	0	10
MC-338-220.2	SG19	1	15	0	31	10	0	0	14
MC-338-272	SG20	2	19	0	45	9	0	1	20
MC-338-319	SG21	2	13	0	34	3	0	1	15
MC-338-372.17	SG22	1	8	0	27	9	0	0	12
MC-338-410.8	SG23	1	7	0	24	4	0	0	11
MC-338-466	SG24	4	12	0	76	8	0	0	34
MC-338-502.37	SG25	1	21	0	11	21	0	0	5
MC-338-537.64	SG26	1	23	0	13	13	0	0	7
MC-338-554.73	SG27	1	21	0	15	9	0	0	7
MC-338-557.5	SG28	2	56	0	50	13	0	0	26
MC-338-559	SG29	5	48	0	62	11	0	1	32
MC-344-26.1	SG30	1	8	<0.01	15	6	0	0	7
MC-344-69	SG31	1	8	<0.01	21	3	0	0	10
MC-344-100.1	SG32	1	9	<0.01	24	15	0	0	10
MC-344-128	SG33	1	11	<0.01	22	6	0	0	9
MC-344-164	SG34	3	14	0	26	6	0	0	12
MC-344-179.8	SG35	1	10	<0.01	24	9	0	0	10
MC-344-199	SG36	1	12	<0.01	29	7	0	0	12
MC-344-230	SG37	1	11	0	28	8	0	0	12
MC-344-275	SG38	1	9	<0.01	24	17	0	0	10
MC-344-298.82	SG39	2	12	0	38	14	0	0	16
MC-344-343	SG40	2	10	<0.01	23	13	0	0	10
MC-344-378.45	SG41	3	13	0	29	7	0	0	13
MC-344-394.34	SG42	2	14	0	32	12	1	0	15
MC-344-433	SG43	2	13	0	31	7	0	0	15
MC-344-467	SG44	2	25	<0.01	23	12	1	0	10
MC-344-468.8	SG45	1	11	0	15	12	0	0	7
MC-344-485.76	SG46	1	26	0	14	13	0	0	6
MC-344-488	SG47	3	39	<0.01	16	14	0	0	8
MC-344-492.93	SG48	2	33	<0.01	33	11	0	0	16
MAC-208-10.2	SG49	1	14	<0.01	21	2	0	0	10
MAC-208-27	SG50	1	13	<0.01	20	4	0	0	9
MAC-208-63.5	SG51	1	10	<0.01	20	8	0	0	9
MAC-208-86.5	SG52	2	19	0	30	13	0	0	13
MAC-208-88	SG53	1	12	<0.01	27	9	0	0	11
MAC-208-128.4	SG54	1	18	<0.01	27	7	0	0	11
MAC-208-149	SG55	1	21	<0.01	29	7	0	0	13
MAC-208-203	SG56	1	12	0	27	7	0	0	12
MAC-208-217.7	SG57	2	15	0	36	8	0	0	16
MAC-208-237	SG58	2	94	0	30	10	0	0	14
MAC-208-289.2	SG59	1	227	0	29	6	0	0	12
MAC-208-290.5	SG60	3	103	0	34	10	0	1	15
MAC-208-350.5	SG61	3	11	<0.01	51	8	0	0	27
MAC-208-395	SG62	1	14	0	21	9	0	0	9
MAC-208-425.1	SG63	3	22	<0.01	31	8	0	0	16
MAC-208-447.3	SG64	2	26	0	27	7	0	0	13
MAC-208-468.4	SG65	1	22	0	15	11	0	0	7
MAC-208-487	SG66	3	60	0	52	26	0	0	27
MAC-208-493	SG67	2	39	0	24	16	0	0	12
MAC-208-553.3	SG71	2	64	0	38	15	0	0	20
MAC-208-572	SG72	3	10	0	41	12	0	0	22
MAC-250-297.8	SG73	2	13	0	34	10	0	0	15
MAC-250-335.1	SG74	2	10	0	46	8	0	1	21
MAC-250-370.8	SG75	3	15	0	73	15	1	0	36
MAC-250-401.43	SG76	2	20	0	30	14	0	1	14
MAC-250-431.78	SG77	4	41	0	67	19	0	1	35
MAC-250-481.75	SG78	1	25	<0.01	26	15	0	0	12
MC-253-26	SG79	1	15	<0.01	19	6	0	0	9
MC-253-76	SG80	1	12	0	22	4	0	0	10
MC-253-136	SG82	1	13	<0.01	19	7	0	0	8
MC-253-205	SG84	1	10	<0.01	23	6	0	0	9

Appendix B

Lithogeochemical Data

		ICP Total Digestion							
CMIC Sample Name	SGS Sample Name	Al2O3	Ba	CaO	Ce	Cr	Fe2O3	K2O	La
		wt %	ppm	wt %	ppm	ppm	wt %	wt %	ppm
MC-253-265.3	SG85	2	12	0	28	7	0	0	12
MC-253-287.5	SG86	1	8	0	29	4	0	0	12
MC-253-325	SG87	1	20	0	28	5	0	0	12
MC-253-336.2	SG88	3	12	0	33	7	0	1	14
MC-253-382	SG89	2	16	0	39	5	0	0	18
MC-253-416	SG90	3	13	0	46	4	0	0	22
MC-253-430	SG91	6	25	0	68	9	0	1	35
MC-253-440.1	SG92	3	13	0	35	13	0	0	17
MC-253-472.5	SG93	1	13	0	21	11	0	0	10
MC-253-501	SG94	1	20	0	17	8	0	0	7
MC-253-507.5	SG95	1	27	0	86	11	0	0	28
MC-253-528	SG96	3	26	0	29	8	0	1	14
MC-253-538	SG97	2	18	0	19	11	0	0	9
MC-253-550.1	SG99	2	27	0	39	10	0	0	21
MC-253-552	SG100	2	18	0	33	9	0	0	17
MAC-246-4.33	SG101	1	12	<0.01	21	5	0	0	10
MAC-246-54.7	SG102	1	18	<0.01	18	4	0	0	9
MAC-246-60.6	SG103	1	14	<0.01	21	3	0	0	9
MAC-246-82.75	SG104	1	28	<0.01	24	11	0	0	10
MAC-246-126.15	SG105	1	20	<0.01	23	8	0	0	9
MAC-246-142.86	SG106	2	36	0	30	9	0	0	13
MAC-246-165.4	SG107	1	16	<0.01	23	6	0	0	10
MAC-246-213.43	SG108	1	15	<0.01	29	5	0	0	11
MAC-246-267.05	SG109	2	13	0	33	5	0	1	15
MAC-246-297.33	SG110	2	15	0	42	6	0	0	19
MAC-246-324.5	SG111	3	38	0	52	8	0	1	24
MAC-246-333.8	SG112	2	18	0	53	5	1	0	25
MAC-246-354.17	SG113	2	22	0	60	17	0	1	29
MAC-246-378.25	SG114	2	17	0	40	9	0	0	19
MAC-246-418.13	SG115	2	18	0	26	9	0	0	12
MAC-246-423.8	SG116	2	38	0	29	10	0	0	14
MAC-246-454.11	SG117	3	14	0	45	15	0	0	22
MAC-246-475.33	SG118	1	24	0	18	10	0	0	9
MAC-246-496.42	SG119	3	35	0	29	12	0	0	15
MAC-246-499.02	SG120	2	32	0	25	14	0	0	13
MAC-246-508.8	SG121	2	17	0	22	12	0	0	11
MAC-246-510.2	SG122	4	18	0	18	11	0	0	9
MAC-246-543	SG123	1	20	0	19	15	0	0	9
MAC-252-10.15	SG124	1	13	<0.01	19	1	0	0	9
MAC-252-25.7	SG125	1	15	<0.01	21	4	0	0	10
MAC-252-55.65	SG126	4	14	0	26	4	0	0	13
MAC-252-102.48	SG127	1	19	<0.01	23	10	0	0	10
MAC-252-167.2	SG128	1	10	<0.01	23	4	0	0	10
MAC-252-199.86	SG129	1	10	0	32	3	0	0	13
MAC-252-249.43	SG130	1	9	<0.01	32	4	0	0	13
MAC-252-261.91	SG131	1	9	<0.01	29	5	0	0	13
MAC-252-271.2	SG132	2	22	0	49	8	0	0	23
MAC-252-286.2	SG133	2	10	0	43	4	0	0	19
MAC-252-305.3	SG134	2	8	0	32	8	0	0	13
MAC-252-319.44	SG135	2	12	0	44	6	0	1	19
MAC-252-331.7	SG136	2	14	0	41	10	1	0	18
MAC-252-342.5	SG137	2	6	<0.01	32	5	0	0	13
MAC-255-6.13	SG138	1	13	<0.01	22	4	0	0	10
MAC-255-29.21	SG139	1	35	0	25	9	0	0	12
MAC-255-51.63	SG140	2	17	0	27	4	0	0	13
MAC-255-95	SG141	1	11	<0.01	23	5	0	0	9
MAC-255-132.3	No Data								
MAC-255-149	SG143	1	19	<0.01	21	7	0	0	10
MAC-255-194.47	SG144	1	21	<0.01	29	7	0	0	12
MAC-255-209.83	SG145	1	18	0	23	3	0	0	10
MAC-255-217.68	SG146	2	15	0	41	7	0	0	17
MAC-255-259.93	SG147	1	12	0	32	7	0	0	14
MAC-255-288.82	SG148	2	13	0	33	6	0	1	15
MAC-255-293.4	SG149	3	31	0	38	8	0	1	17
MAC-255-332.33	SG150	3	9	0	31	9	0	0	14
MAC-255-338	SG151	4	14	0	41	4	0	0	20
MAC-255-362.46	SG152	2	17	0	24	11	0	0	11
MAC-255-378.33	SG153	2	19	0	35	12	0	0	17
MAC-255-397.78	SG154	3	19	0	28	9	0	0	13
MAC-255-412.58	SG155	2	20	<0.01	33	13	0	0	17
MAC-255-426.3	SG156	3	34	0	33	11	0	0	17
MAC-255-429.5	SG157	3	26	0	30	19	0	0	15
MAC-255-451.78	SG158	4	37	0	33	12	0	0	17
MAC-255-462.07	SG159	2	33	0	29	11	1	0	15
MAC-255-469.36	SG160	0	20	0	12	14	0	0	5
MAC-255-479.17	SG161	1	40	<0.01	17	8	0	0	8
MAC-255-483.68	SG162	1	19	0	14	15	0	0	7
MAC-255-501.32	SG163	2	48	0	41	11	0	1	22
MAC-255-503.26	SG164	1	25	0	21	17	0	0	11
MAC-255-559	SG165	1	10	0	47	13	1	0	36
MAC-255-564.36	SG166	3	18	0	111	23	1	0	74

		ICP Total Digestion							
CMIC Sample Name	SGS Sample Name	Al2O3	Ba	CaO	Ce	Cr	Fe2O3	K2O	La
		wt %	ppm	wt %	ppm	ppm	wt %	wt %	ppm
MC-413-71.64	SG167	1	10	0	19	4	0	0	9
MC-413-130	SG168	1	10	<0.01	23	5	0	0	10
MC-413-183.26	SG169	3	24	0	31	8	0	0	13
MC-413-224	SG170	1	9	<0.01	16	5	0	0	7
MC-413-258.26	SG171	1	14	0	37	4	0	0	15
MC-413-282.17	SG172	1	12	0	27	6	0	0	11
MC-413-299	SG173	2	25	0	43	9	1	1	19
MC-413-303.5	SG174	1	24	0	44	8	0	0	21
MC-413-317.96	SG175	1	13	0	34	14	0	0	16
MC-413-354.67	SG177	2	11	0	35	9	0	0	16
MC-413-388.82	SG178	3	118	0	265	9	0	0	115
MC-413-404	SG179	2	41	0	42	17	0	0	21
MC-413-430.57	SG180	2	23	0	45	15	0	0	21
MC-413-456.68	SG181	1	20	0	25	15	0	0	12
MC-413-482.25	SG182	2	28	0	56	12	0	0	29
MC-413-501.66	SG183	1	24	0	18	16	0	0	8
MC-413-527.67	SG184	2	19	0	18	9	0	0	9
MC-413-547.3	SG185	2	62	<0.01	24	12	0	0	12
MC-413-559.73	SG187	2	17	0	48	17	1	0	23
MC-413-566.28	SG188	7	40	0	78	23	1	2	43
MC-413-603.83	SG189	4	35	0	167	59	0	1	102
MC-413-614.83	SG190	2	28	0	115	43	0	0	62
MC-413-623.78	SG191	0	10	0	19	19	2	0	10
MC-413-638.86	SG192	2	20	0	59	26	2	1	28
MC-413-649	SG193	3	31	0	141	30	2	0	77
MC-415-76.73	SG194	1	10	<0.01	19	12	0	0	9
MC-415-127.56	SG195	1	11	<0.01	22	4	0	0	10
MC-415-173.74	SG196	2	18	0	26	8	0	0	12
MC-415-197	SG197	1	9	<0.01	21	7	0	0	10
MC-415-222.34	SG198	1	8	<0.01	16	5	0	0	7
MC-415-232.5	SG199	1	15	0	32	8	0	0	13
MC-415-295.67	SG200	2	18	0	28	4	0	0	13
MC-415-350.35	SG203	2	19	0	62	19	0	0	28
MC-415-389	SG205	3	23	0	70	15	0	0	37
MC-415-416.08	SG206	2	13	0	34	14	0	0	18
MC-415-432.38	SG207	3	22	0	35	14	0	0	16
MC-415-455.72	SG208	2	13	0	29	18	0	0	13
MC-415-477	SG209	4	17	0	35	18	0	0	18
MC-415-490.78	SG210	1	16	0	12	8	0	0	5
MC-415-497.66	SG211	2	23	0	21	18	0	0	11
MC-415-503.32	SG212	1	17	0	14	14	0	0	7
MC-415-520.15	SG215	2	23	0	29	12	0	0	15
MC-415-537	SG216	1	38	0	85	30	0	0	45
MC-415-539.69	SG217	2	19	0	308	16	0	0	123
MC-434-11.1	SG218	1	10	<0.01	20	6	0	0	11
MC-434-31.63	SG219	1	10	<0.01	21	11	0	0	10
MC-434-54.07	SG220	1	7	<0.01	16	7	0	0	8
MC-434-93.9	SG221	1	6	<0.01	18	7	0	0	8
MC-434-119.66	SG222	5	19	<0.01	33	10	0	0	15
MC-434-168.25	SG223	1	6	<0.01	15	5	0	0	7
MC-434-183.4	SG224	1	8	<0.01	25	4	0	0	11
MC-434-217.84	SG225	1	9	<0.01	27	4	0	0	11
MC-434-253.64	SG226	2	9	<0.01	33	4	0	0	14
MC-434-256.65	SG227	1	8	<0.01	24	5	0	0	11
MC-434-282.2	SG228	1	8	0	28	5	0	0	13
MC-434-328.83	SG229	2	8	0	33	3	0	0	16
MC-434-338.05	SG230	3	6	<0.01	26	5	0	0	12
MC-434-348.28	SG231	2	10	0	38	5	0	0	18
MC-434-370.63	SG232	2	8	0	29	6	0	0	15
MC-434-397.53	SG233	2	8	<0.01	43	9	0	0	19
MC-434-421.67	SG234	2	6	0	26	8	0	0	12

Process Details	Total Digestion: A 0.250 g pulp is gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in a dilute ultrapure HNO3.
Standard(s)	ASR109 and ASR209

Appendix B

Lithogeochemical Data

					ICP Total Digestion				
CMIC Sample Name	SGS Sample Name	Li	MgO	MnO	Na2O	P2O5	Sr	TiO2	Zr
		ppm	wt %	wt %	wt %	wt %	ppm	wt %	ppm
MC-336-433	SG1	5	0	<0.001	<0.01	0	96	0	466
MC-336-455	SG2	20	0	<0.001	0	0	136	0	306
MC-336-465	SG3	7	0	<0.001	0	0	84	0	157
MC-336-479.5	SG4	11	0	<0.001	<0.01	0	59	0	46
MC-336-500.43	SG5	5	0	<0.001	0	0	55	0	96
MC-336-506.55	SG6	14	0	<0.001	0	0	56	0	126
MC-336-506.8	SG7	16	1	<0.001	0	0	127	0	367
MC-336-517	SG8	18	0	<0.001	0	0	58	0	183
MC-336-522.86	SG9	23	1	<0.001	0	0	142	0	290
MC-336-532.73	SG10	9	0	<0.001	0	0	32	0	111
MC-336-557	SG11	15	0	<0.001	0	0	22	0	45
MC-336-560.46	SG12	11	0	<0.001	<0.01	0	34	0	49
MC-336-564	SG13	7	0	<0.001	<0.01	0	101	0	320
MC-336-570.5	SG14	20	1	0	0	0	336	0	404
MC-338-23	SG15	2	0	<0.001	0	0	28	0	69
MC-338-65	SG16	4	0	<0.001	<0.01	0	27	0	68
MC-338-101	SG17	4	0	<0.001	<0.01	0	46	0	182
MC-338-150.4	SG18	3	0	<0.001	<0.01	0	42	0	155
MC-338-220.2	SG19	6	0	<0.001	<0.01	0	60	0	205
MC-338-272	SG20	7	0	0	<0.01	0	131	0	231
MC-338-319	SG21	5	0	<0.001	<0.01	0	90	0	174
MC-338-372.17	SG22	3	0	<0.001	<0.01	0	449	0	64
MC-338-410.8	SG23	4	0	<0.001	<0.01	0	122	0	78
MC-338-466	SG24	11	0	<0.001	<0.01	0	93	0	75
MC-338-502.37	SG25	10	0	<0.001	<0.01	0	23	0	40
MC-338-537.64	SG26	9	0	<0.001	0	0	21	0	45
MC-338-554.73	SG27	12	0	<0.001	0	0	28	0	44
MC-338-557.5	SG28	23	0	<0.001	0	0	123	0	273
MC-338-559	SG29	17	0	<0.001	0	0	157	0	389
MC-344-26.1	SG30	1	0	<0.001	0	0	29	0	199
MC-344-69	SG31	1	0	<0.001	0	0	39	0	114
MC-344-100.1	SG32	2	0	<0.001	0	0	41	0	40
MC-344-128	SG33	3	0	<0.001	<0.01	0	42	0	198
MC-344-164	SG34	2	1	<0.001	0	0	54	0	347
MC-344-179.8	SG35	1	0	<0.001	0	0	49	0	89
MC-344-199	SG36	4	0	<0.001	<0.01	0	63	0	106
MC-344-230	SG37	2	0	<0.001	<0.01	0	74	0	151
MC-344-275	SG38	3	0	<0.001	<0.01	0	83	0	111
MC-344-298.82	SG39	5	0	<0.001	<0.01	0	112	0	151
MC-344-343	SG40	7	0	<0.001	<0.01	0	54	0	41
MC-344-378.45	SG41	9	0	<0.001	<0.01	0	65	0	156
MC-344-394.34	SG42	7	0	0	<0.01	0	74	0	136
MC-344-433	SG43	10	0	<0.001	<0.01	0	64	0	164
MC-344-467	SG44	11	0	0	<0.01	0	78	0	189
MC-344-468.8	SG45	3	0	<0.001	<0.01	0	42	0	319
MC-344-485.76	SG46	10	0	<0.001	<0.01	0	27	0	71
MC-344-488	SG47	19	0	<0.001	<0.01	0	26	0	43
MC-344-492.93	SG48	12	0	0	<0.01	0	51	0	269
MAC-208-10.2	SG49	3	0	<0.001	<0.01	0	25	0	63
MAC-208-27	SG50	2	0	<0.001	<0.01	0	25	0	47
MAC-208-63.5	SG51	4	0	<0.001	0	0	26	0	83
MAC-208-86.5	SG52	5	0	<0.001	0	0	52	0	191
MAC-208-88	SG53	2	0	<0.001	<0.01	0	34	0	40
MAC-208-128.4	SG54	3	0	<0.001	0	0	43	0	133
MAC-208-149	SG55	2	0	<0.001	0	0	61	0	186
MAC-208-203	SG56	5	0	<0.001	<0.01	0	72	0	179
MAC-208-217.7	SG57	5	0	<0.001	0	0	102	0	429
MAC-208-237	SG58	7	0	<0.001	<0.01	0	187	0	240
MAC-208-289.2	SG59	3	0	<0.001	<0.01	0	370	0	77
MAC-208-290.5	SG60	3	0	<0.001	<0.01	0	204	0	169
MAC-208-350.5	SG61	5	0	<0.001	0	0	113	0	285
MAC-208-395	SG62	5	0	<0.001	<0.01	0	70	0	91
MAC-208-425.1	SG63	10	0	<0.001	<0.01	0	52	0	196
MAC-208-447.3	SG64	12	0	<0.001	<0.01	0	52	0	222
MAC-208-468.4	SG65	11	0	<0.001	0	0	29	0	93
MAC-208-487	SG66	24	0	0	0	0	90	0	151
MAC-208-493	SG67	16	0	<0.001	0	0	24	0	58
MAC-208-553.3	SG71	18	0	<0.001	0	0	48	0	66
MAC-208-572	SG72	36	1	<0.001	0	0	58	0	52
MAC-250-297.8	SG73	2	0	<0.001	<0.01	0	197	0	77
MAC-250-335.1	SG74	6	0	<0.001	<0.01	0	257	0	112
MAC-250-370.8	SG75	6	0	<0.001	<0.01	0	127	0	532
MAC-250-401.43	SG76	6	0	<0.001	<0.01	0	126	0	70
MAC-250-431.78	SG77	10	0	<0.001	0	0	187	0	629
MAC-250-481.75	SG78	8	0	<0.001	<0.01	0	45	0	237
MC-253-26	SG79	3	0	<0.001	<0.01	0	26	0	57
MC-253-76	SG80	2	0	<0.001	<0.01	0	28	0	111
MC-253-136	SG82	2	0	<0.001	0	0	32	0	94
MC-253-205	SG84	1	0	<0.001	0	0	33	0	97

Appendix B

Lithogeochemical Data

		ICP Total Digestion							
CMIC Sample Name	SGS Sample Name	Li	MgO	MnO	Na2O	P2O5	Sr	TiO2	Zr
		ppm	wt %	wt %	wt %	wt %	ppm	wt %	ppm
MC-253-265.3	SG85	6	0	<0.001	0	0	110	0	143
MC-253-287.5	SG86	4	0	<0.001	0	0	125	0	72
MC-253-325	SG87	6	0	<0.001	<0.01	0	83	0	71
MC-253-336.2	SG88	10	0	<0.001	0	0	104	0	155
MC-253-382	SG89	6	0	<0.001	<0.01	0	342	0	207
MC-253-416	SG90	7	0	<0.001	<0.01	0	219	0	159
MC-253-430	SG91	18	0	<0.001	0	0	172	0	658
MC-253-440.1	SG92	2	1	<0.001	0	0	60	0	193
MC-253-472.5	SG93	7	0	<0.001	<0.01	0	25	0	71
MC-253-501	SG94	10	0	<0.001	<0.01	0	35	0	69
MC-253-507.5	SG95	11	0	<0.001	0	0	136	0	67
MC-253-528	SG96	12	0	<0.001	0	0	128	0	183
MC-253-538	SG97	9	0	<0.001	<0.01	0	32	0	79
MC-253-550.1	SG99	9	0	<0.001	0	0	66	0	286
MC-253-552	SG100	3	0	<0.001	0	0	52	0	167
MAC-246-4.33	SG101	1	0	<0.001	0	0	34	0	39
MAC-246-54.7	SG102	2	0	<0.001	0	0	28	0	127
MAC-246-60.6	SG103	2	0	<0.001	0	0	32	0	101
MAC-246-82.75	SG104	1	0	<0.001	0	0	37	0	113
MAC-246-126.15	SG105	2	0	<0.001	0	0	34	0	56
MAC-246-142.86	SG106	3	0	<0.001	0	0	58	0	255
MAC-246-165.4	SG107	2	0	<0.001	0	0	37	0	84
MAC-246-213.43	SG108	1	0	<0.001	<0.01	0	49	0	58
MAC-246-267.05	SG109	5	0	<0.001	<0.01	0	90	0	150
MAC-246-297.33	SG110	4	0	<0.001	<0.01	0	174	0	335
MAC-246-324.5	SG111	11	0	<0.001	<0.01	0	505	0	339
MAC-246-333.8	SG112	6	0	<0.001	<0.01	0	353	0	363
MAC-246-354.17	SG113	8	0	<0.001	0	0	261	0	432
MAC-246-378.25	SG114	5	0	<0.001	<0.01	0	221	0	121
MAC-246-418.13	SG115	9	0	0	<0.01	0	116	0	141
MAC-246-423.8	SG116	12	0	<0.001	<0.01	0	84	0	206
MAC-246-454.11	SG117	2	1	<0.001	0	0	105	0	263
MAC-246-475.33	SG118	7	0	<0.001	0	0	41	0	149
MAC-246-496.42	SG119	12	1	<0.001	0	0	44	0	110
MAC-246-499.02	SG120	9	0	<0.001	0	0	35	0	126
MAC-246-508.8	SG121	7	0	<0.001	0	0	41	0	191
MAC-246-510.2	SG122	11	1	<0.001	0	0	27	0	104
MAC-246-543	SG123	6	0	<0.001	0	0	40	0	103
MAC-252-10.15	SG124	3	0	<0.001	0	0	27	0	45
MAC-252-25.7	SG125	1	0	<0.001	<0.01	0	31	0	151
MAC-252-55.65	SG126	3	1	0	0	0	41	0	130
MAC-252-102.48	SG127	2	0	0	0	0	36	0	122
MAC-252-167.2	SG128	1	0	<0.001	0	0	39	0	117
MAC-252-199.86	SG129	2	0	<0.001	0	0	60	0	256
MAC-252-249.43	SG130	4	0	<0.001	0	0	64	0	85
MAC-252-261.91	SG131	1	0	<0.001	0	0	61	0	145
MAC-252-271.2	SG132	6	0	<0.001	<0.01	0	184	0	394
MAC-252-286.2	SG133	2	0	0	0	0	146	0	200
MAC-252-305.3	SG134	<1	0	<0.001	0	0	65	0	116
MAC-252-319.44	SG135	2	0	0	<0.01	0	318	0	237
MAC-252-331.7	SG136	8	0	0	0	0	262	0	221
MAC-252-342.5	SG137	1	0	<0.001	0	0	89	0	63
MAC-255-6.13	SG138	1	0	<0.001	0	0	38	0	121
MAC-255-29.21	SG139	4	0	0	0	0	33	0	115
MAC-255-51.63	SG140	2	0	<0.001	0	0	49	0	231
MAC-255-95	SG141	2	0	<0.001	0	0	32	0	63
MAC-255-132.3	No Data								
MAC-255-149	SG143	3	0	<0.001	0	0	37	0	138
MAC-255-194.47	SG144	1	0	<0.001	0	0	55	0	138
MAC-255-209.83	SG145	2	0	<0.001	<0.01	0	51	0	116
MAC-255-217.68	SG146	4	0	<0.001	0	0	80	0	114
MAC-255-259.93	SG147	2	0	<0.001	<0.01	0	123	0	119
MAC-255-288.82	SG148	5	0	<0.001	<0.01	0	199	0	162
MAC-255-293.4	SG149	14	0	0	<0.01	0	392	0	261
MAC-255-332.33	SG150	5	0	<0.001	<0.01	0	303	0	76
MAC-255-338	SG151	12	0	<0.001	<0.01	0	141	0	291
MAC-255-362.46	SG152	5	0	0	<0.01	0	96	0	117
MAC-255-378.33	SG153	8	0	<0.001	<0.01	0	48	0	244
MAC-255-397.78	SG154	12	0	<0.001	<0.01	0	44	0	82
MAC-255-412.58	SG155	7	0	<0.001	<0.01	0	55	0	218
MAC-255-426.3	SG156	11	0	<0.001	<0.01	0	69	0	171
MAC-255-429.5	SG157	11	0	<0.001	<0.01	0	67	0	70
MAC-255-451.78	SG158	18	0	<0.001	<0.01	0	84	0	193
MAC-255-462.07	SG159	9	0	<0.001	<0.01	0	107	0	458
MAC-255-469.36	SG160	4	0	<0.001	<0.01	0	32	0	159
MAC-255-479.17	SG161	11	0	<0.001	<0.01	0	32	0	140
MAC-255-483.68	SG162	8	0	<0.001	0	0	31	0	59
MAC-255-501.32	SG163	22	0	<0.001	0	0	46	0	71
MAC-255-503.26	SG164	15	0	<0.001	<0.01	0	28	0	52
MAC-255-559	SG165	50	1	0	0	0	44	0	74
MAC-255-564.36	SG166	45	1	0	0	0	165	0	96

Appendix B

Lithogeochemical Data

		ICP Total Digestion							
CMIC Sample Name	SGS Sample Name	Li	MgO	MnO	Na2O	P2O5	Sr	TiO2	Zr
		ppm	wt %	wt %	wt %	wt %	ppm	wt %	ppm
MC-413-71.64	SG167	2	0	<0.001	<0.01	0	80	0	98
MC-413-130	SG168	2	0	<0.001	<0.01	0	34	0	74
MC-413-183.26	SG169	8	1	<0.001	<0.01	0	63	0	276
MC-413-224	SG170	2	0	<0.001	<0.01	0	33	0	108
MC-413-258.26	SG171	2	0	<0.001	0	0	74	0	159
MC-413-282.17	SG172	2	0	<0.001	0	0	84	0	69
MC-413-299	SG173	5	0	<0.001	<0.01	0	198	0	239
MC-413-303.5	SG174	3	0	<0.001	<0.01	0	341	0	247
MC-413-317.96	SG175	<1	0	<0.001	0	0	194	0	144
MC-413-354.67	SG177	3	0	<0.001	<0.01	0	228	0	104
MC-413-388.82	SG178	6	0	<0.001	<0.01	0	2,130	1	909
MC-413-404	SG179	3	0	<0.001	0	0	99	0	555
MC-413-430.57	SG180	6	0	<0.001	<0.01	0	89	0	217
MC-413-456.68	SG181	3	0	<0.001	<0.01	0	56	0	66
MC-413-482.25	SG182	6	0	<0.001	<0.01	0	126	0	713
MC-413-501.66	SG183	6	0	<0.001	<0.01	0	49	0	124
MC-413-527.67	SG184	9	0	<0.001	<0.01	0	32	0	106
MC-413-547.3	SG185	8	0	<0.001	<0.01	0	46	0	147
MC-413-559.73	SG187	12	0	<0.001	<0.01	0	21	0	77
MC-413-566.28	SG188	20	0	<0.001	0	0	100	0	280
MC-413-603.83	SG189	44	1	<0.001	0	0	246	1	689
MC-413-614.83	SG190	7	1	<0.001	0	0	293	0	475
MC-413-623.78	SG191	4	0	<0.001	0	0	44	0	254
MC-413-638.86	SG192	9	0	0	0	0	61	0	124
MC-413-649	SG193	18	0	0	0	0	110	0	415
MC-415-76.73	SG194	2	0	<0.001	<0.01	0	30	0	63
MC-415-127.56	SG195	2	0	<0.001	<0.01	0	34	0	90
MC-415-173.74	SG196	6	0	<0.001	<0.01	0	45	0	111
MC-415-197	SG197	2	0	0	<0.01	0	31	0	40
MC-415-222.34	SG198	2	0	0	<0.01	0	27	0	51
MC-415-232.5	SG199	2	0	<0.001	<0.01	0	75	0	164
MC-415-295.67	SG200	3	0	<0.001	<0.01	0	90	0	121
MC-415-350.35	SG203	1	0	<0.001	0	0	473	0	263
MC-415-389	SG205	1	1	<0.001	0	0	182	0	515
MC-415-416.08	SG206	3	0	<0.001	0	0	71	0	94
MC-415-432.38	SG207	3	0	<0.001	0	0	72	0	132
MC-415-455.72	SG208	3	0	<0.001	0	0	61	0	128
MC-415-477	SG209	3	1	<0.001	0	0	68	0	196
MC-415-490.78	SG210	4	0	<0.001	0	0	23	0	35
MC-415-497.66	SG211	4	0	<0.001	0	0	44	0	145
MC-415-503.32	SG212	2	0	<0.001	0	0	27	0	210
MC-415-520.15	SG215	5	0	0	0	0	57	0	184
MC-415-537	SG216	9	0	<0.001	<0.01	0	241	0	489
MC-415-539.69	SG217	12	0	0	<0.01	0	335	0	73
MC-434-11.1	SG218	2	0	<0.001	<0.01	0	37	0	193
MC-434-31.63	SG219	3	0	<0.001	<0.01	0	40	0	282
MC-434-54.07	SG220	3	0	<0.001	<0.01	0	31	0	249
MC-434-93.9	SG221	2	0	<0.001	<0.01	0	30	0	35
MC-434-119.66	SG222	19	0	<0.001	<0.01	0	72	0	241
MC-434-168.25	SG223	3	0	<0.001	<0.01	0	35	0	137
MC-434-183.4	SG224	4	0	<0.001	<0.01	0	52	0	127
MC-434-217.84	SG225	2	0	<0.001	<0.01	0	64	0	106
MC-434-253.64	SG226	6	0	<0.001	<0.01	0	206	0	84
MC-434-256.65	SG227	4	0	<0.001	<0.01	0	132	0	158
MC-434-282.2	SG228	5	0	<0.001	<0.01	0	252	0	144
MC-434-328.83	SG229	6	0	<0.001	<0.01	0	319	0	124
MC-434-338.05	SG230	9	0	<0.001	<0.01	0	94	0	54
MC-434-348.28	SG231	7	0	<0.001	<0.01	0	105	0	314
MC-434-370.63	SG232	7	0	<0.001	<0.01	0	68	0	249
MC-434-397.53	SG233	7	0	<0.001	<0.01	0	78	0	171
MC-434-421.67	SG234	5	0	<0.001	<0.01	0	63	0	121

Process Details — Total Digestion: ATotal Digestion: A 0.250 g pulp is gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in a dilute ultrapure HNO3.

Standard(s) — ASR109 and ASR209

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Ag	Be	Bi	Cd	Co	Cs	Cu	Dy
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	0.07	0.2	<0.1	0.30	0.15	<0.1	2.4	1.12
MC-336-455	SG2	0.13	0.4	0.10	0.20	0.22	<0.1	5.4	0.91
MC-336-465	SG3	0.04	0.4	<0.1	<0.1	0.39	<0.1	2.3	0.44
MC-336-479.5	SG4	0.03	0.2	<0.1	<0.1	0.19	<0.1	2.0	0.33
MC-336-500.43	SG5	0.03	0.2	<0.1	<0.1	0.34	<0.1	3.0	0.47
MC-336-506.55	SG6	0.03	0.3	<0.1	<0.1	0.28	<0.1	1.7	0.45
MC-336-506.8	SG7	0.05	0.9	<0.1	0.20	0.92	<0.1	4.6	0.98
MC-336-517	SG8	0.03	0.3	<0.1	0.10	0.24	<0.1	2.5	0.52
MC-336-522.86	SG9	0.07	0.9	<0.1	0.20	1.14	<0.1	8.7	1.35
MC-336-532.73	SG10	0.14	0.4	0.50	<0.1	0.22	<0.1	18.4	0.98
MC-336-557	SG11	0.04	0.3	0.40	<0.1	6.35	<0.1	14.2	0.98
MC-336-560.46	SG12	0.03	0.2	<0.1	<0.1	0.20	<0.1	1.6	0.29
MC-336-564	SG13	0.06	0.2	<0.1	0.20	0.24	<0.1	9.5	0.61
MC-336-570.5	SG14	0.03	0.7	<0.1	0.20	3.33	<0.1	0.8	1.31
MC-338-23	SG15	0.03	0.2	0.20	<0.1	0.18	<0.1	1.4	0.60
MC-338-65	SG16	0.02	<0.1	<0.1	<0.1	0.06	<0.1	1.0	0.39
MC-338-101	SG17	0.03	<0.1	<0.1	0.10	0.05	<0.1	0.9	0.62
MC-338-150.4	SG18	0.05	<0.1	<0.1	0.10	0.07	<0.1	1.2	0.56
MC-338-220.2	SG19	0.05	0.2	<0.1	0.10	0.12	<0.1	2.1	1.24
MC-338-272	SG20	0.08	0.2	<0.1	0.20	0.18	<0.1	1.5	1.23
MC-338-319	SG21	0.06	0.2	<0.1	0.10	0.11	<0.1	0.9	0.84
MC-338-372.17	SG22	0.04	0.1	<0.1	<0.1	0.10	<0.1	2.5	0.72
MC-338-410.8	SG23	0.04	0.1	<0.1	<0.1	0.15	<0.1	0.8	0.50
MC-338-466	SG24	0.04	0.2	<0.1	<0.1	0.17	<0.1	1.0	0.82
MC-338-502.37	SG25	0.02	0.1	<0.1	<0.1	0.19	<0.1	1.0	0.30
MC-338-537.64	SG26	0.07	0.4	<0.1	<0.1	0.36	<0.1	8.3	0.56
MC-338-554.73	SG27	0.03	0.1	<0.1	<0.1	0.11	<0.1	2.0	0.30
MC-338-557.5	SG28	0.06	0.5	<0.1	0.20	1.47	<0.1	14.0	1.11
MC-338-559	SG29	0.07	0.8	<0.1	0.20	1.16	0.10	9.1	3.39
MC-344-26.1	SG30	0.02	0.3	<0.1	0.10	0.19	<0.1	3.0	1.06
MC-344-69	SG31	0.03	0.5	0.20	<0.1	0.29	<0.1	3.8	0.86
MC-344-100.1	SG32	0.03	0.4	<0.1	<0.1	0.21	<0.1	3.8	0.47
MC-344-128	SG33	0.04	0.3	<0.1	0.10	0.14	<0.1	2.7	0.65
MC-344-164	SG34	0.07	0.8	<0.1	0.20	0.42	<0.1	2.6	1.48
MC-344-179.8	SG35	0.02	0.6	<0.1	<0.1	0.28	<0.1	1.6	0.74
MC-344-199	SG36	0.05	0.1	<0.1	<0.1	0.12	<0.1	1.2	0.62
MC-344-230	SG37	0.07	0.2	<0.1	0.10	0.10	<0.1	1.1	0.76
MC-344-275	SG38	0.03	0.1	<0.1	<0.1	0.21	<0.1	0.7	0.43
MC-344-298.82	SG39	0.07	0.2	<0.1	<0.1	0.12	<0.1	1.0	0.56
MC-344-343	SG40	0.03	0.1	<0.1	<0.1	0.08	<0.1	0.5	0.29
MC-344-378.45	SG41	0.08	0.2	<0.1	<0.1	0.12	<0.1	0.8	0.50
MC-344-394.34	SG42	0.06	0.2	<0.1	<0.1	0.90	<0.1	1.0	0.41
MC-344-433	SG43	0.05	0.1	<0.1	0.10	0.12	<0.1	0.7	0.40
MC-344-467	SG44	0.06	0.4	0.20	0.20	0.39	<0.1	1.2	0.61
MC-344-468.8	SG45	<0.02	0.1	<0.1	0.20	0.06	<0.1	0.5	0.33
MC-344-485.76	SG46	0.03	0.4	<0.1	<0.1	0.16	<0.1	0.7	0.27
MC-344-488	SG47	0.03	0.4	<0.1	<0.1	0.12	<0.1	0.6	0.30
MC-344-492.93	SG48	0.03	0.4	<0.1	0.20	0.22	<0.1	0.9	1.15
MAC-208-10.2	SG49	0.03	0.1	<0.1	<0.1	0.06	<0.1	1.6	0.64
MAC-208-27	SG50	0.02	0.1	<0.1	<0.1	0.08	<0.1	1.5	0.58
MAC-208-63.5	SG51	0.02	0.2	<0.1	<0.1	0.13	<0.1	2.6	0.69
MAC-208-86.5	SG52	0.05	0.4	<0.1	0.10	0.19	<0.1	3.0	1.22
MAC-208-88	SG53	0.02	0.2	<0.1	<0.1	0.07	<0.1	1.4	0.60
MAC-208-128.4	SG54	0.04	0.4	<0.1	<0.1	0.15	<0.1	2.5	0.93
MAC-208-149	SG55	0.03	0.3	<0.1	0.10	0.14	<0.1	2.0	0.97
MAC-208-203	SG56	0.04	0.2	<0.1	0.10	0.18	<0.1	3.0	0.77
MAC-208-217.7	SG57	0.11	0.5	<0.1	0.30	0.19	<0.1	4.2	1.26
MAC-208-237	SG58	0.10	0.4	<0.1	0.20	0.26	<0.1	2.4	1.17
MAC-208-289.2	SG59	0.04	0.7	<0.1	<0.1	0.06	<0.1	1.3	1.30
MAC-208-290.5	SG60	0.07	0.4	<0.1	<0.1	0.07	<0.1	1.2	1.05
MAC-208-350.5	SG61	0.06	0.2	<0.1	0.20	0.46	<0.1	1.3	0.58
MAC-208-395	SG62	0.03	0.1	<0.1	<0.1	0.08	<0.1	0.9	0.34
MAC-208-425.1	SG63	0.05	0.1	<0.1	0.10	0.09	<0.1	1.1	0.73
MAC-208-447.3	SG64	0.03	0.2	<0.1	0.10	0.16	<0.1	1.7	0.82
MAC-208-468.4	SG65	0.02	0.1	<0.1	<0.1	0.14	<0.1	4.0	0.56
MAC-208-487	SG66	0.07	0.4	<0.1	0.10	0.70	0.10	4.0	1.53
MAC-208-493	SG67	0.05	0.5	0.10	<0.1	1.53	<0.1	11.1	0.86
MAC-208-553.3	SG71	0.05	0.8	0.40	<0.1	1.21	0.30	38.1	0.50
MAC-208-572	SG72	0.05	0.6	<0.1	<0.1	1.34	<0.1	29.8	0.66
MAC-250-297.8	SG73	0.03	0.2	<0.1	<0.1	0.10	<0.1	2.6	0.53
MAC-250-335.1	SG74	0.04	0.1	<0.1	<0.1	0.17	<0.1	1.6	1.06
MAC-250-370.8	SG75	0.07	0.3	<0.1	0.30	1.08	<0.1	1.8	0.79
MAC-250-401.43	SG76	0.04	0.2	<0.1	<0.1	0.22	<0.1	2.1	0.86
MAC-250-431.78	SG77	0.06	0.5	<0.1	0.40	0.76	<0.1	3.3	2.03
MAC-250-481.75	SG78	0.03	0.2	<0.1	0.20	0.22	<0.1	1.3	0.95
MC-253-26	SG79	0.03	0.1	<0.1	<0.1	0.11	<0.1	1.6	0.64
MC-253-76	SG80	0.04	0.2	<0.1	<0.1	0.14	<0.1	2.0	0.96
MC-253-136	SG82	0.03	0.2	<0.1	<0.1	0.10	<0.1	1.0	0.56
MC-253-205	SG84	0.02	0.2	<0.1	<0.1	0.09	<0.1	1.2	0.84
MC-253-265.3	SG85	0.05	0.4	<0.1	<0.1	0.26	<0.1	1.7	0.70
MC-253-287.5	SG86	0.03	0.2	<0.1	<0.1	0.14	<0.1	1.9	0.49
MC-253-325	SG87	0.04	0.2	<0.1	<0.1	0.31	<0.1	2.2	0.49
MC-253-336.2	SG88	0.06	0.3	<0.1	<0.1	0.36	0.10	1.6	0.73
MC-253-382	SG89	0.05	0.2	<0.1	0.10	0.09	<0.1	1.0	0.89
MC-253-416	SG90	0.05	0.2	<0.1	0.10	0.08	<0.1	1.6	1.03
MC-253-430	SG91	0.12	0.4	<0.1	0.40	0.16	<0.1	2.5	1.18
MC-253-440.1	SG92	0.04	1.0	<0.1	0.10	0.21	<0.1	1.5	0.48
MC-253-472.5	SG93	0.04	0.1	<0.1	<0.1	0.09	<0.1	0.9	0.31
MC-253-501	SG94	0.03	0.1	<0.1	<0.1	0.08	<0.1	0.7	0.28
MC-253-507.5	SG95	0.03	0.3	<0.1	<0.1	0.14	<0.1	1.0	1.13
MC-253-528	SG96	0.05	0.3	<0.1	0.10	0.15	<0.1	1.4	1.31
MC-253-538	SG97	0.03	0.2	<0.1	<0.1	0.18	<0.1	1.3	0.38
MC-253-550.1	SG99	0.10	0.6	<0.1	0.20	0.53	<0.1	6.1	0.82
MC-253-552	SG100	0.06	0.9	<0.1	<0.1	0.57	<0.1	2.7	0.53

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Ag	Be	Bi	Cd	Co	Cs	Cu	Dy
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MAC-246-4.33	SG101	0.03	0.4	<0.1	<0.1	0.12	<0.1	1.9	0.67
MAC-246-54.7	SG102	0.03	0.3	<0.1	<0.1	0.10	<0.1	2.9	0.85
MAC-246-60.6	SG103	0.03	0.2	<0.1	<0.1	0.08	<0.1	1.7	0.74
MAC-246-82.75	SG104	0.04	0.5	<0.1	<0.1	0.12	<0.1	2.0	0.84
MAC-246-126.15	SG105	0.03	0.2	<0.1	<0.1	0.11	<0.1	1.5	0.51
MAC-246-142.86	SG106	0.05	0.6	<0.1	0.20	0.21	<0.1	3.9	1.10
MAC-246-165.4	SG107	0.03	0.2	<0.1	<0.1	0.12	<0.1	1.7	0.74
MAC-246-213.43	SG108	0.03	0.2	<0.1	<0.1	0.08	<0.1	0.9	0.51
MAC-246-267.05	SG109	0.07	0.2	<0.1	<0.1	0.11	<0.1	1.5	0.64
MAC-246-297.33	SG110	0.12	0.2	<0.1	0.20	0.09	<0.1	3.2	1.33
MAC-246-324.5	SG111	0.09	0.3	<0.1	0.20	0.16	<0.1	2.6	1.30
MAC-246-333.8	SG112	0.12	0.2	<0.1	0.20	0.10	<0.1	1.4	1.24
MAC-246-354.17	SG113	0.09	0.3	<0.1	0.30	0.12	<0.1	2.0	2.00
MAC-246-378.25	SG114	0.04	0.2	<0.1	<0.1	0.10	<0.1	0.9	0.72
MAC-246-418.13	SG115	0.04	0.2	<0.1	0.10	0.18	<0.1	0.8	0.45
MAC-246-423.8	SG116	0.06	0.2	<0.1	0.10	0.12	<0.1	1.4	0.63
MAC-246-454.11	SG117	0.06	1.1	<0.1	0.20	0.30	<0.1	2.8	0.62
MAC-246-475.33	SG118	0.04	0.5	<0.1	0.10	0.33	<0.1	2.5	0.43
MAC-246-496.42	SG119	0.07	2.0	<0.1	<0.1	1.07	<0.1	10.3	0.73
MAC-246-499.02	SG120	0.06	1.2	<0.1	<0.1	0.90	<0.1	6.6	0.88
MAC-246-508.8	SG121	0.07	1.6	0.10	0.10	0.92	<0.1	6.5	0.63
MAC-246-510.2	SG122	0.06	2.2	<0.1	<0.1	0.84	<0.1	8.2	0.38
MAC-246-543	SG123	0.04	0.2	<0.1	<0.1	0.27	<0.1	2.3	0.62
MAC-252-10.15	SG124	0.03	0.2	<0.1	<0.1	0.10	<0.1	2.8	0.61
MAC-252-25.7	SG125	0.03	0.2	<0.1	0.10	0.10	<0.1	2.0	1.07
MAC-252-55.65	SG126	0.04	1.3	<0.1	<0.1	0.32	<0.1	5.5	1.11
MAC-252-102.48	SG127	0.03	0.4	<0.1	<0.1	0.16	<0.1	2.5	0.66
MAC-252-167.2	SG128	0.03	0.3	<0.1	<0.1	0.11	<0.1	1.8	0.64
MAC-252-199.86	SG129	0.06	0.3	<0.1	0.20	0.14	<0.1	4.2	1.05
MAC-252-249.43	SG130	0.03	0.4	<0.1	<0.1	0.16	<0.1	1.2	0.54
MAC-252-261.91	SG131	0.05	0.4	<0.1	0.10	0.14	<0.1	1.7	0.78
MAC-252-271.2	SG132	0.10	0.5	<0.1	0.30	0.47	0.10	1.1	1.07
MAC-252-286.2	SG133	0.06	0.4	<0.1	0.10	0.16	<0.1	2.0	0.76
MAC-252-305.3	SG134	0.06	0.6	<0.1	<0.1	0.18	<0.1	1.1	0.41
MAC-252-319.44	SG135	0.08	0.3	<0.1	0.20	0.45	<0.1	2.4	5.36
MAC-252-331.7	SG136	0.10	0.4	<0.1	0.10	0.47	<0.1	4.4	0.77
MAC-252-342.5	SG137	0.05	0.4	<0.1	<0.1	0.17	<0.1	1.2	0.43
MAC-255-6.13	SG138	0.03	0.4	<0.1	<0.1	0.11	<0.1	1.9	0.93
MAC-255-29.21	SG139	0.04	0.3	<0.1	<0.1	0.34	0.30	9.7	1.05
MAC-255-51.63	SG140	0.05	0.7	<0.1	0.10	0.29	<0.1	5.4	1.68
MAC-255-95	SG141	0.02	0.2	<0.1	<0.1	0.09	<0.1	3.3	0.57
MAC-255-132.3	No Data								
MAC-255-149	SG143	0.03	0.3	<0.1	0.10	0.16	<0.1	2.8	0.81
MAC-255-194.47	SG144	0.04	0.2	<0.1	<0.1	0.11	<0.1	2.1	0.73
MAC-255-209.83	SG145	0.03	0.1	<0.1	<0.1	0.10	<0.1	2.7	0.59
MAC-255-217.68	SG146	0.04	0.3	<0.1	<0.1	0.25	<0.1	3.5	0.60
MAC-255-259.93	SG147	0.05	0.2	<0.1	<0.1	0.06	<0.1	1.9	0.66
MAC-255-288.82	SG148	0.06	0.2	<0.1	0.10	0.12	<0.1	3.0	0.73
MAC-255-293.4	SG149	0.08	0.2	<0.1	0.20	0.16	<0.1	2.6	1.26
MAC-255-332.33	SG150	0.04	0.1	<0.1	<0.1	0.10	<0.1	1.2	0.92
MAC-255-338	SG151	0.08	0.2	<0.1	0.20	0.10	<0.1	1.8	1.12
MAC-255-362.46	SG152	0.04	0.2	<0.1	<0.1	0.15	<0.1	0.9	0.67
MAC-255-378.33	SG153	0.05	0.2	<0.1	0.20	0.12	<0.1	0.7	0.58
MAC-255-397.78	SG154	0.03	0.2	<0.1	<0.1	0.10	<0.1	0.6	0.39
MAC-255-412.58	SG155	0.03	0.1	<0.1	0.10	0.14	<0.1	0.7	0.60
MAC-255-426.3	SG156	0.06	0.2	<0.1	0.10	0.09	<0.1	0.9	0.60
MAC-255-429.5	SG157	0.03	0.1	<0.1	<0.1	0.20	<0.1	0.7	0.40
MAC-255-451.78	SG158	0.04	0.2	<0.1	0.10	0.19	<0.1	1.1	0.78
MAC-255-462.07	SG159	0.05	0.2	<0.1	0.30	0.17	<0.1	0.8	0.78
MAC-255-469.36	SG160	<0.02	0.1	<0.1	0.10	0.09	<0.1	0.6	0.43
MAC-255-479.17	SG161	0.04	0.2	<0.1	<0.1	0.15	<0.1	1.3	0.59
MAC-255-483.68	SG162	0.03	0.1	<0.1	<0.1	0.13	<0.1	1.3	0.37
MAC-255-501.32	SG163	0.08	0.3	<0.1	<0.1	0.71	0.10	5.3	0.79
MAC-255-503.26	SG164	0.04	0.3	<0.1	<0.1	1.28	<0.1	5.5	0.49
MAC-255-559	SG165	0.06	1.4	0.20	<0.1	4.03	<0.1	17.2	1.32
MAC-255-564.36	SG166	0.14	1.7	0.10	<0.1	4.57	<0.1	5.2	2.13
MC-413-71.64	SG167	0.03	0.2	<0.1	<0.1	0.24	<0.1	1.6	0.79
MC-413-130	SG168	<0.02	0.1	<0.1	<0.1	0.08	<0.1	0.9	0.61
MC-413-183.26	SG169	0.05	0.4	<0.1	0.20	0.24	0.10	2.4	1.20
MC-413-224	SG170	<0.02	0.2	<0.1	<0.1	0.11	<0.1	3.0	0.70
MC-413-258.26	SG171	0.05	0.3	<0.1	0.10	0.10	<0.1	1.8	1.06
MC-413-282.17	SG172	0.03	0.4	<0.1	<0.1	0.10	<0.1	1.6	0.56
MC-413-299	SG173	0.08	0.4	<0.1	0.10	0.12	<0.1	5.3	1.02
MC-413-303.5	SG174	0.06	0.3	<0.1	0.20	0.07	<0.1	1.0	1.08
MC-413-317.96	SG175	0.06	0.4	<0.1	0.10	0.10	<0.1	1.3	0.82
MC-413-354.67	SG177	0.04	0.1	<0.1	<0.1	0.06	<0.1	0.7	0.80
MC-413-388.82	SG178	0.31	0.6	<0.1	0.50	0.11	<0.1	3.5	4.27
MC-413-404	SG179	0.08	0.6	<0.1	0.40	0.20	<0.1	2.0	1.19
MC-413-430.57	SG180	0.07	0.2	<0.1	0.20	0.10	<0.1	1.0	0.57
MC-413-456.68	SG181	0.02	0.1	<0.1	<0.1	0.10	<0.1	1.1	0.32
MC-413-482.25	SG182	0.13	0.2	<0.1	0.40	0.08	<0.1	1.1	1.12
MC-413-501.66	SG183	<0.02	0.1	<0.1	<0.1	0.12	<0.1	0.8	0.39
MC-413-527.67	SG184	<0.02	<0.1	<0.1	<0.1	0.10	<0.1	0.5	0.40
MC-413-547.3	SG185	0.04	0.1	<0.1	<0.1	0.10	<0.1	1.1	0.87
MC-413-559.73	SG187	0.05	0.6	<0.1	<0.1	0.56	<0.1	7.8	1.33
MC-413-566.28	SG188	0.16	0.5	<0.1	0.20	0.40	0.20	4.4	1.77
MC-413-603.83	SG189	0.19	1.4	<0.1	0.40	11.90	0.10	5.6	1.79
MC-413-614.83	SG190	0.10	2.2	0.50	0.30	6.92	<0.1	18.2	1.59
MC-413-623.78	SG191	0.04	0.2	<0.1	0.20	0.60	<0.1	0.7	0.36
MC-413-638.86	SG192	0.02	0.2	<0.1	<0.1	1.12	<0.1	0.8	2.86
MC-413-649	SG193	0.06	0.6	<0.1	0.30	0.46	<0.1	0.5	1.51
MC-415-76.73	SG194	0.04	0.2	<0.1	<0.1	0.16	<0.1	0.8	0.55
MC-415-127.56	SG195	0.04	0.1	<0.1	<0.1	0.11	<0.1	0.9	0.63
MC-415-173.74	SG196	0.03	0.3	<0.1	<0.1	0.18	<0.1	3.5	0.66
MC-415-197	SG197	<0.02	0.1	<0.1	<0.1	0.26	<0.1	2.4	0.44
MC-415-222.34	SG198	<0.02	0.1	<0.1	<0.1	0.22	<0.1	1.4	0.50

Appendix B

Lithogeochemical Data

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Ag	Be	Bi	Cd	Co	Cs	Cu	Dy
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-415-232.5	SG199	0.05	0.2	<0.1	0.10	0.10	<0.1	1.5	0.78
MC-415-295.67	SG200	0.06	0.3	<0.1	<0.1	0.06	<0.1	0.9	0.73
MC-415-350.35	SG203	0.09	1.1	<0.1	0.20	0.27	<0.1	1.7	0.74
MC-415-389	SG205	0.08	1.3	<0.1	0.30	0.22	<0.1	2.7	0.81
MC-415-416.08	SG206	0.03	0.4	<0.1	<0.1	0.16	<0.1	1.8	0.31
MC-415-432.38	SG207	0.04	0.7	<0.1	<0.1	0.17	<0.1	1.9	0.51
MC-415-455.72	SG208	0.03	0.8	<0.1	<0.1	0.16	<0.1	1.3	0.44
MC-415-477	SG209	0.04	1.2	<0.1	0.20	0.21	<0.1	1.7	0.62
MC-415-490.78	SG210	<0.02	0.2	<0.1	<0.1	0.06	<0.1	0.5	0.30
MC-415-497.66	SG211	<0.02	0.7	<0.1	<0.1	0.23	<0.1	1.7	0.51
MC-415-503.32	SG212	<0.02	0.3	<0.1	0.10	0.08	<0.1	0.7	0.46
MC-415-520.15	SG215	0.02	0.4	<0.1	<0.1	0.22	<0.1	3.5	0.45
MC-415-537	SG216	0.09	0.4	<0.1	0.30	0.17	<0.1	2.2	1.85
MC-415-539.69	SG217	0.04	0.4	<0.1	<0.1	0.28	<0.1	2.2	1.23
MC-434-11.1	SG218	0.04	0.2	<0.1	0.10	0.11	<0.1	2.3	0.57
MC-434-31.63	SG219	0.03	0.1	<0.1	0.20	0.08	<0.1	0.7	0.56
MC-434-54.07	SG220	<0.02	0.1	<0.1	0.20	0.06	<0.1	0.5	0.39
MC-434-93.9	SG221	<0.02	<0.1	<0.1	<0.1	0.05	<0.1	0.4	0.24
MC-434-119.66	SG222	0.07	0.2	<0.1	0.20	0.08	<0.1	1.5	0.78
MC-434-168.25	SG223	0.02	<0.1	<0.1	<0.1	0.06	<0.1	0.4	0.30
MC-434-183.4	SG224	0.04	0.1	<0.1	<0.1	0.07	<0.1	0.6	0.37
MC-434-217.84	SG225	0.03	<0.1	<0.1	<0.1	0.08	<0.1	1.0	0.39
MC-434-253.64	SG226	0.05	0.1	<0.1	<0.1	0.05	<0.1	0.6	0.55
MC-434-256.65	SG227	0.04	0.1	<0.1	<0.1	0.09	<0.1	0.7	0.44
MC-434-282.2	SG228	0.03	0.1	<0.1	<0.1	0.05	<0.1	0.8	0.52
MC-434-328.83	SG229	0.04	0.1	<0.1	<0.1	0.06	<0.1	0.5	0.57
MC-434-338.05	SG230	0.03	0.1	<0.1	<0.1	0.08	<0.1	1.4	0.36
MC-434-348.28	SG231	0.06	0.2	<0.1	0.20	0.06	<0.1	0.8	0.50
MC-434-370.63	SG232	0.07	0.2	<0.1	0.20	0.10	<0.1	0.7	0.44
MC-434-397.53	SG233	0.04	0.2	<0.1	0.10	0.11	<0.1	0.6	0.47
MC-434-421.67	SG234	0.04	0.1	<0.1	<0.1	0.06	<0.1	0.7	0.32

Process Details	Total Digestion: A 0.250 g pulp is gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in a dilute ultrapure HNO3.
Standard(s)	ASR109 and ASR209

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Er	Eu	Ga	Gd	Hf	Ho	Mo	Nb
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	0.9	0.39	3.0	2.8	13.3	0.28	0.46	4.8
MC-336-455	SG2	0.6	0.52	6.2	3.6	9.2	0.21	0.33	7.4
MC-336-465	SG3	0.3	0.25	3.2	1.8	4.7	0.10	0.32	2.2
MC-336-479.5	SG4	0.2	0.29	3.5	1.4	1.6	0.06	0.14	0.9
MC-336-500.43	SG5	0.3	0.25	2.1	1.4	2.8	0.10	0.36	1.2
MC-336-506.55	SG6	0.3	0.25	2.3	1.3	3.7	0.09	0.18	1.0
MC-336-506.8	SG7	0.6	0.50	5.8	2.8	10.2	0.21	0.33	3.8
MC-336-517	SG8	0.3	0.23	2.3	1.2	5.4	0.11	0.19	1.1
MC-336-522.86	SG9	0.8	0.63	6.8	3.4	8.1	0.28	0.20	4.9
MC-336-532.73	SG10	0.5	0.21	1.7	1.3	3.4	0.20	0.57	0.8
MC-336-557	SG11	0.4	0.13	0.9	0.9	1.4	0.19	0.53	0.7
MC-336-560.46	SG12	0.2	0.14	1.8	0.8	1.6	0.06	0.16	0.7
MC-336-564	SG13	0.4	0.25	0.4	1.6	8.6	0.14	0.31	3.4
MC-336-570.5	SG14	0.9	0.65	5.3	4.7	10.8	0.29	0.68	2.4
MC-338-23	SG15	0.3	0.16	1.1	1.1	2.2	0.13	0.10	0.8
MC-338-65	SG16	0.2	0.14	0.8	0.9	2.2	0.08	0.14	0.8
MC-338-101	SG17	0.4	0.22	0.9	1.4	5.3	0.14	0.18	1.6
MC-338-150.4	SG18	0.4	0.21	0.7	1.3	4.4	0.13	0.27	1.7
MC-338-220.2	SG19	0.8	0.30	1.8	2.1	6.0	0.28	0.28	2.7
MC-338-272	SG20	0.7	0.41	3.1	2.9	7.0	0.26	0.23	4.8
MC-338-319	SG21	0.5	0.30	2.6	2.0	5.2	0.19	0.17	3.5
MC-338-372.17	SG22	0.3	0.18	1.5	1.7	2.1	0.11	0.12	1.5
MC-338-410.8	SG23	0.3	0.21	1.7	1.5	2.6	0.11	0.11	2.3
MC-338-466	SG24	0.3	0.38	3.5	4.6	2.3	0.11	0.08	1.7
MC-338-502.37	SG25	0.2	0.13	1.6	0.8	1.2	0.06	0.18	0.5
MC-338-537.64	SG26	0.2	0.12	1.5	0.8	1.4	0.10	0.14	0.6
MC-338-554.73	SG27	0.2	0.12	0.9	0.7	1.4	0.06	0.13	0.7
MC-338-557.5	SG28	0.6	0.50	2.7	2.7	7.5	0.24	0.22	3.1
MC-338-559	SG29	2.0	0.70	6.7	4.8	10.8	0.80	0.13	4.3
MC-344-26.1	SG30	0.7	0.17	1.7	1.3	6.4	0.26	0.10	1.3
MC-344-69	SG31	0.5	0.19	2.9	1.4	3.8	0.19	0.08	1.3
MC-344-100.1	SG32	0.2	0.18	2.4	1.2	1.3	0.09	0.16	0.6
MC-344-128	SG33	0.4	0.19	2.1	1.3	5.6	0.15	0.23	2.5
MC-344-164	SG34	0.8	0.30	4.9	2.0	10.5	0.34	0.13	4.4
MC-344-179.8	SG35	0.4	0.20	3.2	1.4	2.8	0.16	0.14	1.2
MC-344-199	SG36	0.3	0.22	1.5	1.6	3.4	0.13	0.11	2.1
MC-344-230	SG37	0.4	0.23	1.3	1.8	4.8	0.16	0.11	4.1
MC-344-275	SG38	0.3	0.16	1.2	1.2	3.3	0.10	0.25	1.8
MC-344-298.82	SG39	0.3	0.28	1.8	2.0	4.6	0.12	0.14	4.5
MC-344-343	SG40	0.2	0.19	1.8	1.1	1.4	0.05	0.09	1.0
MC-344-378.45	SG41	0.3	0.29	3.0	1.6	4.9	0.11	0.11	3.4
MC-344-394.34	SG42	0.3	0.24	2.4	1.4	4.2	0.08	0.12	3.8
MC-344-433	SG43	0.3	0.22	2.7	1.5	4.9	0.09	0.09	2.9
MC-344-467	SG44	0.5	0.28	2.8	1.6	5.8	0.15	0.23	1.6
MC-344-468.8	SG45	0.3	0.12	0.6	0.9	8.8	0.09	0.23	1.4
MC-344-485.76	SG46	0.2	0.12	1.5	0.7	2.2	0.06	0.14	0.8
MC-344-488	SG47	0.2	0.15	3.8	0.8	1.3	0.06	0.12	0.8
MC-344-492.93	SG48	0.8	0.31	2.3	2.2	7.7	0.28	0.22	1.8
MAC-208-10.2	SG49	0.4	0.16	1.1	1.1	2.0	0.13	0.04	0.9
MAC-208-27	SG50	0.3	0.15	1.2	1.1	1.5	0.12	0.04	0.7
MAC-208-63.5	SG51	0.4	0.18	2.6	1.2	2.6	0.16	0.21	0.9
MAC-208-86.5	SG52	0.7	0.30	3.6	1.9	5.6	0.26	0.10	2.4
MAC-208-88	SG53	0.3	0.22	1.1	1.4	1.3	0.12	0.08	0.7
MAC-208-128.4	SG54	0.6	0.27	2.5	1.7	3.9	0.21	0.08	2.2
MAC-208-149	SG55	0.5	0.27	2.0	1.7	5.4	0.21	0.07	1.9
MAC-208-203	SG56	0.5	0.25	3.0	1.7	5.3	0.17	0.09	2.4
MAC-208-217.7	SG57	0.8	0.34	3.5	2.4	12.4	0.31	0.25	7.1
MAC-208-237	SG58	0.6	0.33	3.0	2.4	7.2	0.26	0.14	6.7
MAC-208-289.2	SG59	0.7	0.30	1.8	2.2	2.5	0.32	0.08	2.0
MAC-208-290.5	SG60	0.6	0.31	3.1	2.1	5.3	0.23	0.09	4.3
MAC-208-350.5	SG61	0.4	0.30	2.5	2.2	8.3	0.12	0.12	3.9
MAC-208-395	SG62	0.2	0.19	1.3	1.1	2.9	0.07	0.13	1.5
MAC-208-425.1	SG63	0.5	0.28	2.5	1.6	6.0	0.16	0.22	3.4
MAC-208-447.3	SG64	0.5	0.27	2.2	1.6	6.4	0.19	0.14	1.6
MAC-208-468.4	SG65	0.3	0.19	1.4	1.1	2.8	0.12	0.28	0.9
MAC-208-487	SG66	0.9	0.50	4.6	3.5	4.5	0.33	0.61	2.5
MAC-208-493	SG67	0.5	0.17	4.6	1.4	1.7	0.20	1.03	1.1
MAC-208-553.3	SG71	0.3	0.29	2.8	1.7	1.9	0.11	0.22	0.9
MAC-208-572	SG72	0.4	0.32	4.3	1.8	1.6	0.15	0.21	2.2
MAC-250-297.8	SG73	0.3	0.20	1.8	1.9	2.5	0.10	0.08	1.6
MAC-250-335.1	SG74	0.5	0.38	2.8	3.2	3.1	0.20	0.12	1.6
MAC-250-370.8	SG75	0.6	0.34	2.6	3.6	15.2	0.19	0.14	6.7
MAC-250-401.43	SG76	0.4	0.27	2.7	2.1	2.4	0.16	0.26	1.4
MAC-250-431.78	SG77	1.4	0.72	3.8	4.8	17.4	0.48	0.24	4.7
MAC-250-481.75	SG78	0.6	0.24	1.4	1.7	7.2	0.22	0.27	1.6
MC-253-26	SG79	0.3	0.16	1.5	1.1	1.8	0.14	0.09	0.8
MC-253-76	SG80	0.5	0.21	2.1	1.4	3.4	0.22	0.10	1.7
MC-253-136	SG82	0.3	0.18	1.2	1.1	2.9	0.13	0.11	1.3
MC-253-205	SG84	0.4	0.20	1.2	1.3	3.0	0.18	0.08	1.2
MC-253-265.3	SG85	0.4	0.23	4.1	1.6	4.5	0.16	0.15	2.3
MC-253-287.5	SG86	0.3	0.20	1.9	1.4	2.4	0.10	0.08	1.5
MC-253-325	SG87	0.3	0.18	2.2	1.5	2.2	0.10	0.13	1.9
MC-253-336.2	SG88	0.4	0.29	4.5	1.9	4.7	0.15	0.09	2.8
MC-253-382	SG89	0.5	0.29	2.1	2.4	6.4	0.18	0.08	3.4
MC-253-416	SG90	0.6	0.30	2.9	2.9	4.9	0.21	0.06	3.2
MC-253-430	SG91	0.9	0.56	6.9	4.0	18.5	0.28	0.21	9.3
MC-253-440.1	SG92	0.3	0.26	3.2	1.6	6.2	0.11	0.12	3.1
MC-253-472.5	SG93	0.2	0.13	1.3	0.9	2.4	0.06	0.11	1.7
MC-253-501	SG94	0.2	0.14	1.1	0.8	2.1	0.06	0.10	1.2
MC-253-507.5	SG95	0.5	0.46	1.6	6.3	2.1	0.14	0.14	1.2
MC-253-528	SG96	0.7	0.31	2.6	2.3	5.1	0.28	0.14	2.7
MC-253-538	SG97	0.2	0.18	1.6	1.0	2.6	0.08	0.21	1.4
MC-253-550.1	SG99	0.5	0.30	2.6	1.8	8.4	0.19	0.18	4.1
MC-253-552	SG100	0.3	0.25	2.4	1.6	5.1	0.12	0.13	2.8

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Er	Eu	Ga	Gd	Hf	Ho	Mo	Nb
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MAC-246-4.33	SG101	0.4	0.19	1.9	1.2	1.3	0.14	0.09	0.8
MAC-246-54.7	SG102	0.5	0.19	1.5	1.2	3.8	0.20	0.09	1.2
MAC-246-60.6	SG103	0.4	0.18	1.4	1.2	3.0	0.16	0.10	1.0
MAC-246-82.75	SG104	0.5	0.21	2.4	1.3	3.6	0.18	0.10	1.9
MAC-246-126.15	SG105	0.3	0.19	0.9	1.2	1.8	0.10	0.09	0.8
MAC-246-142.86	SG106	0.7	0.31	3.0	1.9	7.4	0.25	0.21	3.2
MAC-246-165.4	SG107	0.4	0.22	1.6	1.3	2.7	0.15	0.08	1.1
MAC-246-213.43	SG108	0.3	0.21	1.0	1.5	1.9	0.10	0.08	1.3
MAC-246-267.05	SG109	0.4	0.22	3.0	1.6	4.6	0.14	0.12	3.5
MAC-246-297.33	SG110	0.8	0.35	2.5	2.7	10.0	0.30	0.16	7.4
MAC-246-324.5	SG111	0.7	0.43	3.2	3.2	10.3	0.28	0.13	6.3
MAC-246-333.8	SG112	0.7	0.31	2.1	3.1	10.6	0.26	0.13	7.6
MAC-246-354.17	SG113	1.2	0.44	3.3	4.3	11.9	0.45	0.45	6.4
MAC-246-378.25	SG114	0.3	0.25	2.3	2.3	3.8	0.11	0.13	2.2
MAC-246-418.13	SG115	0.2	0.20	2.0	1.5	4.3	0.08	0.13	2.5
MAC-246-423.8	SG116	0.4	0.28	2.2	1.7	6.3	0.13	0.24	2.8
MAC-246-454.11	SG117	0.4	0.39	2.8	2.6	8.0	0.12	0.24	3.9
MAC-246-475.33	SG118	0.3	0.20	1.2	1.1	4.6	0.09	0.25	1.3
MAC-246-496.42	SG119	0.4	0.26	6.1	1.6	3.4	0.17	0.60	2.4
MAC-246-499.02	SG120	0.5	0.22	3.5	1.4	3.8	0.20	1.02	1.5
MAC-246-508.8	SG121	0.3	0.23	5.6	1.4	5.6	0.14	0.47	1.9
MAC-246-510.2	SG122	0.2	0.18	8.3	1.1	3.1	0.09	0.53	1.0
MAC-246-543	SG123	0.5	0.28	1.4	1.5	3.1	0.15	0.18	1.1
MAC-252-10.15	SG124	0.3	0.18	1.4	1.1	1.5	0.14	0.07	0.7
MAC-252-25.7	SG125	0.6	0.23	1.5	1.4	4.7	0.24	0.10	1.4
MAC-252-55.65	SG126	0.7	0.25	9.9	1.6	4.0	0.26	0.06	2.1
MAC-252-102.48	SG127	0.4	0.21	2.7	1.3	3.6	0.15	0.12	1.2
MAC-252-167.2	SG128	0.4	0.20	1.3	1.3	3.7	0.15	0.07	1.6
MAC-252-199.86	SG129	0.6	0.24	1.5	1.8	8.1	0.23	0.07	4.0
MAC-252-249.43	SG130	0.3	0.22	2.1	1.5	2.8	0.11	0.06	1.6
MAC-252-261.91	SG131	0.4	0.20	2.2	1.5	4.5	0.18	0.07	2.9
MAC-252-271.2	SG132	0.7	0.36	3.2	2.8	11.9	0.25	0.12	7.2
MAC-252-286.2	SG133	0.4	0.31	2.1	2.4	6.1	0.15	0.07	4.2
MAC-252-305.3	SG134	0.2	0.23	1.6	1.5	3.6	0.09	0.16	3.2
MAC-252-319.44	SG135	2.4	0.52	2.2	4.4	7.0	1.17	0.15	4.8
MAC-252-331.7	SG136	0.4	0.32	3.5	2.3	6.5	0.16	0.14	5.8
MAC-252-342.5	SG137	0.2	0.24	2.2	1.6	2.1	0.09	0.06	2.6
MAC-255-6.13	SG138	0.5	0.21	1.7	1.4	3.7	0.20	0.07	1.1
MAC-255-29.21	SG139	0.6	0.24	2.0	1.5	3.6	0.23	0.27	1.2
MAC-255-51.63	SG140	1.0	0.32	4.0	2.1	6.8	0.38	0.11	2.5
MAC-255-95	SG141	0.3	0.20	1.0	1.2	2.0	0.13	0.08	0.7
MAC-255-132.3	No Data								
MAC-255-149	SG143	0.5	0.22	1.6	1.5	4.1	0.19	0.45	1.7
MAC-255-194.47	SG144	0.4	0.23	1.0	1.6	4.2	0.16	0.18	1.8
MAC-255-209.83	SG145	0.4	0.20	1.3	1.3	3.8	0.13	0.09	2.1
MAC-255-217.68	SG146	0.4	0.28	2.4	2.0	3.5	0.13	0.29	2.0
MAC-255-259.93	SG147	0.4	0.23	1.9	1.8	3.8	0.13	0.11	3.0
MAC-255-288.82	SG148	0.5	0.25	3.4	1.8	4.9	0.16	0.27	3.7
MAC-255-293.4	SG149	0.7	0.42	4.4	3.1	7.8	0.27	0.18	5.5
MAC-255-332.33	SG150	0.5	0.29	2.9	2.2	2.5	0.18	0.15	1.8
MAC-255-338	SG151	0.7	0.40	4.4	2.6	8.6	0.26	0.11	5.8
MAC-255-362.46	SG152	0.4	0.25	2.5	1.8	3.8	0.15	0.15	2.0
MAC-255-378.33	SG153	0.5	0.24	2.8	1.6	7.6	0.14	0.14	3.5
MAC-255-397.78	SG154	0.2	0.22	3.4	1.3	2.8	0.08	0.10	1.5
MAC-255-412.58	SG155	0.5	0.21	2.2	1.5	6.6	0.14	0.13	2.8
MAC-255-426.3	SG156	0.4	0.25	3.0	1.6	5.2	0.14	0.09	2.6
MAC-255-429.5	SG157	0.2	0.22	2.9	1.3	2.2	0.09	0.15	1.5
MAC-255-451.78	SG158	0.5	0.38	3.6	2.0	5.4	0.17	0.12	2.0
MAC-255-462.07	SG159	0.6	0.30	2.1	1.9	12.9	0.18	0.18	3.7
MAC-255-469.36	SG160	0.3	0.12	0.6	0.8	4.8	0.11	0.15	1.0
MAC-255-479.17	SG161	0.4	0.19	1.3	1.0	4.2	0.15	0.21	1.0
MAC-255-483.68	SG162	0.2	0.15	1.1	0.8	2.0	0.08	0.70	0.9
MAC-255-501.32	SG163	0.5	0.29	1.9	2.1	2.2	0.19	1.42	2.1
MAC-255-503.26	SG164	0.3	0.17	2.3	1.2	1.6	0.11	2.00	1.4
MAC-255-559	SG165	0.9	0.19	3.3	2.1	2.5	0.32	0.38	2.3
MAC-255-564.36	SG166	1.2	0.49	4.9	4.4	2.9	0.46	0.57	3.2
MC-413-71.64	SG167	0.4	0.17	1.8	1.3	3.0	0.18	0.06	1.0
MC-413-130	SG168	0.4	0.19	1.3	1.1	2.2	0.13	0.04	0.8
MC-413-183.26	SG169	0.8	0.34	5.1	2.1	8.3	0.28	0.09	3.3
MC-413-224	SG170	0.4	0.17	1.5	1.1	3.4	0.16	0.29	0.9
MC-413-258.26	SG171	0.7	0.29	2.1	2.0	4.9	0.24	0.08	2.5
MC-413-282.17	SG172	0.3	0.22	1.7	1.5	2.4	0.11	0.06	1.3
MC-413-299	SG173	0.6	0.37	2.8	2.5	7.0	0.23	0.22	5.0
MC-413-303.5	SG174	0.6	0.35	1.6	2.8	7.3	0.23	0.10	4.5
MC-413-317.96	SG175	0.5	0.24	1.7	1.9	4.6	0.18	0.14	3.7
MC-413-354.67	SG177	0.4	0.27	1.9	2.1	3.3	0.17	0.10	2.4
MC-413-388.82	SG178	2.2	1.90	2.6	19.2	25.2	0.75	0.19	12.2
MC-413-404	SG179	0.9	0.36	2.0	2.7	16.8	0.28	0.14	6.2
MC-413-430.57	SG180	0.4	0.25	1.8	1.8	6.6	0.13	0.24	5.1
MC-413-456.68	SG181	0.2	0.20	1.2	1.2	2.2	0.07	0.08	1.2
MC-413-482.25	SG182	0.9	0.39	1.7	2.9	19.8	0.28	0.17	11.7
MC-413-501.66	SG183	0.3	0.18	1.3	1.1	3.9	0.09	0.10	1.0
MC-413-527.67	SG184	0.3	0.18	1.6	1.0	3.1	0.09	0.09	1.1
MC-413-547.3	SG185	0.6	0.28	2.3	1.6	4.6	0.21	0.12	1.7
MC-413-559.73	SG187	0.7	0.22	3.3	2.9	2.4	0.27	0.54	2.9
MC-413-566.28	SG188	1.1	0.60	9.0	3.9	8.6	0.41	0.29	5.6
MC-413-603.83	SG189	1.2	0.73	4.4	5.5	19.4	0.40	2.20	13.6
MC-413-614.83	SG190	1.1	0.51	4.4	4.7	14.1	0.36	0.64	6.8
MC-413-623.78	SG191	0.3	0.13	0.6	0.9	7.1	0.09	0.50	1.6
MC-413-638.86	SG192	3.0	0.49	3.4	3.6	3.7	0.84	0.69	1.8
MC-413-649	SG193	1.0	0.44	3.2	4.2	12.4	0.37	0.75	5.3
MC-415-76.73	SG194	0.3	0.16	1.4	1.0	2.1	0.12	0.10	1.0
MC-415-127.56	SG195	0.3	0.19	1.6	1.2	2.7	0.14	0.05	1.4
MC-415-173.74	SG196	0.4	0.25	3.6	1.5	3.3	0.14	0.12	1.7
MC-415-197	SG197	0.3	0.18	1.6	1.0	1.3	0.09	0.16	0.6
MC-415-222.34	SG198	0.3	0.14	1.5	0.9	1.6	0.11	0.06	0.6

Appendix B

Lithogeochemical Data

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Er	Eu	Ga	Gd	Hf	Ho	Mo	Nb
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-415-232.5	SG199	0.5	0.27	1.7	1.8	5.0	0.17	0.17	2.3
MC-415-295.67	SG200	0.4	0.20	1.8	1.6	3.8	0.16	0.06	3.2
MC-415-350.35	SG203	0.4	0.58	2.1	3.8	7.9	0.13	0.12	6.7
MC-415-389	SG205	0.6	0.44	3.1	3.2	14.6	0.18	0.20	8.1
MC-415-416.08	SG206	0.2	0.16	2.4	1.2	3.2	0.07	0.13	1.7
MC-415-432.38	SG207	0.3	0.27	2.8	1.7	4.1	0.11	0.12	2.1
MC-415-455.72	SG208	0.3	0.26	2.4	1.8	3.9	0.10	0.10	1.6
MC-415-477	SG209	0.5	0.28	3.6	1.6	6.1	0.14	0.11	2.7
MC-415-490.78	SG210	0.2	0.13	0.6	0.7	1.2	0.06	0.07	0.5
MC-415-497.66	SG211	0.3	0.21	2.3	1.2	4.2	0.12	0.09	1.0
MC-415-503.32	SG212	0.4	0.15	0.7	0.9	6.2	0.12	0.08	1.2
MC-415-520.15	SG215	0.3	0.22	2.4	1.3	5.4	0.11	0.20	1.4
MC-415-537	SG216	1.1	0.64	2.1	5.2	13.9	0.40	0.33	7.8
MC-415-539.69	SG217	0.8	1.71	4.6	14.7	2.2	0.17	0.36	2.2
MC-434-11.1	SG218	0.4	0.18	1.2	1.3	5.8	0.14	0.14	1.9
MC-434-31.63	SG219	0.4	0.18	1.2	1.2	8.6	0.14	0.08	2.2
MC-434-54.07	SG220	0.3	0.11	0.9	0.8	7.4	0.10	0.05	1.6
MC-434-93.9	SG221	0.1	0.13	0.6	0.7	1.2	0.05	0.05	0.5
MC-434-119.66	SG222	0.5	0.32	4.1	1.8	7.3	0.18	0.16	4.2
MC-434-168.25	SG223	0.2	0.12	1.0	0.8	4.1	0.08	0.08	1.3
MC-434-183.4	SG224	0.2	0.15	1.1	1.0	4.0	0.07	0.08	2.1
MC-434-217.84	SG225	0.3	0.21	0.8	1.5	3.6	0.09	0.06	2.0
MC-434-253.64	SG226	0.3	0.24	1.6	1.8	2.8	0.10	0.08	2.7
MC-434-256.65	SG227	0.3	0.18	1.2	1.4	4.8	0.10	0.60	2.4
MC-434-282.2	SG228	0.3	0.20	1.5	1.6	4.6	0.11	0.08	2.5
MC-434-328.83	SG229	0.3	0.24	2.2	2.0	4.0	0.11	0.05	2.9
MC-434-338.05	SG230	0.2	0.17	2.9	1.4	1.8	0.07	0.12	1.3
MC-434-348.28	SG231	0.4	0.28	2.3	1.9	9.6	0.11	0.10	5.3
MC-434-370.63	SG232	0.3	0.19	2.3	1.4	7.9	0.10	0.13	4.7
MC-434-397.53	SG233	0.3	0.30	1.9	2.3	5.4	0.10	0.06	2.8
MC-434-421.67	SG234	0.2	0.20	1.4	1.5	3.8	0.06	0.08	1.9

Process Details	Total Digestion: A 0.250 g pulp is gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in a dilute ultrapure HNO3.
Standard(s)	ASR109 and ASR209

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Nd	Ni	Pb204	Pb206	Pb207	Pb208	PbSUM	Pr
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	19.4	0.9	0.03	0.97	0.52	2.04	3.56	6.3
MC-336-455	SG2	27.2	2.2	0.06	1.39	0.91	3.52	5.88	8.6
MC-336-465	SG3	14.6	4.1	0.03	0.66	0.41	1.30	2.40	4.4
MC-336-479.5	SG4	11.1	0.8	0.04	0.67	0.52	1.42	2.65	3.3
MC-336-500.43	SG5	9.4	2.1	0.03	0.73	0.50	1.31	2.57	2.7
MC-336-506.55	SG6	9.0	2.1	0.04	0.84	0.64	1.73	3.26	2.7
MC-336-506.8	SG7	18.4	5.9	0.06	1.39	1.00	2.80	5.25	5.5
MC-336-517	SG8	8.0	1.8	0.05	0.99	0.71	1.84	3.58	2.5
MC-336-522.86	SG9	23.4	11.5	0.10	2.36	1.57	4.38	8.41	7.0
MC-336-532.73	SG10	5.8	1.3	0.09	6.42	1.63	4.48	12.60	1.7
MC-336-557	SG11	4.3	5.0	0.03	5.96	0.64	1.11	7.74	1.3
MC-336-560.46	SG12	6.3	0.6	0.04	0.78	0.56	1.41	2.78	1.9
MC-336-564	SG13	10.8	0.7	0.08	2.44	1.22	4.79	8.54	3.6
MC-336-570.5	SG14	34.2	6.7	0.04	0.94	0.58	2.02	3.57	10.0
MC-338-23	SG15	6.7	1.1	0.03	0.65	0.49	1.27	2.45	2.1
MC-338-65	SG16	6.0	0.4	0.03	0.62	0.47	1.25	2.37	1.9
MC-338-101	SG17	8.2	0.4	0.04	0.79	0.64	1.82	3.30	2.5
MC-338-150.4	SG18	8.3	0.4	0.06	1.12	0.89	2.47	4.53	2.5
MC-338-220.2	SG19	11.3	0.8	0.05	1.14	0.83	2.64	4.67	3.4
MC-338-272	SG20	16.3	2.3	0.04	0.92	0.70	2.21	3.88	4.8
MC-338-319	SG21	12.8	0.6	0.04	0.85	0.67	1.95	3.51	3.8
MC-338-372.17	SG22	10.6	0.5	0.02	0.44	0.25	0.89	1.60	3.2
MC-338-410.8	SG23	9.6	0.6	0.02	0.42	0.28	1.00	1.71	2.8
MC-338-466	SG24	39.6	0.7	0.03	0.63	0.50	1.52	2.68	10.7
MC-338-502.37	SG25	5.3	1.0	0.03	0.57	0.47	1.22	2.29	1.6
MC-338-537.64	SG26	4.6	1.4	0.03	1.24	0.52	1.23	3.02	1.5
MC-338-554.73	SG27	5.4	0.5	0.03	0.59	0.45	1.16	2.22	1.7
MC-338-557.5	SG28	19.5	5.9	0.08	1.81	1.22	3.40	6.51	6.0
MC-338-559	SG29	25.4	4.0	0.07	1.93	1.10	3.34	6.44	7.8
MC-344-26.1	SG30	6.4	1.3	0.03	0.82	0.46	1.28	2.59	2.0
MC-344-69	SG31	7.8	1.7	0.04	1.20	0.59	1.58	3.40	2.5
MC-344-100.1	SG32	8.2	1.7	0.04	0.93	0.60	1.45	3.02	2.5
MC-344-128	SG33	8.1	2.1	0.05	0.89	0.71	2.00	3.66	2.5
MC-344-164	SG34	10.0	3.9	0.18	4.26	2.76	9.28	16.50	3.0
MC-344-179.8	SG35	8.7	1.8	0.05	1.03	0.72	2.05	3.84	2.7
MC-344-199	SG36	10.3	0.9	0.06	1.22	0.97	2.76	5.01	3.1
MC-344-230	SG37	9.8	0.6	0.05	0.84	0.72	1.96	3.57	3.0
MC-344-275	SG38	8.3	1.2	0.04	0.85	0.68	1.86	3.44	2.5
MC-344-298.82	SG39	14.4	0.7	0.05	0.86	0.73	2.16	3.80	4.3
MC-344-343	SG40	8.2	0.5	0.03	0.57	0.50	1.31	2.42	2.6
MC-344-378.45	SG41	11.0	0.5	0.04	0.81	0.64	1.89	3.37	3.4
MC-344-394.34	SG42	10.7	1.5	0.05	0.97	0.73	2.67	4.41	3.5
MC-344-433	SG43	12.4	0.6	0.03	0.68	0.49	1.46	2.66	3.8
MC-344-467	SG44	9.9	1.0	0.04	0.98	0.72	1.90	3.64	2.9
MC-344-468.8	SG45	6.5	0.4	0.02	0.66	0.37	1.08	2.13	1.9
MC-344-485.76	SG46	5.2	0.6	0.03	0.62	0.49	1.23	2.38	1.6
MC-344-488	SG47	6.0	1.9	0.06	0.91	0.85	2.07	3.89	1.9
MC-344-492.93	SG48	13.8	1.4	0.04	1.09	0.70	1.97	3.80	4.0
MAC-208-10.2	SG49	7.6	0.5	0.03	0.61	0.43	1.10	2.17	2.5
MAC-208-27	SG50	7.2	0.7	0.03	0.65	0.49	1.26	2.44	2.4
MAC-208-63.5	SG51	7.5	1.5	0.02	0.58	0.39	1.06	2.05	2.3
MAC-208-86.5	SG52	11.2	3.4	0.06	1.21	0.91	2.49	4.67	3.3
MAC-208-88	SG53	9.3	1.2	0.04	0.65	0.59	1.45	2.72	2.9
MAC-208-128.4	SG54	10.5	2.6	0.05	0.81	0.71	1.84	3.41	3.1
MAC-208-149	SG55	11.1	1.8	0.03	0.65	0.50	1.62	2.80	3.3
MAC-208-203	SG56	10.0	5.0	0.03	0.62	0.43	1.25	2.32	3.0
MAC-208-217.7	SG57	12.9	4.7	0.44	11.40	7.08	25.70	44.60	3.9
MAC-208-237	SG58	11.8	5.9	0.05	1.78	0.83	2.33	4.98	3.5
MAC-208-289.2	SG59	10.2	1.0	0.04	1.21	0.59	1.64	3.48	3.1
MAC-208-290.5	SG60	12.1	0.7	0.03	0.95	0.47	1.43	2.88	3.7
MAC-208-350.5	SG61	17.8	1.4	0.03	0.70	0.49	2.05	3.27	5.9
MAC-208-395	SG62	8.3	0.5	0.03	0.61	0.43	1.23	2.30	2.5
MAC-208-425.1	SG63	11.2	0.5	0.06	1.09	0.86	2.48	4.49	3.6
MAC-208-447.3	SG64	11.1	0.7	0.12	2.78	1.90	6.79	11.60	3.3
MAC-208-468.4	SG65	6.6	0.6	0.04	1.07	0.60	1.68	3.39	1.9
MAC-208-487	SG66	21.0	5.8	0.03	1.40	0.52	1.70	3.65	6.3
MAC-208-493	SG67	9.2	7.4	0.02	2.55	0.42	1.01	3.99	2.9
MAC-208-553.3	SG71	14.4	3.1	0.01	1.24	0.24	0.85	2.35	4.5
MAC-208-572	SG72	14.5	6.7	0.02	1.11	0.30	0.90	2.33	4.7
MAC-250-297.8	SG73	13.2	0.6	0.02	0.59	0.29	0.96	1.86	3.9
MAC-250-335.1	SG74	19.8	1.8	0.04	0.85	0.56	1.73	3.18	5.8
MAC-250-370.8	SG75	27.9	1.4	0.04	0.89	0.57	2.85	4.34	8.6
MAC-250-401.43	SG76	12.3	0.7	0.04	1.16	0.68	2.19	4.07	3.7
MAC-250-431.78	SG77	27.3	1.7	0.07	1.92	1.05	3.52	6.55	8.2
MAC-250-481.75	SG78	10.3	0.9	0.03	0.88	0.53	1.46	2.90	3.0
MC-253-26	SG79	6.7	0.9	0.03	0.55	0.41	1.08	2.08	2.2
MC-253-76	SG80	7.6	1.3	0.03	0.63	0.46	1.22	2.34	2.4
MC-253-136	SG82	7.0	1.0	0.03	0.63	0.53	1.39	2.58	2.1
MC-253-205	SG84	7.8	1.5	0.07	1.57	1.06	3.30	6.00	2.4
MC-253-265.3	SG85	9.8	5.2	0.22	5.79	3.44	11.80	21.30	2.9
MC-253-287.5	SG86	10.0	3.6	0.03	0.69	0.43	1.27	2.42	3.0
MC-253-325	SG87	9.4	5.0	0.03	1.21	0.57	1.43	3.24	2.9
MC-253-336.2	SG88	12.0	6.4	0.03	0.99	0.52	1.59	3.13	3.6
MC-253-382	SG89	14.8	0.7	0.03	0.66	0.44	1.70	2.83	4.4
MC-253-416	SG90	18.9	0.6	0.03	0.59	0.42	1.66	2.69	5.5
MC-253-430	SG91	27.4	1.5	0.05	1.32	0.82	4.17	6.36	8.3
MC-253-440.1	SG92	12.4	2.9	0.03	0.65	0.46	1.74	2.88	4.0
MC-253-472.5	SG93	7.1	0.5	0.03	0.59	0.45	1.34	2.41	2.4
MC-253-501	SG94	6.0	0.4	0.03	0.56	0.44	1.13	2.16	1.8
MC-253-507.5	SG95	72.1	0.8	0.02	0.49	0.33	0.97	1.81	15.6
MC-253-528	SG96	11.9	0.9	0.05	0.98	0.69	1.99	3.71	3.5
MC-253-538	SG97	7.1	1.0	0.04	0.73	0.55	1.48	2.79	2.2
MC-253-550.1	SG99	12.8	2.7	0.04	1.61	0.73	2.45	4.83	4.2
MC-253-552	SG100	12.1	2.0	0.04	0.96	0.62	1.85	3.48	3.8

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Nd	Ni	Pb204	Pb206	Pb207	Pb208	PbSUM	Pr
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MAC-246-4.33	SG101	8.0	1.2	0.03	0.71	0.47	1.20	2.41	2.4
MAC-246-54.7	SG102	6.9	1.2	0.03	0.56	0.41	1.08	2.08	2.2
MAC-246-60.6	SG103	7.2	1.0	0.03	0.53	0.40	1.07	2.03	2.2
MAC-246-82.75	SG104	8.2	1.3	0.04	0.75	0.56	1.47	2.82	2.6
MAC-246-126.15	SG105	8.0	0.9	0.06	1.32	0.96	2.67	5.02	2.3
MAC-246-142.86	SG106	10.8	2.6	0.11	2.45	1.67	5.00	9.23	3.2
MAC-246-165.4	SG107	8.3	1.6	0.05	0.88	0.67	1.78	3.37	2.6
MAC-246-213.43	SG108	10.0	1.3	0.04	0.75	0.63	1.61	3.03	3.0
MAC-246-267.05	SG109	11.0	2.2	0.04	1.30	0.62	1.71	3.68	3.4
MAC-246-297.33	SG110	15.9	1.3	0.04	1.10	0.60	2.50	4.24	4.7
MAC-246-324.5	SG111	19.7	1.1	0.04	1.19	0.69	2.96	4.89	5.8
MAC-246-333.8	SG112	20.0	0.7	0.06	1.15	0.83	3.27	5.30	6.1
MAC-246-354.17	SG113	23.7	0.6	0.03	0.86	0.51	2.77	4.18	7.1
MAC-246-378.25	SG114	15.2	0.4	0.03	0.64	0.44	1.69	2.80	4.6
MAC-246-418.13	SG115	9.7	0.8	0.05	0.99	0.81	2.45	4.30	2.9
MAC-246-423.8	SG116	11.0	0.8	0.04	0.89	0.58	1.83	3.33	3.3
MAC-246-454.11	SG117	17.3	2.9	0.04	1.14	0.65	2.56	4.40	5.3
MAC-246-475.33	SG118	7.2	1.5	0.03	0.91	0.47	1.35	2.75	2.1
MAC-246-496.42	SG119	11.3	3.2	0.04	1.86	0.54	1.38	3.80	3.4
MAC-246-499.02	SG120	8.9	2.0	0.04	1.85	0.55	1.42	3.86	2.8
MAC-246-508.8	SG121	9.3	2.6	0.04	2.45	0.65	1.59	4.73	2.7
MAC-246-510.2	SG122	7.0	3.3	0.04	2.07	0.68	1.65	4.44	2.0
MAC-246-543	SG123	8.3	1.0	0.04	0.80	0.55	1.48	2.86	2.2
MAC-252-10.15	SG124	7.7	0.9	0.03	0.62	0.48	1.15	2.28	2.4
MAC-252-25.7	SG125	8.4	1.0	0.04	0.76	0.55	1.42	2.76	2.5
MAC-252-55.65	SG126	10.1	5.1	0.03	0.86	0.56	1.44	2.89	3.1
MAC-252-102.48	SG127	8.6	2.2	0.05	0.86	0.71	1.80	3.42	2.6
MAC-252-167.2	SG128	8.2	1.4	0.03	0.63	0.47	1.31	2.44	2.5
MAC-252-199.86	SG129	11.0	2.3	0.16	3.72	2.45	8.16	14.50	3.3
MAC-252-249.43	SG130	12.3	2.2	0.04	0.77	0.58	1.61	2.99	3.6
MAC-252-261.91	SG131	10.2	1.9	0.07	1.53	1.06	3.23	5.88	3.1
MAC-252-271.2	SG132	16.7	7.2	0.05	0.95	0.67	2.92	4.59	5.2
MAC-252-286.2	SG133	15.1	1.8	0.03	0.56	0.39	1.60	2.58	4.6
MAC-252-305.3	SG134	10.7	1.7	0.03	0.63	0.51	1.42	2.59	3.2
MAC-252-319.44	SG135	18.0	1.4	0.03	0.75	0.50	1.77	3.04	5.0
MAC-252-331.7	SG136	14.5	5.8	0.05	1.02	0.77	2.68	4.53	4.3
MAC-252-342.5	SG137	11.7	1.5	0.03	0.54	0.41	1.21	2.19	3.4
MAC-255-6.13	SG138	8.4	1.2	0.03	0.63	0.45	1.16	2.26	2.6
MAC-255-29.21	SG139	8.9	2.1	0.07	1.77	1.11	3.12	6.07	2.8
MAC-255-51.63	SG140	11.0	2.6	0.04	0.98	0.65	1.76	3.43	3.3
MAC-255-95	SG141	8.1	0.9	0.05	0.76	0.62	1.58	3.00	2.4
MAC-255-132.3	No Data								
MAC-255-149	SG143	8.6	1.4	0.03	0.93	0.52	1.30	2.78	2.6
MAC-255-194.47	SG144	10.2	1.0	0.07	1.76	1.20	3.52	6.56	3.0
MAC-255-209.83	SG145	9.1	1.2	0.04	0.93	0.70	1.98	3.66	2.7
MAC-255-217.68	SG146	14.1	3.5	0.05	1.09	0.72	2.29	4.15	4.2
MAC-255-259.93	SG147	11.1	0.7	0.03	1.43	0.57	1.45	3.47	3.4
MAC-255-288.82	SG148	12.0	1.7	0.10	2.55	1.64	5.77	10.10	3.6
MAC-255-293.4	SG149	15.5	3.9	0.03	0.80	0.45	1.52	2.80	4.4
MAC-255-332.33	SG150	11.9	0.7	0.05	0.91	0.77	2.14	3.86	3.6
MAC-255-338	SG151	16.3	0.6	0.08	1.88	1.25	4.51	7.72	4.8
MAC-255-362.46	SG152	10.1	0.5	0.03	0.69	0.51	1.55	2.78	3.0
MAC-255-378.33	SG153	12.4	0.4	0.04	0.88	0.63	2.05	3.60	4.0
MAC-255-397.78	SG154	10.4	0.5	0.05	0.85	0.70	1.86	3.46	3.2
MAC-255-412.58	SG155	11.3	0.5	0.03	0.76	0.54	1.85	3.18	3.8
MAC-255-426.3	SG156	12.6	0.5	0.04	0.84	0.64	1.99	3.51	4.0
MAC-255-429.5	SG157	10.7	0.6	0.04	0.77	0.59	1.65	3.04	3.5
MAC-255-451.78	SG158	13.6	0.8	0.07	1.33	1.05	2.59	5.04	4.1
MAC-255-462.07	SG159	12.0	0.5	0.08	1.58	1.16	3.10	5.92	3.6
MAC-255-469.36	SG160	4.5	0.4	0.03	0.72	0.47	1.17	2.39	1.4
MAC-255-479.17	SG161	6.1	0.5	0.04	1.04	0.67	1.62	3.38	1.8
MAC-255-483.68	SG162	5.6	0.6	0.04	0.80	0.53	1.34	2.71	1.7
MAC-255-501.32	SG163	16.1	2.5	0.11	4.32	1.73	6.19	12.30	4.9
MAC-255-503.26	SG164	8.8	10.0	0.02	1.64	0.30	0.99	2.94	2.7
MAC-255-559	SG165	14.4	14.1	0.01	7.89	0.22	1.08	9.20	5.1
MAC-255-564.36	SG166	33.6	54.1	0.03	5.44	0.64	2.14	8.24	11.6
MC-413-71.64	SG167	7.6	2.3	0.03	0.70	0.43	1.13	2.28	2.4
MC-413-130	SG168	8.0	1.3	0.04	0.64	0.55	1.37	2.59	2.5
MC-413-183.26	SG169	11.6	5.8	0.08	1.28	1.13	3.05	5.54	3.4
MC-413-224	SG170	6.1	2.2	0.03	0.51	0.38	1.02	1.94	1.9
MC-413-258.26	SG171	12.8	1.8	0.05	0.92	0.77	2.18	3.92	3.8
MC-413-282.17	SG172	9.7	1.7	0.02	0.52	0.34	1.08	1.95	3.0
MC-413-299	SG173	16.0	1.8	0.04	0.97	0.63	2.00	3.64	4.8
MC-413-303.5	SG174	15.2	0.8	0.03	0.74	0.48	1.84	3.09	4.7
MC-413-317.96	SG175	12.6	2.1	0.02	0.69	0.40	1.72	2.84	3.9
MC-413-354.67	SG177	13.3	0.4	0.03	0.63	0.46	1.47	2.58	4.0
MC-413-388.82	SG178	152.0	0.8	0.04	1.21	0.62	5.09	6.96	36.9
MC-413-404	SG179	17.7	1.5	0.02	0.77	0.40	2.18	3.37	5.5
MC-413-430.57	SG180	15.4	0.7	0.05	1.11	0.74	2.96	4.86	5.0
MC-413-456.68	SG181	10.7	0.7	0.03	0.58	0.39	1.29	2.30	3.1
MC-413-482.25	SG182	21.2	0.5	0.05	1.20	0.76	3.49	5.49	6.7
MC-413-501.66	SG183	8.2	0.6	0.04	0.71	0.54	1.45	2.74	2.3
MC-413-527.67	SG184	6.9	0.4	0.05	0.76	0.68	1.68	3.17	2.1
MC-413-547.3	SG185	10.0	0.5	0.06	1.18	0.87	2.23	4.34	3.0
MC-413-559.73	SG187	19.7	10.2	0.01	1.77	0.29	1.52	3.60	6.0
MC-413-566.28	SG188	29.3	1.6	0.15	3.49	2.32	6.83	12.80	9.6
MC-413-603.83	SG189	52.1	27.2	0.04	4.25	0.80	5.39	10.50	18.5
MC-413-614.83	SG190	41.9	12.0	0.06	7.78	1.20	4.38	13.40	13.7
MC-413-623.78	SG191	7.8	2.3	0.02	1.48	0.35	1.11	2.97	2.5
MC-413-638.86	SG192	28.0	3.6	0.02	0.52	0.25	1.07	1.85	7.9
MC-413-649	SG193	45.1	1.6	0.05	1.25	0.87	3.67	5.84	16.0
MC-415-76.73	SG194	7.3	1.6	0.03	0.55	0.43	1.08	2.08	2.3
MC-415-127.56	SG195	7.7	1.7	0.03	0.63	0.51	1.30	2.48	2.4
MC-415-173.74	SG196	10.0	4.7	0.06	1.05	0.95	2.37	4.43	3.0
MC-415-197	SG197	7.5	2.1	0.03	0.52	0.42	1.05	2.01	2.4
MC-415-222.34	SG198	6.0	1.8	0.02	0.45	0.34	0.86	1.68	1.8

Appendix B

Lithogeochemical Data

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Nd	Ni	Pb204	Pb206	Pb207	Pb208	PbSUM	Pr
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-415-232.5	SG199	11.0	2.0	0.04	0.73	0.61	1.74	3.12	3.3
MC-415-295.67	SG200	10.1	1.3	0.03	0.64	0.47	1.37	2.51	3.1
MC-415-350.35	SG203	25.7	2.1	0.03	0.78	0.55	2.60	3.96	7.3
MC-415-389	SG205	22.8	2.6	0.03	0.76	0.45	3.38	10.40	7.4
MC-415-416.08	SG206	11.5	1.6	0.02	0.44	0.29	1.19	1.94	4.0
MC-415-432.38	SG207	15.0	2.1	0.03	0.65	0.49	1.61	2.78	4.3
MC-415-455.72	SG208	15.5	2.4	0.02	0.53	0.37	1.13	2.05	4.1
MC-415-477	SG209	13.4	2.8	0.03	0.70	0.47	1.58	2.78	4.2
MC-415-490.78	SG210	5.5	0.6	0.03	0.48	0.41	1.02	1.93	1.5
MC-415-497.66	SG211	8.3	2.2	0.04	0.71	0.57	1.47	2.79	2.5
MC-415-503.32	SG212	5.5	0.8	0.03	0.63	0.42	1.03	2.10	1.7
MC-415-520.15	SG215	10.0	1.5	0.03	0.87	0.43	1.22	2.54	3.3
MC-415-537	SG216	32.7	1.6	0.03	1.04	0.52	3.90	5.50	10.1
MC-415-539.69	SG217	181.0	2.5	0.09	1.67	1.29	3.54	6.58	45.1
MC-434-11.1	SG218	10.6	0.7	0.05	1.20	0.82	2.55	4.62	3.2
MC-434-31.63	SG219	8.2	0.6	0.03	0.57	0.44	1.26	2.30	2.6
MC-434-54.07	SG220	5.6	0.4	0.02	0.47	0.34	0.99	1.82	1.9
MC-434-93.9	SG221	5.9	0.3	0.03	0.53	0.48	1.16	2.20	2.0
MC-434-119.66	SG222	11.9	0.6	0.17	3.51	2.60	7.70	14.00	3.8
MC-434-168.25	SG223	5.8	0.4	0.03	0.50	0.38	1.19	2.09	1.8
MC-434-183.4	SG224	8.0	0.4	0.04	0.67	0.59	1.59	2.88	2.6
MC-434-217.84	SG225	9.7	0.3	0.07	1.46	1.02	3.48	6.03	3.0
MC-434-253.64	SG226	11.3	0.4	0.04	0.59	0.51	1.43	2.57	3.5
MC-434-256.65	SG227	9.0	0.3	0.02	0.45	0.32	1.23	2.03	2.8
MC-434-282.2	SG228	10.6	0.4	0.03	0.62	0.45	1.32	2.41	3.2
MC-434-328.83	SG229	13.2	0.2	0.03	0.58	0.43	1.46	2.49	4.0
MC-434-338.05	SG230	10.0	0.9	0.02	0.48	0.36	1.04	1.90	3.0
MC-434-348.28	SG231	12.9	0.4	0.03	0.67	0.48	1.89	3.07	4.2
MC-434-370.63	SG232	11.0	0.4	0.02	0.49	0.32	1.53	2.36	3.6
MC-434-397.53	SG233	20.2	0.4	0.02	0.46	0.37	1.24	2.09	5.5
MC-434-421.67	SG234	11.0	0.3	0.02	0.44	0.30	1.10	1.86	3.3

Process Details	Total Digestion: A 0.250 g pulp is gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in a dilute ultrapure HNO3.
Standard(s)	ASR109 and ASR209

CMIC Sample Name	SGS Sample Name	Rb	Sc	Sm	Sn	Ta	Tb	Th	U
		ICP MS Total Digestion							
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	6.9	1.1	3.3	0.45	0.51	0.22	20.60	6.35
MC-336-455	SG2	6.0	1.4	4.3	0.60	0.71	0.20	21.30	4.67
MC-336-465	SG3	4.1	0.7	2.1	0.26	0.23	0.10	7.00	3.46
MC-336-479.5	SG4	2.2	0.4	1.8	0.17	0.09	0.08	3.80	1.46
MC-336-500.43	SG5	6.1	0.4	1.7	0.22	0.10	0.10	3.24	1.81
MC-336-506.55	SG6	3.3	0.4	1.6	0.20	0.10	0.10	3.95	1.87
MC-336-506.8	SG7	7.5	1.1	3.2	0.57	0.32	0.20	7.79	3.95
MC-336-517	SG8	3.4	0.5	1.4	0.21	0.10	0.10	2.94	2.62
MC-336-522.86	SG9	6.6	1.8	4.1	0.90	0.40	0.27	10.20	6.64
MC-336-532.73	SG10	0.6	0.6	1.3	0.15	0.08	0.17	2.76	11.30
MC-336-557	SG11	2.0	0.2	0.8	0.24	0.08	0.16	2.16	124.00
MC-336-560.46	SG12	3.8	0.3	1.0	0.12	0.06	0.06	2.41	4.02
MC-336-564	SG13	1.1	0.5	1.7	0.80	0.41	0.13	34.80	27.30
MC-336-570.5	SG14	4.8	2.6	6.2	0.52	0.24	0.30	15.60	2.36
MC-338-23	SG15	0.6	0.5	1.2	0.19	0.08	0.10	3.27	2.00
MC-338-65	SG16	1.8	0.3	1.0	0.22	0.08	0.07	3.10	1.80
MC-338-101	SG17	2.3	0.3	1.5	0.21	0.15	0.12	11.00	2.03
MC-338-150.4	SG18	1.9	0.4	1.6	0.14	0.15	0.11	4.37	2.60
MC-338-220.2	SG19	3.3	1.1	2.2	0.29	0.26	0.22	7.27	5.04
MC-338-272	SG20	5.8	0.7	3.1	0.52	0.45	0.24	13.40	2.98
MC-338-319	SG21	5.5	0.8	2.4	0.24	0.30	0.16	9.65	2.64
MC-338-372.17	SG22	3.1	0.4	1.8	0.16	0.15	0.19	6.57	2.01
MC-338-410.8	SG23	3.1	0.4	1.7	0.30	0.23	0.12	7.54	1.30
MC-338-466	SG24	1.8	0.5	7.0	0.16	0.16	0.24	6.12	1.26
MC-338-502.37	SG25	2.3	0.4	0.9	0.14	0.04	0.06	1.76	1.05
MC-338-537.64	SG26	0.6	0.3	0.8	0.14	0.06	0.10	2.28	3.69
MC-338-554.73	SG27	2.1	0.2	0.8	0.16	0.06	0.06	2.28	2.16
MC-338-557.5	SG28	6.7	1.3	3.2	0.60	0.28	0.21	8.99	16.20
MC-338-559	SG29	16.1	2.4	4.6	1.34	0.38	0.61	12.30	17.00
MC-344-26.1	SG30	0.5	0.9	1.2	0.24	0.11	0.17	5.23	4.03
MC-344-69	SG31	0.4	0.8	1.3	0.29	0.20	0.14	5.90	3.85
MC-344-100.1	SG32	0.4	0.4	1.4	0.12	0.07	0.10	2.38	2.33
MC-344-128	SG33	1.1	0.4	1.5	0.27	0.23	0.12	9.32	2.89
MC-344-164	SG34	1.3	1.0	2.0	0.55	0.42	0.25	11.50	6.76
MC-344-179.8	SG35	0.5	0.5	1.5	0.27	0.10	0.13	6.23	3.00
MC-344-199	SG36	2.8	0.4	1.8	0.26	0.19	0.13	8.58	1.76
MC-344-230	SG37	2.4	0.5	1.9	0.28	0.32	0.15	6.98	1.36
MC-344-275	SG38	2.3	0.4	1.4	0.27	0.16	0.09	5.44	1.26
MC-344-298.82	SG39	2.9	0.6	2.7	0.38	0.37	0.12	10.50	1.03
MC-344-343	SG40	1.2	0.3	1.3	0.20	0.10	0.06	3.28	0.76
MC-344-378.45	SG41	2.0	0.7	2.0	0.35	0.34	0.11	9.55	1.44
MC-344-394.34	SG42	3.0	0.6	1.8	0.68	0.55	0.09	24.20	1.01
MC-344-433	SG43	2.3	0.7	1.9	0.33	0.29	0.09	6.51	1.20
MC-344-467	SG44	0.7	0.8	1.9	0.34	0.18	0.14	5.27	2.58
MC-344-468.8	SG45	0.2	0.4	1.1	0.21	0.16	0.06	5.50	2.28
MC-344-485.76	SG46	1.1	0.2	0.8	0.15	0.07	0.05	2.00	1.01
MC-344-488	SG47	2.0	0.4	0.9	0.21	0.06	0.06	2.10	0.90
MC-344-492.93	SG48	1.2	0.8	2.5	0.40	0.17	0.20	10.20	2.73
MAC-208-10.2	SG49	0.4	0.7	1.3	0.32	0.08	0.11	3.18	1.67
MAC-208-27	SG50	0.6	0.5	1.2	0.30	0.06	0.10	2.91	1.32
MAC-208-63.5	SG51	0.8	0.6	1.3	0.30	0.09	0.12	3.89	2.65
MAC-208-86.5	SG52	0.7	1.0	2.1	0.63	0.20	0.21	8.45	3.40
MAC-208-88	SG53	0.2	0.3	1.6	0.21	0.07	0.11	2.31	1.28
MAC-208-128.4	SG54	0.6	1.0	2.0	0.36	0.16	0.16	5.68	2.99
MAC-208-149	SG55	0.5	0.9	2.1	0.43	0.19	0.17	17.40	3.61
MAC-208-203	SG56	1.0	0.5	1.8	0.54	0.21	0.15	7.58	2.74
MAC-208-217.7	SG57	1.7	0.9	2.5	0.85	0.64	0.22	23.00	6.64
MAC-208-237	SG58	2.2	0.7	2.4	0.75	0.76	0.23	15.00	9.36
MAC-208-289.2	SG59	3.5	0.4	1.9	0.30	0.19	0.24	5.38	10.30
MAC-208-290.5	SG60	7.4	0.7	2.2	0.50	0.38	0.19	10.60	5.64
MAC-208-350.5	SG61	1.8	1.0	2.6	0.42	0.41	0.13	20.30	1.40
MAC-208-395	SG62	0.4	0.3	1.4	0.24	0.16	0.08	5.09	2.35
MAC-208-425.1	SG63	1.0	0.8	1.8	0.33	0.37	0.13	11.20	4.79
MAC-208-447.3	SG64	2.0	0.7	1.9	0.23	0.18	0.15	4.78	5.74
MAC-208-468.4	SG65	2.8	0.5	1.4	0.16	0.13	0.10	2.94	3.63
MAC-208-487	SG66	6.7	1.9	4.1	0.88	0.28	0.29	13.40	8.43
MAC-208-493	SG67	0.5	1.1	1.5	0.45	0.12	0.15	6.78	23.20
MAC-208-553.3	SG71	4.1	1.1	2.3	0.74	0.10	0.10	5.54	5.18
MAC-208-572	SG72	1.5	1.4	2.2	0.82	0.30	0.13	8.07	3.12
MAC-250-297.8	SG73	4.7	0.4	2.4	0.35	0.16	0.14	6.17	1.80
MAC-250-335.1	SG74	7.4	0.7	3.7	0.36	0.17	0.24	5.09	3.42
MAC-250-370.8	SG75	5.5	1.2	4.6	0.71	0.66	0.18	36.80	2.30
MAC-250-401.43	SG76	6.7	0.6	2.3	0.41	0.13	0.19	4.71	3.10
MAC-250-431.78	SG77	8.7	2.2	5.3	0.54	0.50	0.41	24.00	26.10
MAC-250-481.75	SG78	2.3	1.0	1.9	0.33	0.17	0.17	7.12	6.75
MC-253-26	SG79	0.6	0.6	1.1	0.26	0.08	0.11	3.32	1.51
MC-253-76	SG80	1.1	0.8	1.4	0.40	0.16	0.17	3.89	2.03
MC-253-136	SG82	0.9	0.5	1.3	0.22	0.11	0.11	4.82	1.93
MC-253-205	SG84	0.4	0.6	1.4	0.18	0.12	0.14	3.72	2.73
MC-253-265.3	SG85	1.6	0.8	1.8	0.40	0.20	0.14	8.77	3.87
MC-253-287.5	SG86	1.1	0.3	1.8	0.42	0.16	0.10	6.11	1.70
MC-253-325	SG87	2.7	0.4	1.6	0.44	0.17	0.12	4.66	4.70
MC-253-336.2	SG88	6.8	0.8	2.2	0.36	0.25	0.15	8.17	4.06
MC-253-382	SG89	3.7	0.7	2.8	0.33	0.33	0.20	13.70	1.64
MC-253-416	SG90	3.5	0.7	3.4	0.42	0.32	0.23	14.70	1.81
MC-253-430	SG91	8.3	2.4	4.8	0.91	0.95	0.27	49.70	7.60
MC-253-440.1	SG92	0.6	0.9	2.0	0.27	0.28	0.10	15.30	2.41
MC-253-472.5	SG93	1.2	0.3	1.0	0.21	0.15	0.06	6.71	1.58
MC-253-501	SG94	0.6	0.2	1.0	0.14	0.08	0.06	2.87	1.90
MC-253-507.5	SG95	1.8	0.4	13.4	0.24	0.13	0.32	5.15	1.97
MC-253-528	SG96	5.4	0.8	2.3	0.33	0.26	0.25	8.21	6.46
MC-253-538	SG97	4.4	0.4	1.2	0.21	0.14	0.08	5.30	1.63
MC-253-550.1	SG99	1.6	0.9	2.0	0.54	0.64	0.16	24.30	6.22
MC-253-552	SG100	0.4	0.7	1.9	0.47	0.27	0.11	9.86	5.97

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Rb	Sc	Sm	Sn	Ta	Tb	Th	U
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MAC-246-4.33	SG101	0.3	0.7	1.3	0.16	0.06	0.12	2.92	1.50
MAC-246-54.7	SG102	0.7	1.1	1.2	0.45	0.13	0.14	3.60	2.16
MAC-246-60.6	SG103	0.5	0.8	1.3	0.29	0.10	0.13	5.01	1.98
MAC-246-82.75	SG104	0.4	1.1	1.4	0.26	0.17	0.14	4.90	2.41
MAC-246-126.15	SG105	0.8	0.3	1.4	0.15	0.08	0.10	3.04	2.18
MAC-246-142.86	SG106	0.9	1.4	2.0	0.36	0.29	0.19	10.40	6.50
MAC-246-165.4	SG107	0.5	0.6	1.5	0.21	0.09	0.14	4.35	3.18
MAC-246-213.43	SG108	0.7	0.4	1.7	0.17	0.10	0.11	4.17	2.21
MAC-246-267.05	SG109	5.4	0.7	1.9	0.48	0.37	0.13	13.90	3.19
MAC-246-297.33	SG110	5.0	0.9	3.0	1.00	0.67	0.26	33.40	3.51
MAC-246-324.5	SG111	6.3	1.1	3.5	1.16	0.67	0.28	46.60	4.62
MAC-246-333.8	SG112	4.4	1.0	3.4	0.68	0.70	0.27	30.30	3.65
MAC-246-354.17	SG113	5.2	1.9	4.4	1.12	0.73	0.41	49.30	3.42
MAC-246-378.25	SG114	0.7	0.5	2.5	0.26	0.23	0.20	13.60	2.45
MAC-246-418.13	SG115	0.8	0.6	1.6	0.32	0.26	0.12	11.70	1.24
MAC-246-423.8	SG116	1.3	0.8	2.0	0.33	0.31	0.14	11.70	8.01
MAC-246-454.11	SG117	0.3	0.9	3.2	0.91	0.54	0.16	19.10	8.34
MAC-246-475.33	SG118	0.4	0.6	1.3	0.21	0.14	0.09	5.01	9.23
MAC-246-496.42	SG119	0.5	1.6	1.9	0.20	0.21	0.14	4.64	15.50
MAC-246-499.02	SG120	0.3	1.3	1.4	0.13	0.14	0.15	4.14	16.20
MAC-246-508.8	SG121	0.2	1.1	1.7	0.24	0.17	0.12	4.08	14.80
MAC-246-510.2	SG122	0.2	1.5	1.2	0.15	0.10	0.08	2.81	14.20
MAC-246-543	SG123	1.7	0.6	1.7	0.19	0.11	0.12	6.25	2.23
MAC-252-10.15	SG124	0.4	0.6	1.3	0.34	0.06	0.11	2.71	1.16
MAC-252-25.7	SG125	0.7	1.2	1.5	0.21	0.12	0.17	4.49	2.21
MAC-252-55.65	SG126	1.1	1.5	1.7	0.61	0.18	0.19	5.29	2.39
MAC-252-102.48	SG127	0.5	0.5	1.5	0.23	0.10	0.11	4.83	2.32
MAC-252-167.2	SG128	0.4	0.4	1.4	0.23	0.14	0.12	7.37	2.47
MAC-252-199.86	SG129	0.6	0.6	2.0	0.80	0.30	0.18	11.20	4.98
MAC-252-249.43	SG130	0.5	0.6	1.9	0.19	0.15	0.10	8.04	2.50
MAC-252-261.91	SG131	0.5	0.7	1.6	0.66	0.28	0.14	13.10	3.00
MAC-252-271.2	SG132	4.0	0.9	3.0	0.74	0.74	0.23	46.00	2.04
MAC-252-286.2	SG133	2.0	0.7	2.8	0.50	0.39	0.17	18.50	1.07
MAC-252-305.3	SG134	0.3	0.7	1.8	0.35	0.24	0.10	6.71	0.99
MAC-252-319.44	SG135	4.8	1.2	4.0	0.60	0.43	0.82	14.60	1.31
MAC-252-331.7	SG136	3.7	0.9	2.6	0.74	0.53	0.17	21.20	2.12
MAC-252-342.5	SG137	1.4	0.5	2.0	0.32	0.25	0.10	5.09	0.74
MAC-255-6.13	SG138	0.4	0.8	1.5	0.25	0.09	0.16	3.81	2.16
MAC-255-29.21	SG139	2.6	1.8	1.6	0.98	0.10	0.18	4.34	5.82
MAC-255-51.63	SG140	1.0	2.1	2.2	0.67	0.20	0.28	6.78	5.18
MAC-255-95	SG141	0.7	0.3	1.4	0.24	0.06	0.11	3.86	3.64
MAC-255-132.3	No Data								
MAC-255-149	SG143	2.0	1.1	1.6	0.35	0.13	0.15	5.26	5.24
MAC-255-194.47	SG144	0.6	0.7	1.8	0.95	0.15	0.14	7.88	4.90
MAC-255-209.83	SG145	1.5	0.7	1.6	0.58	0.15	0.11	8.82	3.48
MAC-255-217.68	SG146	2.8	0.8	2.6	0.48	0.20	0.13	7.34	4.93
MAC-255-259.93	SG147	3.7	0.5	2.0	0.44	0.26	0.16	8.96	3.17
MAC-255-288.82	SG148	6.5	0.8	2.2	0.64	0.34	0.16	13.10	3.63
MAC-255-293.4	SG149	6.9	1.0	3.1	0.68	0.44	0.27	12.80	6.30
MAC-255-332.33	SG150	3.1	0.6	2.3	1.78	0.19	0.20	5.70	2.13
MAC-255-338	SG151	4.1	1.0	3.1	0.61	0.52	0.23	15.20	3.91
MAC-255-362.46	SG152	2.1	1.3	2.1	0.38	0.20	0.15	7.48	2.64
MAC-255-378.33	SG153	1.4	0.8	1.9	0.36	0.32	0.12	13.40	2.85
MAC-255-397.78	SG154	1.2	0.6	1.6	0.22	0.15	0.08	6.62	2.65
MAC-255-412.58	SG155	0.8	0.7	1.7	0.52	0.32	0.11	14.20	2.83
MAC-255-426.3	SG156	1.0	1.1	1.9	0.35	0.27	0.12	11.70	3.09
MAC-255-429.5	SG157	0.6	0.6	1.6	0.22	0.14	0.09	6.29	3.47
MAC-255-451.78	SG158	2.2	0.8	2.5	0.42	0.17	0.16	5.43	6.01
MAC-255-462.07	SG159	0.6	0.9	2.0	0.41	0.38	0.16	9.59	9.60
MAC-255-469.36	SG160	0.4	0.6	0.9	0.12	0.09	0.08	3.23	6.58
MAC-255-479.17	SG161	1.1	1.0	1.1	0.28	0.11	0.10	3.04	8.43
MAC-255-483.68	SG162	1.0	0.3	0.9	0.18	0.08	0.07	2.58	4.57
MAC-255-501.32	SG163	6.7	1.2	2.8	1.02	0.18	0.16	11.40	10.10
MAC-255-503.26	SG164	0.8	0.9	1.6	0.45	0.12	0.10	4.50	3.08
MAC-255-559	SG165	0.6	1.3	2.0	0.65	0.33	0.22	24.00	5.12
MAC-255-564.36	SG166	2.4	2.7	4.6	1.61	0.35	0.38	28.30	17.30
MC-413-71.64	SG167	0.7	0.5	1.3	0.24	0.09	0.15	4.05	1.82
MC-413-130	SG168	0.5	0.4	1.4	0.17	0.07	0.11	4.43	0.98
MC-413-183.26	SG169	1.8	0.7	2.2	0.53	0.31	0.21	12.90	2.35
MC-413-224	SG170	0.6	0.8	1.2	0.35	0.09	0.12	4.88	2.88
MC-413-258.26	SG171	1.1	0.5	2.3	0.34	0.22	0.19	11.50	2.18
MC-413-282.17	SG172	1.1	0.4	1.8	0.24	0.12	0.13	11.40	1.90
MC-413-299	SG173	5.7	1.5	3.0	1.13	0.45	0.21	15.70	6.92
MC-413-303.5	SG174	3.6	0.7	2.9	0.49	0.41	0.23	22.00	3.30
MC-413-317.96	SG175	0.4	0.9	2.1	0.44	0.38	0.17	23.00	2.08
MC-413-354.67	SG177	2.7	0.6	2.4	0.46	0.22	0.17	7.18	1.77
MC-413-388.82	SG178	1.0	4.0	35.4	1.11	1.18	1.17	83.10	11.40
MC-413-404	SG179	1.5	2.5	3.4	0.68	0.66	0.23	34.10	5.89
MC-413-430.57	SG180	1.0	0.6	2.2	0.64	0.50	0.12	21.30	4.01
MC-413-456.68	SG181	0.5	0.4	1.7	0.27	0.13	0.07	5.14	1.59
MC-413-482.25	SG182	1.0	1.3	3.5	0.93	1.29	0.22	43.90	4.97
MC-413-501.66	SG183	0.5	0.4	1.5	0.21	0.11	0.08	5.73	2.04
MC-413-527.67	SG184	0.7	0.3	1.1	0.13	0.10	0.08	3.02	1.11
MC-413-547.3	SG185	0.8	1.0	1.8	0.28	0.18	0.15	5.83	7.46
MC-413-559.73	SG187	0.4	1.8	3.6	1.08	0.34	0.26	18.60	19.70
MC-413-566.28	SG188	24.0	3.4	4.5	1.96	0.56	0.32	19.40	13.00
MC-413-603.83	SG189	8.2	4.2	6.6	3.67	1.84	0.32	138.00	31.20
MC-413-614.83	SG190	1.4	2.0	6.4	1.68	0.82	0.31	49.20	34.40
MC-413-623.78	SG191	0.4	0.4	1.2	0.40	0.17	0.07	9.29	4.72
MC-413-638.86	SG192	6.5	1.4	5.0	0.53	0.20	0.40	11.80	1.54
MC-413-649	SG193	4.2	2.6	5.1	1.45	0.60	0.24	49.30	1.98
MC-415-76.73	SG194	0.7	0.3	1.2	0.18	0.09	0.11	3.72	1.07
MC-415-127.56	SG195	0.6	0.4	1.3	0.17	0.13	0.11	3.75	1.44
MC-415-173.74	SG196	1.2	0.5	1.7	0.57	0.14	0.13	4.71	1.44
MC-415-197	SG197	0.6	0.3	1.3	0.38	0.06	0.08	3.21	1.38
MC-415-222.34	SG198	0.6	0.2	1.0	0.22	0.06	0.09	3.10	1.10

Appendix B

Lithogeochemical Data

		ICP MS Total Digestion							
CMIC Sample Name	SGS Sample Name	Rb	Sc	Sm	Sn	Ta	Tb	Th	U
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-415-232.5	SG199	0.7	0.4	2.0	0.46	0.20	0.15	14.00	2.03
MC-415-295.67	SG200	3.3	0.4	1.7	0.35	0.32	0.14	8.76	1.47
MC-415-350.35	SG203	0.3	0.8	5.4	0.55	0.60	0.22	32.80	2.32
MC-415-389	SG205	0.3	1.2	4.0	1.44	0.92	0.19	78.00	4.65
MC-415-416.08	SG206	1.8	0.7	1.5	0.27	0.18	0.06	11.70	1.70
MC-415-432.38	SG207	0.5	0.8	2.5	0.37	0.21	0.11	10.60	2.18
MC-415-455.72	SG208	0.2	0.7	3.2	0.36	0.19	0.10	5.92	2.23
MC-415-477	SG209	0.2	1.6	2.0	0.50	0.27	0.12	10.70	3.41
MC-415-490.78	SG210	0.3	0.3	0.9	0.11	0.05	0.06	1.68	0.92
MC-415-497.66	SG211	0.2	1.0	1.5	0.40	0.10	0.10	4.06	3.36
MC-415-503.32	SG212	0.2	0.6	1.0	0.17	0.14	0.08	3.14	3.42
MC-415-520.15	SG215	3.2	0.7	1.5	0.38	0.12	0.09	5.70	6.18
MC-415-537	SG216	2.6	1.5	6.3	2.20	1.10	0.40	113.00	10.20
MC-415-539.69	SG217	4.0	2.8	29.4	0.74	0.27	0.36	10.20	3.66
MC-434-11.1	SG218	2.2	0.8	1.8	0.54	0.18	0.10	8.39	1.38
MC-434-31.63	SG219	2.4	0.9	1.4	0.30	0.19	0.10	7.72	1.36
MC-434-54.07	SG220	1.4	0.7	0.9	0.27	0.15	0.07	7.48	1.44
MC-434-93.9	SG221	0.8	0.2	0.9	0.14	0.04	0.05	2.43	0.59
MC-434-119.66	SG222	3.2	0.9	2.1	0.50	0.37	0.14	9.41	4.51
MC-434-168.25	SG223	1.3	0.3	0.9	0.27	0.11	0.06	7.29	0.90
MC-434-183.4	SG224	1.4	0.4	1.2	0.20	0.19	0.07	6.41	1.10
MC-434-217.84	SG225	1.2	0.3	1.7	0.22	0.18	0.10	7.37	1.90
MC-434-253.64	SG226	1.8	0.5	1.9	0.30	0.22	0.15	5.59	0.64
MC-434-256.65	SG227	1.5	0.6	1.6	0.26	0.23	0.11	11.60	1.07
MC-434-282.2	SG228	1.6	0.5	1.7	0.28	0.21	0.13	7.20	1.08
MC-434-328.83	SG229	1.5	0.6	2.3	0.28	0.27	0.15	8.21	1.14
MC-434-338.05	SG230	1.8	0.5	1.7	0.25	0.12	0.10	3.70	2.23
MC-434-348.28	SG231	1.9	0.9	2.2	0.40	0.52	0.12	20.20	1.66
MC-434-370.63	SG232	2.1	0.8	1.7	0.37	0.51	0.09	21.90	1.10
MC-434-397.53	SG233	0.7	0.6	3.7	0.28	0.30	0.11	9.85	0.96
MC-434-421.67	SG234	0.8	0.4	1.9	0.33	0.24	0.09	9.56	0.81

Process Details	Total Digestion: A 0.250 g pulp is gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in a dilute ultrapure HNO3.
Standard(s)	ASR109 and ASR209

ICP MS Total Digestion

CMIC Sample Name	SGS Sample Name	V	W
		ppm	ppm
MC-336-433	SG1	6.3	0.2
MC-336-455	SG2	8.6	0.2
MC-336-465	SG3	3.1	<0.1
MC-336-479.5	SG4	1.5	<0.1
MC-336-500.43	SG5	2.0	<0.1
MC-336-506.55	SG6	2.0	<0.1
MC-336-506.8	SG7	6.0	<0.1
MC-336-517	SG8	2.7	<0.1
MC-336-522.86	SG9	8.2	0.1
MC-336-532.73	SG10	7.4	<0.1
MC-336-557	SG11	3.9	0.1
MC-336-560.46	SG12	5.3	<0.1
MC-336-564	SG13	3.8	0.1
MC-336-570.5	SG14	24.0	0.9
MC-338-23	SG15	1.9	<0.1
MC-338-65	SG16	1.5	<0.1
MC-338-101	SG17	1.5	<0.1
MC-338-150.4	SG18	1.6	<0.1
MC-338-220.2	SG19	6.3	<0.1
MC-338-272	SG20	13.2	0.2
MC-338-319	SG21	5.0	<0.1
MC-338-372.17	SG22	3.9	<0.1
MC-338-410.8	SG23	2.7	<0.1
MC-338-466	SG24	2.4	<0.1
MC-338-502.37	SG25	2.2	<0.1
MC-338-537.64	SG26	9.0	<0.1
MC-338-554.73	SG27	4.8	<0.1
MC-338-557.5	SG28	10.4	<0.1
MC-338-559	SG29	13.8	0.5
MC-344-26.1	SG30	8.8	<0.1
MC-344-69	SG31	17.6	<0.1
MC-344-100.1	SG32	22.0	<0.1
MC-344-128	SG33	3.0	<0.1
MC-344-164	SG34	7.4	<0.1
MC-344-179.8	SG35	4.8	<0.1
MC-344-199	SG36	3.7	<0.1
MC-344-230	SG37	3.9	<0.1
MC-344-275	SG38	1.9	<0.1
MC-344-298.82	SG39	3.0	<0.1
MC-344-343	SG40	2.2	<0.1
MC-344-378.45	SG41	3.9	<0.1
MC-344-394.34	SG42	4.9	<0.1
MC-344-433	SG43	3.3	<0.1
MC-344-467	SG44	3.3	<0.1
MC-344-468.8	SG45	2.5	<0.1
MC-344-485.76	SG46	1.6	<0.1
MC-344-488	SG47	2.2	<0.1
MC-344-492.93	SG48	5.2	<0.1
MAC-208-10.2	SG49	1.6	<0.1
MAC-208-27	SG50	2.4	<0.1
MAC-208-63.5	SG51	7.2	<0.1
MAC-208-86.5	SG52	6.2	<0.1
MAC-208-88	SG53	1.8	<0.1
MAC-208-128.4	SG54	3.1	<0.1
MAC-208-149	SG55	3.0	<0.1
MAC-208-203	SG56	2.3	<0.1
MAC-208-217.7	SG57	5.6	<0.1
MAC-208-237	SG58	4.1	<0.1
MAC-208-289.2	SG59	2.8	<0.1
MAC-208-290.5	SG60	4.7	<0.1
MAC-208-350.5	SG61	2.0	<0.1
MAC-208-395	SG62	2.4	<0.1
MAC-208-425.1	SG63	3.6	<0.1
MAC-208-447.3	SG64	2.7	<0.1
MAC-208-468.4	SG65	2.4	<0.1
MAC-208-487	SG66	18.7	0.2
MAC-208-493	SG67	31.2	0.1
MAC-208-553.3	SG71	7.4	<0.1
MAC-208-572	SG72	12.4	0.7
MAC-250-297.8	SG73	4.1	<0.1
MAC-250-335.1	SG74	3.5	<0.1
MAC-250-370.8	SG75	4.5	0.1
MAC-250-401.43	SG76	4.0	<0.1
MAC-250-431.78	SG77	6.3	<0.1
MAC-250-481.75	SG78	3.4	0.5
MC-253-26	SG79	1.2	0.2
MC-253-76	SG80	3.0	0.3
MC-253-136	SG82	1.4	0.3
MC-253-205	SG84	3.0	0.2
MC-253-265.3	SG85	4.5	0.3
MC-253-287.5	SG86	1.6	0.3
MC-253-325	SG87	3.3	0.2
MC-253-336.2	SG88	7.0	0.3
MC-253-382	SG89	4.0	0.3
MC-253-416	SG90	3.5	0.3
MC-253-430	SG91	6.7	0.7
MC-253-440.1	SG92	2.7	0.4
MC-253-472.5	SG93	2.2	0.2
MC-253-501	SG94	1.7	0.1
MC-253-507.5	SG95	6.5	0.2
MC-253-528	SG96	3.5	0.3
MC-253-538	SG97	2.0	0.2
MC-253-550.1	SG99	7.5	1.3
MC-253-552	SG100	7.0	0.8

Appendix B

Lithogeochemical Data

		ICP MS Total Digestion	
CMIC Sample Name	SGS Sample Name	V	W
		ppm	ppm
MAC-246-4.33	SG101	2.1	0.1
MAC-246-54.7	SG102	2.5	0.2
MAC-246-60.6	SG103	1.6	0.2
MAC-246-82.75	SG104	2.5	0.3
MAC-246-126.15	SG105	1.2	<0.1
MAC-246-142.86	SG106	9.4	0.3
MAC-246-165.4	SG107	2.0	0.1
MAC-246-213.43	SG108	1.7	<0.1
MAC-246-267.05	SG109	4.2	0.5
MAC-246-297.33	SG110	6.2	0.7
MAC-246-324.5	SG111	8.3	1.0
MAC-246-333.8	SG112	4.6	0.6
MAC-246-354.17	SG113	6.7	0.8
MAC-246-378.25	SG114	2.7	0.2
MAC-246-418.13	SG115	5.2	0.2
MAC-246-423.8	SG116	3.8	0.3
MAC-246-454.11	SG117	5.2	1.5
MAC-246-475.33	SG118	2.6	0.4
MAC-246-496.42	SG119	25.6	0.3
MAC-246-499.02	SG120	29.4	0.3
MAC-246-508.8	SG121	147.0	0.7
MAC-246-510.2	SG122	82.2	0.4
MAC-246-543	SG123	5.4	0.2
MAC-252-10.15	SG124	2.8	0.1
MAC-252-25.7	SG125	2.7	0.3
MAC-252-55.65	SG126	15.9	0.2
MAC-252-102.48	SG127	3.1	0.3
MAC-252-167.2	SG128	1.7	0.1
MAC-252-199.86	SG129	3.9	0.6
MAC-252-249.43	SG130	6.4	0.1
MAC-252-261.91	SG131	9.4	0.4
MAC-252-271.2	SG132	5.8	0.6
MAC-252-286.2	SG133	3.9	0.3
MAC-252-305.3	SG134	2.3	0.3
MAC-252-319.44	SG135	4.6	0.4
MAC-252-331.7	SG136	5.5	0.9
MAC-252-342.5	SG137	1.7	0.2
MAC-255-6.13	SG138	2.2	0.2
MAC-255-29.21	SG139	17.8	0.3
MAC-255-51.63	SG140	5.4	0.4
MAC-255-95	SG141	1.5	<0.1
MAC-255-132.3	No Data		
MAC-255-149	SG143	3.6	0.3
MAC-255-194.47	SG144	2.0	0.3
MAC-255-209.83	SG145	2.0	0.2
MAC-255-217.68	SG146	12.8	0.5
MAC-255-259.93	SG147	4.3	0.3
MAC-255-288.82	SG148	6.5	0.3
MAC-255-293.4	SG149	7.4	0.5
MAC-255-332.33	SG150	3.5	0.2
MAC-255-338	SG151	6.2	0.5
MAC-255-362.46	SG152	4.6	0.3
MAC-255-378.33	SG153	3.6	0.3
MAC-255-397.78	SG154	4.2	0.2
MAC-255-412.58	SG155	3.2	0.3
MAC-255-426.3	SG156	3.6	0.3
MAC-255-429.5	SG157	2.4	0.2
MAC-255-451.78	SG158	3.4	0.4
MAC-255-462.07	SG159	3.2	0.4
MAC-255-469.36	SG160	1.5	0.2
MAC-255-479.17	SG161	2.6	0.2
MAC-255-483.68	SG162	1.9	0.2
MAC-255-501.32	SG163	12.9	0.8
MAC-255-503.26	SG164	20.3	0.4
MAC-255-559	SG165	18.9	1.1
MAC-255-564.36	SG166	37.4	2.5
MC-413-71.64	SG167	3.9	0.2
MC-413-130	SG168	2.0	0.1
MC-413-183.26	SG169	4.1	0.4
MC-413-224	SG170	6.8	0.4
MC-413-258.26	SG171	2.9	0.3
MC-413-282.17	SG172	2.4	0.1
MC-413-299	SG173	9.2	0.5
MC-413-303.5	SG174	3.5	0.4
MC-413-317.96	SG175	3.6	0.4
MC-413-354.67	SG177	3.0	0.2
MC-413-388.82	SG178	6.4	2.8
MC-413-404	SG179	4.7	0.6
MC-413-430.57	SG180	3.4	0.5
MC-413-456.68	SG181	3.2	0.3
MC-413-482.25	SG182	6.4	0.8
MC-413-501.66	SG183	2.4	0.2
MC-413-527.67	SG184	1.1	0.1
MC-413-547.3	SG185	3.0	0.2
MC-413-559.73	SG187	31.0	0.7
MC-413-566.28	SG188	19.5	0.8
MC-413-603.83	SG189	38.7	1.9
MC-413-614.83	SG190	88.5	3.3
MC-413-623.78	SG191	4.4	0.6
MC-413-638.86	SG192	40.9	0.5
MC-413-649	SG193	28.6	0.8
MC-415-76.73	SG194	1.6	0.2
MC-415-127.56	SG195	4.2	0.2
MC-415-173.74	SG196	5.0	0.3
MC-415-197	SG197	1.6	<0.1
MC-415-222.34	SG198	3.0	0.1

Appendix B

Lithogeochemical Data

		ICP MS Total Digestion	
CMIC Sample Name	SGS Sample Name	V	W
		ppm	ppm
MC-415-232.5	SG199	6.4	0.3
MC-415-295.67	SG200	2.8	0.4
MC-415-350.35	SG203	4.4	0.9
MC-415-389	SG205	4.9	1.4
MC-415-416.08	SG206	3.8	0.2
MC-415-432.38	SG207	2.6	0.4
MC-415-455.72	SG208	1.6	0.4
MC-415-477	SG209	2.6	0.6
MC-415-490.78	SG210	0.5	<0.1
MC-415-497.66	SG211	2.1	0.3
MC-415-503.32	SG212	1.2	0.2
MC-415-520.15	SG215	7.9	0.2
MC-415-537	SG216	15.3	0.8
MC-415-539.69	SG217	12.3	2.4
MC-434-11.1	SG218	2.0	0.4
MC-434-31.63	SG219	2.2	0.4
MC-434-54.07	SG220	1.5	0.3
MC-434-93.9	SG221	1.0	<0.1
MC-434-119.66	SG222	7.1	0.8
MC-434-168.25	SG223	2.9	0.2
MC-434-183.4	SG224	4.0	0.2
MC-434-217.84	SG225	2.6	0.2
MC-434-253.64	SG226	4.1	0.2
MC-434-256.65	SG227	3.5	0.2
MC-434-282.2	SG228	2.9	0.2
MC-434-328.83	SG229	2.9	0.2
MC-434-338.05	SG230	2.9	0.1
MC-434-348.28	SG231	3.5	0.3
MC-434-370.63	SG232	3.7	0.4
MC-434-397.53	SG233	2.2	0.5
MC-434-421.67	SG234	1.5	0.3

Process Details	Total Digestion: A 0.250 g pulp is gently heated in a mixture of ultrapure HF/HNO3/HClO4 until dry and the residue dissolved in a dilute ultrapure HNO3.
Standard(s)	ASR109 and ASR209

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Ag	As	Be	Bi	Cd	Co	Cs	Cu
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	<0.01	1	0	0	0	0	0	1
MC-336-455	SG2	<0.01	0	0	0	<0.01	0	0	4
MC-336-465	SG3	<0.01	0	0	0	<0.01	0	0	1
MC-336-479.5	SG4	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-336-500.43	SG5	<0.01	0	0	0	<0.01	0	0	2
MC-336-506.55	SG6	<0.01	0	0	0	<0.01	0	<0.01	1
MC-336-506.8	SG7	<0.01	1	0	<0.01	<0.01	0	0	2
MC-336-517	SG8	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-336-522.86	SG9	<0.01	0	0	<0.01	<0.01	0	0	3
MC-336-532.73	SG10	0	0	0	0	<0.01	0	<0.01	7
MC-336-557	SG11	0	2	0	0	0	5	0	9
MC-336-560.46	SG12	<0.01	0	0	0	<0.01	0	<0.01	1
MC-336-564	SG13	0	1	0	0	0	0	<0.01	7
MC-336-570.5	SG14	<0.01	3	0	<0.01	<0.01	2	0	0
MC-338-23	SG15	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-338-65	SG16	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-338-101	SG17	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-338-150.4	SG18	0	0	0	0	<0.01	0	<0.01	1
MC-338-220.2	SG19	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-338-272	SG20	<0.01	1	0	<0.01	<0.01	0	0	1
MC-338-319	SG21	<0.01	0	0	0	<0.01	0	<0.01	1
MC-338-372.17	SG22	<0.01	1	0	0	<0.01	0	<0.01	2
MC-338-410.8	SG23	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-338-466	SG24	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-338-502.37	SG25	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-338-537.64	SG26	0	0	0	0	<0.01	0	<0.01	3
MC-338-554.73	SG27	<0.01	0	0	0	<0.01	0	<0.01	1
MC-338-557.5	SG28	<0.01	1	0	<0.01	<0.01	1	0	10
MC-338-559	SG29	<0.01	0	0	0	<0.01	1	0	5
MC-344-26.1	SG30	<0.01	0	0	0	0	0	<0.01	1
MC-344-69	SG31	<0.01	0	0	0	<0.01	0	<0.01	2
MC-344-100.1	SG32	<0.01	0	0	0	<0.01	0	<0.01	2
MC-344-128	SG33	<0.01	1	0	<0.01	<0.01	0	<0.01	2
MC-344-164	SG34	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-344-179.8	SG35	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-344-199	SG36	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-344-230	SG37	0	0	0	<0.01	<0.01	0	<0.01	1
MC-344-275	SG38	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-344-298.82	SG39	<0.01	0	0	0	0	0	<0.01	1
MC-344-343	SG40	<0.01	0	<0.01	<0.01	<0.01	0	<0.01	0
MC-344-378.45	SG41	<0.01	1	0	<0.01	<0.01	0	<0.01	0
MC-344-394.34	SG42	<0.01	1	0	<0.01	<0.01	1	<0.01	1
MC-344-433	SG43	<0.01	1	0	<0.01	<0.01	0	<0.01	0
MC-344-467	SG44	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-344-468.8	SG45	<0.01	0	<0.01	<0.01	0	0	<0.01	0
MC-344-485.76	SG46	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-344-488	SG47	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-344-492.93	SG48	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-208-10.2	SG49	<0.01	0	0	0	<0.01	0	<0.01	1
MAC-208-27	SG50	<0.01	0	0	0	<0.01	0	<0.01	1
MAC-208-63.5	SG51	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-208-86.5	SG52	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-208-88	SG53	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-208-128.4	SG54	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-208-149	SG55	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-208-203	SG56	<0.01	0	0	<0.01	<0.01	0	0	2
MAC-208-217.7	SG57	<0.01	1	0	0	0	0	0	3
MAC-208-237	SG58	<0.01	1	0	<0.01	<0.01	0	0	1
MAC-208-289.2	SG59	<0.01	1	0	<0.01	<0.01	0	0	1
MAC-208-290.5	SG60	<0.01	1	0	<0.01	<0.01	0	0	1
MAC-208-350.5	SG61	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MAC-208-395	SG62	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-208-425.1	SG63	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MAC-208-447.3	SG64	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-208-468.4	SG65	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-208-487	SG66	<0.01	0	0	<0.01	<0.01	0	0	1
MAC-208-493	SG67	<0.01	2	0	0	<0.01	0	<0.01	5
MAC-208-553.3	SG71	0	0	0	0	<0.01	0	<0.01	21
MAC-208-572	SG72	<0.01	0	0	0	<0.01	1	<0.01	21
MAC-250-297.8	SG73	<0.01	1	0	<0.01	<0.01	0	<0.01	2
MAC-250-335.1	SG74	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-250-370.8	SG75	<0.01	0	0	0	0	1	<0.01	1
MAC-250-401.43	SG76	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MAC-250-431.78	SG77	0	1	0	<0.01	0	0	0	1
MAC-250-481.75	SG78	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-253-26	SG79	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-253-76	SG80	<0.01	0	0	<0.01	<0.01	0	0	1
MC-253-136	SG82	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-253-205	SG84	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-253-265.3	SG85	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-253-287.5	SG86	<0.01	0	0	<0.01	<0.01	0	0	1
MC-253-325	SG87	<0.01	1	0	<0.01	0	0	0	1

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Ag	As	Be	Bi	Cd	Co	Cs	Cu
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-253-336.2	SG88	<0.01	1	0	<0.01	<0.01	0	0	1
MC-253-382	SG89	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MC-253-416	SG90	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MC-253-430	SG91	<0.01	1	0	0	<0.01	0	0	1
MC-253-440.1	SG92	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-253-472.5	SG93	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-253-501	SG94	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-253-507.5	SG95	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-253-528	SG96	<0.01	0	0	<0.01	<0.01	0	0	1
MC-253-538	SG97	<0.01	0	0	<0.01	<0.01	0	0	1
MC-253-550.1	SG99	0	0	0	0	<0.01	0	<0.01	2
MC-253-552	SG100	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-4.33	SG101	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-54.7	SG102	<0.01	0	0	0	<0.01	0	0	2
MAC-246-60.6	SG103	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-82.75	SG104	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-126.15	SG105	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-142.86	SG106	<0.01	0	0	<0.01	<0.01	0	<0.01	2
MAC-246-165.4	SG107	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-213.43	SG108	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-267.05	SG109	<0.01	1	0	<0.01	<0.01	0	0	1
MAC-246-297.33	SG110	<0.01	1	0	0	<0.01	0	<0.01	3
MAC-246-324.5	SG111	<0.01	1	0	0	<0.01	0	0	1
MAC-246-333.8	SG112	<0.01	1	0	0	0	0	<0.01	1
MAC-246-354.17	SG113	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MAC-246-378.25	SG114	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-246-418.13	SG115	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-246-423.8	SG116	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-454.11	SG117	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MAC-246-475.33	SG118	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-246-496.42	SG119	0	1	0	0	<0.01	0	<0.01	5
MAC-246-499.02	SG120	0	1	0	0	<0.01	0	<0.01	3
MAC-246-508.8	SG121	0	0	0	0	0	0	<0.01	2
MAC-246-510.2	SG122	0	0	0	<0.01	<0.01	0	<0.01	5
MAC-246-543	SG123	<0.01	0	0	<0.01	<0.01	0	<0.01	2
MAC-252-10.15	SG124	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-252-25.7	SG125	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-252-55.65	SG126	<0.01	0	0	<0.01	<0.01	0	<0.01	2
MAC-252-102.48	SG127	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-252-167.2	SG128	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-252-199.86	SG129	<0.01	0	0	<0.01	<0.01	0	0	3
MAC-252-249.43	SG130	<0.01	1	0	0	<0.01	0	<0.01	1
MAC-252-261.91	SG131	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-252-271.2	SG132	<0.01	1	0	<0.01	<0.01	0	0	0
MAC-252-286.2	SG133	<0.01	0	0	<0.01	<0.01	0	<0.01	2
MAC-252-305.3	SG134	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-252-319.44	SG135	<0.01	1	0	<0.01	0	0	<0.01	1
MAC-252-331.7	SG136	<0.01	1	0	<0.01	<0.01	0	0	3
MAC-252-342.5	SG137	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-255-6.13	SG138	<0.01	0	0	0	<0.01	0	<0.01	1
MAC-255-29.21	SG139	<0.01	1	0	0	<0.01	0	0	6
MAC-255-51.63	SG140	<0.01	0	0	<0.01	<0.01	0	<0.01	2
MAC-255-95	SG141	<0.01	0	0	<0.01	<0.01	0	<0.01	2
MAC-255-132.3	No Data								
MAC-255-149	SG143	<0.01	0	0	0	<0.01	0	<0.01	2
MAC-255-194.47	SG144	<0.01	0	0	0	<0.01	0	<0.01	1
MAC-255-209.83	SG145	<0.01	0	0	<0.01	<0.01	0	0	2
MAC-255-217.68	SG146	<0.01	1	0	<0.01	<0.01	0	<0.01	2
MAC-255-259.93	SG147	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MAC-255-288.82	SG148	0	1	0	<0.01	<0.01	0	<0.01	2
MAC-255-293.4	SG149	<0.01	0	0	<0.01	<0.01	0	0	1
MAC-255-332.33	SG150	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MAC-255-338	SG151	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MAC-255-362.46	SG152	<0.01	0	0	0	<0.01	0	<0.01	1
MAC-255-378.33	SG153	<0.01	1	0	<0.01	<0.01	0	<0.01	0
MAC-255-397.78	SG154	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-255-412.58	SG155	<0.01	1	0	<0.01	<0.01	0	<0.01	0
MAC-255-426.3	SG156	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-255-429.5	SG157	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-255-451.78	SG158	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-255-462.07	SG159	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-255-469.36	SG160	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MAC-255-479.17	SG161	<0.01	0	0	0	<0.01	0	<0.01	0
MAC-255-483.68	SG162	<0.01	2	0	<0.01	<0.01	0	<0.01	1
MAC-255-501.32	SG163	0	4	0	0	<0.01	0	<0.01	3
MAC-255-503.26	SG164	<0.01	1	0	0	<0.01	0	<0.01	2
MAC-255-559	SG165	0	1	1	0	<0.01	3	0	14
MAC-255-564.36	SG166	0	2	1	0	<0.01	4	0	4
MC-413-71.64	SG167	<0.01	0	0	<0.01	<0.01	0	0	1
MC-413-130	SG168	<0.01	0	0	<0.01	<0.01	0	0	1
MC-413-183.26	SG169	<0.01	0	0	0	<0.01	0	0	1
MC-413-224	SG170	<0.01	0	0	<0.01	<0.01	0	0	2
MC-413-258.26	SG171	<0.01	0	0	<0.01	<0.01	0	0	1

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Ag	As	Be	Bi	Cd	Co	Cs	Cu
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-413-282.17	SG172	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-413-299	SG173	<0.01	1	0	0	<0.01	0	<0.01	4
MC-413-303.5	SG174	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MC-413-317.96	SG175	<0.01	0	0	0	<0.01	0	<0.01	1
MC-413-354.67	SG177	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-413-388.82	SG178	0	1	0	<0.01	<0.01	0	<0.01	1
MC-413-404	SG179	0	0	0	<0.01	0	0	<0.01	1
MC-413-430.57	SG180	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-413-456.68	SG181	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-413-482.25	SG182	<0.01	0	0	<0.01	0	0	<0.01	0
MC-413-501.66	SG183	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-413-527.67	SG184	<0.01	0	<0.01	<0.01	<0.01	0	<0.01	0
MC-413-547.3	SG185	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-413-559.73	SG187	<0.01	5	0	0	<0.01	0	<0.01	5
MC-413-566.28	SG188	0	2	0	<0.01	<0.01	0	0	1
MC-413-603.83	SG189	0	15	0	0	0	10	0	3
MC-413-614.83	SG190	0	3	0	0	0	5	<0.01	14
MC-413-623.78	SG191	0	0	0	0	<0.01	0	<0.01	0
MC-413-638.86	SG192	<0.01	0	0	<0.01	<0.01	0	0	0
MC-413-649	SG193	<0.01	1	0	<0.01	0	0	<0.01	0
MC-415-76.73	SG194	<0.01	0	0	<0.01	<0.01	0	0	0
MC-415-127.56	SG195	<0.01	0	0	<0.01	<0.01	0	0	0
MC-415-173.74	SG196	<0.01	0	0	0	<0.01	0	0	2
MC-415-197	SG197	<0.01	0	0	<0.01	<0.01	0	0	2
MC-415-222.34	SG198	<0.01	0	0	<0.01	<0.01	0	0	1
MC-415-232.5	SG199	<0.01	0	0	<0.01	<0.01	0	0	1
MC-415-295.67	SG200	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-415-350.35	SG203	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-415-389	SG205	<0.01	1	0	<0.01	0	0	<0.01	1
MC-415-416.08	SG206	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-415-432.38	SG207	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-415-455.72	SG208	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-415-477	SG209	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-415-490.78	SG210	<0.01	0	<0.01	<0.01	<0.01	0	<0.01	0
MC-415-497.66	SG211	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-415-503.32	SG212	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-415-520.15	SG215	<0.01	1	0	<0.01	<0.01	0	<0.01	2
MC-415-537	SG216	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MC-415-539.69	SG217	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MC-434-11.1	SG218	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-434-31.63	SG219	<0.01	0	0	<0.01	0	0	<0.01	0
MC-434-54.07	SG220	<0.01	0	<0.01	<0.01	0	0	<0.01	0
MC-434-93.9	SG221	<0.01	0	<0.01	<0.01	<0.01	0	<0.01	0
MC-434-119.66	SG222	0	1	0	<0.01	<0.01	0	<0.01	1
MC-434-168.25	SG223	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-434-183.4	SG224	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-434-217.84	SG225	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-434-253.64	SG226	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-434-256.65	SG227	<0.01	0	0	0	<0.01	0	<0.01	1
MC-434-282.2	SG228	<0.01	0	0	<0.01	<0.01	0	<0.01	1
MC-434-328.83	SG229	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-434-338.05	SG230	<0.01	1	0	<0.01	<0.01	0	<0.01	1
MC-434-348.28	SG231	<0.01	0	0	0	<0.01	0	<0.01	1
MC-434-370.63	SG232	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-434-397.53	SG233	<0.01	0	0	<0.01	<0.01	0	<0.01	0
MC-434-421.67	SG234	<0.01	0	0	<0.01	<0.01	0	<0.01	0

Process Details — Partial Digestion: a 2.00 g pulp is digested with 2.25 ml of 8:1 HNO3:HCl for 1 hour at 95 C.

Standard(s) — ASR109 and ASR209

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	0	0	0	0	0	<0.01	0	<0.01
MC-336-455	SG2	0	0	0	0	0	<0.01	0	<0.01
MC-336-465	SG3	0	0	0	0	0	<0.01	0	<0.01
MC-336-479.5	SG4	0	0	0	0	0	<0.01	0	<0.01
MC-336-500.43	SG5	0	0	0	0	0	<0.01	0	<0.01
MC-336-506.55	SG6	0	0	0	0	0	<0.01	0	<0.01
MC-336-506.8	SG7	0	0	0	0	0	<0.01	0	<0.01
MC-336-517	SG8	0	0	0	0	0	<0.01	0	<0.01
MC-336-522.86	SG9	0	0	0	0	0	<0.01	0	<0.01
MC-336-532.73	SG10	0	0	0	0	0	<0.01	0	<0.01
MC-336-557	SG11	1	0	0	0	0	<0.01	0	<0.01
MC-336-560.46	SG12	0	0	0	0	0	<0.01	0	<0.01
MC-336-564	SG13	0	0	0	0	0	<0.01	1	<0.01
MC-336-570.5	SG14	0	0	0	0	1	<0.01	0	<0.01
MC-338-23	SG15	0	0	0	0	0	<0.01	0	<0.01
MC-338-65	SG16	0	0	0	0	0	<0.01	0	<0.01
MC-338-101	SG17	0	0	0	0	0	<0.01	0	<0.01
MC-338-150.4	SG18	0	0	0	0	0	<0.01	0	<0.01
MC-338-220.2	SG19	0	0	0	0	0	<0.01	0	<0.01
MC-338-272	SG20	0	0	0	0	0	<0.01	0	<0.01
MC-338-319	SG21	0	0	0	0	0	<0.01	0	<0.01
MC-338-372.17	SG22	0	0	0	0	0	<0.01	0	<0.01
MC-338-410.8	SG23	0	0	0	0	0	<0.01	0	<0.01
MC-338-466	SG24	0	0	0	0	0	<0.01	0	<0.01
MC-338-502.37	SG25	0	0	0	0	0	<0.01	0	<0.01
MC-338-537.64	SG26	0	0	0	0	0	<0.01	0	<0.01
MC-338-554.73	SG27	0	0	0	0	0	<0.01	0	<0.01
MC-338-557.5	SG28	0	0	0	0	0	<0.01	0	<0.01
MC-338-559	SG29	1	0	0	0	1	<0.01	0	<0.01
MC-344-26.1	SG30	0	0	0	0	0	<0.01	1	<0.01
MC-344-69	SG31	0	0	0	0	0	<0.01	0	<0.01
MC-344-100.1	SG32	0	0	0	0	0	<0.01	0	<0.01
MC-344-128	SG33	0	0	0	0	0	<0.01	0	<0.01
MC-344-164	SG34	0	0	0	0	0	<0.01	0	<0.01
MC-344-179.8	SG35	0	0	0	0	0	<0.01	0	<0.01
MC-344-199	SG36	0	0	0	0	0	<0.01	0	<0.01
MC-344-230	SG37	0	0	0	0	0	<0.01	0	<0.01
MC-344-275	SG38	0	0	0	0	0	<0.01	0	<0.01
MC-344-298.82	SG39	0	0	0	0	0	<0.01	0	<0.01
MC-344-343	SG40	0	0	0	0	0	<0.01	0	<0.01
MC-344-378.45	SG41	0	0	0	0	0	<0.01	0	<0.01
MC-344-394.34	SG42	0	0	0	0	0	<0.01	0	<0.01
MC-344-433	SG43	0	0	0	0	0	<0.01	0	<0.01
MC-344-467	SG44	0	0	0	0	0	<0.01	0	<0.01
MC-344-468.8	SG45	0	0	0	0	0	<0.01	0	<0.01
MC-344-485.76	SG46	0	0	0	0	0	<0.01	0	<0.01
MC-344-488	SG47	0	0	0	0	0	<0.01	0	<0.01
MC-344-492.93	SG48	0	0	0	0	0	<0.01	0	<0.01
MAC-208-10.2	SG49	0	0	0	0	0	<0.01	0	<0.01
MAC-208-27	SG50	0	0	0	0	0	<0.01	0	<0.01
MAC-208-63.5	SG51	0	0	0	0	0	<0.01	0	<0.01
MAC-208-86.5	SG52	0	0	0	0	0	<0.01	0	<0.01
MAC-208-88	SG53	0	0	0	0	0	<0.01	0	<0.01
MAC-208-128.4	SG54	0	0	0	0	0	<0.01	0	<0.01
MAC-208-149	SG55	0	0	0	0	0	<0.01	0	<0.01
MAC-208-203	SG56	0	0	0	0	0	<0.01	0	<0.01
MAC-208-217.7	SG57	0	0	0	0	0	<0.01	0	<0.01
MAC-208-237	SG58	1	0	0	0	1	<0.01	0	<0.01
MAC-208-289.2	SG59	1	1	0	0	1	<0.01	0	<0.01
MAC-208-290.5	SG60	0	0	0	0	1	<0.01	0	<0.01
MAC-208-350.5	SG61	0	0	0	0	0	<0.01	0	<0.01
MAC-208-395	SG62	0	0	0	0	0	<0.01	0	<0.01
MAC-208-425.1	SG63	0	0	0	0	0	<0.01	0	<0.01
MAC-208-447.3	SG64	0	0	0	0	0	<0.01	0	<0.01
MAC-208-468.4	SG65	0	0	0	0	0	<0.01	0	<0.01
MAC-208-487	SG66	0	0	0	0	1	<0.01	0	<0.01
MAC-208-493	SG67	0	0	0	1	0	<0.01	0	<0.01
MAC-208-553.3	SG71	0	0	0	0	0	<0.01	0	<0.01
MAC-208-572	SG72	0	0	0	0	0	<0.01	0	<0.01
MAC-250-297.8	SG73	0	0	0	0	0	<0.01	0	<0.01
MAC-250-335.1	SG74	0	0	0	0	1	<0.01	0	<0.01
MAC-250-370.8	SG75	0	0	0	0	0	<0.01	0	<0.01
MAC-250-401.43	SG76	0	0	0	0	0	<0.01	0	<0.01
MAC-250-431.78	SG77	0	0	0	0	1	<0.01	1	<0.01
MAC-250-481.75	SG78	0	0	0	0	0	<0.01	0	<0.01
MC-253-26	SG79	0	0	0	0	0	<0.01	0	<0.01
MC-253-76	SG80	0	0	0	0	0	<0.01	0	<0.01
MC-253-136	SG82	0	0	0	0	0	<0.01	0	<0.01
MC-253-205	SG84	0	0	0	0	0	<0.01	0	<0.01
MC-253-265.3	SG85	0	0	0	0	0	<0.01	0	<0.01
MC-253-287.5	SG86	0	0	0	0	0	<0.01	0	<0.01
MC-253-325	SG87	0	0	0	0	0	<0.01	0	<0.01

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-253-336.2	SG88	0	0	0	0	1	<0.01	0	<0.01
MC-253-382	SG89	0	0	0	0	1	<0.01	0	<0.01
MC-253-416	SG90	0	0	0	0	0	<0.01	0	<0.01
MC-253-430	SG91	0	0	0	0	1	<0.01	0	<0.01
MC-253-440.1	SG92	0	0	0	0	0	<0.01	0	<0.01
MC-253-472.5	SG93	0	0	0	0	0	<0.01	0	<0.01
MC-253-501	SG94	0	0	0	0	0	<0.01	0	<0.01
MC-253-507.5	SG95	0	0	0	0	0	<0.01	0	<0.01
MC-253-528	SG96	0	0	0	0	0	<0.01	0	<0.01
MC-253-538	SG97	0	0	0	0	0	<0.01	0	<0.01
MC-253-550.1	SG99	0	0	0	0	0	<0.01	0	<0.01
MC-253-552	SG100	0	0	0	0	0	<0.01	0	<0.01
MAC-246-4.33	SG101	0	0	0	0	0	<0.01	0	<0.01
MAC-246-54.7	SG102	0	0	0	0	0	<0.01	0	<0.01
MAC-246-60.6	SG103	0	0	0	0	0	<0.01	0	<0.01
MAC-246-82.75	SG104	0	0	0	0	0	<0.01	0	<0.01
MAC-246-126.15	SG105	0	0	0	0	0	<0.01	0	<0.01
MAC-246-142.86	SG106	0	0	0	0	0	<0.01	0	<0.01
MAC-246-165.4	SG107	0	0	0	0	0	<0.01	0	<0.01
MAC-246-213.43	SG108	0	0	0	0	0	<0.01	0	<0.01
MAC-246-267.05	SG109	0	0	0	0	0	<0.01	0	<0.01
MAC-246-297.33	SG110	0	0	0	0	0	<0.01	0	<0.01
MAC-246-324.5	SG111	0	0	0	0	1	<0.01	0	<0.01
MAC-246-333.8	SG112	0	0	0	0	1	<0.01	0	<0.01
MAC-246-354.17	SG113	0	0	0	0	1	<0.01	0	<0.01
MAC-246-378.25	SG114	0	0	0	0	0	<0.01	0	<0.01
MAC-246-418.13	SG115	0	0	0	0	0	<0.01	0	<0.01
MAC-246-423.8	SG116	0	0	0	0	0	<0.01	0	<0.01
MAC-246-454.11	SG117	0	0	0	0	0	<0.01	0	<0.01
MAC-246-475.33	SG118	0	0	0	0	0	<0.01	0	<0.01
MAC-246-496.42	SG119	0	0	0	0	0	<0.01	0	<0.01
MAC-246-499.02	SG120	0	0	0	0	0	<0.01	0	<0.01
MAC-246-508.8	SG121	0	0	0	0	0	<0.01	0	<0.01
MAC-246-510.2	SG122	0	0	0	0	0	<0.01	0	<0.01
MAC-246-543	SG123	0	0	0	0	0	<0.01	0	<0.01
MAC-252-10.15	SG124	0	0	0	0	0	<0.01	0	<0.01
MAC-252-25.7	SG125	0	0	0	0	0	<0.01	0	<0.01
MAC-252-55.65	SG126	0	0	0	0	0	<0.01	0	<0.01
MAC-252-102.48	SG127	0	0	0	0	0	<0.01	0	<0.01
MAC-252-167.2	SG128	0	0	0	0	0	<0.01	0	<0.01
MAC-252-199.86	SG129	0	0	0	0	0	<0.01	0	<0.01
MAC-252-249.43	SG130	0	0	0	0	0	<0.01	0	<0.01
MAC-252-261.91	SG131	0	0	0	0	0	<0.01	0	<0.01
MAC-252-271.2	SG132	0	0	0	0	1	<0.01	0	<0.01
MAC-252-286.2	SG133	0	0	0	0	0	<0.01	0	<0.01
MAC-252-305.3	SG134	0	0	0	0	0	<0.01	0	<0.01
MAC-252-319.44	SG135	0	0	0	0	1	<0.01	0	<0.01
MAC-252-331.7	SG136	0	0	0	0	0	<0.01	0	<0.01
MAC-252-342.5	SG137	0	0	0	0	0	<0.01	0	<0.01
MAC-255-6.13	SG138	0	0	0	0	1	<0.01	0	<0.01
MAC-255-29.21	SG139	0	0	0	0	0	<0.01	0	<0.01
MAC-255-51.63	SG140	0	0	0	0	0	<0.01	0	<0.01
MAC-255-95	SG141	0	0	0	0	0	<0.01	0	<0.01
MAC-255-132.3	No Data								
MAC-255-149	SG143	0	0	0	0	0	<0.01	0	<0.01
MAC-255-194.47	SG144	0	0	0	0	0	<0.01	0	<0.01
MAC-255-209.83	SG145	0	0	0	0	0	<0.01	0	<0.01
MAC-255-217.68	SG146	0	0	0	0	0	<0.01	0	<0.01
MAC-255-259.93	SG147	0	0	0	0	0	<0.01	0	<0.01
MAC-255-288.82	SG148	0	0	0	0	0	<0.01	0	<0.01
MAC-255-293.4	SG149	0	0	0	0	1	<0.01	0	<0.01
MAC-255-332.33	SG150	0	0	0	0	0	<0.01	0	<0.01
MAC-255-338	SG151	0	0	0	0	0	<0.01	0	<0.01
MAC-255-362.46	SG152	0	0	0	0	0	<0.01	0	<0.01
MAC-255-378.33	SG153	0	0	0	0	0	<0.01	0	<0.01
MAC-255-397.78	SG154	0	0	0	0	0	<0.01	0	<0.01
MAC-255-412.58	SG155	0	0	0	0	0	<0.01	0	<0.01
MAC-255-426.3	SG156	0	0	0	0	0	<0.01	0	<0.01
MAC-255-429.5	SG157	0	0	0	0	0	<0.01	0	<0.01
MAC-255-451.78	SG158	0	0	0	0	0	<0.01	0	<0.01
MAC-255-462.07	SG159	0	0	0	0	0	<0.01	0	<0.01
MAC-255-469.36	SG160	0	0	0	0	0	<0.01	0	<0.01
MAC-255-479.17	SG161	0	0	0	0	0	<0.01	0	<0.01
MAC-255-483.68	SG162	0	0	0	0	0	<0.01	0	<0.01
MAC-255-501.32	SG163	0	0	0	0	0	<0.01	0	<0.01
MAC-255-503.26	SG164	0	0	0	0	0	<0.01	0	<0.01
MAC-255-559	SG165	0	0	0	3	1	0	0	<0.01
MAC-255-564.36	SG166	1	1	0	2	1	<0.01	0	<0.01
MC-413-71.64	SG167	0	0	0	0	0	<0.01	0	<0.01
MC-413-130	SG168	0	0	0	0	0	<0.01	0	<0.01
MC-413-183.26	SG169	0	0	0	0	0	<0.01	0	<0.01
MC-413-224	SG170	0	0	0	0	0	<0.01	0	<0.01
MC-413-258.26	SG171	0	0	0	0	0	<0.01	0	<0.01

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Dy	Er	Eu	Ga	Gd	Ge	Hf	Hg
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-413-282.17	SG172	0	0	0	0	0	<0.01	0	<0.01
MC-413-299	SG173	0	0	0	0	0	<0.01	0	<0.01
MC-413-303.5	SG174	0	0	0	0	1	<0.01	0	<0.01
MC-413-317.96	SG175	0	0	0	0	0	<0.01	0	<0.01
MC-413-354.67	SG177	0	0	0	0	0	<0.01	0	<0.01
MC-413-388.82	SG178	1	0	0	0	2	<0.01	0	<0.01
MC-413-404	SG179	0	0	0	0	0	<0.01	1	<0.01
MC-413-430.57	SG180	0	0	0	0	0	<0.01	0	<0.01
MC-413-456.68	SG181	0	0	0	0	0	<0.01	0	<0.01
MC-413-482.25	SG182	0	0	0	0	0	<0.01	1	<0.01
MC-413-501.66	SG183	0	0	0	0	0	<0.01	0	<0.01
MC-413-527.67	SG184	0	0	0	0	0	<0.01	0	<0.01
MC-413-547.3	SG185	0	0	0	0	0	<0.01	0	<0.01
MC-413-559.73	SG187	0	0	0	0	1	<0.01	0	<0.01
MC-413-566.28	SG188	0	0	0	0	0	<0.01	0	<0.01
MC-413-603.83	SG189	0	0	0	0	1	<0.01	0	<0.01
MC-413-614.83	SG190	0	0	0	0	1	<0.01	0	<0.01
MC-413-623.78	SG191	0	0	0	0	0	0	0	<0.01
MC-413-638.86	SG192	0	0	0	0	0	<0.01	0	<0.01
MC-413-649	SG193	0	0	0	0	0	<0.01	0	<0.01
MC-415-76.73	SG194	0	0	0	0	0	<0.01	0	<0.01
MC-415-127.56	SG195	0	0	0	0	0	<0.01	0	<0.01
MC-415-173.74	SG196	0	0	0	0	0	<0.01	0	<0.01
MC-415-197	SG197	0	0	0	0	0	<0.01	0	<0.01
MC-415-222.34	SG198	0	0	0	0	0	<0.01	0	<0.01
MC-415-232.5	SG199	0	0	0	0	0	<0.01	0	<0.01
MC-415-295.67	SG200	0	0	0	0	0	<0.01	0	<0.01
MC-415-350.35	SG203	0	0	0	0	1	<0.01	0	<0.01
MC-415-389	SG205	0	0	0	0	1	<0.01	0	<0.01
MC-415-416.08	SG206	0	0	0	0	0	<0.01	0	<0.01
MC-415-432.38	SG207	0	0	0	0	0	<0.01	0	<0.01
MC-415-455.72	SG208	0	0	0	0	0	<0.01	0	<0.01
MC-415-477	SG209	0	0	0	0	0	<0.01	0	<0.01
MC-415-490.78	SG210	0	0	0	0	0	<0.01	0	<0.01
MC-415-497.66	SG211	0	0	0	0	0	<0.01	0	<0.01
MC-415-503.32	SG212	0	0	0	0	0	<0.01	0	<0.01
MC-415-520.15	SG215	0	0	0	0	0	<0.01	0	<0.01
MC-415-537	SG216	0	0	0	0	1	<0.01	0	<0.01
MC-415-539.69	SG217	0	0	0	0	1	<0.01	0	<0.01
MC-434-11.1	SG218	0	0	0	0	0	<0.01	0	<0.01
MC-434-31.63	SG219	0	0	0	0	0	<0.01	0	<0.01
MC-434-54.07	SG220	0	0	0	0	0	<0.01	0	<0.01
MC-434-93.9	SG221	0	0	0	0	0	<0.01	0	<0.01
MC-434-119.66	SG222	0	0	0	0	0	<0.01	0	<0.01
MC-434-168.25	SG223	0	0	0	0	0	<0.01	0	<0.01
MC-434-183.4	SG224	0	0	0	0	0	<0.01	0	<0.01
MC-434-217.84	SG225	0	0	0	0	0	<0.01	0	<0.01
MC-434-253.64	SG226	0	0	0	0	0	<0.01	0	<0.01
MC-434-256.65	SG227	0	0	0	0	0	<0.01	0	<0.01
MC-434-282.2	SG228	0	0	0	0	0	<0.01	0	<0.01
MC-434-328.83	SG229	0	0	0	0	0	<0.01	0	<0.01
MC-434-338.05	SG230	0	0	0	0	0	<0.01	0	<0.01
MC-434-348.28	SG231	0	0	0	0	0	<0.01	0	<0.01
MC-434-370.63	SG232	0	0	0	0	0	<0.01	0	<0.01
MC-434-397.53	SG233	0	0	0	0	0	<0.01	0	<0.01
MC-434-421.67	SG234	0	0	0	0	0	<0.01	0	<0.01

Process Details — Partial Digestion: a 2.00 g pulp is digested with 2.25 ml of 8:1 HNO3:HCl for 1 hour at 95 C.

Standard(s) — ASR109 and ASR209

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Ho	Mo	Nb	Nd	Ni	Pb204	Pb206	Pb207
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	0	0	<0.01	2	0	0	0	0
MC-336-455	SG2	0	0	<0.01	3	0	0	0	0
MC-336-465	SG3	0	0	<0.01	2	1	0	0	0
MC-336-479.5	SG4	<0.01	0	<0.01	1	0	0	0	0
MC-336-500.43	SG5	0	0	<0.01	1	0	0	0	0
MC-336-506.55	SG6	<0.01	0	<0.01	1	0	0	0	0
MC-336-506.8	SG7	0	0	<0.01	1	1	0	0	0
MC-336-517	SG8	0	0	<0.01	1	0	0	0	0
MC-336-522.86	SG9	0	0	<0.01	2	2	0	0	0
MC-336-532.73	SG10	0	0	<0.01	1	0	0	3	1
MC-336-557	SG11	0	0	<0.01	1	4	0	4	0
MC-336-560.46	SG12	<0.01	0	<0.01	1	0	0	0	0
MC-336-564	SG13	0	0	<0.01	2	0	0	1	0
MC-336-570.5	SG14	0	0	<0.01	2	1	0	0	0
MC-338-23	SG15	0	0	<0.01	1	0	0	0	0
MC-338-65	SG16	0	0	<0.01	1	0	0	0	0
MC-338-101	SG17	0	0	<0.01	1	0	0	0	0
MC-338-150.4	SG18	0	0	<0.01	1	0	0	0	0
MC-338-220.2	SG19	0	0	<0.01	1	0	0	0	0
MC-338-272	SG20	0	0	<0.01	2	0	0	0	0
MC-338-319	SG21	0	0	<0.01	1	0	0	0	0
MC-338-372.17	SG22	0	0	<0.01	1	0	0	0	0
MC-338-410.8	SG23	0	0	<0.01	1	0	0	0	0
MC-338-466	SG24	0	0	<0.01	2	0	0	0	0
MC-338-502.37	SG25	<0.01	0	<0.01	1	0	0	0	0
MC-338-537.64	SG26	0	0	<0.01	1	0	0	0	0
MC-338-554.73	SG27	<0.01	0	<0.01	1	0	0	0	0
MC-338-557.5	SG28	0	0	<0.01	2	2	0	0	0
MC-338-559	SG29	0	0	<0.01	2	2	0	0	0
MC-344-26.1	SG30	0	0	<0.01	2	0	0	0	0
MC-344-69	SG31	0	0	<0.01	2	0	0	0	0
MC-344-100.1	SG32	0	0	<0.01	1	0	0	0	0
MC-344-128	SG33	0	0	<0.01	1	0	0	0	0
MC-344-164	SG34	0	0	<0.01	1	0	0	1	1
MC-344-179.8	SG35	0	0	<0.01	1	0	0	0	0
MC-344-199	SG36	0	0	<0.01	1	0	0	0	0
MC-344-230	SG37	0	0	<0.01	1	1	0	0	0
MC-344-275	SG38	<0.01	0	<0.01	1	0	0	0	0
MC-344-298.82	SG39	0	0	<0.01	2	0	0	0	0
MC-344-343	SG40	<0.01	0	<0.01	1	0	0	0	0
MC-344-378.45	SG41	0	0	<0.01	1	0	0	0	0
MC-344-394.34	SG42	0	0	<0.01	1	1	0	0	0
MC-344-433	SG43	<0.01	0	<0.01	1	0	0	0	0
MC-344-467	SG44	0	0	<0.01	1	0	0	0	0
MC-344-468.8	SG45	<0.01	0	<0.01	1	0	0	0	0
MC-344-485.76	SG46	<0.01	0	<0.01	1	0	0	0	0
MC-344-488	SG47	<0.01	0	<0.01	0	0	0	0	0
MC-344-492.93	SG48	0	0	<0.01	2	0	0	0	0
MAC-208-10.2	SG49	0	0	<0.01	2	0	0	0	0
MAC-208-27	SG50	0	0	<0.01	1	0	0	0	0
MAC-208-63.5	SG51	0	0	<0.01	1	0	0	0	0
MAC-208-86.5	SG52	0	0	<0.01	1	0	0	0	0
MAC-208-88	SG53	0	0	<0.01	2	0	0	0	0
MAC-208-128.4	SG54	0	0	<0.01	1	0	0	0	0
MAC-208-149	SG55	0	0	<0.01	2	0	0	0	0
MAC-208-203	SG56	0	0	<0.01	1	1	0	0	0
MAC-208-217.7	SG57	0	0	<0.01	2	1	0	9	5
MAC-208-237	SG58	0	0	<0.01	3	1	0	1	0
MAC-208-289.2	SG59	0	0	<0.01	2	0	0	1	0
MAC-208-290.5	SG60	0	0	<0.01	2	0	0	1	0
MAC-208-350.5	SG61	0	0	<0.01	4	1	0	0	0
MAC-208-395	SG62	0	0	<0.01	1	0	0	0	0
MAC-208-425.1	SG63	0	0	<0.01	1	0	0	0	0
MAC-208-447.3	SG64	0	0	<0.01	1	0	0	1	0
MAC-208-468.4	SG65	0	0	<0.01	1	0	0	0	0
MAC-208-487	SG66	0	0	<0.01	3	1	0	0	0
MAC-208-493	SG67	0	1	<0.01	2	1	0	1	0
MAC-208-553.3	SG71	0	0	<0.01	3	1	0	0	0
MAC-208-572	SG72	0	0	<0.01	2	1	0	0	0
MAC-250-297.8	SG73	0	0	<0.01	3	0	0	0	0
MAC-250-335.1	SG74	0	0	<0.01	3	0	0	0	0
MAC-250-370.8	SG75	0	0	<0.01	3	1	0	0	0
MAC-250-401.43	SG76	0	0	<0.01	1	0	0	0	0
MAC-250-431.78	SG77	0	0	<0.01	2	0	0	0	0
MAC-250-481.75	SG78	0	0	<0.01	2	0	0	0	0
MC-253-26	SG79	0	0	<0.01	1	0	0	0	0
MC-253-76	SG80	0	0	<0.01	1	0	0	0	0
MC-253-136	SG82	0	0	<0.01	1	0	0	0	0
MC-253-205	SG84	0	0	<0.01	2	0	0	1	0
MC-253-265.3	SG85	0	0	<0.01	2	1	0	3	2
MC-253-287.5	SG86	0	0	<0.01	2	1	0	0	0
MC-253-325	SG87	0	0	<0.01	2	1	0	1	0

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Ho	Mo	Nb	Nd	Ni	Pb204	Pb206	Pb207
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-253-336.2	SG88	0	0	<0.01	3	1	0	0	0
MC-253-382	SG89	0	0	<0.01	3	0	0	0	0
MC-253-416	SG90	0	0	<0.01	3	0	0	0	0
MC-253-430	SG91	0	0	<0.01	3	0	0	0	0
MC-253-440.1	SG92	0	0	<0.01	2	0	0	0	0
MC-253-472.5	SG93	<0.01	0	<0.01	1	0	0	0	0
MC-253-501	SG94	0	0	<0.01	1	0	0	0	0
MC-253-507.5	SG95	0	0	<0.01	3	0	0	0	0
MC-253-528	SG96	0	0	<0.01	1	0	0	0	0
MC-253-538	SG97	<0.01	0	<0.01	1	0	0	0	0
MC-253-550.1	SG99	0	0	<0.01	2	1	0	0	0
MC-253-552	SG100	0	0	<0.01	2	0	0	0	0
MAC-246-4.33	SG101	0	0	<0.01	2	0	0	0	0
MAC-246-54.7	SG102	0	0	<0.01	2	0	0	0	0
MAC-246-60.6	SG103	0	0	<0.01	2	0	0	0	0
MAC-246-82.75	SG104	0	0	<0.01	1	0	0	0	0
MAC-246-126.15	SG105	0	0	<0.01	1	0	0	0	0
MAC-246-142.86	SG106	0	0	<0.01	1	0	0	1	0
MAC-246-165.4	SG107	0	0	<0.01	2	0	0	0	0
MAC-246-213.43	SG108	0	0	<0.01	2	0	0	0	0
MAC-246-267.05	SG109	0	0	<0.01	1	0	0	0	0
MAC-246-297.33	SG110	0	0	<0.01	2	0	0	0	0
MAC-246-324.5	SG111	0	0	<0.01	4	0	0	0	0
MAC-246-333.8	SG112	0	0	0	4	0	0	1	0
MAC-246-354.17	SG113	0	0	<0.01	3	0	0	0	0
MAC-246-378.25	SG114	0	0	<0.01	2	0	0	0	0
MAC-246-418.13	SG115	<0.01	0	<0.01	1	0	0	0	0
MAC-246-423.8	SG116	0	0	<0.01	1	0	0	0	0
MAC-246-454.11	SG117	0	0	<0.01	2	0	0	0	0
MAC-246-475.33	SG118	0	0	<0.01	1	0	0	0	0
MAC-246-496.42	SG119	0	0	<0.01	1	1	0	0	0
MAC-246-499.02	SG120	0	1	<0.01	1	0	0	0	0
MAC-246-508.8	SG121	0	0	<0.01	1	0	0	1	0
MAC-246-510.2	SG122	0	0	<0.01	1	0	0	0	0
MAC-246-543	SG123	0	0	<0.01	1	0	0	0	0
MAC-252-10.15	SG124	0	0	<0.01	2	0	0	0	0
MAC-252-25.7	SG125	0	0	<0.01	1	0	0	0	0
MAC-252-55.65	SG126	0	0	<0.01	1	0	0	0	0
MAC-252-102.48	SG127	0	0	<0.01	1	0	0	0	0
MAC-252-167.2	SG128	0	0	<0.01	2	0	0	0	0
MAC-252-199.86	SG129	0	0	0	2	1	0	2	1
MAC-252-249.43	SG130	0	0	<0.01	3	0	0	0	0
MAC-252-261.91	SG131	0	0	<0.01	2	0	0	0	0
MAC-252-271.2	SG132	0	0	<0.01	5	1	0	0	0
MAC-252-286.2	SG133	0	0	<0.01	3	0	0	0	0
MAC-252-305.3	SG134	0	0	<0.01	2	0	0	0	0
MAC-252-319.44	SG135	0	0	<0.01	3	1	0	0	0
MAC-252-331.7	SG136	0	0	<0.01	2	1	0	0	0
MAC-252-342.5	SG137	0	0	<0.01	2	0	0	0	0
MAC-255-6.13	SG138	0	0	<0.01	3	0	0	0	0
MAC-255-29.21	SG139	0	0	<0.01	1	1	0	0	0
MAC-255-51.63	SG140	0	0	<0.01	2	0	0	0	0
MAC-255-95	SG141	0	0	<0.01	2	0	0	0	0
MAC-255-132.3	No Data								
MAC-255-149	SG143	0	0	<0.01	1	0	0	0	0
MAC-255-194.47	SG144	0	0	<0.01	2	0	0	1	0
MAC-255-209.83	SG145	0	0	<0.01	1	0	0	0	0
MAC-255-217.68	SG146	0	0	<0.01	1	1	0	0	0
MAC-255-259.93	SG147	0	0	<0.01	1	0	0	0	0
MAC-255-288.82	SG148	0	0	<0.01	1	0	0	1	0
MAC-255-293.4	SG149	0	0	<0.01	2	0	0	0	0
MAC-255-332.33	SG150	0	0	<0.01	1	0	0	0	0
MAC-255-338	SG151	0	0	<0.01	1	0	0	0	0
MAC-255-362.46	SG152	0	0	<0.01	1	0	0	0	0
MAC-255-378.33	SG153	0	0	<0.01	1	0	0	0	0
MAC-255-397.78	SG154	<0.01	0	<0.01	1	0	0	0	0
MAC-255-412.58	SG155	0	0	<0.01	1	0	0	0	0
MAC-255-426.3	SG156	0	0	<0.01	1	0	0	0	0
MAC-255-429.5	SG157	0	0	<0.01	1	0	0	0	0
MAC-255-451.78	SG158	0	0	<0.01	1	0	0	0	0
MAC-255-462.07	SG159	0	0	<0.01	1	0	0	0	0
MAC-255-469.36	SG160	0	0	<0.01	1	0	0	0	0
MAC-255-479.17	SG161	0	0	<0.01	1	0	0	0	0
MAC-255-483.68	SG162	0	1	<0.01	0	0	0	0	0
MAC-255-501.32	SG163	0	1	<0.01	1	1	0	1	0
MAC-255-503.26	SG164	0	1	<0.01	1	2	0	0	0
MAC-255-559	SG165	0	0	0	4	10	0	7	0
MAC-255-564.36	SG166	0	0	<0.01	4	17	0	3	0
MC-413-71.64	SG167	0	0	<0.01	1	0	0	0	0
MC-413-130	SG168	0	0	<0.01	1	0	0	0	0
MC-413-183.26	SG169	0	0	<0.01	1	1	0	0	0
MC-413-224	SG170	0	0	<0.01	1	0	0	0	0
MC-413-258.26	SG171	0	0	<0.01	2	0	0	0	0

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Ho	Mo	Nb	Nd	Ni	Pb204	Pb206	Pb207
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-413-282.17	SG172	0	0	<0.01	2	0	0	0	0
MC-413-299	SG173	0	0	<0.01	2	1	0	0	0
MC-413-303.5	SG174	0	0	<0.01	3	0	0	0	0
MC-413-317.96	SG175	0	0	<0.01	2	0	0	0	0
MC-413-354.67	SG177	0	0	<0.01	2	0	0	0	0
MC-413-388.82	SG178	0	0	<0.01	9	0	0	0	0
MC-413-404	SG179	0	0	<0.01	3	0	0	0	0
MC-413-430.57	SG180	0	0	<0.01	2	0	0	0	0
MC-413-456.68	SG181	<0.01	0	<0.01	1	0	0	0	0
MC-413-482.25	SG182	0	0	<0.01	3	0	0	0	0
MC-413-501.66	SG183	0	0	<0.01	1	0	0	0	0
MC-413-527.67	SG184	<0.01	0	<0.01	1	0	0	0	0
MC-413-547.3	SG185	0	0	<0.01	1	0	0	0	0
MC-413-559.73	SG187	0	0	<0.01	6	1	0	1	0
MC-413-566.28	SG188	0	0	<0.01	2	0	0	0	0
MC-413-603.83	SG189	0	2	<0.01	7	17	0	1	0
MC-413-614.83	SG190	0	0	<0.01	5	7	0	3	1
MC-413-623.78	SG191	0	0	<0.01	1	1	0	0	0
MC-413-638.86	SG192	0	0	<0.01	3	1	0	0	0
MC-413-649	SG193	0	0	<0.01	4	0	0	0	0
MC-415-76.73	SG194	0	0	<0.01	1	0	0	0	0
MC-415-127.56	SG195	0	0	<0.01	1	1	0	0	0
MC-415-173.74	SG196	0	0	<0.01	1	1	0	0	0
MC-415-197	SG197	0	0	<0.01	1	1	0	0	0
MC-415-222.34	SG198	0	0	<0.01	1	0	0	0	0
MC-415-232.5	SG199	0	0	<0.01	2	0	0	0	0
MC-415-295.67	SG200	0	0	<0.01	2	0	0	0	0
MC-415-350.35	SG203	0	0	<0.01	3	0	0	0	0
MC-415-389	SG205	0	0	<0.01	4	0	0	0	0
MC-415-416.08	SG206	<0.01	0	<0.01	1	0	0	0	0
MC-415-432.38	SG207	0	0	<0.01	2	0	0	0	0
MC-415-455.72	SG208	0	0	<0.01	2	0	0	0	0
MC-415-477	SG209	0	0	<0.01	2	0	0	0	0
MC-415-490.78	SG210	<0.01	0	<0.01	1	0	0	0	0
MC-415-497.66	SG211	0	0	<0.01	1	0	0	0	0
MC-415-503.32	SG212	0	0	<0.01	1	0	0	0	0
MC-415-520.15	SG215	0	0	<0.01	1	0	0	0	0
MC-415-537	SG216	0	0	<0.01	7	0	0	0	0
MC-415-539.69	SG217	0	0	<0.01	10	1	0	0	0
MC-434-11.1	SG218	0	0	<0.01	1	0	0	0	0
MC-434-31.63	SG219	0	0	<0.01	1	0	0	0	0
MC-434-54.07	SG220	0	0	<0.01	1	0	0	0	0
MC-434-93.9	SG221	<0.01	0	<0.01	1	0	0	0	0
MC-434-119.66	SG222	0	0	<0.01	1	1	0	0	0
MC-434-168.25	SG223	0	0	<0.01	1	0	0	0	0
MC-434-183.4	SG224	<0.01	0	<0.01	1	0	0	0	0
MC-434-217.84	SG225	0	0	<0.01	2	0	0	1	0
MC-434-253.64	SG226	0	0	<0.01	1	0	0	0	0
MC-434-256.65	SG227	0	0	<0.01	2	0	0	0	0
MC-434-282.2	SG228	0	0	<0.01	1	0	0	0	0
MC-434-328.83	SG229	0	0	<0.01	2	0	0	0	0
MC-434-338.05	SG230	<0.01	0	<0.01	1	0	0	0	0
MC-434-348.28	SG231	0	0	<0.01	1	0	0	0	0
MC-434-370.63	SG232	0	0	<0.01	2	0	0	0	0
MC-434-397.53	SG233	0	0	<0.01	3	0	0	0	0
MC-434-421.67	SG234	<0.01	0	<0.01	2	0	0	0	0

Process Details — Partial Digestion: a 2.00 g pulp is digested with 2.25 ml of 8:1 HNO_3:HCl for 1 hour at 95 C.

Standard(s) — ASR109 and ASR209

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Pb208	PbSUM	Pr	Rb	Sb	Sc	Se	Sm
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	0	1	1	0	<0.01	<0.1	<0.1	0
MC-336-455	SG2	0	1	1	0	<0.01	<0.1	<0.1	0
MC-336-465	SG3	0	0	0	0	<0.01	<0.1	<0.1	0
MC-336-479.5	SG4	0	0	0	0	<0.01	<0.1	<0.1	0
MC-336-500.43	SG5	0	1	0	0	0	<0.1	<0.1	0
MC-336-506.55	SG6	0	0	0	0	<0.01	<0.1	<0.1	0
MC-336-506.8	SG7	0	1	0	0	<0.01	<0.1	<0.1	0
MC-336-517	SG8	0	1	0	0	<0.01	<0.1	<0.1	0
MC-336-522.86	SG9	1	1	1	0	<0.01	0	<0.1	0
MC-336-532.73	SG10	1	4	0	0	0	<0.1	<0.1	0
MC-336-557	SG11	0	4	0	0	0	<0.1	<0.1	0
MC-336-560.46	SG12	0	1	0	0	<0.01	<0.1	<0.1	0
MC-336-564	SG13	1	3	1	0	<0.01	<0.1	<0.1	0
MC-336-570.5	SG14	0	0	1	0	<0.01	0	<0.1	0
MC-338-23	SG15	0	1	0	0	<0.01	0	<0.1	0
MC-338-65	SG16	0	0	0	0	0	<0.1	<0.1	0
MC-338-101	SG17	0	1	0	0	<0.01	<0.1	<0.1	0
MC-338-150.4	SG18	0	1	0	0	<0.01	<0.1	<0.1	0
MC-338-220.2	SG19	0	1	0	0	<0.01	0	<0.1	0
MC-338-272	SG20	0	1	0	0	0	<0.1	<0.1	0
MC-338-319	SG21	0	0	0	0	<0.01	0	<0.1	0
MC-338-372.17	SG22	0	0	0	0	<0.01	<0.1	<0.1	0
MC-338-410.8	SG23	0	0	0	0	<0.01	<0.1	<0.1	0
MC-338-466	SG24	0	0	1	0	<0.01	<0.1	<0.1	0
MC-338-502.37	SG25	0	0	0	0	<0.01	<0.1	<0.1	0
MC-338-537.64	SG26	0	0	0	0	<0.01	<0.1	<0.1	0
MC-338-554.73	SG27	0	0	0	0	<0.01	<0.1	<0.1	0
MC-338-557.5	SG28	0	1	1	0	<0.01	0	<0.1	0
MC-338-559	SG29	0	1	1	1	<0.01	0	<0.1	0
MC-344-26.1	SG30	0	1	1	0	<0.01	0	<0.1	0
MC-344-69	SG31	0	1	1	0	<0.01	0	<0.1	0
MC-344-100.1	SG32	0	1	0	0	<0.01	<0.1	<0.1	0
MC-344-128	SG33	0	1	0	0	0	<0.1	<0.1	0
MC-344-164	SG34	2	4	0	0	<0.01	0	<0.1	0
MC-344-179.8	SG35	0	1	0	0	<0.01	<0.1	<0.1	0
MC-344-199	SG36	0	1	0	0	<0.01	<0.1	<0.1	0
MC-344-230	SG37	0	1	0	0	<0.01	0	<0.1	0
MC-344-275	SG38	0	0	0	0	<0.01	<0.1	<0.1	0
MC-344-298.82	SG39	0	1	0	0	<0.01	<0.1	<0.1	0
MC-344-343	SG40	0	0	0	0	<0.01	<0.1	<0.1	0
MC-344-378.45	SG41	0	1	0	0	<0.01	<0.1	<0.1	0
MC-344-394.34	SG42	1	1	0	0	<0.01	<0.1	<0.1	0
MC-344-433	SG43	0	0	0	0	<0.01	<0.1	<0.1	0
MC-344-467	SG44	0	0	0	0	0	<0.1	<0.1	0
MC-344-468.8	SG45	0	0	0	0	<0.01	<0.1	<0.1	0
MC-344-485.76	SG46	0	0	0	0	0	<0.1	<0.1	0
MC-344-488	SG47	0	0	0	0	<0.01	<0.1	<0.1	0
MC-344-492.93	SG48	0	1	1	0	0	0	<0.1	0
MAC-208-10.2	SG49	0	1	1	0	<0.01	0	<0.1	0
MAC-208-27	SG50	0	1	0	0	<0.01	0	<0.1	0
MAC-208-63.5	SG51	0	0	0	0	0	0	<0.1	0
MAC-208-86.5	SG52	0	1	0	0	<0.01	0	<0.1	0
MAC-208-88	SG53	0	1	0	0	<0.01	<0.1	<0.1	0
MAC-208-128.4	SG54	0	1	0	0	0	0	<0.1	0
MAC-208-149	SG55	0	1	1	0	<0.01	0	<0.1	1
MAC-208-203	SG56	0	0	0	0	<0.01	<0.1	<0.1	0
MAC-208-217.7	SG57	19	34	1	0	<0.01	0	<0.1	0
MAC-208-237	SG58	1	2	1	0	<0.01	0	<0.1	1
MAC-208-289.2	SG59	1	2	1	0	<0.01	0	<0.1	1
MAC-208-290.5	SG60	0	1	1	0	<0.01	0	<0.1	0
MAC-208-350.5	SG61	1	1	1	0	<0.01	0	<0.1	1
MAC-208-395	SG62	0	0	0	0	0	<0.1	<0.1	0
MAC-208-425.1	SG63	0	1	0	0	0	<0.1	<0.1	0
MAC-208-447.3	SG64	1	3	0	0	<0.01	0	<0.1	0
MAC-208-468.4	SG65	0	1	0	0	0	0	<0.1	0
MAC-208-487	SG66	0	1	1	0	0	0	<0.1	1
MAC-208-493	SG67	0	1	1	0	0	0	<0.1	0
MAC-208-553.3	SG71	0	1	1	0	0	<0.1	<0.1	1
MAC-208-572	SG72	0	1	1	0	<0.01	0	<0.1	0
MAC-250-297.8	SG73	0	1	1	0	<0.01	<0.1	0	1
MAC-250-335.1	SG74	0	1	1	0	<0.01	<0.1	<0.1	1
MAC-250-370.8	SG75	1	1	1	0	0	0	<0.1	1
MAC-250-401.43	SG76	0	1	0	0	0	0	<0.1	0
MAC-250-431.78	SG77	1	1	1	0	0	0	<0.1	1
MAC-250-481.75	SG78	0	1	1	0	<0.01	0	<0.1	0
MC-253-26	SG79	0	1	0	0	<0.01	0	<0.1	0
MC-253-76	SG80	0	1	0	0	<0.01	0	<0.1	0
MC-253-136	SG82	0	1	0	0	<0.01	0	<0.1	0
MC-253-205	SG84	1	2	1	0	<0.01	0	<0.1	0
MC-253-265.3	SG85	6	10	1	0	<0.01	0	<0.1	0
MC-253-287.5	SG86	0	1	1	0	<0.01	<0.1	<0.1	0
MC-253-325	SG87	1	2	1	0	<0.01	0	<0.1	0

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Pb208	PbSUM	Pr	Rb	Sb	Sc	Se	Sm
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-253-336.2	SG88	1	1	1	0	<0.01	0	<0.1	1
MC-253-382	SG89	0	1	1	0	<0.01	0	<0.1	1
MC-253-416	SG90	0	1	1	0	<0.01	<0.1	<0.1	1
MC-253-430	SG91	1	1	1	0	<0.01	0	0	1
MC-253-440.1	SG92	0	1	1	0	<0.01	<0.1	<0.1	0
MC-253-472.5	SG93	0	0	0	0	<0.01	<0.1	<0.1	0
MC-253-501	SG94	0	0	0	0	<0.01	<0.1	<0.1	0
MC-253-507.5	SG95	0	0	1	0	0	<0.1	<0.1	1
MC-253-528	SG96	0	1	0	0	<0.01	<0.1	<0.1	0
MC-253-538	SG97	0	0	0	0	<0.01	<0.1	<0.1	0
MC-253-550.1	SG99	0	1	1	0	<0.01	0	<0.1	0
MC-253-552	SG100	0	1	1	0	<0.01	<0.1	<0.1	0
MAC-246-4.33	SG101	0	1	1	0	0	0	<0.1	0
MAC-246-54.7	SG102	0	1	1	0	<0.01	0	<0.1	0
MAC-246-60.6	SG103	0	1	1	0	<0.01	0	<0.1	0
MAC-246-82.75	SG104	0	0	0	0	0	0	<0.1	0
MAC-246-126.15	SG105	1	1	0	0	0	<0.1	<0.1	0
MAC-246-142.86	SG106	1	2	0	0	0	0	<0.1	0
MAC-246-165.4	SG107	0	1	1	0	0	0	<0.1	0
MAC-246-213.43	SG108	0	1	0	0	<0.01	0	<0.1	0
MAC-246-267.05	SG109	0	1	0	0	<0.01	<0.1	<0.1	0
MAC-246-297.33	SG110	1	1	1	0	0	0	<0.1	0
MAC-246-324.5	SG111	1	1	1	0	<0.01	0	<0.1	1
MAC-246-333.8	SG112	1	2	1	0	<0.01	<0.1	0	1
MAC-246-354.17	SG113	1	1	1	0	<0.01	0	<0.1	1
MAC-246-378.25	SG114	0	1	1	0	<0.01	<0.1	<0.1	0
MAC-246-418.13	SG115	0	1	0	0	0	<0.1	<0.1	0
MAC-246-423.8	SG116	0	0	0	0	0	0	<0.1	0
MAC-246-454.11	SG117	0	1	1	0	<0.01	<0.1	<0.1	0
MAC-246-475.33	SG118	0	1	0	0	<0.01	<0.1	<0.1	0
MAC-246-496.42	SG119	0	1	0	0	<0.01	0	<0.1	0
MAC-246-499.02	SG120	0	1	0	0	<0.01	0	<0.1	0
MAC-246-508.8	SG121	1	1	0	0	0	0	<0.1	0
MAC-246-510.2	SG122	0	1	0	0	0	<0.1	<0.1	0
MAC-246-543	SG123	0	1	0	0	0	<0.1	<0.1	0
MAC-252-10.15	SG124	0	1	1	0	<0.01	0	<0.1	0
MAC-252-25.7	SG125	0	1	0	0	0	0	<0.1	0
MAC-252-55.65	SG126	0	0	0	0	<0.01	0	<0.1	0
MAC-252-102.48	SG127	0	1	0	0	0	<0.1	<0.1	0
MAC-252-167.2	SG128	0	1	1	0	<0.01	0	<0.1	0
MAC-252-199.86	SG129	4	7	1	0	<0.01	0	<0.1	0
MAC-252-249.43	SG130	1	1	1	0	<0.01	0	<0.1	1
MAC-252-261.91	SG131	1	2	1	0	<0.01	<0.1	<0.1	0
MAC-252-271.2	SG132	1	2	2	0	<0.01	<0.1	<0.1	1
MAC-252-286.2	SG133	0	1	1	0	<0.01	<0.1	<0.1	1
MAC-252-305.3	SG134	0	1	1	0	<0.01	<0.1	<0.1	0
MAC-252-319.44	SG135	0	1	1	0	<0.01	0	<0.1	1
MAC-252-331.7	SG136	1	1	1	0	<0.01	<0.1	<0.1	0
MAC-252-342.5	SG137	0	1	1	0	<0.01	<0.1	<0.1	0
MAC-255-6.13	SG138	0	1	1	0	<0.01	0	<0.1	1
MAC-255-29.21	SG139	0	1	0	1	0	1	<0.1	0
MAC-255-51.63	SG140	0	1	1	0	<0.01	0	<0.1	0
MAC-255-95	SG141	0	1	0	0	<0.01	<0.1	<0.1	0
MAC-255-132.3	No Data								
MAC-255-149	SG143	0	1	0	0	0	0	<0.1	0
MAC-255-194.47	SG144	1	2	0	0	<0.01	0	<0.1	0
MAC-255-209.83	SG145	0	1	0	0	<0.01	0	<0.1	0
MAC-255-217.68	SG146	0	1	0	0	0	0	<0.1	0
MAC-255-259.93	SG147	0	1	0	0	<0.01	<0.1	<0.1	0
MAC-255-288.82	SG148	1	2	0	0	<0.01	<0.1	<0.1	0
MAC-255-293.4	SG149	0	0	1	0	<0.01	<0.1	<0.1	0
MAC-255-332.33	SG150	1	2	0	0	<0.01	<0.1	<0.1	0
MAC-255-338	SG151	1	1	0	0	0	<0.1	<0.1	0
MAC-255-362.46	SG152	0	0	0	0	<0.01	<0.1	<0.1	0
MAC-255-378.33	SG153	0	1	0	0	<0.01	<0.1	<0.1	0
MAC-255-397.78	SG154	0	0	0	0	<0.01	<0.1	<0.1	0
MAC-255-412.58	SG155	0	0	1	0	<0.01	<0.1	<0.1	0
MAC-255-426.3	SG156	0	1	0	0	<0.01	0	<0.1	0
MAC-255-429.5	SG157	0	0	0	0	0	0	<0.1	0
MAC-255-451.78	SG158	0	0	0	0	<0.01	<0.1	<0.1	0
MAC-255-462.07	SG159	0	1	0	0	0	0	<0.1	0
MAC-255-469.36	SG160	0	0	0	0	0	<0.1	<0.1	0
MAC-255-479.17	SG161	0	1	0	0	0	0	<0.1	0
MAC-255-483.68	SG162	0	0	0	0	0	<0.1	<0.1	0
MAC-255-501.32	SG163	1	3	0	0	0	0	0	0
MAC-255-503.26	SG164	0	1	0	0	0	0	<0.1	0
MAC-255-559	SG165	1	8	1	0	<0.01	1	<0.1	1
MAC-255-564.36	SG166	1	4	1	0	0	1	0	1
MC-413-71.64	SG167	0	1	0	0	<0.01	0	<0.1	0
MC-413-130	SG168	0	0	0	0	<0.01	0	<0.1	0
MC-413-183.26	SG169	0	1	0	0	<0.01	<0.1	<0.1	0
MC-413-224	SG170	0	0	0	0	<0.01	0	<0.1	0
MC-413-258.26	SG171	0	1	0	0	<0.01	<0.1	<0.1	0

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Pb208	PbSUM	Pr	Rb	Sb	Sc	Se	Sm
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-413-282.17	SG172	0	0	0	0	<0.01	<0.1	<0.1	0
MC-413-299	SG173	0	0	0	0	<0.01	0	<0.1	0
MC-413-303.5	SG174	0	1	1	0	<0.01	<0.1	<0.1	1
MC-413-317.96	SG175	0	1	1	0	<0.01	<0.1	<0.1	0
MC-413-354.67	SG177	0	0	1	0	<0.01	<0.1	<0.1	0
MC-413-388.82	SG178	1	1	2	0	<0.01	1	0	2
MC-413-404	SG179	0	1	1	0	<0.01	0	<0.1	1
MC-413-430.57	SG180	1	1	1	0	<0.01	<0.1	<0.1	0
MC-413-456.68	SG181	0	0	0	0	<0.01	<0.1	<0.1	0
MC-413-482.25	SG182	1	1	1	0	0	0	<0.1	1
MC-413-501.66	SG183	0	0	0	0	<0.01	<0.1	<0.1	0
MC-413-527.67	SG184	0	0	0	0	<0.01	<0.1	<0.1	0
MC-413-547.3	SG185	0	0	0	0	<0.01	0	<0.1	0
MC-413-559.73	SG187	1	2	2	0	<0.01	0	<0.1	1
MC-413-566.28	SG188	1	1	1	1	0	0	<0.1	0
MC-413-603.83	SG189	2	3	3	0	<0.01	0	<0.1	1
MC-413-614.83	SG190	2	6	2	0	<0.01	0	<0.1	1
MC-413-623.78	SG191	0	1	0	0	<0.01	<0.1	<0.1	0
MC-413-638.86	SG192	0	0	1	0	<0.01	<0.1	<0.1	1
MC-413-649	SG193	1	1	2	0	<0.01	0	<0.1	1
MC-415-76.73	SG194	0	0	0	0	<0.01	<0.1	<0.1	0
MC-415-127.56	SG195	0	0	0	0	<0.01	0	<0.1	0
MC-415-173.74	SG196	0	1	0	0	<0.01	0	<0.1	0
MC-415-197	SG197	0	0	0	0	0	<0.1	<0.1	0
MC-415-222.34	SG198	0	0	0	0	<0.01	<0.1	<0.1	0
MC-415-232.5	SG199	0	1	0	0	<0.01	<0.1	<0.1	0
MC-415-295.67	SG200	0	1	1	0	<0.01	<0.1	<0.1	0
MC-415-350.35	SG203	0	1	1	0	0	<0.1	<0.1	1
MC-415-389	SG205	1	1	2	0	0	0	<0.1	1
MC-415-416.08	SG206	1	1	0	0	<0.01	<0.1	<0.1	0
MC-415-432.38	SG207	0	0	0	0	<0.01	<0.1	<0.1	0
MC-415-455.72	SG208	0	0	0	0	<0.01	<0.1	<0.1	0
MC-415-477	SG209	0	0	1	0	<0.01	0	<0.1	0
MC-415-490.78	SG210	0	0	0	0	<0.01	<0.1	<0.1	0
MC-415-497.66	SG211	0	0	0	0	<0.01	0	<0.1	0
MC-415-503.32	SG212	0	0	0	0	<0.01	<0.1	<0.1	0
MC-415-520.15	SG215	0	0	0	0	0	<0.1	<0.1	0
MC-415-537	SG216	1	1	2	0	0	0	<0.1	1
MC-415-539.69	SG217	0	0	3	0	<0.01	0	<0.1	2
MC-434-11.1	SG218	1	1	0	0	0	0	<0.1	0
MC-434-31.63	SG219	0	0	0	0	<0.01	0	<0.1	0
MC-434-54.07	SG220	0	0	0	0	<0.01	0	<0.1	0
MC-434-93.9	SG221	0	0	0	0	<0.01	<0.1	<0.1	0
MC-434-119.66	SG222	1	1	0	0	<0.01	0	<0.1	0
MC-434-168.25	SG223	0	1	0	0	<0.01	<0.1	<0.1	0
MC-434-183.4	SG224	1	1	0	0	<0.01	<0.1	<0.1	0
MC-434-217.84	SG225	1	2	1	0	<0.01	<0.1	<0.1	0
MC-434-253.64	SG226	0	0	0	0	<0.01	<0.1	<0.1	0
MC-434-256.65	SG227	0	1	1	0	<0.01	<0.1	<0.1	0
MC-434-282.2	SG228	0	1	0	0	<0.01	<0.1	<0.1	0
MC-434-328.83	SG229	0	0	1	0	<0.01	<0.1	<0.1	0
MC-434-338.05	SG230	0	0	0	0	<0.01	<0.1	<0.1	0
MC-434-348.28	SG231	0	1	0	0	0	<0.1	<0.1	0
MC-434-370.63	SG232	0	1	1	0	<0.01	<0.1	<0.1	0
MC-434-397.53	SG233	0	0	1	0	<0.01	<0.1	<0.1	1
MC-434-421.67	SG234	0	1	1	0	<0.01	<0.1	<0.1	0

Process Details — Partial Digestion: a 2.00 g pulp is digested with 2.25 ml of 8:1 HNO3:HCl for 1 hour at 95 C.

Standard(s) — ASR109 and ASR209

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Sn	Ta	Tb	Te	Th	U	V	W
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-336-433	SG1	0	<0.01	0	<0.01	3	3	2	<0.1
MC-336-455	SG2	0	<0.01	0	<0.01	3	2	1	<0.1
MC-336-465	SG3	0	<0.01	0	<0.01	1	2	1	<0.1
MC-336-479.5	SG4	0	<0.01	0	<0.01	1	1	0	<0.1
MC-336-500.43	SG5	0	<0.01	0	<0.01	1	1	0	<0.1
MC-336-506.55	SG6	0	<0.01	0	<0.01	1	1	0	<0.1
MC-336-506.8	SG7	0	<0.01	0	<0.01	1	1	2	<0.1
MC-336-517	SG8	0	<0.01	0	<0.01	0	1	0	<0.1
MC-336-522.86	SG9	0	<0.01	0	<0.01	1	2	2	<0.1
MC-336-532.73	SG10	0	<0.01	0	0	1	5	2	<0.1
MC-336-557	SG11	0	<0.01	0	<0.01	1	117	1	0
MC-336-560.46	SG12	0	<0.01	<0.01	<0.01	1	2	0	<0.1
MC-336-564	SG13	0	<0.01	0	<0.01	12	15	1	<0.1
MC-336-570.5	SG14	0	<0.01	0	<0.01	1	1	3	<0.1
MC-338-23	SG15	0	<0.01	0	<0.01	1	1	0	<0.1
MC-338-65	SG16	0	<0.01	0	<0.01	1	1	0	<0.1
MC-338-101	SG17	0	<0.01	0	<0.01	1	1	0	<0.1
MC-338-150.4	SG18	0	<0.01	0	<0.01	1	1	0	<0.1
MC-338-220.2	SG19	0	<0.01	0	<0.01	1	2	2	<0.1
MC-338-272	SG20	0	<0.01	0	<0.01	2	1	2	<0.1
MC-338-319	SG21	0	<0.01	0	<0.01	1	1	1	<0.1
MC-338-372.17	SG22	0	<0.01	0	<0.01	1	1	1	<0.1
MC-338-410.8	SG23	0	<0.01	0	<0.01	1	1	0	<0.1
MC-338-466	SG24	0	<0.01	0	<0.01	1	0	0	<0.1
MC-338-502.37	SG25	0	<0.01	<0.01	<0.01	0	0	1	<0.1
MC-338-537.64	SG26	0	<0.01	0	0	1	1	1	<0.1
MC-338-554.73	SG27	0	<0.01	0	<0.01	1	1	0	<0.1
MC-338-557.5	SG28	0	<0.01	0	<0.01	1	7	1	<0.1
MC-338-559	SG29	0	<0.01	0	<0.01	1	6	1	<0.1
MC-344-26.1	SG30	0	<0.01	0	<0.01	1	1	1	<0.1
MC-344-69	SG31	0	<0.01	0	<0.01	2	1	1	<0.1
MC-344-100.1	SG32	0	<0.01	0	<0.01	0	1	1	<0.1
MC-344-128	SG33	0	<0.01	0	0	1	1	1	<0.1
MC-344-164	SG34	0	<0.01	0	<0.01	1	1	1	<0.1
MC-344-179.8	SG35	0	<0.01	0	<0.01	1	1	0	<0.1
MC-344-199	SG36	0	<0.01	0	<0.01	1	0	1	<0.1
MC-344-230	SG37	0	<0.01	0	<0.01	1	0	0	<0.1
MC-344-275	SG38	0	<0.01	0	<0.01	1	0	0	<0.1
MC-344-298.82	SG39	0	<0.01	0	<0.01	2	0	0	<0.1
MC-344-343	SG40	0	<0.01	0	<0.01	0	0	0	<0.1
MC-344-378.45	SG41	0	<0.01	0	<0.01	1	0	0	<0.1
MC-344-394.34	SG42	0	<0.01	0	<0.01	4	0	1	<0.1
MC-344-433	SG43	0	<0.01	0	<0.01	1	0	0	<0.1
MC-344-467	SG44	0	<0.01	0	<0.01	1	1	1	<0.1
MC-344-468.8	SG45	0	<0.01	0	<0.01	1	1	1	<0.1
MC-344-485.76	SG46	0	<0.01	0	<0.01	1	0	1	<0.1
MC-344-488	SG47	0	<0.01	<0.01	<0.01	0	0	1	<0.1
MC-344-492.93	SG48	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-208-10.2	SG49	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-208-27	SG50	0	<0.01	0	<0.01	1	0	0	<0.1
MAC-208-63.5	SG51	0	<0.01	0	<0.01	1	1	3	<0.1
MAC-208-86.5	SG52	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-208-88	SG53	0	<0.01	0	<0.01	1	0	0	<0.1
MAC-208-128.4	SG54	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-208-149	SG55	0	<0.01	0	<0.01	5	1	0	<0.1
MAC-208-203	SG56	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-208-217.7	SG57	0	<0.01	0	<0.01	5	2	1	<0.1
MAC-208-237	SG58	0	<0.01	0	<0.01	5	6	1	<0.1
MAC-208-289.2	SG59	0	<0.01	0	<0.01	2	9	1	<0.1
MAC-208-290.5	SG60	0	<0.01	0	<0.01	2	4	1	<0.1
MAC-208-350.5	SG61	0	<0.01	0	<0.01	6	0	0	<0.1
MAC-208-395	SG62	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-208-425.1	SG63	0	<0.01	0	<0.01	2	2	2	<0.1
MAC-208-447.3	SG64	0	<0.01	0	<0.01	1	2	1	<0.1
MAC-208-468.4	SG65	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-208-487	SG66	0	<0.01	0	<0.01	2	2	3	<0.1
MAC-208-493	SG67	0	<0.01	0	0	2	15	8	<0.1
MAC-208-553.3	SG71	0	<0.01	0	<0.01	2	3	1	<0.1
MAC-208-572	SG72	0	<0.01	0	0	3	2	2	<0.1
MAC-250-297.8	SG73	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-250-335.1	SG74	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-250-370.8	SG75	0	<0.01	0	<0.01	7	1	1	<0.1
MAC-250-401.43	SG76	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-250-431.78	SG77	0	<0.01	0	<0.01	3	5	1	<0.1
MAC-250-481.75	SG78	0	<0.01	0	<0.01	2	2	1	<0.1
MC-253-26	SG79	0	<0.01	0	<0.01	1	0	0	<0.1
MC-253-76	SG80	0	<0.01	0	<0.01	1	1	1	<0.1
MC-253-136	SG82	0	<0.01	0	<0.01	1	0	0	<0.1
MC-253-205	SG84	0	<0.01	0	<0.01	1	1	0	<0.1
MC-253-265.3	SG85	0	<0.01	0	<0.01	2	1	0	<0.1
MC-253-287.5	SG86	0	<0.01	0	<0.01	2	1	0	<0.1
MC-253-325	SG87	0	<0.01	0	<0.01	1	3	1	<0.1

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Sn	Ta	Tb	Te	Th	U	V	W
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-253-336.2	SG88	0	<0.01	0	<0.01	3	2	1	<0.1
MC-253-382	SG89	0	<0.01	0	<0.01	4	1	1	<0.1
MC-253-416	SG90	0	<0.01	0	<0.01	4	1	1	<0.1
MC-253-430	SG91	0	<0.01	0	<0.01	8	3	1	<0.1
MC-253-440.1	SG92	0	<0.01	0	<0.01	3	1	1	<0.1
MC-253-472.5	SG93	0	<0.01	0	<0.01	1	0	0	<0.1
MC-253-501	SG94	0	<0.01	0	<0.01	1	1	0	<0.1
MC-253-507.5	SG95	0	<0.01	0	<0.01	1	1	1	<0.1
MC-253-528	SG96	0	<0.01	0	<0.01	1	1	0	<0.1
MC-253-538	SG97	0	<0.01	0	<0.01	1	1	1	<0.1
MC-253-550.1	SG99	0	<0.01	0	<0.01	6	2	1	<0.1
MC-253-552	SG100	0	<0.01	0	<0.01	2	2	0	<0.1
MAC-246-4.33	SG101	0	<0.01	0	<0.01	1	0	0	<0.1
MAC-246-54.7	SG102	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-246-60.6	SG103	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-246-82.75	SG104	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-246-126.15	SG105	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-246-142.86	SG106	0	<0.01	0	<0.01	1	2	5	<0.1
MAC-246-165.4	SG107	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-246-213.43	SG108	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-246-267.05	SG109	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-246-297.33	SG110	1	<0.01	0	<0.01	7	1	1	<0.1
MAC-246-324.5	SG111	0	<0.01	0	<0.01	18	2	1	<0.1
MAC-246-333.8	SG112	0	<0.01	0	<0.01	12	1	1	<0.1
MAC-246-354.17	SG113	0	<0.01	0	<0.01	15	1	1	<0.1
MAC-246-378.25	SG114	0	<0.01	0	<0.01	3	1	1	<0.1
MAC-246-418.13	SG115	0	<0.01	0	<0.01	2	0	1	<0.1
MAC-246-423.8	SG116	0	<0.01	0	<0.01	2	2	1	<0.1
MAC-246-454.11	SG117	0	<0.01	0	<0.01	4	2	1	<0.1
MAC-246-475.33	SG118	0	<0.01	0	<0.01	1	2	1	<0.1
MAC-246-496.42	SG119	0	<0.01	0	<0.01	1	6	2	<0.1
MAC-246-499.02	SG120	0	<0.01	0	<0.01	1	6	2	<0.1
MAC-246-508.8	SG121	0	<0.01	0	<0.01	1	4	5	<0.1
MAC-246-510.2	SG122	0	<0.01	0	<0.01	0	5	2	0
MAC-246-543	SG123	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-252-10.15	SG124	0	<0.01	0	<0.01	1	0	0	<0.1
MAC-252-25.7	SG125	0	<0.01	0	<0.01	1	0	0	<0.1
MAC-252-55.65	SG126	0	<0.01	0	<0.01	1	0	0	<0.1
MAC-252-102.48	SG127	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-252-167.2	SG128	0	<0.01	0	<0.01	2	1	0	<0.1
MAC-252-199.86	SG129	1	<0.01	0	<0.01	3	1	0	<0.1
MAC-252-249.43	SG130	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-252-261.91	SG131	0	<0.01	0	<0.01	4	1	0	<0.1
MAC-252-271.2	SG132	0	<0.01	0	<0.01	19	1	1	<0.1
MAC-252-286.2	SG133	0	<0.01	0	<0.01	5	0	1	<0.1
MAC-252-305.3	SG134	0	<0.01	0	<0.01	1	0	1	<0.1
MAC-252-319.44	SG135	0	<0.01	0	<0.01	4	0	1	<0.1
MAC-252-331.7	SG136	0	<0.01	0	<0.01	6	1	2	<0.1
MAC-252-342.5	SG137	0	<0.01	0	<0.01	1	0	0	<0.1
MAC-255-6.13	SG138	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-255-29.21	SG139	1	<0.01	0	<0.01	1	3	11	<0.1
MAC-255-51.63	SG140	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-255-95	SG141	0	<0.01	0	<0.01	1	2	1	<0.1
MAC-255-132.3	No Data								
MAC-255-149	SG143	0	<0.01	0	<0.01	1	2	1	<0.1
MAC-255-194.47	SG144	1	<0.01	0	<0.01	1	2	0	<0.1
MAC-255-209.83	SG145	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-255-217.68	SG146	0	<0.01	0	0	1	2	8	<0.1
MAC-255-259.93	SG147	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-255-288.82	SG148	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-255-293.4	SG149	0	<0.01	0	<0.01	2	2	0	<0.1
MAC-255-332.33	SG150	1	<0.01	0	<0.01	1	1	1	<0.1
MAC-255-338	SG151	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-255-362.46	SG152	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-255-378.33	SG153	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-255-397.78	SG154	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-255-412.58	SG155	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-255-426.3	SG156	0	<0.01	0	<0.01	2	1	1	<0.1
MAC-255-429.5	SG157	0	<0.01	0	<0.01	1	1	0	<0.1
MAC-255-451.78	SG158	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-255-462.07	SG159	0	<0.01	0	<0.01	1	2	1	<0.1
MAC-255-469.36	SG160	0	<0.01	0	<0.01	1	1	1	<0.1
MAC-255-479.17	SG161	0	<0.01	0	<0.01	1	2	1	<0.1
MAC-255-483.68	SG162	0	<0.01	<0.01	<0.01	1	1	1	<0.1
MAC-255-501.32	SG163	0	<0.01	0	0	2	2	1	<0.1
MAC-255-503.26	SG164	0	<0.01	0	0	1	1	4	<0.1
MAC-255-559	SG165	0	<0.01	0	<0.01	17	3	12	<0.1
MAC-255-564.36	SG166	0	<0.01	0	<0.01	7	10	13	<0.1
MC-413-71.64	SG167	0	<0.01	0	<0.01	1	0	0	<0.1
MC-413-130	SG168	0	<0.01	0	<0.01	1	0	0	<0.1
MC-413-183.26	SG169	0	<0.01	0	<0.01	1	1	1	<0.1
MC-413-224	SG170	0	<0.01	0	<0.01	1	1	4	<0.1
MC-413-258.26	SG171	0	<0.01	0	<0.01	2	1	1	<0.1

		ICP MS Partial Digestion							
CMIC Sample Name	SGS Sample Name	Sn	Ta	Tb	Te	Th	U	V	W
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MC-413-282.17	SG172	0	<0.01	0	<0.01	3	1	0	<0.1
MC-413-299	SG173	0	<0.01	0	<0.01	2	4	5	<0.1
MC-413-303.5	SG174	0	<0.01	0	<0.01	5	1	1	<0.1
MC-413-317.96	SG175	0	<0.01	0	<0.01	6	1	0	<0.1
MC-413-354.67	SG177	0	<0.01	0	<0.01	1	1	0	<0.1
MC-413-388.82	SG178	0	<0.01	0	<0.01	14	4	1	<0.1
MC-413-404	SG179	0	<0.01	0	<0.01	7	2	1	<0.1
MC-413-430.57	SG180	0	<0.01	0	<0.01	3	1	0	<0.1
MC-413-456.68	SG181	0	<0.01	0	<0.01	1	0	0	<0.1
MC-413-482.25	SG182	0	<0.01	0	<0.01	7	1	1	<0.1
MC-413-501.66	SG183	0	<0.01	0	<0.01	1	1	1	<0.1
MC-413-527.67	SG184	0	<0.01	<0.01	<0.01	0	0	0	<0.1
MC-413-547.3	SG185	0	<0.01	0	<0.01	1	2	1	<0.1
MC-413-559.73	SG187	0	<0.01	0	<0.01	8	13	8	<0.1
MC-413-566.28	SG188	0	<0.01	0	<0.01	2	3	3	<0.1
MC-413-603.83	SG189	0	<0.01	0	<0.01	61	15	3	<0.1
MC-413-614.83	SG190	0	<0.01	0	<0.01	13	18	8	<0.1
MC-413-623.78	SG191	0	<0.01	0	<0.01	2	2	1	<0.1
MC-413-638.86	SG192	0	<0.01	0	<0.01	2	0	4	<0.1
MC-413-649	SG193	0	<0.01	0	<0.01	11	0	2	<0.1
MC-415-76.73	SG194	0	<0.01	0	<0.01	1	0	0	<0.1
MC-415-127.56	SG195	0	<0.01	0	<0.01	1	0	1	<0.1
MC-415-173.74	SG196	0	<0.01	0	<0.01	1	0	1	<0.1
MC-415-197	SG197	0	<0.01	0	<0.01	1	1	0	<0.1
MC-415-222.34	SG198	0	<0.01	0	<0.01	1	0	1	<0.1
MC-415-232.5	SG199	0	<0.01	0	<0.01	3	0	1	<0.1
MC-415-295.67	SG200	0	<0.01	0	<0.01	2	0	0	<0.1
MC-415-350.35	SG203	0	<0.01	0	<0.01	6	1	1	<0.1
MC-415-389	SG205	0	<0.01	0	<0.01	21	2	1	<0.1
MC-415-416.08	SG206	0	<0.01	0	<0.01	2	1	1	<0.1
MC-415-432.38	SG207	0	<0.01	0	<0.01	1	1	1	<0.1
MC-415-455.72	SG208	0	<0.01	0	<0.01	1	1	0	<0.1
MC-415-477	SG209	0	<0.01	0	<0.01	2	1	0	<0.1
MC-415-490.78	SG210	0	<0.01	<0.01	<0.01	0	0	0	<0.1
MC-415-497.66	SG211	0	<0.01	0	<0.01	1	1	0	<0.1
MC-415-503.32	SG212	0	<0.01	0	<0.01	1	1	0	<0.1
MC-415-520.15	SG215	0	<0.01	0	<0.01	1	3	4	<0.1
MC-415-537	SG216	0	<0.01	0	0	51	3	3	<0.1
MC-415-539.69	SG217	0	<0.01	0	<0.01	1	1	2	<0.1
MC-434-11.1	SG218	0	<0.01	0	<0.01	1	1	0	<0.1
MC-434-31.63	SG219	0	<0.01	0	<0.01	1	0	0	<0.1
MC-434-54.07	SG220	0	<0.01	0	<0.01	2	0	0	<0.1
MC-434-93.9	SG221	0	<0.01	0	<0.01	1	0	0	<0.1
MC-434-119.66	SG222	0	<0.01	0	<0.01	1	1	1	<0.1
MC-434-168.25	SG223	0	<0.01	0	<0.01	1	0	1	<0.1
MC-434-183.4	SG224	0	<0.01	0	<0.01	1	0	1	<0.1
MC-434-217.84	SG225	0	<0.01	0	<0.01	2	1	1	<0.1
MC-434-253.64	SG226	0	<0.01	0	<0.01	1	0	0	<0.1
MC-434-256.65	SG227	0	<0.01	0	<0.01	3	0	1	<0.1
MC-434-282.2	SG228	0	<0.01	0	<0.01	1	0	0	<0.1
MC-434-328.83	SG229	0	<0.01	0	<0.01	2	0	0	<0.1
MC-434-338.05	SG230	0	<0.01	0	<0.01	1	1	1	<0.1
MC-434-348.28	SG231	0	<0.01	0	<0.01	2	0	0	<0.1
MC-434-370.63	SG232	0	<0.01	0	<0.01	5	0	1	<0.1
MC-434-397.53	SG233	0	<0.01	0	<0.01	2	0	0	<0.1
MC-434-421.67	SG234	0	<0.01	0	<0.01	2	0	1	<0.1

Process Details — Partial Digestion: a 2.00 g pulp is digested with 2.25 ml of 8:1 HNO_3:HCl for 1 hour at 95 C.

Standard(s) — ASR109 and ASR209

		ICP MS Partial Digestion			
CMIC Sample Name	SGS Sample Name	Y	Yb	Zn	Zr
		ppm	ppm	ppm	ppm
MC-336-433	SG1	1	0	1	13
MC-336-455	SG2	1	0	1	5
MC-336-465	SG3	0	0	1	4
MC-336-479.5	SG4	0	0	4	1
MC-336-500.43	SG5	0	0	1	4
MC-336-506.55	SG6	0	0	1	4
MC-336-506.8	SG7	0	0	2	7
MC-336-517	SG8	0	0	1	6
MC-336-522.86	SG9	1	0	1	6
MC-336-532.73	SG10	1	0	1	6
MC-336-557	SG11	2	0	1	6
MC-336-560.46	SG12	0	0	1	2
MC-336-564	SG13	1	0	1	25
MC-336-570.5	SG14	1	0	1	6
MC-338-23	SG15	1	0	1	7
MC-338-65	SG16	0	0	1	4
MC-338-101	SG17	0	0	2	9
MC-338-150.4	SG18	0	0	1	5
MC-338-220.2	SG19	1	0	1	5
MC-338-272	SG20	1	0	2	7
MC-338-319	SG21	1	0	1	6
MC-338-372.17	SG22	0	0	1	3
MC-338-410.8	SG23	1	0	1	4
MC-338-466	SG24	0	0	1	2
MC-338-502.37	SG25	0	0	1	1
MC-338-537.64	SG26	0	0	1	2
MC-338-554.73	SG27	0	0	1	2
MC-338-557.5	SG28	1	0	1	9
MC-338-559	SG29	3	0	1	14
MC-344-26.1	SG30	2	0	1	20
MC-344-69	SG31	1	0	1	14
MC-344-100.1	SG32	0	0	1	3
MC-344-128	SG33	1	0	1	9
MC-344-164	SG34	1	0	1	16
MC-344-179.8	SG35	1	0	1	6
MC-344-199	SG36	0	0	1	4
MC-344-230	SG37	0	0	1	6
MC-344-275	SG38	0	0	1	5
MC-344-298.82	SG39	0	0	1	7
MC-344-343	SG40	0	0	1	2
MC-344-378.45	SG41	0	0	1	6
MC-344-394.34	SG42	0	0	2	6
MC-344-433	SG43	0	0	1	4
MC-344-467	SG44	0	0	1	7
MC-344-468.8	SG45	0	0	1	15
MC-344-485.76	SG46	0	0	1	4
MC-344-488	SG47	0	0	1	2
MC-344-492.93	SG48	1	0	1	8
MAC-208-10.2	SG49	1	0	1	8
MAC-208-27	SG50	1	0	1	5
MAC-208-63.5	SG51	1	0	1	3
MAC-208-86.5	SG52	1	0	1	8
MAC-208-88	SG53	1	0	1	4
MAC-208-128.4	SG54	1	0	1	6
MAC-208-149	SG55	1	0	1	15
MAC-208-203	SG56	1	0	1	6
MAC-208-217.7	SG57	1	0	1	17
MAC-208-237	SG58	2	0	2	5
MAC-208-289.2	SG59	5	0	1	3
MAC-208-290.5	SG60	2	0	1	5
MAC-208-350.5	SG61	1	0	1	15
MAC-208-395	SG62	0	0	1	6
MAC-208-425.1	SG63	1	0	1	8
MAC-208-447.3	SG64	1	0	1	11
MAC-208-468.4	SG65	1	0	1	5
MAC-208-487	SG66	1	0	1	6
MAC-208-493	SG67	1	0	2	5
MAC-208-553.3	SG71	1	0	1	4
MAC-208-572	SG72	2	0	1	2
MAC-250-297.8	SG73	0	0	1	5
MAC-250-335.1	SG74	1	0	1	5
MAC-250-370.8	SG75	1	0	1	18
MAC-250-401.43	SG76	0	0	1	5
MAC-250-431.78	SG77	2	0	2	32
MAC-250-481.75	SG78	1	0	1	10
MC-253-26	SG79	1	0	1	5
MC-253-76	SG80	1	0	1	6
MC-253-136	SG82	1	0	1	6
MC-253-205	SG84	1	0	3	8
MC-253-265.3	SG85	1	0	1	6
MC-253-287.5	SG86	1	0	1	4
MC-253-325	SG87	1	0	3	4

		ICP MS Partial Digestion			
CMIC Sample Name	SGS Sample Name	Y	Yb	Zn	Zr
		ppm	ppm	ppm	ppm
MC-253-336.2	SG88	1	0	3	6
MC-253-382	SG89	1	0	1	9
MC-253-416	SG90	1	0	1	6
MC-253-430	SG91	1	0	1	14
MC-253-440.1	SG92	0	0	1	7
MC-253-472.5	SG93	0	0	1	3
MC-253-501	SG94	0	0	1	4
MC-253-507.5	SG95	0	0	1	3
MC-253-528	SG96	1	0	1	7
MC-253-538	SG97	0	0	1	3
MC-253-550.1	SG99	1	0	1	12
MC-253-552	SG100	0	0	1	10
MAC-246-4.33	SG101	1	0	1	4
MAC-246-54.7	SG102	1	0	1	9
MAC-246-60.6	SG103	1	0	1	8
MAC-246-82.75	SG104	1	0	1	6
MAC-246-126.15	SG105	0	0	1	3
MAC-246-142.86	SG106	1	0	3	10
MAC-246-165.4	SG107	1	0	1	7
MAC-246-213.43	SG108	1	0	1	3
MAC-246-267.05	SG109	1	0	1	5
MAC-246-297.33	SG110	1	0	1	16
MAC-246-324.5	SG111	1	0	1	13
MAC-246-333.8	SG112	1	0	2	16
MAC-246-354.17	SG113	1	0	1	16
MAC-246-378.25	SG114	0	0	1	6
MAC-246-418.13	SG115	0	0	1	7
MAC-246-423.8	SG116	1	0	1	9
MAC-246-454.11	SG117	0	0	1	11
MAC-246-475.33	SG118	0	0	1	8
MAC-246-496.42	SG119	1	0	1	9
MAC-246-499.02	SG120	1	0	1	12
MAC-246-508.8	SG121	1	0	1	19
MAC-246-510.2	SG122	0	0	1	9
MAC-246-543	SG123	0	0	1	4
MAC-252-10.15	SG124	1	0	1	4
MAC-252-25.7	SG125	1	0	1	7
MAC-252-55.65	SG126	1	0	1	5
MAC-252-102.48	SG127	1	0	1	4
MAC-252-167.2	SG128	1	0	1	10
MAC-252-199.86	SG129	1	0	1	16
MAC-252-249.43	SG130	1	0	1	9
MAC-252-261.91	SG131	1	0	1	11
MAC-252-271.2	SG132	1	0	1	6
MAC-252-286.2	SG133	0	0	2	5
MAC-252-305.3	SG134	0	0	1	6
MAC-252-319.44	SG135	2	0	2	10
MAC-252-331.7	SG136	0	0	3	7
MAC-252-342.5	SG137	0	0	2	3
MAC-255-6.13	SG138	1	0	1	13
MAC-255-29.21	SG139	1	0	2	4
MAC-255-51.63	SG140	2	0	1	15
MAC-255-95	SG141	1	0	1	7
MAC-255-132.3	No Data				
MAC-255-149	SG143	1	0	1	6
MAC-255-194.47	SG144	1	0	1	8
MAC-255-209.83	SG145	1	0	1	5
MAC-255-217.68	SG146	1	0	2	3
MAC-255-259.93	SG147	1	0	2	7
MAC-255-288.82	SG148	1	0	1	5
MAC-255-293.4	SG149	1	0	1	5
MAC-255-332.33	SG150	0	0	1	3
MAC-255-338	SG151	1	0	1	7
MAC-255-362.46	SG152	0	0	1	4
MAC-255-378.33	SG153	0	0	1	7
MAC-255-397.78	SG154	0	0	1	3
MAC-255-412.58	SG155	1	0	3	9
MAC-255-426.3	SG156	1	0	1	7
MAC-255-429.5	SG157	0	0	1	4
MAC-255-451.78	SG158	0	0	1	7
MAC-255-462.07	SG159	1	0	1	15
MAC-255-469.36	SG160	0	0	1	6
MAC-255-479.17	SG161	1	0	1	9
MAC-255-483.68	SG162	0	0	1	3
MAC-255-501.32	SG163	2	0	2	4
MAC-255-503.26	SG164	1	0	2	1
MAC-255-559	SG165	2	0	4	4
MAC-255-564.36	SG166	6	0	3	2
MC-413-71.64	SG167	1	0	1	6
MC-413-130	SG168	1	0	1	3
MC-413-183.26	SG169	1	0	1	5
MC-413-224	SG170	1	0	1	4
MC-413-258.26	SG171	1	0	1	6

Appendix B

Lithogeochemical Data

		ICP MS Partial Digestion			
CMIC Sample Name	SGS Sample Name	Y	Yb	Zn	Zr
		ppm	ppm	ppm	ppm
MC-413-282.17	SG172	1	0	1	4
MC-413-299	SG173	1	0	1	6
MC-413-303.5	SG174	1	0	1	7
MC-413-317.96	SG175	1	0	1	7
MC-413-354.67	SG177	0	0	1	5
MC-413-388.82	SG178	3	0	1	10
MC-413-404	SG179	1	0	1	38
MC-413-430.57	SG180	1	0	1	12
MC-413-456.68	SG181	0	0	1	3
MC-413-482.25	SG182	1	0	1	30
MC-413-501.66	SG183	0	0	1	5
MC-413-527.67	SG184	0	0	1	5
MC-413-547.3	SG185	1	0	1	11
MC-413-559.73	SG187	2	0	4	5
MC-413-566.28	SG188	1	0	2	7
MC-413-603.83	SG189	1	0	2	19
MC-413-614.83	SG190	2	0	19	23
MC-413-623.78	SG191	0	0	1	12
MC-413-638.86	SG192	2	0	1	5
MC-413-649	SG193	1	0	1	18
MC-415-76.73	SG194	1	0	1	3
MC-415-127.56	SG195	1	0	1	5
MC-415-173.74	SG196	1	0	1	3
MC-415-197	SG197	1	0	1	2
MC-415-222.34	SG198	1	0	1	2
MC-415-232.5	SG199	1	0	1	6
MC-415-295.67	SG200	1	0	1	3
MC-415-350.35	SG203	0	0	1	17
MC-415-389	SG205	1	0	1	23
MC-415-416.08	SG206	0	0	1	4
MC-415-432.38	SG207	0	0	1	6
MC-415-455.72	SG208	0	0	1	6
MC-415-477	SG209	1	0	1	9
MC-415-490.78	SG210	0	0	1	2
MC-415-497.66	SG211	1	0	1	9
MC-415-503.32	SG212	1	0	1	11
MC-415-520.15	SG215	0	0	1	6
MC-415-537	SG216	2	0	1	12
MC-415-539.69	SG217	0	0	1	2
MC-434-11.1	SG218	0	0	1	8
MC-434-31.63	SG219	0	0	1	19
MC-434-54.07	SG220	0	0	1	16
MC-434-93.9	SG221	0	0	1	3
MC-434-119.66	SG222	0	0	1	5
MC-434-168.25	SG223	0	0	1	9
MC-434-183.4	SG224	0	0	1	7
MC-434-217.84	SG225	0	0	1	7
MC-434-253.64	SG226	0	0	1	4
MC-434-256.65	SG227	0	0	1	9
MC-434-282.2	SG228	0	0	1	8
MC-434-328.83	SG229	0	0	1	5
MC-434-338.05	SG230	0	0	1	3
MC-434-348.28	SG231	0	0	1	13
MC-434-370.63	SG232	0	0	1	9
MC-434-397.53	SG233	0	0	1	9
MC-434-421.67	SG234	0	0	1	6

Process Details — Partial Digestion: a 2.00 g pulp is digested with 2.25 ml of 8:1 HNO_3:HCl for 1 hour at 95 C.

Standard(s) — ASR109 and ASR209

Appendix C

SWIR Mineral Data

Appendix C

SWIR Mineral Data

CMIC Sample Name	TerraSpec Sample Name	Illite % (%)	Chlorite % (%)	Dickite % (%)	Kaolinite % (%)	Dravite % (%)	Signal/Noise
MC-336-433	MCA CMIC TS00001_asd_sco.pcs	100	0	0	0	0	18
MC-336-455	MCA CMIC TS00002_asd_sco.pcs	40	0	60	0	0	32
MC-336-465	MCA CMIC TS00003_asd_sco.pcs	79	0	0	0	21	37
MC-336-479.5	MCA CMIC TS00004_asd_sco.pcs	16	0	84	0	0	59
MC-336-500.43	MCA CMIC TS00005_asd_sco.pcs	100	0	0	0	0	26
MC-336-506.55	MCA CMIC TS00006_asd_sco.pcs	79	0	0	21	0	12
MC-336-506.8	MCA CMIC TS00007_asd_sco.pcs	83	0	0	6	11	39
MC-336-517	MCA CMIC TS00008_asd_sco.pcs	80	0	0	20	0	14
MC-336-522.86	MCA CMIC TS00009_asd_sco.pcs	91	0	0	9	0	25
MC-336-532.73	MCA CMIC TS00010_asd_sco.pcs	40	0	0	60	0	16
MC-336-557	MCA CMIC TS00011_asd_sco.pcs	72	0	0	28	0	16
MC-336-560.46	MCA CMIC TS00012_asd_sco.pcs	51	0	49	0	0	28
MC-336-564	MCA CMIC TS00013_asd_sco.pcs	60	0	40	0	0	21
MC-336-570.5	MCA CMIC TS00014_asd_sco.pcs	5	79	0	17	0	3
MC-338-23	MCA CMIC TS00015_asd_sco.pcs	26	0	0	14	61	16
MC-338-65	MCA CMIC TS00016_asd_sco.pcs	100	0	0	0	0	28
MC-338-101	MCA CMIC TS00017_asd_sco.pcs	100	0	0	0	0	31
MC-338-150.4	MCA CMIC TS00018_asd_sco.pcs	100	0	0	0	0	23
MC-338-220.2	MCA CMIC TS00019_asd_sco.pcs	87	0	0	13	0	3
MC-338-272	MCA CMIC TS00020_asd_sco.pcs	91	0	0	9	0	15
MC-338-319	MCA CMIC TS00021_asd_sco.pcs	100	0	0	0	0	26
MC-338-372.17	MCA CMIC TS00022_asd_sco.pcs	100	0	0	0	0	34
MC-338-410.8	MCA CMIC TS00023_asd_sco.pcs	83	0	17	0	0	39
MC-338-466	MCA CMIC TS00024_asd_sco.pcs	18	0	82	0	0	44
MC-338-502.37	MCA CMIC TS00025_asd_sco.pcs	64	0	36	0	0	19
MC-338-537.64	MCA CMIC TS00026_asd_sco.pcs	16	0	0	59	26	24
MC-338-554.73	MCA CMIC TS00027_asd_sco.pcs	98	0	0	2	0	34
MC-338-557.5	MCA CMIC TS00028_asd_sco.pcs	74	0	0	18	8	8
MC-338-559	MCA CMIC TS00029_asd_sco.pcs	100	0	0	0	0	15
MC-344-26.1	MCA CMIC TS00030_asd_sco.pcs	0	0	0	19	81	25
MC-344-69	MCA CMIC TS00031_asd_sco.pcs	0	0	0	17	83	19
MC-344-100.1	MCA CMIC TS00032_asd_sco.pcs	0	0	0	18	82	41
MC-344-128	MCA CMIC TS00033_asd_sco.pcs	19	0	0	15	66	35
MC-344-164	MCA CMIC TS00034_asd_sco.pcs	24	0	0	0	76	28
MC-344-179.8	MCA CMIC TS00035_asd_sco.pcs	0	0	0	0	100	47
MC-344-199	MCA CMIC TS00036_asd_sco.pcs	100	0	0	0	0	24
MC-344-230	MCA CMIC TS00037_asd_sco.pcs	92	0	0	0	8	17
MC-344-275	MCA CMIC TS00038_asd_sco.pcs	76	0	24	0	0	25
MC-344-298.82	MCA CMIC TS00039_asd_sco.pcs	71	0	29	0	0	45
MC-344-343	MCA CMIC TS00040_asd_sco.pcs	10	0	90	0	0	57
MC-344-378.45	MCA CMIC TS00041_asd_sco.pcs	19	0	81	0	0	45
MC-344-394.34	MCA CMIC TS00042_asd_sco.pcs	48	0	52	0	0	25
MC-344-433	MCA CMIC TS00043_asd_sco.pcs	47	0	53	0	0	56
MC-344-467	MCA CMIC TS00044_asd_sco.pcs	22	0	78	0	0	14
MC-344-468.8	MCA CMIC TS00045_asd_sco.pcs	15	0	85	0	0	5
MC-344-485.76	MCA CMIC TS00046_asd_sco.pcs	10	0	23	68	0	23
MC-344-488	MCA CMIC TS00047_asd_sco.pcs	13	0	22	66	0	45
MC-344-492.93	MCA CMIC TS00048_asd_sco.pcs	0	0	25	75	0	7
MAC-208-10.2	MCA CMIC TS00049_asd_sco.pcs	0	0	0	63	37	45
MAC-208-27	MCA CMIC TS00050_asd_sco.pcs	17	0	0	51	32	31
MAC-208-63.5	MCA CMIC TS00051_asd_sco.pcs	39	0	0	61	0	34
MAC-208-86.5	MCA CMIC TS00052_asd_sco.pcs	6	0	0	59	35	57
MAC-208-88	MCA CMIC TS00053_asd_sco.pcs	8	0	0	24	68	32
MAC-208-128.4	MCA CMIC TS00054_asd_sco.pcs	18	0	0	18	63	52
MAC-208-149	MCA CMIC TS00055_asd_sco.pcs	14	0	0	31	55	14
MAC-208-203	MCA CMIC TS00056_asd_sco.pcs	10	66	0	23	0	38
MAC-208-217.7	MCA CMIC TS00057_asd_sco.pcs	60	0	0	3	36	50
MAC-208-237	MCA CMIC TS00058_asd_sco.pcs	0	73	0	27	0	39
MAC-208-289.2	MCA CMIC TS00059_asd_sco.pcs	100	0	0	0	0	38
MAC-208-290.5	MCA CMIC TS00060_asd_sco.pcs	100	0	0	0	0	27
MAC-208-350.5	MCA CMIC TS00061_asd_sco.pcs	26	0	74	0	0	36
MAC-208-395	MCA CMIC TS00062_asd_sco.pcs	0	0	100	0	0	21
MAC-208-425.1	MCA CMIC TS00063_asd_sco.pcs	19	0	81	0	0	25
MAC-208-447.3	MCA CMIC TS00064_asd_sco.pcs	48	0	52	0	0	26
MAC-208-468.4	MCA CMIC TS00065_asd_sco.pcs	100	0	0	0	0	25
MAC-208-487	MCA CMIC TS00066_asd_sco.pcs	29	37	0	34	0	13
MAC-208-493	MCA CMIC TS00067_asd_sco.pcs	29	0	0	71	0	9
MAC-208-553.3	MCA CMIC TS00068_asd_sco.pcs	7	0	0	28	65	7
MAC-208-572	MCA CMIC TS00069_asd_sco.pcs	53	0	0	0	47	14

Appendix C

SWIR Mineral Data

CMIC Sample Name	TerraSpec Sample Name	Illite % (%)	Chlorite % (%)	Dickite % (%)	Kaolinite % (%)	Dravite % (%)	Signal/Noise
MAC-250-297.8	MCA CMIC TS00070_asd_sco.pcs	100	0	0	0	0	14
MAC-250-335.1	MCA CMIC TS00071_asd_sco.pcs	100	0	0	0	0	50
MAC-250-370.8	MCA CMIC TS00072_asd_sco.pcs	22	0	78	0	0	11
MAC-250-401.43	MCA CMIC TS00073_asd_sco.pcs	100	0	0	0	0	23
MAC-250-431.78	MCA CMIC TS00074_asd_sco.pcs	29	0	71	0	0	54
MAC-250-481.75	MCA CMIC TS00075_asd_sco.pcs	40	0	60	0	0	8
MC-253-26	MCA CMIC TS00076_asd_sco.pcs	27	0	0	73	0	34
MC-253-76	MCA CMIC TS00077_asd_sco.pcs	26	0	0	55	19	37
MC-253-136	MCA CMIC TS00232_asd_sco.pcs	39	0	0	20	41	23
MC-253-205	MCA CMIC TS00233_asd_sco.pcs	0	0	0	13	87	22
MC-253-265.3	MCA CMIC TS00234_asd_sco.pcs	13	0	0	34	53	61
MC-253-287.5	MCA CMIC TS00078_asd_sco.pcs	45	0	0	16	39	23
MC-253-325	MCA CMIC TS00079_asd_sco.pcs	61	39	0	0	0	44
MC-253-336.2	MCA CMIC TS00080_asd_sco.pcs	100	0	0	0	0	59
MC-253-382	MCA CMIC TS00081_asd_sco.pcs	43	0	57	0	0	46
MC-253-416	MCA CMIC TS00082_asd_sco.pcs	36	0	64	0	0	50
MC-253-430.1	MCA CMIC TS00083_asd_sco.pcs	42	0	58	0	0	52
MC-253-440.1	MCA CMIC TS00084_asd_sco.pcs	0	0	0	12	88	25
MC-253-472.5	MCA CMIC TS00085_asd_sco.pcs	17	0	83	0	0	19
MC-253-501	MCA CMIC TS00086_asd_sco.pcs	17	0	83	0	0	16
MC-253-507.5	MCA CMIC TS00087_asd_sco.pcs	81	0	0	19	0	19
MC-253-528	MCA CMIC TS00088_asd_sco.pcs	81	0	0	19	0	11
MC-253-538	MCA CMIC TS00089_asd_sco.pcs	70	0	0	2	28	23
MC-253-550.1	MCA CMIC TS00090_asd_sco.pcs	34	0	0	25	41	17
MC-253-552	MCA CMIC TS00091_asd_sco.pcs	3	0	0	18	79	16
MAC-246-4.33	MCA CMIC TS00092_asd_sco.pcs	0	0	0	7	93	22
MAC-246-54.7	MCA CMIC TS00093_asd_sco.pcs	5	0	0	33	62	32
MAC-246-60.6	MCA CMIC TS00094_asd_sco.pcs	0	0	0	14	86	53
MAC-246-82.75	MCA CMIC TS00095_asd_sco.pcs	0	0	0	12	88	74
MAC-246-126.15	MCA CMIC TS00096_asd_sco.pcs	48	0	0	23	29	20
MAC-246-142.86	MCA CMIC TS00097_asd_sco.pcs	0	0	0	19	81	32
MAC-246-165.4	MCA CMIC TS00098_asd_sco.pcs	3	0	0	22	75	18
MAC-246-213.43	MCA CMIC TS00099_asd_sco.pcs	44	0	0	26	30	24
MAC-246-267.05	MCA CMIC TS00100_asd_sco.pcs	100	0	0	0	0	46
MAC-246-297.33	MCA CMIC TS00101_asd_sco.pcs	100	0	0	0	0	36
MAC-246-324.5	MCA CMIC TS00102_asd_sco.pcs	63	0	37	0	0	46
MAC-246-333.8	MCA CMIC TS00103_asd_sco.pcs	70	0	30	0	0	21
MAC-246-354.17	MCA CMIC TS00104_asd_sco.pcs	100	0	0	0	0	17
MAC-246-378.25	MCA CMIC TS00105_asd_sco.pcs	3	0	97	0	0	27
MAC-246-418.13	MCA CMIC TS00106_asd_sco.pcs	0	0	100	0	0	2
MAC-246-423.8	MCA CMIC TS00107_asd_sco.pcs	37	0	63	0	0	16
MAC-246-454.11	MCA CMIC TS00108_asd_sco.pcs	0	0	0	15	85	12
MAC-246-475.33	MCA CMIC TS00109_asd_sco.pcs	18	0	0	34	48	17
MAC-246-496.42	MCA CMIC TS00110_asd_sco.pcs	0	0	0	9	91	15
MAC-246-499.02	MCA CMIC TS00111_asd_sco.pcs	0	0	0	25	75	14
MAC-246-508.8	MCA CMIC TS00112_asd_sco.pcs	9	0	0	42	49	13
MAC-246-510.2	MCA CMIC TS00113_asd_sco.pcs	0	0	0	17	83	42
MAC-246-543	MCA CMIC TS00114_asd_sco.pcs	39	0	43	0	18	6
MAC-252-10.15	MCA CMIC TS00115_asd_sco.pcs	8	0	0	45	47	26
MAC-252-25.7	MCA CMIC TS00116_asd_sco.pcs	0	0	0	26	74	65
MAC-252-55.65	MCA CMIC TS00117_asd_sco.pcs	0	0	0	9	91	68
MAC-252-102.48	MCA CMIC TS00118_asd_sco.pcs	0	0	0	53	47	60
MAC-252-167.2	MCA CMIC TS00119_asd_sco.pcs	23	0	0	19	59	31
MAC-252-199.86	MCA CMIC TS00120_asd_sco.pcs	0	0	0	18	82	19
MAC-252-249.43	MCA CMIC TS00121_asd_sco.pcs	31	0	0	32	37	26
MAC-252-261.91	MCA CMIC TS00122_asd_sco.pcs	0	0	0	11	89	27
MAC-252-271.2	MCA CMIC TS00123_asd_sco.pcs	78	22	0	0	0	29
MAC-252-286.2	MCA CMIC TS00124_asd_sco.pcs	58	0	0	0	42	26
MAC-252-305.3	MCA CMIC TS00125_asd_sco.pcs	0	0	0	0	100	24
MAC-252-319.44	MCA CMIC TS00126_asd_sco.pcs	100	0	0	0	0	30
MAC-252-331.7	MCA CMIC TS00127_asd_sco.pcs	64	36	0	0	0	36
MAC-252-342.5	MCA CMIC TS00128_asd_sco.pcs	2	0	0	0	98	12
MAC-255-6.13	MCA CMIC TS00129_asd_sco.pcs	0	0	0	8	92	16
MAC-255-29.21	MCA CMIC TS00130_asd_sco.pcs	28	0	0	41	31	29
MAC-255-51.63	MCA CMIC TS00131_asd_sco.pcs	0	0	0	28	72	40
MAC-255-95	MCA CMIC TS00132_asd_sco.pcs	44	0	0	7	48	23
MAC-255-132.3	MCA CMIC TS00133_asd_sco.pcs	100	0	0	0	0	59
MAC-255-149	MCA CMIC TS00134_asd_sco.pcs	75	0	0	25	0	29
MAC-255-194.47	MCA CMIC TS00135_asd_sco.pcs	41	0	0	11	48	18

Appendix C

SWIR Mineral Data

CMIC Sample Name	TerraSpec Sample Name	Illite %	Chlorite %	Dickite %	Kaolinite %	Dravite %	Signal/Noise
		(%)	(%)	(%)	(%)	(%)	
MAC-255-209.83	MCA CMIC TS00136_asd_sco.pcs	92	0	0	8	0	24
MAC-255-217.68	MCA CMIC TS00137_asd_sco.pcs	49	0	0	9	42	38
MAC-255-259.93	MCA CMIC TS00138_asd_sco.pcs	100	0	0	0	0	25
MAC-255-288.82	MCA CMIC TS00139_asd_sco.pcs	100	0	0	0	0	27
MAC-255-293.4	MCA CMIC TS00140_asd_sco.pcs	100	0	0	0	0	47
MAC-255-332.33	MCA CMIC TS00141_asd_sco.pcs	24	0	76	0	0	50
MAC-255-338	MCA CMIC TS00142_asd_sco.pcs	20	0	80	0	0	53
MAC-255-362.46	MCA CMIC TS00143_asd_sco.pcs	7	0	93	0	0	25
MAC-255-378.33	MCA CMIC TS00144_asd_sco.pcs	1	0	99	0	0	10
MAC-255-397.78	MCA CMIC TS00145_asd_sco.pcs	24	0	76	0	0	39
MAC-255-412.58	MCA CMIC TS00146_asd_sco.pcs	37	0	63	0	0	5
MAC-255-426.3	MCA CMIC TS00147_asd_sco.pcs	12	0	88	0	0	31
MAC-255-429.5	MCA CMIC TS00148_asd_sco.pcs	8	0	92	0	0	34
MAC-255-451.78	MCA CMIC TS00149_asd_sco.pcs	31	0	69	0	0	41
MAC-255-462.07	MCA CMIC TS00150_asd_sco.pcs	12	0	88	0	0	7
MAC-255-469.36	MCA CMIC TS00151_asd_sco.pcs	4	0	85	0	11	12
MAC-255-479.17	MCA CMIC TS00152_asd_sco.pcs	7	0	70	23	0	13
MAC-255-483.68	MCA CMIC TS00153_asd_sco.pcs	27	0	73	0	0	23
MAC-255-501.32	MCA CMIC TS00154_asd_sco.pcs	91	0	0	9	0	27
MAC-255-503.26	MCA CMIC TS00155_asd_sco.pcs	7	34	0	51	8	39
MAC-255-559	MCA CMIC TS00156_asd_sco.pcs	0	86	0	0	14	4
MAC-255-564.36	MCA CMIC TS00157_asd_sco.pcs	0	100	0	0	0	14
MC-413-71.64	MCA CMIC TS00158_asd_sco.pcs	1	56	0	43	0	29
MC-413-130	MCA CMIC TS00159_asd_sco.pcs	41	0	0	40	18	19
MC-413-183.26	MCA CMIC TS00160_asd_sco.pcs	30	4	0	66	0	59
MC-413-224	MCA CMIC TS00161_asd_sco.pcs	56	0	0	44	0	30
MC-413-258.26	MCA CMIC TS00162_asd_sco.pcs	23	0	0	37	41	36
MC-413-282.17	MCA CMIC TS00163_asd_sco.pcs	28	0	0	0	72	23
MC-413-299	MCA CMIC TS00164_asd_sco.pcs	100	0	0	0	0	49
MC-413-303.5	MCA CMIC TS00165_asd_sco.pcs	100	0	0	0	0	38
MC-413-317.96	MCA CMIC TS00166_asd_sco.pcs	0	0	0	19	81	13
MC-413-354.67	MCA CMIC TS00167_asd_sco.pcs	43	0	57	0	0	45
MC-413-388.82	MCA CMIC TS00168_asd_sco.pcs	0	0	100	0	0	13
MC-413-404	MCA CMIC TS00169_asd_sco.pcs	6	0	0	35	59	13
MC-413-430.57	MCA CMIC TS00170_asd_sco.pcs	1	0	99	0	0	11
MC-413-456.68	MCA CMIC TS00171_asd_sco.pcs	13	0	87	0	0	38
MC-413-482.25	MCA CMIC TS00172_asd_sco.pcs	24	0	76	0	0	9
MC-413-501.66	MCA CMIC TS00173_asd_sco.pcs	18	0	82	0	0	7
MC-413-527.67	MCA CMIC TS00174_asd_sco.pcs	6	0	94	0	0	8
MC-413-547.3	MCA CMIC TS00175_asd_sco.pcs	17	0	83	0	0	30
MC-413-559.73	MCA CMIC TS00176_asd_sco.pcs	54	0	46	0	0	16
MC-413-566.28	MCA CMIC TS00177_asd_sco.pcs	25	0	0	75	0	16
MC-413-603.83	MCA CMIC TS00178_asd_sco.pcs	100	0	0	0	0	15
MC-413-614.83	MCA CMIC TS00179_asd_sco.pcs	11	0	0	38	50	7
MC-413-623.78	MCA CMIC TS00180_asd_sco.pcs	0	100	0	0	0	2
MC-413-638.86	MCA CMIC TS00181_asd_sco.pcs	53	0	0	0	47	7
MC-413-649	MCA CMIC TS00182_asd_sco.pcs	13	0	0	18	69	11
MC-415-76.73	MCA CMIC TS00183_asd_sco.pcs	0	64	0	36	0	30
MC-415-127.56	MCA CMIC TS00184_asd_sco.pcs	0	72	0	28	0	21
MC-415-173.74	MCA CMIC TS00185_asd_sco.pcs	0	50	0	29	21	47
MC-415-197	MCA CMIC TS00186_asd_sco.pcs	0	70	0	30	0	31
MC-415-222.34	MCA CMIC TS00187_asd_sco.pcs	0	51	0	36	13	14
MC-415-232.5	MCA CMIC TS00188_asd_sco.pcs	0	59	0	25	17	24
MC-415-295.67	MCA CMIC TS00189_asd_sco.pcs	100	0	0	0	0	42
MC-415-350.35	MCA CMIC TS00190_asd_sco.pcs	0	0	0	20	80	27
MC-415-389	MCA CMIC TS00191_asd_sco.pcs	0	0	0	14	86	13
MC-415-416.08	MCA CMIC TS00192_asd_sco.pcs	59	0	0	0	41	27
MC-415-432.38	MCA CMIC TS00193_asd_sco.pcs	0	0	0	14	86	13
MC-415-455.72	MCA CMIC TS00194_asd_sco.pcs	0	0	0	19	81	10
MC-415-477	MCA CMIC TS00195_asd_sco.pcs	0	0	0	15	85	31
MC-415-490.78	MCA CMIC TS00196_asd_sco.pcs	0	0	0	14	86	31
MC-415-497.66	MCA CMIC TS00197_asd_sco.pcs	15	0	0	39	46	5
MC-415-503.32	MCA CMIC TS00198_asd_sco.pcs	0	0	0	18	82	11
MC-415-520.15	MCA CMIC TS00199_asd_sco.pcs	57	0	0	5	38	16
MC-415-537	MCA CMIC TS00200_asd_sco.pcs	62	17	0	20	0	20
MC-415-539.69	MCA CMIC TS00201_asd_sco.pcs	83	0	0	17	0	23
MC-434-11.1	MCA CMIC TS00202_asd_sco.pcs	97	0	0	3	0	20
MC-434-31.63	MCA CMIC TS00203_asd_sco.pcs	100	0	0	0	0	22
MC-434-54.07	MCA CMIC TS00204_asd_sco.pcs	28	0	72	0	0	46
MC-434-93.9	MCA CMIC TS00205_asd_sco.pcs	37	0	63	0	0	30

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SWIR Mineral Data

CMIC Sample Name	TerraSpec Sample Name	Illite % (%)	Chlorite % (%)	Dickite % (%)	Kaolinite % (%)	Dravite % (%)	Signal/Noise
MC-434-119.66	MCA CMIC TS00206_asd_sco.pcs	18	0	82	0	0	66
MC-434-168.25	MCA CMIC TS00207_asd_sco.pcs	42	0	58	0	0	38
MC-434-183.4	MCA CMIC TS00208_asd_sco.pcs	23	0	77	0	0	44
MC-434-217.84	MCA CMIC TS00209_asd_sco.pcs	38	0	62	0	0	30
MC-434-253.64	MCA CMIC TS00210_asd_sco.pcs	23	0	77	0	0	49
MC-434-256.65	MCA CMIC TS00211_asd_sco.pcs	35	0	65	0	0	11
MC-434-282.2	MCA CMIC TS00212_asd_sco.pcs	12	0	88	0	0	31
MC-434-328.83	MCA CMIC TS00213_asd_sco.pcs	9	0	91	0	0	50
MC-434-338.05	MCA CMIC TS00214_asd_sco.pcs	14	0	86	0	0	58
MC-434-348.28	MCA CMIC TS00215_asd_sco.pcs	12	0	88	0	0	40
MC-434-370.63	MCA CMIC TS00216_asd_sco.pcs	26	0	74	0	0	53
MC-434-397.53	MCA CMIC TS00217_asd_sco.pcs	2	0	98	0	0	44
MC-434-421.67	MCA CMIC TS00218_asd_sco.pcs	3	0	97	0	0	43

Note: Spectra taken from the same sample offcuts from which geochemistry was analysed and thin sections were taken.

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SWIR Mineral Data

CMIC Sample Name	TerraSpec Sample Name	Pass/Fail	TS Available (Y/N)
MC-336-433	MCA CMIC TS00001_asd_sco.pcs	PASS	N
MC-336-455	MCA CMIC TS00002_asd_sco.pcs	PASS	Y
MC-336-465	MCA CMIC TS00003_asd_sco.pcs	PASS	N
MC-336-479.5	MCA CMIC TS00004_asd_sco.pcs	PASS	N
MC-336-500.43	MCA CMIC TS00005_asd_sco.pcs	PASS	N
MC-336-506.55	MCA CMIC TS00006_asd_sco.pcs	PASS	Y
MC-336-506.8	MCA CMIC TS00007_asd_sco.pcs	PASS	Y
MC-336-517	MCA CMIC TS00008_asd_sco.pcs	PASS	N
MC-336-522.86	MCA CMIC TS00009_asd_sco.pcs	PASS	Y
MC-336-532.73	MCA CMIC TS00010_asd_sco.pcs	PASS	N
MC-336-557	MCA CMIC TS00011_asd_sco.pcs	PASS	Y
MC-336-560.46	MCA CMIC TS00012_asd_sco.pcs	PASS	N
MC-336-564	MCA CMIC TS00013_asd_sco.pcs	PASS	Y
MC-336-570.5	MCA CMIC TS00014_asd_sco.pcs	FAIL	Y
MC-338-23	MCA CMIC TS00015_asd_sco.pcs	PASS	Y
MC-338-65	MCA CMIC TS00016_asd_sco.pcs	PASS	N
MC-338-101	MCA CMIC TS00017_asd_sco.pcs	PASS	Y
MC-338-150.4	MCA CMIC TS00018_asd_sco.pcs	PASS	Y
MC-338-220.2	MCA CMIC TS00019_asd_sco.pcs	FAIL	N
MC-338-272	MCA CMIC TS00020_asd_sco.pcs	PASS	Y
MC-338-319	MCA CMIC TS00021_asd_sco.pcs	PASS	Y
MC-338-372.17	MCA CMIC TS00022_asd_sco.pcs	PASS	N
MC-338-410.8	MCA CMIC TS00023_asd_sco.pcs	PASS	Y
MC-338-466	MCA CMIC TS00024_asd_sco.pcs	PASS	Y
MC-338-502.37	MCA CMIC TS00025_asd_sco.pcs	PASS	N
MC-338-537.64	MCA CMIC TS00026_asd_sco.pcs	PASS	Y
MC-338-554.73	MCA CMIC TS00027_asd_sco.pcs	PASS	Y
MC-338-557.5	MCA CMIC TS00028_asd_sco.pcs	FAIL	Y
MC-338-559	MCA CMIC TS00029_asd_sco.pcs	PASS	Y
MC-344-26.1	MCA CMIC TS00030_asd_sco.pcs	PASS	Y
MC-344-69	MCA CMIC TS00031_asd_sco.pcs	PASS	N
MC-344-100.1	MCA CMIC TS00032_asd_sco.pcs	PASS	Y
MC-344-128	MCA CMIC TS00033_asd_sco.pcs	PASS	N
MC-344-164	MCA CMIC TS00034_asd_sco.pcs	PASS	Y
MC-344-179.8	MCA CMIC TS00035_asd_sco.pcs	PASS	Y
MC-344-199	MCA CMIC TS00036_asd_sco.pcs	PASS	N
MC-344-230	MCA CMIC TS00037_asd_sco.pcs	PASS	Y
MC-344-275	MCA CMIC TS00038_asd_sco.pcs	PASS	N
MC-344-298.82	MCA CMIC TS00039_asd_sco.pcs	PASS	Y
MC-344-343	MCA CMIC TS00040_asd_sco.pcs	PASS	Y
MC-344-378.45	MCA CMIC TS00041_asd_sco.pcs	PASS	Y
MC-344-394.34	MCA CMIC TS00042_asd_sco.pcs	PASS	Y
MC-344-433	MCA CMIC TS00043_asd_sco.pcs	PASS	N
MC-344-467	MCA CMIC TS00044_asd_sco.pcs	PASS	Y
MC-344-468.8	MCA CMIC TS00045_asd_sco.pcs	FAIL	N
MC-344-485.76	MCA CMIC TS00046_asd_sco.pcs	PASS	N
MC-344-488	MCA CMIC TS00047_asd_sco.pcs	PASS	Y
MC-344-492.93	MCA CMIC TS00048_asd_sco.pcs	FAIL	Y
MAC-208-10.2	MCA CMIC TS00049_asd_sco.pcs	PASS	Y
MAC-208-27	MCA CMIC TS00050_asd_sco.pcs	PASS	N
MAC-208-63.5	MCA CMIC TS00051_asd_sco.pcs	PASS	N
MAC-208-86.5	MCA CMIC TS00052_asd_sco.pcs	PASS	N
MAC-208-88	MCA CMIC TS00053_asd_sco.pcs	PASS	N
MAC-208-128.4	MCA CMIC TS00054_asd_sco.pcs	PASS	Y
MAC-208-149	MCA CMIC TS00055_asd_sco.pcs	PASS	N
MAC-208-203	MCA CMIC TS00056_asd_sco.pcs	PASS	N
MAC-208-217.7	MCA CMIC TS00057_asd_sco.pcs	PASS	N
MAC-208-237	MCA CMIC TS00058_asd_sco.pcs	PASS	Y
MAC-208-289.2	MCA CMIC TS00059_asd_sco.pcs	PASS	N
MAC-208-290.5	MCA CMIC TS00060_asd_sco.pcs	PASS	Y
MAC-208-350.5	MCA CMIC TS00061_asd_sco.pcs	PASS	Y
MAC-208-395	MCA CMIC TS00062_asd_sco.pcs	PASS	N
MAC-208-425.1	MCA CMIC TS00063_asd_sco.pcs	PASS	Y
MAC-208-447.3	MCA CMIC TS00064_asd_sco.pcs	PASS	N
MAC-208-468.4	MCA CMIC TS00065_asd_sco.pcs	PASS	N
MAC-208-487	MCA CMIC TS00066_asd_sco.pcs	PASS	Y
MAC-208-493	MCA CMIC TS00067_asd_sco.pcs	FAIL	Y
MAC-208-553.3	MCA CMIC TS00068_asd_sco.pcs	FAIL	Y
MAC-208-572	MCA CMIC TS00069_asd_sco.pcs	PASS	Y

Appendix C

SWIR Mineral Data

CMIC Sample Name	TerraSpec Sample Name	Pass/Fail	TS Available (Y/N)
MAC-250-297.8	MCA CMIC TS00070_asd_sco.pcs	PASS	Y
MAC-250-335.1	MCA CMIC TS00071_asd_sco.pcs	PASS	Y
MAC-250-370.8	MCA CMIC TS00072_asd_sco.pcs	PASS	Y
MAC-250-401.43	MCA CMIC TS00073_asd_sco.pcs	PASS	Y
MAC-250-431.78	MCA CMIC TS00074_asd_sco.pcs	PASS	Y
MAC-250-481.75	MCA CMIC TS00075_asd_sco.pcs	FAIL	Y
MC-253-26	MCA CMIC TS00076_asd_sco.pcs	PASS	N
MC-253-76	MCA CMIC TS00077_asd_sco.pcs	PASS	Y
MC-253-136	MCA CMIC TS00232_asd_sco.pcs	PASS	N
MC-253-205	MCA CMIC TS00233_asd_sco.pcs	PASS	Y
MC-253-265.3	MCA CMIC TS00234_asd_sco.pcs	PASS	Y
MC-253-287.5	MCA CMIC TS00078_asd_sco.pcs	PASS	N
MC-253-325	MCA CMIC TS00079_asd_sco.pcs	PASS	Y
MC-253-336.2	MCA CMIC TS00080_asd_sco.pcs	PASS	N
MC-253-382	MCA CMIC TS00081_asd_sco.pcs	PASS	Y
MC-253-416	MCA CMIC TS00082_asd_sco.pcs	PASS	N
MC-253-430.1	MCA CMIC TS00083_asd_sco.pcs	PASS	Y
MC-253-440.1	MCA CMIC TS00084_asd_sco.pcs	PASS	N
MC-253-472.5	MCA CMIC TS00085_asd_sco.pcs	PASS	Y
MC-253-501	MCA CMIC TS00086_asd_sco.pcs	PASS	N
MC-253-507.5	MCA CMIC TS00087_asd_sco.pcs	PASS	Y
MC-253-528	MCA CMIC TS00088_asd_sco.pcs	PASS	N
MC-253-538	MCA CMIC TS00089_asd_sco.pcs	PASS	Y
MC-253-550.1	MCA CMIC TS00090_asd_sco.pcs	PASS	N
MC-253-552	MCA CMIC TS00091_asd_sco.pcs	PASS	Y
MAC-246-4.33	MCA CMIC TS00092_asd_sco.pcs	PASS	Y
MAC-246-54.7	MCA CMIC TS00093_asd_sco.pcs	PASS	Y
MAC-246-60.6	MCA CMIC TS00094_asd_sco.pcs	PASS	N
MAC-246-82.75	MCA CMIC TS00095_asd_sco.pcs	PASS	Y
MAC-246-126.15	MCA CMIC TS00096_asd_sco.pcs	PASS	N
MAC-246-142.86	MCA CMIC TS00097_asd_sco.pcs	PASS	Y
MAC-246-165.4	MCA CMIC TS00098_asd_sco.pcs	PASS	N
MAC-246-213.43	MCA CMIC TS00099_asd_sco.pcs	PASS	Y
MAC-246-267.05	MCA CMIC TS00100_asd_sco.pcs	PASS	N
MAC-246-297.33	MCA CMIC TS00101_asd_sco.pcs	PASS	N
MAC-246-324.5	MCA CMIC TS00102_asd_sco.pcs	PASS	N
MAC-246-333.8	MCA CMIC TS00103_asd_sco.pcs	PASS	Y
MAC-246-354.17	MCA CMIC TS00104_asd_sco.pcs	PASS	N
MAC-246-378.25	MCA CMIC TS00105_asd_sco.pcs	PASS	N
MAC-246-418.13	MCA CMIC TS00106_asd_sco.pcs	FAIL	Y
MAC-246-423.8	MCA CMIC TS00107_asd_sco.pcs	PASS	N
MAC-246-454.11	MCA CMIC TS00108_asd_sco.pcs	PASS	N
MAC-246-475.33	MCA CMIC TS00109_asd_sco.pcs	PASS	Y
MAC-246-496.42	MCA CMIC TS00110_asd_sco.pcs	PASS	N
MAC-246-499.02	MCA CMIC TS00111_asd_sco.pcs	PASS	Y
MAC-246-508.8	MCA CMIC TS00112_asd_sco.pcs	PASS	Y
MAC-246-510.2	MCA CMIC TS00113_asd_sco.pcs	PASS	N
MAC-246-543	MCA CMIC TS00114_asd_sco.pcs	FAIL	Y
MAC-252-10.15	MCA CMIC TS00115_asd_sco.pcs	PASS	Y
MAC-252-25.7	MCA CMIC TS00116_asd_sco.pcs	PASS	N
MAC-252-55.65	MCA CMIC TS00117_asd_sco.pcs	PASS	Y
MAC-252-102.48	MCA CMIC TS00118_asd_sco.pcs	PASS	Y
MAC-252-167.2	MCA CMIC TS00119_asd_sco.pcs	PASS	N
MAC-252-199.86	MCA CMIC TS00120_asd_sco.pcs	PASS	Y
MAC-252-249.43	MCA CMIC TS00121_asd_sco.pcs	PASS	N
MAC-252-261.91	MCA CMIC TS00122_asd_sco.pcs	PASS	N
MAC-252-271.2	MCA CMIC TS00123_asd_sco.pcs	PASS	Y
MAC-252-286.2	MCA CMIC TS00124_asd_sco.pcs	PASS	N
MAC-252-305.3	MCA CMIC TS00125_asd_sco.pcs	PASS	N
MAC-252-319.44	MCA CMIC TS00126_asd_sco.pcs	PASS	Y
MAC-252-331.7	MCA CMIC TS00127_asd_sco.pcs	PASS	Y
MAC-252-342.5	MCA CMIC TS00128_asd_sco.pcs	PASS	Y
MAC-255-6.13	MCA CMIC TS00129_asd_sco.pcs	PASS	Y
MAC-255-29.21	MCA CMIC TS00130_asd_sco.pcs	PASS	Y
MAC-255-51.63	MCA CMIC TS00131_asd_sco.pcs	PASS	N
MAC-255-95	MCA CMIC TS00132_asd_sco.pcs	PASS	N
MAC-255-132.3	MCA CMIC TS00133_asd_sco.pcs	PASS	N
MAC-255-149	MCA CMIC TS00134_asd_sco.pcs	PASS	Y
MAC-255-194.47	MCA CMIC TS00135_asd_sco.pcs	PASS	N

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SWIR Mineral Data

CMIC Sample Name	TerraSpec Sample Name	Pass/Fail	TS Available (Y/N)
MAC-255-209.83	MCA CMIC TS00136_asd_sco.pcs	PASS	Y
MAC-255-217.68	MCA CMIC TS00137_asd_sco.pcs	PASS	N
MAC-255-259.93	MCA CMIC TS00138_asd_sco.pcs	PASS	N
MAC-255-288.82	MCA CMIC TS00139_asd_sco.pcs	PASS	N
MAC-255-293.4	MCA CMIC TS00140_asd_sco.pcs	PASS	Y
MAC-255-332.33	MCA CMIC TS00141_asd_sco.pcs	PASS	N
MAC-255-338	MCA CMIC TS00142_asd_sco.pcs	PASS	N
MAC-255-362.46	MCA CMIC TS00143_asd_sco.pcs	PASS	Y
MAC-255-378.33	MCA CMIC TS00144_asd_sco.pcs	FAIL	N
MAC-255-397.78	MCA CMIC TS00145_asd_sco.pcs	PASS	N
MAC-255-412.58	MCA CMIC TS00146_asd_sco.pcs	FAIL	N
MAC-255-426.3	MCA CMIC TS00147_asd_sco.pcs	PASS	Y
MAC-255-429.5	MCA CMIC TS00148_asd_sco.pcs	PASS	N
MAC-255-451.78	MCA CMIC TS00149_asd_sco.pcs	PASS	Y
MAC-255-462.07	MCA CMIC TS00150_asd_sco.pcs	FAIL	N
MAC-255-469.36	MCA CMIC TS00151_asd_sco.pcs	PASS	N
MAC-255-479.17	MCA CMIC TS00152_asd_sco.pcs	PASS	Y
MAC-255-483.68	MCA CMIC TS00153_asd_sco.pcs	PASS	Y
MAC-255-501.32	MCA CMIC TS00154_asd_sco.pcs	PASS	Y
MAC-255-503.26	MCA CMIC TS00155_asd_sco.pcs	PASS	Y
MAC-255-559	MCA CMIC TS00156_asd_sco.pcs	FAIL	Y
MAC-255-564.36	MCA CMIC TS00157_asd_sco.pcs	PASS	Y
MC-413-71.64	MCA CMIC TS00158_asd_sco.pcs	PASS	Y
MC-413-130	MCA CMIC TS00159_asd_sco.pcs	PASS	N
MC-413-183.26	MCA CMIC TS00160_asd_sco.pcs	PASS	Y
MC-413-224	MCA CMIC TS00161_asd_sco.pcs	PASS	N
MC-413-258.26	MCA CMIC TS00162_asd_sco.pcs	PASS	Y
MC-413-282.17	MCA CMIC TS00163_asd_sco.pcs	PASS	N
MC-413-299	MCA CMIC TS00164_asd_sco.pcs	PASS	Y
MC-413-303.5	MCA CMIC TS00165_asd_sco.pcs	PASS	Y
MC-413-317.96	MCA CMIC TS00166_asd_sco.pcs	PASS	Y
MC-413-354.67	MCA CMIC TS00167_asd_sco.pcs	PASS	N
MC-413-388.82	MCA CMIC TS00168_asd_sco.pcs	PASS	N
MC-413-404	MCA CMIC TS00169_asd_sco.pcs	PASS	Y
MC-413-430.57	MCA CMIC TS00170_asd_sco.pcs	PASS	N
MC-413-456.68	MCA CMIC TS00171_asd_sco.pcs	PASS	Y
MC-413-482.25	MCA CMIC TS00172_asd_sco.pcs	FAIL	N
MC-413-501.66	MCA CMIC TS00173_asd_sco.pcs	FAIL	N
MC-413-527.67	MCA CMIC TS00174_asd_sco.pcs	FAIL	N
MC-413-547.3	MCA CMIC TS00175_asd_sco.pcs	PASS	N
MC-413-559.73	MCA CMIC TS00176_asd_sco.pcs	PASS	Y
MC-413-566.28	MCA CMIC TS00177_asd_sco.pcs	PASS	Y
MC-413-603.83	MCA CMIC TS00178_asd_sco.pcs	PASS	Y
MC-413-614.83	MCA CMIC TS00179_asd_sco.pcs	FAIL	N
MC-413-623.78	MCA CMIC TS00180_asd_sco.pcs	FAIL	Y
MC-413-638.86	MCA CMIC TS00181_asd_sco.pcs	FAIL	N
MC-413-649	MCA CMIC TS00182_asd_sco.pcs	PASS	Y
MC-415-76.73	MCA CMIC TS00183_asd_sco.pcs	PASS	Y
MC-415-127.56	MCA CMIC TS00184_asd_sco.pcs	PASS	N
MC-415-173.74	MCA CMIC TS00185_asd_sco.pcs	PASS	Y
MC-415-197	MCA CMIC TS00186_asd_sco.pcs	PASS	Y
MC-415-222.34	MCA CMIC TS00187_asd_sco.pcs	PASS	N
MC-415-232.5	MCA CMIC TS00188_asd_sco.pcs	PASS	Y
MC-415-295.67	MCA CMIC TS00189_asd_sco.pcs	PASS	N
MC-415-350.35	MCA CMIC TS00190_asd_sco.pcs	PASS	Y
MC-415-389	MCA CMIC TS00191_asd_sco.pcs	PASS	Y
MC-415-416.08	MCA CMIC TS00192_asd_sco.pcs	PASS	N
MC-415-432.38	MCA CMIC TS00193_asd_sco.pcs	PASS	Y
MC-415-455.72	MCA CMIC TS00194_asd_sco.pcs	PASS	N
MC-415-477	MCA CMIC TS00195_asd_sco.pcs	PASS	N
MC-415-490.78	MCA CMIC TS00196_asd_sco.pcs	PASS	Y
MC-415-497.66	MCA CMIC TS00197_asd_sco.pcs	FAIL	Y
MC-415-503.32	MCA CMIC TS00198_asd_sco.pcs	PASS	N
MC-415-520.15	MCA CMIC TS00199_asd_sco.pcs	PASS	N
MC-415-537	MCA CMIC TS00200_asd_sco.pcs	PASS	Y
MC-415-539.69	MCA CMIC TS00201_asd_sco.pcs	PASS	Y
MC-434-11.1	MCA CMIC TS00202_asd_sco.pcs	PASS	Y
MC-434-31.63	MCA CMIC TS00203_asd_sco.pcs	PASS	N
MC-434-54.07	MCA CMIC TS00204_asd_sco.pcs	PASS	Y
MC-434-93.9	MCA CMIC TS00205_asd_sco.pcs	PASS	N

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SWIR Mineral Data

CMIC Sample Name	TerraSpec Sample Name	Pass/Fail	TS Available (Y/N)
MC-434-119.66	MCA CMIC TS00206_asd_sco.pcs	PASS	Y
MC-434-168.25	MCA CMIC TS00207_asd_sco.pcs	PASS	N
MC-434-183.4	MCA CMIC TS00208_asd_sco.pcs	PASS	Y
MC-434-217.84	MCA CMIC TS00209_asd_sco.pcs	PASS	N
MC-434-253.64	MCA CMIC TS00210_asd_sco.pcs	PASS	Y
MC-434-256.65	MCA CMIC TS00211_asd_sco.pcs	PASS	N
MC-434-282.2	MCA CMIC TS00212_asd_sco.pcs	PASS	N
MC-434-328.83	MCA CMIC TS00213_asd_sco.pcs	PASS	Y
MC-434-338.05	MCA CMIC TS00214_asd_sco.pcs	PASS	Y
MC-434-348.28	MCA CMIC TS00215_asd_sco.pcs	PASS	Y
MC-434-370.63	MCA CMIC TS00216_asd_sco.pcs	PASS	N
MC-434-397.53	MCA CMIC TS00217_asd_sco.pcs	PASS	Y
MC-434-421.67	MCA CMIC TS00218_asd_sco.pcs	PASS	Y

Note: Analyses with a signal/noise ratio <10 considered to have failed QC.

Appendix D

Normative Mineralogy Data

Appendix D

Normative Mineralogy Data

CMIC Sample Name	Kaolinite Norm	Illite Norm	Chlorite Norm	Dravite Norm	APS Norm (Sr + LREE)	Total Normative Clay Portion
	(%)	(%)	(%)	(%)	(%)	(%)
MC-336-433	0.00	6.85	0.00	0.14	0.11	6.99
MC-336-455	8.28	4.89	0.24	0.45	0.16	13.87
MC-336-465	2.05	3.47	1.25	1.21	0.09	7.99
MC-336-479.5	8.92	1.92	0.00	0.28	0.07	11.11
MC-336-500.43	0.28	5.41	0.22	0.41	0.06	6.32
MC-336-506.55	1.07	3.73	0.20	1.13	0.06	6.12
MC-336-506.8	2.88	7.93	0.05	4.06	0.12	14.91
MC-336-517	0.81	3.90	0.20	0.63	0.06	5.53
MC-336-522.86	5.59	4.76	2.79	1.71	0.15	14.85
MC-336-532.73	1.33	0.38	0.00	1.14	0.03	2.85
MC-336-557	0.32	1.65	0.04	0.05	0.02	2.07
MC-336-560.46	1.06	3.65	0.00	0.05	0.04	4.76
MC-336-564	0.29	0.89	0.01	0.03	0.10	1.22
MC-336-570.5	0.25	2.35	4.66	0.43	0.32	7.69
MC-338-23	0.32	0.31	0.00	1.03	0.04	1.65
MC-338-65	0.04	1.97	0.00	0.06	0.03	2.06
MC-338-101	0.00	2.57	0.00	0.06	0.05	2.63
MC-338-150.4	0.00	2.11	0.00	0.06	0.05	2.17
MC-338-220.2	0.23	3.62	0.00	0.19	0.07	4.04
MC-338-272	0.64	5.14	0.50	0.13	0.13	6.42
MC-338-319	0.00	5.95	0.00	0.13	0.09	6.08
MC-338-372.17	0.12	3.29	0.00	0.06	0.35	3.47
MC-338-410.8	0.09	3.32	0.00	0.07	0.11	3.48
MC-338-466	8.00	1.70	0.00	0.17	0.14	9.88
MC-338-502.37	0.65	2.31	0.09	0.11	0.03	3.16
MC-338-537.64	1.06	0.38	0.00	1.09	0.03	2.53
MC-338-554.73	0.20	2.06	0.00	0.04	0.03	2.30
MC-338-557.5	0.94	4.73	0.93	0.11	0.13	6.71
MC-338-559	0.10	12.65	0.00	1.16	0.16	13.92
MC-344-26.1	0.32	0.10	0.00	1.37	0.03	1.79
MC-344-69	0.39	0.12	0.00	2.50	0.05	3.01
MC-344-100.1	0.63	0.13	0.00	2.16	0.05	2.92
MC-344-128	0.60	0.71	0.61	0.78	0.05	2.70
MC-344-164	1.12	0.92	0.00	6.10	0.06	8.14
MC-344-179.8	0.75	0.26	0.00	3.21	0.05	4.22
MC-344-199	0.11	2.92	0.00	0.21	0.07	3.24
MC-344-230	0.04	2.45	0.00	0.17	0.08	2.66
MC-344-275	0.30	2.42	0.00	0.15	0.08	2.87
MC-344-298.82	0.95	3.31	0.00	0.24	0.11	4.50
MC-344-343	3.01	1.12	0.00	0.06	0.06	4.19
MC-344-378.45	4.34	2.00	0.00	0.09	0.07	6.43
MC-344-394.34	1.73	3.38	0.00	0.18	0.08	5.30
MC-344-433	2.49	2.57	0.00	0.10	0.07	5.16
MC-344-467	4.68	0.36	0.00	0.06	0.08	5.09
MC-344-468.8	1.22	0.11	0.05	0.00	0.04	1.38
MC-344-485.76	1.55	0.54	0.03	0.02	0.03	2.14
MC-344-488	4.65	1.16	0.00	0.02	0.03	5.83
MC-344-492.93	2.96	0.46	0.10	0.02	0.07	3.54
MAC-208-10.2	1.19	0.11	0.00	0.22	0.04	1.52
MAC-208-27	0.73	0.24	0.00	0.50	0.04	1.47
MAC-208-63.5	1.66	0.38	0.24	0.75	0.04	3.03
MAC-208-86.5	2.00	0.24	0.75	1.95	0.06	4.95
MAC-208-88	0.40	0.07	0.28	0.68	0.05	1.44
MAC-208-128.4	0.98	0.24	0.53	1.85	0.05	3.59
MAC-208-149	0.80	0.16	0.03	1.44	0.07	2.43
MAC-208-203	0.59	0.36	2.08	0.42	0.07	3.44
MAC-208-217.7	1.07	1.23	1.49	1.68	0.10	5.47
MAC-208-237	0.32	1.53	2.66	0.08	0.16	4.58
MAC-208-289.2	0.48	3.34	0.13	0.06	0.29	4.01
MAC-208-290.5	0.00	7.42	0.00	0.13	0.17	7.55
MAC-208-350.5	4.51	1.59	0.00	0.51	0.13	6.61

Appendix D

Normative Mineralogy Data

CMIC Sample Name	Kaolinite Norm	Illite Norm	Chlorite Norm	Dravite Norm	APS Norm (Sr + LREE)	Total Normative Clay Portion
	(%)	(%)	(%)	(%)	(%)	(%)
MAC-208-395	2.80	0.21	0.05	0.03	0.07	3.08
MAC-208-425.1	4.99	0.88	0.00	0.02	0.07	5.90
MAC-208-447.3	1.60	2.33	0.00	0.04	0.06	3.97
MAC-208-468.4	0.32	2.86	0.03	0.07	0.03	3.28
MAC-208-487	1.84	4.38	2.57	0.05	0.11	8.85
MAC-208-493	4.03	0.23	0.15	0.01	0.04	4.42
MAC-208-553.3	1.35	1.04	0.00	2.49	0.07	4.88
MAC-208-572	1.48	0.46	2.36	3.52	0.00	7.82
MAC-250-297.8	0.00	4.72	0.00	0.07	0.17	4.79
MAC-250-335.1	0.00	6.80	0.28	0.08	0.22	7.16
MAC-250-370.8	2.35	4.57	0.04	0.08	0.16	7.04
MAC-250-401.43	0.04	6.13	0.00	0.08	0.11	6.25
MAC-250-431.78	1.56	7.80	0.00	1.31	0.19	10.67
MAC-250-481.75	1.18	1.06	0.00	0.03	0.06	2.27
MC-253-26	1.17	0.19	0.00	0.44	0.04	1.80
MC-253-76	0.98	0.41	0.28	0.47	0.04	2.14
MC-253-136	0.54	0.61	0.00	1.10	0.04	2.25
MC-253-205	0.50	0.11	0.01	0.97	0.04	1.60
MC-253-265.3	1.76	0.78	2.18	1.48	0.10	6.19
MC-253-287.5	0.40	0.50	1.56	0.65	0.11	3.11
MC-253-325	0.13	2.15	1.62	0.12	0.08	4.02
MC-253-336.2	0.68	5.82	1.90	0.47	0.10	8.87
MC-253-382	1.64	3.55	0.00	0.07	0.28	5.26
MC-253-416	3.53	3.52	0.00	0.06	0.20	7.11
MC-253-430.1	6.02	8.33	0.00	0.37	0.18	14.72
MC-253-440.1	1.45	0.21	0.00	5.67	0.07	7.33
MC-253-472.5	1.71	0.97	0.00	0.13	0.04	2.81
MC-253-501	1.99	0.49	0.02	0.03	0.04	2.52
MC-253-507.5	0.51	1.78	0.00	0.47	0.19	2.75
MC-253-528	0.87	5.42	0.00	0.56	0.12	6.84
MC-253-538	0.70	3.70	0.00	0.11	0.04	4.51
MC-253-550.1	1.56	1.20	0.45	2.14	0.08	5.35
MC-253-552	1.76	0.16	0.00	4.40	0.07	6.32
MAC-246-4.33	0.27	0.08	0.00	1.92	0.04	2.27
MAC-246-54.7	0.60	0.15	0.00	1.10	0.04	1.86
MAC-246-60.6	0.68	0.16	0.00	0.90	0.04	1.74
MAC-246-82.75	0.43	0.12	0.00	2.32	0.05	2.88
MAC-246-126.15	0.50	0.53	0.03	0.66	0.04	1.72
MAC-246-142.86	1.42	0.44	0.00	3.39	0.07	5.25
MAC-246-165.4	0.56	0.26	0.00	1.42	0.05	2.24
MAC-246-213.43	0.36	0.30	0.43	0.48	0.06	1.58
MAC-246-267.05	0.04	5.28	0.49	0.09	0.09	5.90
MAC-246-297.33	0.12	4.70	0.03	0.07	0.16	4.92
MAC-246-324.5	1.17	6.26	0.00	0.13	0.41	7.56
MAC-246-333.8	0.81	4.40	0.00	0.09	0.30	5.30
MAC-246-354.17	0.25	5.98	0.00	0.13	0.24	6.36
MAC-246-378.25	3.74	0.44	0.02	0.03	0.20	4.23
MAC-246-418.13	3.23	0.78	0.00	0.03	0.11	4.04
MAC-246-423.8	3.78	1.23	0.00	0.07	0.09	5.07
MAC-246-454.11	1.62	0.11	0.00	6.60	0.11	8.32
MAC-246-475.33	0.91	0.31	0.00	2.06	0.05	3.28
MAC-246-496.42	2.59	0.27	0.00	5.45	0.06	8.31
MAC-246-499.02	1.50	0.14	0.00	3.20	0.05	4.84
MAC-246-508.8	1.07	0.13	0.00	5.49	0.05	6.69
MAC-246-510.2	1.72	0.11	0.00	8.18	0.03	10.00
MAC-246-543	0.58	1.42	0.00	0.45	0.05	2.44
MAC-252-10.15	0.62	0.14	0.00	0.91	0.04	1.67
MAC-252-25.7	0.72	0.28	0.04	0.45	0.04	1.50
MAC-252-55.65	2.39	0.51	0.00	7.26	0.05	10.16
MAC-252-102.48	1.83	0.26	0.08	1.64	0.05	3.80

Appendix D

Normative Mineralogy Data

CMIC Sample Name	Kaolinite Norm	Illite Norm	Chlorite Norm	Dravite Norm	APS Norm (Sr + LREE)	Total Normative Clay Portion
	(%)	(%)	(%)	(%)	(%)	(%)
MAC-252-167.2	0.48	0.14	0.00	1.28	0.05	1.91
MAC-252-199.86	0.60	0.17	0.60	0.64	0.07	2.01
MAC-252-249.43	0.58	0.07	0.77	1.33	0.07	2.74
MAC-252-261.91	0.67	0.17	0.00	2.03	0.07	2.87
MAC-252-271.2	0.27	3.43	1.74	0.29	0.17	5.73
MAC-252-286.2	0.79	1.95	0.00	1.81	0.14	4.55
MAC-252-305.3	0.73	0.10	0.00	4.05	0.07	4.89
MAC-252-319.44	0.08	5.39	0.00	0.47	0.27	5.94
MAC-252-331.7	0.56	3.07	1.89	0.73	0.22	6.25
MAC-252-342.5	0.75	1.27	0.00	2.71	0.09	4.73
MAC-255-6.13	0.28	0.11	0.00	1.54	0.05	1.93
MAC-255-29.21	1.30	0.37	0.00	0.92	0.05	2.59
MAC-255-51.63	1.62	0.28	0.00	3.50	0.06	5.40
MAC-255-95	0.39	0.44	0.00	0.82	0.04	1.65
MAC-255-132.3						
MAC-255-149	0.87	1.43	0.03	0.88	0.04	3.21
MAC-255-194.47	0.38	0.27	0.01	0.79	0.06	1.45
MAC-255-209.83	0.32	0.86	0.45	0.16	0.06	1.79
MAC-255-217.68	1.07	2.23	0.46	1.22	0.09	4.98
MAC-255-259.93	0.03	3.78	0.00	0.11	0.11	3.92
MAC-255-288.82	0.00	6.70	0.00	0.09	0.17	6.78
MAC-255-293.4	0.39	6.31	0.70	0.09	0.31	7.48
MAC-255-332.33	3.19	3.38	0.00	0.07	0.25	6.64
MAC-255-338	5.90	4.43	0.00	0.08	0.14	10.41
MAC-255-362.46	2.51	2.20	0.00	0.06	0.09	4.77
MAC-255-378.33	3.59	1.23	0.00	0.04	0.07	4.85
MAC-255-397.78	5.51	0.97	0.00	0.03	0.06	6.51
MAC-255-412.58	3.45	0.62	0.01	0.01	0.07	4.09
MAC-255-426.3	5.72	0.79	0.00	0.02	0.08	6.53
MAC-255-429.5	6.04	0.42	0.05	0.01	0.08	6.52
MAC-255-451.78	6.73	2.61	0.00	0.13	0.09	9.47
MAC-255-462.07	4.00	0.42	0.05	0.01	0.11	4.49
MAC-255-469.36	0.59	0.29	0.07	0.01	0.03	0.96
MAC-255-479.17	1.73	0.96	0.02	0.01	0.04	2.71
MAC-255-483.68	1.36	0.79	0.13	0.02	0.03	2.31
MAC-255-501.32	0.81	5.05	0.00	0.09	0.07	5.95
MAC-255-503.26	1.30	0.17	1.96	0.03	0.04	3.46
MAC-255-559	0.00	0.00	5.12	0.10	0.07	5.22
MAC-255-564.36	0.00	0.07	6.99	0.75	0.22	7.81
MC-413-71.64	0.70	0.27	0.60	0.41	0.07	1.99
MC-413-130	0.50	0.17	0.58	0.11	0.04	1.37
MC-413-183.26	2.03	0.60	3.65	0.48	0.07	6.76
MC-413-224	0.64	0.21	0.62	0.24	0.04	1.71
MC-413-258.26	1.12	0.60	0.33	1.08	0.08	3.13
MC-413-282.17	1.02	0.84	0.00	1.79	0.08	3.65
MC-413-299	0.39	5.78	0.14	0.48	0.18	6.78
MC-413-303.5	0.28	3.56	0.00	0.30	0.28	4.14
MC-413-317.96	0.78	0.12	0.00	3.32	0.17	4.22
MC-413-354.67	1.96	2.93	0.00	0.09	0.20	4.98
MC-413-388.82	6.38	0.70	0.00	0.34	1.82	7.41
MC-413-404	1.63	1.12	0.00	2.32	0.11	5.06
MC-413-430.57	3.68	0.69	0.00	0.14	0.10	4.50
MC-413-456.68	1.99	0.35	0.00	0.38	0.06	2.72
MC-413-482.25	2.73	0.82	0.00	0.12	0.14	3.66
MC-413-501.66	2.24	0.42	0.04	0.03	0.05	2.73
MC-413-527.67	3.02	0.62	0.03	0.02	0.04	3.68
MC-413-547.3	4.67	0.45	0.00	0.02	0.06	5.15
MC-413-559.73	3.62	0.17	0.09	0.02	0.06	3.90
MC-413-566.28	2.20	15.18	0.00	0.23	0.13	17.62
MC-413-603.83	0.59	6.56	2.86	0.63	0.33	10.64
MC-413-614.83	2.03	0.34	0.00	4.22	0.32	6.59
MC-413-623.78	0.29	0.15	0.03	0.40	0.05	0.87

Appendix D

Normative Mineralogy Data

CMIC Sample Name	Kaolinite Norm	Illite Norm	Chlorite Norm	Dravite Norm	APS Norm (Sr + LREE)	Total Normative Clay Portion
	(%)	(%)	(%)	(%)	(%)	(%)
MC-413-638.86	0.15	5.58	0.00	0.70	0.10	6.42
MC-413-649	1.06	4.12	0.00	2.12	0.20	7.30
MC-415-76.73	0.41	0.25	0.71	0.17	0.04	1.54
MC-415-127.56	0.38	0.20	0.68	0.08	0.04	1.34
MC-415-173.74	1.53	0.50	2.68	0.71	0.05	5.42
MC-415-197	0.36	0.22	0.94	0.09	0.04	1.61
MC-415-222.34	0.43	0.23	0.73	0.21	0.03	1.60
MC-415-232.5	0.68	0.25	0.84	0.19	0.08	1.95
MC-415-295.67	0.48	3.36	0.06	0.51	0.09	4.41
MC-415-350.35	1.25	0.08	0.00	4.04	0.40	5.37
MC-415-389	1.49	0.13	0.00	6.27	0.19	7.89
MC-415-416.08	0.76	1.93	0.00	3.32	0.08	6.00
MC-415-432.38	1.72	0.28	0.00	5.25	0.08	7.25
MC-415-455.72	1.13	0.08	0.00	5.52	0.07	6.73
MC-415-477	1.48	0.09	0.00	8.34	0.08	9.91
MC-415-490.78	0.36	0.20	0.00	0.97	0.03	1.52
MC-415-497.66	1.52	0.10	0.00	4.23	0.05	5.86
MC-415-503.32	0.28	0.08	0.00	1.48	0.03	1.84
MC-415-520.15	0.94	3.03	0.00	2.32	0.06	6.29
MC-415-537	0.64	1.81	0.77	0.15	0.25	3.37
MC-415-539.69	1.36	2.24	2.10	0.13	0.54	5.82
MC-434-11.1	0.02	2.29	0.00	0.29	0.05	2.59
MC-434-31.63	0.36	2.42	0.00	0.27	0.05	3.05
MC-434-54.07	0.76	1.36	0.00	0.32	0.04	2.44
MC-434-93.9	0.62	0.90	0.00	0.09	0.04	1.61
MC-434-119.66	8.69	3.56	0.00	0.09	0.08	12.34
MC-434-168.25	0.40	1.46	0.00	0.11	0.04	1.96
MC-434-183.4	0.83	1.42	0.00	0.13	0.06	2.38
MC-434-217.84	0.55	1.09	0.00	0.06	0.07	1.69
MC-434-253.64	2.10	1.89	0.00	0.09	0.18	4.09
MC-434-256.65	1.26	1.56	0.00	0.08	0.12	2.90
MC-434-282.2	1.85	1.76	0.00	0.11	0.21	3.72
MC-434-328.83	4.00	1.54	0.00	0.08	0.26	5.61
MC-434-338.05	5.59	2.00	0.00	0.06	0.09	7.66
MC-434-348.28	3.54	2.02	0.00	0.07	0.11	5.63
MC-434-370.63	3.34	2.25	0.00	0.10	0.07	5.69
MC-434-397.53	4.71	0.54	0.00	0.08	0.10	5.33
MC-434-421.67	2.93	0.62	0.04	0.06	0.07	3.66

Notes: Normative mineralogy calculated using Dave Quirt's Clay Norm macro based on whole rock lithogeochemistry total digests. APS mineral norm based on the relative abundances of Sr and LREE observed in the McArthur River footprint as determined by EMPA.

Appendix D

Normative Mineralogy

CMIC Sample Name	Illite SWIR Norm (%)	Chlorite SWIR Norm (%)	Dickite SWIR Norm (%)	Kaolinite SWIR Norm (%)	Dravite SWIR Norm (%)	Kaolin SWIR Norm (kao + dck) (%)
MC-336-433	6.99	0.00	0.00	0.00	0.00	0.00
MC-336-455	5.55	0.00	8.32	0.00	0.00	8.32
MC-336-465	6.31	0.00	0.00	0.00	1.68	0.00
MC-336-479.5	1.78	0.00	9.34	0.00	0.00	9.34
MC-336-500.43	6.32	0.00	0.00	0.00	0.00	0.00
MC-336-506.55	4.84	0.00	0.00	1.29	0.00	1.29
MC-336-506.8	12.38	0.00	0.00	0.89	1.64	0.89
MC-336-517	4.43	0.00	0.00	1.11	0.00	1.11
MC-336-522.86	13.51	0.00	0.00	1.34	0.00	1.34
MC-336-532.73	1.14	0.00	0.00	1.71	0.00	1.71
MC-336-557	1.49	0.00	0.00	0.58	0.00	0.58
MC-336-560.46	2.43	0.00	2.33	0.00	0.00	2.33
MC-336-564	0.73	0.00	0.49	0.00	0.00	0.49
MC-336-570.5	0.38	6.07	0.00	1.31	0.00	1.31
MC-338-23	0.43	0.00	0.00	0.23	1.01	0.23
MC-338-65	2.06	0.00	0.00	0.00	0.00	0.00
MC-338-101	2.63	0.00	0.00	0.00	0.00	0.00
MC-338-150.4	2.17	0.00	0.00	0.00	0.00	0.00
MC-338-220.2	3.51	0.00	0.00	0.52	0.00	0.52
MC-338-272	5.84	0.00	0.00	0.58	0.00	0.58
MC-338-319	6.08	0.00	0.00	0.00	0.00	0.00
MC-338-372.17	3.47	0.00	0.00	0.00	0.00	0.00
MC-338-410.8	2.89	0.00	0.59	0.00	0.00	0.59
MC-338-466	1.78	0.00	8.10	0.00	0.00	8.10
MC-338-502.37	2.02	0.00	1.14	0.00	0.00	1.14
MC-338-537.64	0.40	0.00	0.00	1.49	0.66	1.49
MC-338-554.73	2.25	0.00	0.00	0.05	0.00	0.05
MC-338-557.5	4.97	0.00	0.00	1.21	0.54	1.21
MC-338-559	13.92	0.00	0.00	0.00	0.00	0.00
MC-344-26.1	0.00	0.00	0.00	0.34	1.45	0.34
MC-344-69	0.00	0.00	0.00	0.51	2.50	0.51
MC-344-100.1	0.00	0.00	0.00	0.53	2.39	0.53
MC-344-128	0.51	0.00	0.00	0.40	1.78	0.40
MC-344-164	1.95	0.00	0.00	0.00	6.18	0.00
MC-344-179.8	0.00	0.00	0.00	0.00	4.22	0.00
MC-344-199	3.24	0.00	0.00	0.00	0.00	0.00
MC-344-230	2.45	0.00	0.00	0.00	0.21	0.00
MC-344-275	2.18	0.00	0.69	0.00	0.00	0.69
MC-344-298.82	3.20	0.00	1.31	0.00	0.00	1.31
MC-344-343	0.42	0.00	3.77	0.00	0.00	3.77
MC-344-378.45	1.22	0.00	5.21	0.00	0.00	5.21
MC-344-394.34	2.54	0.00	2.75	0.00	0.00	2.75
MC-344-433	2.43	0.00	2.73	0.00	0.00	2.73
MC-344-467	1.12	0.00	3.97	0.00	0.00	3.97
MC-344-468.8	0.21	0.00	1.17	0.00	0.00	1.17
MC-344-485.76	0.21	0.00	0.49	1.45	0.00	1.95
MC-344-488	0.76	0.00	1.28	3.85	0.00	5.13
MC-344-492.93	0.00	0.00	0.88	2.65	0.00	3.54
MAC-208-10.2	0.00	0.00	0.00	0.96	0.56	0.96
MAC-208-27	0.25	0.00	0.00	0.75	0.47	0.75
MAC-208-63.5	1.18	0.00	0.00	1.85	0.00	1.85
MAC-208-86.5	0.30	0.00	0.00	2.92	1.73	2.92
MAC-208-88	0.11	0.00	0.00	0.34	0.98	0.34
MAC-208-128.4	0.65	0.00	0.00	0.65	2.26	0.65
MAC-208-149	0.34	0.00	0.00	0.75	1.34	0.75
MAC-208-203	0.34	2.27	0.00	0.79	0.00	0.79
MAC-208-217.7	3.28	0.00	0.00	0.16	1.97	0.16
MAC-208-237	0.00	3.34	0.00	1.24	0.00	1.24
MAC-208-289.2	4.01	0.00	0.00	0.00	0.00	0.00
MAC-208-290.5	7.55	0.00	0.00	0.00	0.00	0.00
MAC-208-350.5	1.72	0.00	4.89	0.00	0.00	4.89

Appendix D

Normative Mineralogy .

CMIC Sample Name	Illite SWIR Norm (%)	Chlorite SWIR Norm (%)	Dickite SWIR Norm (%)	Kaolinite SWIR Norm (%)	Dravite SWIR Norm (%)	Kaolin SWIR Norm (kao + dck) (%)
MAC-208-395	0.00	0.00	3.08	0.00	0.00	3.08
MAC-208-425.1	1.12	0.00	4.78	0.00	0.00	4.78
MAC-208-447.3	1.91	0.00	2.07	0.00	0.00	2.07
MAC-208-468.4	3.28	0.00	0.00	0.00	0.00	0.00
MAC-208-487	2.57	3.27	0.00	3.01	0.00	3.01
MAC-208-493	1.28	0.00	0.00	3.14	0.00	3.14
MAC-208-553.3	0.34	0.00	0.00	1.37	3.17	1.37
MAC-208-572	4.14	0.00	0.00	0.00	3.67	0.00
MAC-250-297.8	4.79	0.00	0.00	0.00	0.00	0.00
MAC-250-335.1	7.16	0.00	0.00	0.00	0.00	0.00
MAC-250-370.8	1.55	0.00	5.49	0.00	0.00	5.49
MAC-250-401.43	6.25	0.00	0.00	0.00	0.00	0.00
MAC-250-431.78	3.09	0.00	7.58	0.00	0.00	7.58
MAC-250-481.75	0.91	0.00	1.36	0.00	0.00	1.36
MC-253-26	0.48	0.00	0.00	1.31	0.00	1.31
MC-253-76	0.56	0.00	0.00	1.18	0.41	1.18
MC-253-136	0.88	0.00	0.00	0.45	0.92	0.45
MC-253-205	0.00	0.00	0.00	0.21	1.39	0.21
MC-253-265.3	0.80	0.00	0.00	2.10	3.28	2.10
MC-253-287.5	1.40	0.00	0.00	0.50	1.21	0.50
MC-253-325	2.45	1.57	0.00	0.00	0.00	0.00
MC-253-336.2	8.87	0.00	0.00	0.00	0.00	0.00
MC-253-382	2.26	0.00	3.00	0.00	0.00	3.00
MC-253-416	2.56	0.00	4.55	0.00	0.00	4.55
MC-253-430.1	6.18	0.00	8.54	0.00	0.00	8.54
MC-253-440.1	0.00	0.00	0.00	0.88	6.45	0.88
MC-253-472.5	0.48	0.00	2.33	0.00	0.00	2.33
MC-253-501	0.43	0.00	2.09	0.00	0.00	2.09
MC-253-507.5	2.23	0.00	0.00	0.52	0.00	0.52
MC-253-528	5.54	0.00	0.00	1.30	0.00	1.30
MC-253-538	3.16	0.00	0.00	0.09	1.26	0.09
MC-253-550.1	1.82	0.00	0.00	1.34	2.20	1.34
MC-253-552	0.19	0.00	0.00	1.14	4.99	1.14
MAC-246-4.33	0.00	0.00	0.00	0.16	2.11	0.16
MAC-246-54.7	0.09	0.00	0.00	0.61	1.15	0.61
MAC-246-60.6	0.00	0.00	0.00	0.24	1.50	0.24
MAC-246-82.75	0.00	0.00	0.00	0.35	2.53	0.35
MAC-246-126.15	0.82	0.00	0.00	0.40	0.50	0.40
MAC-246-142.86	0.00	0.00	0.00	1.00	4.26	1.00
MAC-246-165.4	0.07	0.00	0.00	0.49	1.68	0.49
MAC-246-213.43	0.69	0.00	0.00	0.41	0.47	0.41
MAC-246-267.05	5.90	0.00	0.00	0.00	0.00	0.00
MAC-246-297.33	4.92	0.00	0.00	0.00	0.00	0.00
MAC-246-324.5	4.76	0.00	2.80	0.00	0.00	2.80
MAC-246-333.8	3.71	0.00	1.59	0.00	0.00	1.59
MAC-246-354.17	6.36	0.00	0.00	0.00	0.00	0.00
MAC-246-378.25	0.13	0.00	4.11	0.00	0.00	4.11
MAC-246-418.13	0.00	0.00	4.04	0.00	0.00	4.04
MAC-246-423.8	1.88	0.00	3.20	0.00	0.00	3.20
MAC-246-454.11	0.00	0.00	0.00	1.25	7.07	1.25
MAC-246-475.33	0.59	0.00	0.00	1.12	1.57	1.12
MAC-246-496.42	0.00	0.00	0.00	0.75	7.56	0.75
MAC-246-499.02	0.00	0.00	0.00	1.21	3.63	1.21
MAC-246-508.8	0.60	0.00	0.00	2.81	3.28	2.81
MAC-246-510.2	0.00	0.00	0.00	1.70	8.30	1.70
MAC-246-543	0.95	0.00	1.05	0.00	0.44	1.05
MAC-252-10.15	0.13	0.00	0.00	0.75	0.79	0.75
MAC-252-25.7	0.00	0.00	0.00	0.39	1.11	0.39
MAC-252-55.65	0.00	0.00	0.00	0.91	9.25	0.91
MAC-252-102.48	0.00	0.00	0.00	2.02	1.79	2.02

Appendix D

Normative Mineralogy ...

CMIC Sample Name	Illite SWIR Norm (%)	Chlorite SWIR Norm (%)	Dickite SWIR Norm (%)	Kaolinite SWIR Norm (%)	Dravite SWIR Norm (%)	Kaolin SWIR Norm (kao + dck) (%)
MAC-252-167.2	0.44	0.00	0.00	0.36	1.13	0.36
MAC-252-199.86	0.00	0.00	0.00	0.36	1.64	0.36
MAC-252-249.43	0.85	0.00	0.00	0.88	1.01	0.88
MAC-252-261.91	0.00	0.00	0.00	0.32	2.56	0.32
MAC-252-271.2	4.47	1.26	0.00	0.00	0.00	0.00
MAC-252-286.2	2.64	0.00	0.00	0.00	1.91	0.00
MAC-252-305.3	0.00	0.00	0.00	0.00	4.89	0.00
MAC-252-319.44	5.94	0.00	0.00	0.00	0.00	0.00
MAC-252-331.7	4.00	2.25	0.00	0.00	0.00	0.00
MAC-252-342.5	0.09	0.00	0.00	0.00	4.64	0.00
MAC-255-6.13	0.00	0.00	0.00	0.15	1.77	0.15
MAC-255-29.21	0.72	0.00	0.00	1.06	0.80	1.06
MAC-255-51.63	0.00	0.00	0.00	1.51	3.89	1.51
MAC-255-95	0.72	0.00	0.00	0.12	0.79	0.12
MAC-255-132.3						
MAC-255-149	2.41	0.00	0.00	0.80	0.00	0.80
MAC-255-194.47	0.59	0.00	0.00	0.16	0.69	0.16
MAC-255-209.83	1.65	0.00	0.00	0.14	0.00	0.14
MAC-255-217.68	2.44	0.00	0.00	0.45	2.09	0.45
MAC-255-259.93	3.92	0.00	0.00	0.00	0.00	0.00
MAC-255-288.82	6.78	0.00	0.00	0.00	0.00	0.00
MAC-255-293.4	7.48	0.00	0.00	0.00	0.00	0.00
MAC-255-332.33	1.59	0.00	5.05	0.00	0.00	5.05
MAC-255-338	2.08	0.00	8.33	0.00	0.00	8.33
MAC-255-362.46	0.33	0.00	4.43	0.00	0.00	4.43
MAC-255-378.33	0.05	0.00	4.80	0.00	0.00	4.80
MAC-255-397.78	1.56	0.00	4.95	0.00	0.00	4.95
MAC-255-412.58	1.51	0.00	2.58	0.00	0.00	2.58
MAC-255-426.3	0.78	0.00	5.75	0.00	0.00	5.75
MAC-255-429.5	0.52	0.00	6.00	0.00	0.00	6.00
MAC-255-451.78	2.94	0.00	6.53	0.00	0.00	6.53
MAC-255-462.07	0.54	0.00	3.95	0.00	0.00	3.95
MAC-255-469.36	0.04	0.00	0.81	0.00	0.11	0.81
MAC-255-479.17	0.19	0.00	1.90	0.62	0.00	2.52
MAC-255-483.68	0.62	0.00	1.68	0.00	0.00	1.68
MAC-255-501.32	5.42	0.00	0.00	0.54	0.00	0.54
MAC-255-503.26	0.24	1.18	0.00	1.77	0.28	1.77
MAC-255-559	0.00	4.48	0.00	0.00	0.73	0.00
MAC-255-564.36	0.00	7.81	0.00	0.00	0.00	0.00
MC-413-71.64	0.02	1.11	0.00	0.85	0.00	0.85
MC-413-130	0.56	0.00	0.00	0.55	0.25	0.55
MC-413-183.26	2.03	0.27	0.00	4.46	0.00	4.46
MC-413-224	0.96	0.00	0.00	0.75	0.00	0.75
MC-413-258.26	0.72	0.00	0.00	1.16	1.28	1.16
MC-413-282.17	1.02	0.00	0.00	0.00	2.63	0.00
MC-413-299	6.78	0.00	0.00	0.00	0.00	0.00
MC-413-303.5	4.14	0.00	0.00	0.00	0.00	0.00
MC-413-317.96	0.00	0.00	0.00	0.80	3.41	0.80
MC-413-354.67	2.14	0.00	2.84	0.00	0.00	2.84
MC-413-388.82	0.00	0.00	7.41	0.00	0.00	7.41
MC-413-404	0.30	0.00	0.00	1.77	2.99	1.77
MC-413-430.57	0.05	0.00	4.46	0.00	0.00	4.46
MC-413-456.68	0.35	0.00	2.36	0.00	0.00	2.36
MC-413-482.25	0.88	0.00	2.78	0.00	0.00	2.78
MC-413-501.66	0.49	0.00	2.24	0.00	0.00	2.24
MC-413-527.67	0.22	0.00	3.46	0.00	0.00	3.46
MC-413-547.3	0.88	0.00	4.27	0.00	0.00	4.27
MC-413-559.73	2.11	0.00	1.80	0.00	0.00	1.80
MC-413-566.28	4.40	0.00	0.00	13.21	0.00	13.21
MC-413-603.83	10.64	0.00	0.00	0.00	0.00	0.00
MC-413-614.83	0.72	0.00	0.00	2.50	3.30	2.50
MC-413-623.78	0.00	0.87	0.00	0.00	0.00	0.00

Appendix D

Normative Mineralogy .

CMIC Sample Name	Illite SWIR Norm (%)	Chlorite SWIR Norm (%)	Dickite SWIR Norm (%)	Kaolinite SWIR Norm (%)	Dravite SWIR Norm (%)	Kaolin SWIR Norm (kao + dck) (%)
MC-413-638.86	3.40	0.00	0.00	0.00	3.02	0.00
MC-413-649	0.95	0.00	0.00	1.31	5.03	1.31
MC-415-76.73	0.00	0.99	0.00	0.55	0.00	0.55
MC-415-127.56	0.00	0.97	0.00	0.38	0.00	0.38
MC-415-173.74	0.00	2.71	0.00	1.57	1.14	1.57
MC-415-197	0.00	1.13	0.00	0.48	0.00	0.48
MC-415-222.34	0.00	0.81	0.00	0.57	0.21	0.57
MC-415-232.5	0.00	1.15	0.00	0.49	0.33	0.49
MC-415-295.67	4.41	0.00	0.00	0.00	0.00	0.00
MC-415-350.35	0.00	0.00	0.00	1.07	4.30	1.07
MC-415-389	0.00	0.00	0.00	1.10	6.78	1.10
MC-415-416.08	3.54	0.00	0.00	0.00	2.46	0.00
MC-415-432.38	0.00	0.00	0.00	1.01	6.23	1.01
MC-415-455.72	0.00	0.00	0.00	1.28	5.45	1.28
MC-415-477	0.00	0.00	0.00	1.49	8.43	1.49
MC-415-490.78	0.00	0.00	0.00	0.21	1.31	0.21
MC-415-497.66	0.88	0.00	0.00	2.28	2.69	2.28
MC-415-503.32	0.00	0.00	0.00	0.33	1.51	0.33
MC-415-520.15	3.59	0.00	0.00	0.31	2.39	0.31
MC-415-537	2.09	0.57	0.00	0.67	0.00	0.67
MC-415-539.69	4.83	0.00	0.00	0.99	0.00	0.99
MC-434-11.1	2.51	0.00	0.00	0.08	0.00	0.08
MC-434-31.63	3.05	0.00	0.00	0.00	0.00	0.00
MC-434-54.07	0.68	0.00	1.76	0.00	0.00	1.76
MC-434-93.9	0.60	0.00	1.02	0.00	0.00	1.02
MC-434-119.66	2.22	0.00	10.12	0.00	0.00	10.12
MC-434-168.25	0.82	0.00	1.14	0.00	0.00	1.14
MC-434-183.4	0.55	0.00	1.83	0.00	0.00	1.83
MC-434-217.84	0.64	0.00	1.05	0.00	0.00	1.05
MC-434-253.64	0.94	0.00	3.15	0.00	0.00	3.15
MC-434-256.65	1.02	0.00	1.89	0.00	0.00	1.89
MC-434-282.2	0.45	0.00	3.27	0.00	0.00	3.27
MC-434-328.83	0.50	0.00	5.11	0.00	0.00	5.11
MC-434-338.05	1.07	0.00	6.59	0.00	0.00	6.59
MC-434-348.28	0.68	0.00	4.95	0.00	0.00	4.95
MC-434-370.63	1.48	0.00	4.21	0.00	0.00	4.21
MC-434-397.53	0.11	0.00	5.23	0.00	0.00	5.23
MC-434-421.67	0.11	0.00	3.55	0.00	0.00	3.55

Notes: Normative mineralogy calculated using Dave Quirt's Clay Norm macro based on whole rock lithogeochemistry total digests. APS mineral norm based on the relative abundances of Sr and LREE observed in the McArthur River footprint as determined by EMPA.

Appendix E

Normative APS Mineral Proportions

Appendix E
Normative APS Mineralogy

Sample No.	APS Norm (%)	Florencite Norm (%)	Svanbergite-Goyazite Norm (%)
MC-336-433	0.13	0.06	0.06
MC-336-455	0.18	0.10	0.09
MC-336-465	0.10	0.05	0.05
MC-336-479.5	0.07	0.04	0.04
MC-336-500.43	0.07	0.03	0.04
MC-336-506.55	0.06	0.03	0.04
MC-336-506.8	0.14	0.06	0.08
MC-336-517	0.06	0.03	0.04
MC-336-522.86	0.17	0.07	0.09
MC-336-532.73	0.04	0.02	0.02
MC-336-557	0.03	0.01	0.01
MC-336-560.46	0.04	0.02	0.02
MC-336-564	0.10	0.04	0.06
MC-336-570.5	0.32	0.11	0.22
MC-338-23	0.04	0.02	0.02
MC-338-65	0.04	0.02	0.02
MC-338-101	0.06	0.03	0.03
MC-338-150.4	0.06	0.03	0.03
MC-338-220.2	0.08	0.04	0.04
MC-338-272	0.14	0.06	0.08
MC-338-319	0.10	0.04	0.06
MC-338-372.17	0.32	0.03	0.29
MC-338-410.8	0.11	0.03	0.08
MC-338-466	0.16	0.10	0.06
MC-338-502.37	0.03	0.01	0.01
MC-338-537.64	0.03	0.02	0.01
MC-338-554.73	0.04	0.02	0.02
MC-338-557.5	0.14	0.07	0.08
MC-338-559	0.18	0.08	0.10
MC-344-26.1	0.04	0.02	0.02
MC-344-69	0.05	0.03	0.03
MC-344-100.1	0.05	0.03	0.03
MC-344-128	0.05	0.03	0.03
MC-344-164	0.07	0.03	0.03
MC-344-179.8	0.06	0.03	0.03
MC-344-199	0.08	0.03	0.04
MC-344-230	0.08	0.03	0.05
MC-344-275	0.08	0.03	0.05
MC-344-298.82	0.12	0.05	0.07
MC-344-343	0.06	0.03	0.03
MC-344-378.45	0.08	0.04	0.04

Appendix E

Normative APS Mineralogy

Sample No.	APS Norm (%)	Florencite Norm (%)	Svanbergite-Goyazite Norm (%)
MC-344-394.34	0.09	0.04	0.05
MC-344-433	0.08	0.04	0.04
MC-344-467	0.08	0.03	0.05
MC-344-468.8	0.05	0.02	0.03
MC-344-485.76	0.03	0.02	0.02
MC-344-488	0.04	0.02	0.02
MC-344-492.93	0.08	0.04	0.03
MAC-208-10.2	0.04	0.03	0.02
MAC-208-27	0.04	0.02	0.02
MAC-208-63.5	0.04	0.02	0.02
MAC-208-86.5	0.07	0.04	0.03
MAC-208-88	0.05	0.03	0.02
MAC-208-128.4	0.06	0.03	0.03
MAC-208-149	0.08	0.04	0.04
MAC-208-203	0.08	0.03	0.05
MAC-208-217.7	0.11	0.04	0.07
MAC-208-237	0.16	0.04	0.12
MAC-208-289.2	0.27	0.03	0.24
MAC-208-290.5	0.17	0.04	0.13
MAC-208-350.5	0.14	0.07	0.07
MAC-208-395	0.07	0.03	0.04
MAC-208-425.1	0.07	0.04	0.03
MAC-208-447.3	0.07	0.03	0.03
MAC-208-468.4	0.04	0.02	0.02
MAC-208-487	0.13	0.07	0.06
MAC-208-493	0.05	0.03	0.02
MAC-208-553.3	0.08	0.05	0.03
MAC-208-572	0.09	0.05	0.04
MAC-250-297.8	0.17	0.04	0.13
MAC-250-335.1	0.22	0.06	0.16
MAC-250-370.8	0.17	0.09	0.08
MAC-250-401.43	0.12	0.04	0.08
MAC-250-431.78	0.21	0.09	0.12
MAC-250-481.75	0.06	0.03	0.03
MC-253-26	0.04	0.02	0.02
MC-253-76	0.04	0.03	0.02
MC-253-136	0.04	0.02	0.02
MC-253-205	0.05	0.03	0.02
MC-253-265.3	0.10	0.03	0.07
MC-253-287.5	0.11	0.03	0.08

Appendix E

Normative APS Mineralogy

Sample No.	APS Norm (%)	Florencite Norm (%)	Svanbergite-Goyazite Norm (%)
MC-253-325	0.09	0.03	0.05
MC-253-336.2	0.11	0.04	0.07
MC-253-382	0.27	0.05	0.22
MC-253-416	0.20	0.06	0.14
MC-253-430.1	0.20	0.09	0.11
MC-253-440.1	0.08	0.04	0.04
MC-253-472.5	0.04	0.03	0.02
MC-253-501	0.04	0.02	0.02
MC-253-507.5	0.22	0.13	0.09
MC-253-528	0.12	0.04	0.08
MC-253-538	0.04	0.02	0.02
MC-253-550.1	0.09	0.05	0.04
MC-253-552	0.08	0.04	0.03
MAC-246-4.33	0.05	0.03	0.02
MAC-246-54.7	0.04	0.02	0.02
MAC-246-60.6	0.05	0.03	0.02
MAC-246-82.75	0.05	0.03	0.02
MAC-246-126.15	0.05	0.03	0.02
MAC-246-142.86	0.07	0.04	0.04
MAC-246-165.4	0.05	0.03	0.02
MAC-246-213.43	0.07	0.03	0.03
MAC-246-267.05	0.10	0.04	0.06
MAC-246-297.33	0.16	0.05	0.11
MAC-246-324.5	0.39	0.07	0.32
MAC-246-333.8	0.29	0.07	0.23
MAC-246-354.17	0.24	0.08	0.17
MAC-246-378.25	0.19	0.05	0.14
MAC-246-418.13	0.11	0.03	0.07
MAC-246-423.8	0.09	0.04	0.05
MAC-246-454.11	0.12	0.06	0.07
MAC-246-475.33	0.05	0.02	0.03
MAC-246-496.42	0.07	0.04	0.03
MAC-246-499.02	0.05	0.03	0.02
MAC-246-508.8	0.06	0.03	0.03
MAC-246-510.2	0.04	0.02	0.02
MAC-246-543	0.05	0.02	0.03
MAC-252-10.15	0.04	0.02	0.02
MAC-252-25.7	0.05	0.03	0.02
MAC-252-55.65	0.06	0.03	0.03
MAC-252-102.48	0.05	0.03	0.02
MAC-252-167.2	0.05	0.03	0.03

Appendix E
Normative APS Mineralogy

Sample No.	APS Norm (%)	Florencite Norm (%)	Svanbergite-Goyazite Norm (%)
MAC-252-199.86	0.08	0.04	0.04
MAC-252-249.43	0.08	0.04	0.04
MAC-252-261.91	0.07	0.04	0.04
MAC-252-271.2	0.18	0.06	0.12
MAC-252-286.2	0.15	0.05	0.09
MAC-252-305.3	0.08	0.04	0.04
MAC-252-319.44	0.26	0.06	0.20
MAC-252-331.7	0.22	0.05	0.17
MAC-252-342.5	0.10	0.04	0.06
MAC-255-6.13	0.05	0.03	0.02
MAC-255-29.21	0.05	0.03	0.02
MAC-255-51.63	0.07	0.03	0.03
MAC-255-95	0.05	0.03	0.02
MAC-255-132.3			
MAC-255-149	0.05	0.03	0.02
MAC-255-194.47	0.07	0.03	0.04
MAC-255-209.83	0.06	0.03	0.03
MAC-255-217.68	0.10	0.05	0.05
MAC-255-259.93	0.12	0.04	0.08
MAC-255-288.82	0.17	0.04	0.13
MAC-255-293.4	0.30	0.05	0.25
MAC-255-332.33	0.23	0.04	0.19
MAC-255-338	0.14	0.05	0.09
MAC-255-362.46	0.09	0.03	0.06
MAC-255-378.33	0.07	0.04	0.03
MAC-255-397.78	0.06	0.04	0.03
MAC-255-412.58	0.08	0.04	0.04
MAC-255-426.3	0.09	0.04	0.04
MAC-255-429.5	0.08	0.04	0.04
MAC-255-451.78	0.10	0.04	0.05
MAC-255-462.07	0.11	0.04	0.07
MAC-255-469.36	0.04	0.01	0.02
MAC-255-479.17	0.04	0.02	0.02
MAC-255-483.68	0.04	0.02	0.02
MAC-255-501.32	0.08	0.05	0.03
MAC-255-503.26	0.05	0.03	0.02
MAC-255-559	0.09	0.07	0.03
MAC-255-564.36	0.25	0.15	0.11
MC-413-71.64	0.08	0.02	0.05
MC-413-130	0.05	0.03	0.02
MC-413-183.26	0.08	0.04	0.04

Appendix E

Normative APS Mineralogy

Sample No.	APS Norm (%)	Florencite Norm (%)	Svanbergite-Goyazite Norm (%)
MC-413-224	0.04	0.02	0.02
MC-413-258.26	0.09	0.04	0.05
MC-413-282.17	0.09	0.03	0.05
MC-413-299	0.18	0.05	0.13
MC-413-303.5	0.27	0.05	0.22
MC-413-317.96	0.17	0.04	0.12
MC-413-354.67	0.19	0.04	0.15
MC-413-388.82	1.73	0.36	1.37
MC-413-404	0.12	0.06	0.06
MC-413-430.57	0.11	0.06	0.06
MC-413-456.68	0.07	0.03	0.04
MC-413-482.25	0.15	0.07	0.08
MC-413-501.66	0.05	0.02	0.03
MC-413-527.67	0.04	0.02	0.02
MC-413-547.3	0.06	0.03	0.03
MC-413-559.73	0.08	0.06	0.01
MC-413-566.28	0.17	0.10	0.06
MC-413-603.83	0.38	0.22	0.16
MC-413-614.83	0.34	0.15	0.19
MC-413-623.78	0.05	0.03	0.03
MC-413-638.86	0.12	0.08	0.04
MC-413-649	0.25	0.18	0.07
MC-415-76.73	0.04	0.02	0.02
MC-415-127.56	0.05	0.03	0.02
MC-415-173.74	0.06	0.03	0.03
MC-415-197	0.05	0.03	0.02
MC-415-222.34	0.04	0.02	0.02
MC-415-232.5	0.09	0.04	0.05
MC-415-295.67	0.09	0.03	0.06
MC-415-350.35	0.38	0.08	0.30
MC-415-389	0.20	0.09	0.12
MC-415-416.08	0.09	0.04	0.05
MC-415-432.38	0.09	0.05	0.05
MC-415-455.72	0.08	0.04	0.04
MC-415-477	0.09	0.05	0.04
MC-415-490.78	0.03	0.02	0.01
MC-415-497.66	0.06	0.03	0.03
MC-415-503.32	0.04	0.02	0.02
MC-415-520.15	0.07	0.04	0.04
MC-415-537	0.27	0.11	0.15
MC-415-539.69	0.64	0.42	0.21

Appendix E

Normative APS Mineralogy

Sample No.	APS Norm (%)	Florencite Norm (%)	Svanbergite-Goyazite Norm (%)
MC-434-11.1	0.05	0.03	0.02
MC-434-31.63	0.05	0.03	0.03
MC-434-54.07	0.04	0.02	0.02
MC-434-93.9	0.04	0.02	0.02
MC-434-119.66	0.09	0.04	0.05
MC-434-168.25	0.04	0.02	0.02
MC-434-183.4	0.06	0.03	0.03
MC-434-217.84	0.07	0.03	0.04
MC-434-253.64	0.17	0.04	0.13
MC-434-256.65	0.11	0.03	0.08
MC-434-282.2	0.20	0.04	0.16
MC-434-328.83	0.25	0.04	0.20
MC-434-338.05	0.09	0.03	0.06
MC-434-348.28	0.11	0.05	0.07
MC-434-370.63	0.08	0.04	0.04
MC-434-397.53	0.11	0.06	0.05
MC-434-421.67	0.07	0.03	0.04

Note: SWIR Norm derived by normalizing the total normative non-quartz protion to the relative abundances of alteration minerals obtained by SWIR analysis.

Appendix F

EPMA APS Mineral Summary Data

Appendix F

EPMA APS Mineral Summary Data

Mineral	APS Minerals		
	Avg. (n=15)	±1σ	LOD
Oxide (wt. %)			
SrO	9.70	2.43	0.26
CaO	2.27	0.44	0.05
BaO	0.65	0.50	0.14
La2O3	2.80	1.56	0.19
Ce2O3	5.11	1.72	0.17
Pr2O3	0.41	0.19	0.41
Nd2O3	1.61	0.62	0.38
ThO2	0.63	0.40	0.09
Al2O3	29.61	1.16	0.06
Fe2O3	1.48	0.80	0.10
P2O5	22.49	0.74	0.18
SO3	5.03	1.56	0.13
As2O5	0.21	0.12	0.10
F	0.80	0.20	0.15
O = F	-0.34	0.09	-
H2O*	13.00	0.00	-
Total	95.46	1.70	-
Atomic proportions on the basis of 6 cations			
A-site			
Sr	0.47	0.10	-
Ca	0.21	0.04	-
Ba	0.02	0.02	-
La	0.09	0.05	-
Ce	0.16	0.06	-
Pr	0.02	0.00	-
Nd	0.05	0.02	-
Th	0.01	0.01	-
Sum	1.03	0.04	-
ΣLREEs	0.31	0.12	-
B-site			
Al	2.95	0.04	-
Fe3+	0.10	0.05	-
Sum	3.04	0.03	-
X-site			
P	1.61	0.06	-
S	0.32	0.09	-
As	0.01	0.00	-
Sum	1.94	0.06	-
Anions			
OH	6	-	-

Appendix G

EPMA APS Mineral Chemistry Data

Appendix G

EPMA APS Mineral Data

Sample No.	Mineral Group	Mineral	SO3 (wt.%)	P2O5 (wt.%)	As2O5 (wt.%)	ThO2 (wt.%)
MAC250-335.10 APS 01	APS	Svanbergite-Goyazite	7.82	22.39	0.12	0.17
MAC250-335.10 APS 02	APS	Svanbergite-Goyazite	7.41	22.24	0.18	0.20
MAC250-335.10 APS 03	APS	Svanbergite-Goyazite	6.99	22.24	0.04	0.31
MAC250-335.10 APS 04	APS	Svanbergite-Goyazite	8.02	22.75	0.12	0.13
MAC250-335.10 APS 05	APS	Svanbergite-Goyazite	8.01	22.51	0.13	0.22
MAC250-335.10 APS 06	APS	Svanbergite-Goyazite	8.45	21.01	0.06	0.06
MAC250-335.10 APS 07	APS	Svanbergite-Goyazite	8.16	21.86	0.15	0.14
MAC250-335.10 APS 08	APS	Svanbergite-Goyazite	8.12	20.98	0.08	0.08
MAC250-335.10 APS 09	APS	Svanbergite-Goyazite	8.26	21.53	0.10	0.05
MAC250-335.10 APS 10	APS	Svanbergite-Goyazite	8.67	21.66	0.14	0.10
MAC250-335.10 APS 11	APS	Svanbergite-Goyazite	8.84	21.28	0.05	0.05
MAC246-333.8 APS 01	APS	Svanbergite-Goyazite	3.58	20.21	0.27	2.98
MAC246-333.8 APS 02	APS	Svanbergite-Goyazite	2.81	19.47	0.13	4.47
MAC246-333.8 APS 03	APS	Svanbergite-Goyazite	4.10	20.93	0.18	2.35
MAC246-333.8 APS 04	APS	Svanbergite-Goyazite	3.73	21.32	0.17	2.26
MAC246-333.8 APS 05	APS	Svanbergite-Goyazite	4.23	21.14	0.26	1.22
MAC246-333.8 APS 06	APS	Svanbergite-Goyazite	4.90	22.80	0.20	1.25
MAC246-333.8 APS 07	APS	Svanbergite-Goyazite	6.06	23.23	0.11	0.25
MAC246-333.8 APS 08	APS	Svanbergite-Goyazite	7.79	22.30	0.02	0.21
MAC246-333.8 APS 09	APS	Svanbergite-Goyazite	6.30	22.49	0.13	0.28
MAC246-333.8 APS 10	APS	Svanbergite-Goyazite	6.13	23.17	0.15	0.32
MAC246-333.8 APS 11	APS	Svanbergite-Goyazite	7.83	23.73	0.02	0.17
MAC246-333.8 APS 12	APS	Svanbergite-Goyazite	6.07	23.24	0.15	0.34
MAC246-333.8 APS 13	APS	Svanbergite-Goyazite	6.99	20.19	0.02	0.13
MAC246-508.8 APS 01	APS	Florencite	4.18	23.30	0.24	0.44
MAC255-564.36 APS 01	APS	Florencite	2.72	22.28	0.04	1.71
MAC255-564.36 APS 02	APS	Svanbergite-Goyazite	2.76	22.22	0.12	1.55
MAC255-564.36 APS 03	APS	Florencite	3.05	22.73	0.20	1.04
MAC255-564.36 APS 04	APS	Florencite	3.18	22.70	0.19	1.02
MAC253-382 APS 01	APS	Svanbergite-Goyazite	7.32	22.26	0.16	0.29
MAC253-382 APS 02	APS	Svanbergite-Goyazite	8.27	22.10	0.11	0.26
MAC253-382 APS 03	APS	Svanbergite-Goyazite	7.65	22.51	0.11	0.33
MAC253-382 APS 04	APS	Svanbergite-Goyazite	6.35	22.38	0.11	0.78
MAC253-382 APS 05	APS	Svanbergite-Goyazite	5.50	21.07	0.27	1.02
MAC253-382 APS 06	APS	Svanbergite-Goyazite	5.15	22.49	0.16	0.95
MAC253-382 APS 07	APS	Svanbergite-Goyazite	5.57	21.97	0.38	0.30
MAC253-382 APS 08	APS	Svanbergite-Goyazite	5.99	23.00	0.30	0.21
MAC253-382 APS 09	APS	Svanbergite-Goyazite	7.63	22.16	0.08	0.38
MAC253-382 APS 10	APS	Svanbergite-Goyazite	6.46	22.02	0.34	0.52
MAC253-382 APS 11	APS	Svanbergite-Goyazite	6.09	22.29	0.35	0.60
MAC253-382 APS 12	APS	Svanbergite-Goyazite	7.66	22.24	0.16	0.33
MAC253-382 APS 13	APS	Svanbergite-Goyazite	5.48	24.57	0.42	0.20
MAC253-382 APS 14	APS	Svanbergite-Goyazite	6.63	23.71	0.24	0.09
MAC253-382 APS 15	APS	Svanbergite-Goyazite	5.31	24.94	0.44	0.18
MAC253-382 APS 16	APS	Svanbergite-Goyazite	6.97	24.17	0.28	0.12
MAC252-342.5 APS 01	APS	Svanbergite-Goyazite	6.84	23.42	0.32	0.24
MAC252-342.5 APS 02	APS	Svanbergite-Goyazite	6.43	23.72	0.32	0.22
MAC255-559 APS 01	APS	Florencite	2.75	19.70	0.44	2.85
MAC255-559 APS 02	APS	Florencite	3.54	20.78	0.70	1.06
MAC255-559 APS 03	APS	Florencite	3.31	20.42	0.46	1.63
MAC255-559 APS 04	APS	Florencite	3.08	19.53	0.45	2.02
MAC255-559 APS 05	APS	Florencite	3.16	21.14	0.40	2.43
MAC255-559 APS 06	APS	Florencite	3.48	21.84	0.57	0.48
MAC255-559 APS 07	APS	Florencite	3.53	21.42	0.39	0.38
MAC255-559 APS 08	APS	Florencite	3.20	21.56	0.15	1.09
MAC255-559 APS 09	APS	Florencite	3.50	21.57	0.29	0.51
MAC255-559 APS 10	APS	Florencite	3.32	21.96	0.37	0.45

Appendix G

EPMA APS Mineral Data

Sample No.	Mineral Group	Mineral	SO3 (wt.%)	P2O5 (wt.%)	As2O5 (wt.%)	ThO2 (wt.%)
MAC255-559 APS 11	APS	Florencite	3.29	21.55	0.44	0.50
MC336-455.5 APS 01	APS	Svanbergite-Goyazite	3.36	23.45	0.24	0.74
MC336-455.5 APS 02	APS	Svanbergite-Goyazite	3.73	22.50	0.26	0.85
MC336-455.5 APS 03	APS	Svanbergite-Goyazite	3.33	22.92	0.20	0.68
MC336-455.5 APS 04	APS	Svanbergite-Goyazite	3.79	21.36	0.30	0.50
MC336-455.5 APS 05	APS	Svanbergite-Goyazite	2.99	22.51	0.27	0.42
MC336-455.5 APS 06	APS	Svanbergite-Goyazite	3.08	20.47	0.19	0.42
MC336-455.5 APS 07	APS	Svanbergite-Goyazite	4.93	22.83	0.19	0.95
MC336-455.5 APS 08	APS	Svanbergite-Goyazite	5.15	21.89	0.10	0.97
MC434-253.64 APS 01	APS	Svanbergite-Goyazite	6.36	23.16	0.32	0.27
MC434-253.64 APS 02	APS	Svanbergite-Goyazite	6.64	22.56	0.37	0.27
MC434-253.64 APS 03	APS	Svanbergite-Goyazite	6.93	21.14	0.13	0.33
MC434-253.64 APS 04	APS	Svanbergite-Goyazite	7.11	21.90	0.07	0.28
MC434-253.64 APS 05	APS	Svanbergite-Goyazite	7.70	21.27	0.14	0.29
MC434-253.64 APS 06	APS	Svanbergite-Goyazite	7.91	21.43	0.14	0.38
MC434-253.64 APS 07	APS	Svanbergite-Goyazite	9.23	22.03	0.09	0.15
MC434-253.64 APS 08	APS	Svanbergite-Goyazite	8.23	22.15	0.15	0.16
MC434-253.64 APS 09	APS	Svanbergite-Goyazite	6.28	22.58	0.22	0.23
MC434-253.64 APS 10	APS	Svanbergite-Goyazite	5.71	22.48	0.31	0.24
MAC256-543 APS 01	APS	Svanbergite-Goyazite	5.43	21.90	0.06	0.26
MC344-492.93 APS 01	APS	Svanbergite-Goyazite	3.17	23.51	0.00	0.81
MC344-492.93 APS 02	APS	Svanbergite-Goyazite	2.99	23.66	0.00	0.75
MC344-492.93 APS 03	APS	Svanbergite-Goyazite	2.80	23.29	0.00	1.19
MC344-492.93 APS 04	APS	Svanbergite-Goyazite	3.19	21.89	0.00	1.23
MC434-054.07 APS 01	APS	Svanbergite-Goyazite	5.02	22.46	0.25	0.58
MC434-054.07 APS 02	APS	Svanbergite-Goyazite	4.97	21.15	0.14	0.53
MC434-054.07 APS 03	APS	Svanbergite-Goyazite	5.69	21.53	0.26	0.81
MC253-325 APS 01	APS	Svanbergite-Goyazite	6.90	21.97	0.35	0.29
MC253-325 APS 02	APS	Svanbergite-Goyazite	5.67	24.52	0.14	0.24
MC253-325 APS 03	APS	Svanbergite-Goyazite	5.23	23.10	0.19	0.20
MC253-325 APS 04	APS	Svanbergite-Goyazite	5.79	22.38	0.26	0.49
MC253-325 APS 05	APS	Svanbergite-Goyazite	6.42	23.24	0.15	0.20
MC253-325 APS 06	APS	Svanbergite-Goyazite	3.93	24.38	0.32	0.27
MC253-325 APS 07	APS	Svanbergite-Goyazite	5.53	22.45	0.39	0.37
MC253-325 APS 08	APS	Svanbergite-Goyazite	5.64	23.00	0.32	0.34
MC253-325 APS 09	APS	Svanbergite-Goyazite	4.07	24.08	0.43	0.30
MC253-325 APS 10	APS	Svanbergite-Goyazite	4.22	24.18	0.47	0.28
MC208-553.3 APS 01	APS	Svanbergite-Goyazite	5.53	24.36	0.15	0.18
MC208-553.3 APS 02	APS	Svanbergite-Goyazite	5.37	24.36	0.17	0.22
MC208-553.3 APS 03	APS	Svanbergite-Goyazite	5.60	23.37	0.20	0.25
MC208-553.3 APS 04	APS	Florencite	3.03	22.64	0.04	0.95
MC208-553.3 APS 05	APS	Florencite	3.53	22.33	0.12	1.22
MC208-553.3 APS 06	APS	Florencite	5.21	23.50	0.14	0.22
MC208-553.3 APS 07	APS	Florencite	4.65	22.89	0.14	0.12
MC208-553.3 APS 08	APS	Florencite	5.01	23.52	0.08	0.18
MC208-553.3 APS 09	APS	Florencite	2.89	23.05	0.06	1.30
MC208-553.3 APS 10	APS	Florencite	3.09	22.28	0.12	1.32
MC208-553.3 APS 11	APS	Florencite	3.24	21.87	0.10	1.28
MC253-552 APS 01	APS	Florencite	4.66	23.55	0.37	0.61
MC253-552 APS 02	APS	Svanbergite-Goyazite	4.31	22.92	0.29	0.65
MC253-552 APS 03	APS	Florencite	4.62	22.29	0.36	0.61
MC253-552 APS 04	APS	Florencite	3.91	23.22	0.45	0.37
MC253-552 APS 05	APS	Florencite	3.86	24.21	0.42	0.39
MC253-552 APS 06	APS	Florencite	4.04	23.19	0.31	0.79
MC253-552 APS 07	APS	Svanbergite-Goyazite	3.98	22.50	0.31	0.71
MC253-552 APS 08	APS	Florencite	3.81	22.76	0.45	0.30
MC253-552 APS 09	APS	Florencite	4.08	22.37	0.37	0.73
MC253-552 APS 10	APS	Florencite	4.25	23.08	0.34	0.72

Appendix G

EPMA APS Mineral Data

Sample No.	Mineral Group	Mineral	Al2O3 (wt.%)	Fe2O3 (wt.%)	La2O3 (wt.%)	Ce2O3 (wt.%)
MAC250-335.10 APS 01	APS	Svanbergite-Goyazite	31.06	0.79	1.17	2.65
MAC250-335.10 APS 02	APS	Svanbergite-Goyazite	30.86	1.00	1.28	3.14
MAC250-335.10 APS 03	APS	Svanbergite-Goyazite	31.06	1.08	1.49	2.96
MAC250-335.10 APS 04	APS	Svanbergite-Goyazite	31.90	0.52	0.80	2.35
MAC250-335.10 APS 05	APS	Svanbergite-Goyazite	31.76	0.67	1.12	2.25
MAC250-335.10 APS 06	APS	Svanbergite-Goyazite	31.59	0.23	0.65	1.67
MAC250-335.10 APS 07	APS	Svanbergite-Goyazite	31.42	0.59	1.05	2.27
MAC250-335.10 APS 08	APS	Svanbergite-Goyazite	33.29	0.27	0.92	1.91
MAC250-335.10 APS 09	APS	Svanbergite-Goyazite	30.95	0.14	0.87	1.79
MAC250-335.10 APS 10	APS	Svanbergite-Goyazite	32.55	0.40	0.92	2.20
MAC250-335.10 APS 11	APS	Svanbergite-Goyazite	31.47	0.11	0.64	1.73
MAC246-333.8 APS 01	APS	Svanbergite-Goyazite	26.32	7.03	2.15	3.51
MAC246-333.8 APS 02	APS	Svanbergite-Goyazite	24.79	8.42	2.09	3.86
MAC246-333.8 APS 03	APS	Svanbergite-Goyazite	27.39	5.89	1.87	3.65
MAC246-333.8 APS 04	APS	Svanbergite-Goyazite	28.18	4.85	2.31	3.49
MAC246-333.8 APS 05	APS	Svanbergite-Goyazite	27.97	3.06	2.28	4.35
MAC246-333.8 APS 06	APS	Svanbergite-Goyazite	29.13	2.01	2.00	4.08
MAC246-333.8 APS 07	APS	Svanbergite-Goyazite	30.66	1.23	1.79	3.63
MAC246-333.8 APS 08	APS	Svanbergite-Goyazite	31.87	0.54	0.63	1.05
MAC246-333.8 APS 09	APS	Svanbergite-Goyazite	30.37	0.94	1.43	3.22
MAC246-333.8 APS 10	APS	Svanbergite-Goyazite	30.04	1.44	1.94	3.94
MAC246-333.8 APS 11	APS	Svanbergite-Goyazite	33.31	0.57	0.75	1.50
MAC246-333.8 APS 12	APS	Svanbergite-Goyazite	30.39	1.61	1.80	3.51
MAC246-333.8 APS 13	APS	Svanbergite-Goyazite	31.61	0.48	0.40	0.98
MAC246-508.8 APS 01	APS	Florencite	29.25	0.97	3.75	7.68
MAC255-564.36 APS 01	APS	Florencite	28.90	2.43	4.34	6.82
MAC255-564.36 APS 02	APS	Svanbergite-Goyazite	29.07	2.61	4.45	6.16
MAC255-564.36 APS 03	APS	Florencite	28.91	1.47	4.27	6.72
MAC255-564.36 APS 04	APS	Florencite	28.45	1.53	3.96	7.03
MAC253-382 APS 01	APS	Svanbergite-Goyazite	30.89	1.27	1.19	2.77
MAC253-382 APS 02	APS	Svanbergite-Goyazite	31.97	0.88	0.60	1.98
MAC253-382 APS 03	APS	Svanbergite-Goyazite	31.72	1.19	1.16	2.21
MAC253-382 APS 04	APS	Svanbergite-Goyazite	29.90	1.62	1.13	2.73
MAC253-382 APS 05	APS	Svanbergite-Goyazite	30.01	2.06	1.52	3.81
MAC253-382 APS 06	APS	Svanbergite-Goyazite	30.39	1.53	1.20	3.07
MAC253-382 APS 07	APS	Svanbergite-Goyazite	30.91	1.01	1.86	4.11
MAC253-382 APS 08	APS	Svanbergite-Goyazite	31.08	0.83	1.68	3.83
MAC253-382 APS 09	APS	Svanbergite-Goyazite	31.91	1.19	0.67	1.66
MAC253-382 APS 10	APS	Svanbergite-Goyazite	31.08	1.10	1.46	3.33
MAC253-382 APS 11	APS	Svanbergite-Goyazite	30.84	2.27	1.83	3.87
MAC253-382 APS 12	APS	Svanbergite-Goyazite	30.05	2.28	0.86	2.14
MAC253-382 APS 13	APS	Svanbergite-Goyazite	31.86	0.47	2.26	5.42
MAC253-382 APS 14	APS	Svanbergite-Goyazite	32.03	0.32	1.54	3.62
MAC253-382 APS 15	APS	Svanbergite-Goyazite	31.71	0.51	2.27	5.67
MAC253-382 APS 16	APS	Svanbergite-Goyazite	32.39	0.30	1.47	3.23
MAC252-342.5 APS 01	APS	Svanbergite-Goyazite	31.12	0.47	2.22	4.58
MAC252-342.5 APS 02	APS	Svanbergite-Goyazite	30.89	0.49	1.90	4.78
MAC255-559 APS 01	APS	Florencite	26.26	2.71	7.16	5.87
MAC255-559 APS 02	APS	Florencite	28.26	2.76	7.59	6.16
MAC255-559 APS 03	APS	Florencite	27.24	2.30	7.00	6.04
MAC255-559 APS 04	APS	Florencite	26.78	4.95	6.48	5.97
MAC255-559 APS 05	APS	Florencite	27.61	2.33	6.80	6.48
MAC255-559 APS 06	APS	Florencite	28.29	2.33	6.83	7.07
MAC255-559 APS 07	APS	Florencite	28.89	3.06	6.82	7.15
MAC255-559 APS 08	APS	Florencite	28.65	2.69	7.38	6.99
MAC255-559 APS 09	APS	Florencite	28.62	2.32	7.44	7.11
MAC255-559 APS 10	APS	Florencite	28.76	2.46	7.37	6.56

Appendix G

EPMA APS Mineral Data

Sample No.	Mineral Group	Mineral	Al2O3 (wt.%)	Fe2O3 (wt.%)	La2O3 (wt.%)	Ce2O3 (wt.%)
MAC255-559 APS 11	APS	Florencite	28.51	2.14	6.99	6.84
MC336-455.5 APS 01	APS	Svanbergite-Goyazite	29.68	1.54	3.14	5.42
MC336-455.5 APS 02	APS	Svanbergite-Goyazite	29.51	2.04	2.64	5.29
MC336-455.5 APS 03	APS	Svanbergite-Goyazite	29.49	1.62	3.03	5.25
MC336-455.5 APS 04	APS	Svanbergite-Goyazite	27.37	1.34	2.38	5.54
MC336-455.5 APS 05	APS	Svanbergite-Goyazite	27.77	1.10	2.70	5.44
MC336-455.5 APS 06	APS	Svanbergite-Goyazite	24.64	1.22	2.36	5.02
MC336-455.5 APS 07	APS	Svanbergite-Goyazite	28.81	1.21	2.47	5.29
MC336-455.5 APS 08	APS	Svanbergite-Goyazite	28.99	1.21	2.47	4.80
MC434-253.64 APS 01	APS	Svanbergite-Goyazite	30.90	0.94	1.39	3.90
MC434-253.64 APS 02	APS	Svanbergite-Goyazite	31.20	1.02	1.62	3.96
MC434-253.64 APS 03	APS	Svanbergite-Goyazite	30.42	1.25	1.06	2.79
MC434-253.64 APS 04	APS	Svanbergite-Goyazite	29.84	1.10	0.85	2.39
MC434-253.64 APS 05	APS	Svanbergite-Goyazite	31.12	0.79	0.77	2.16
MC434-253.64 APS 06	APS	Svanbergite-Goyazite	30.50	1.15	0.75	2.47
MC434-253.64 APS 07	APS	Svanbergite-Goyazite	31.45	0.29	0.80	1.95
MC434-253.64 APS 08	APS	Svanbergite-Goyazite	32.12	0.29	0.76	1.89
MC434-253.64 APS 09	APS	Svanbergite-Goyazite	31.16	0.89	1.39	3.60
MC434-253.64 APS 10	APS	Svanbergite-Goyazite	30.48	1.01	1.49	3.96
MAC256-543 APS 01	APS	Svanbergite-Goyazite	29.08	1.67	2.83	6.32
MC344-492.93 APS 01	APS	Svanbergite-Goyazite	28.44	2.58	3.02	5.69
MC344-492.93 APS 02	APS	Svanbergite-Goyazite	28.50	2.59	2.94	5.06
MC344-492.93 APS 03	APS	Svanbergite-Goyazite	27.40	2.87	2.98	5.34
MC344-492.93 APS 04	APS	Svanbergite-Goyazite	28.01	3.09	2.83	5.44
MC434-054.07 APS 01	APS	Svanbergite-Goyazite	29.43	0.84	3.02	5.45
MC434-054.07 APS 02	APS	Svanbergite-Goyazite	29.67	0.75	2.66	5.11
MC434-054.07 APS 03	APS	Svanbergite-Goyazite	29.12	1.03	2.85	4.83
MC253-325 APS 01	APS	Svanbergite-Goyazite	30.18	1.73	1.34	3.76
MC253-325 APS 02	APS	Svanbergite-Goyazite	31.84	1.07	0.95	2.15
MC253-325 APS 03	APS	Svanbergite-Goyazite	29.65	1.88	1.18	2.95
MC253-325 APS 04	APS	Svanbergite-Goyazite	30.07	1.37	1.95	3.95
MC253-325 APS 05	APS	Svanbergite-Goyazite	30.31	0.89	1.11	2.61
MC253-325 APS 06	APS	Svanbergite-Goyazite	29.85	1.43	1.24	3.41
MC253-325 APS 07	APS	Svanbergite-Goyazite	30.49	1.06	1.72	4.03
MC253-325 APS 08	APS	Svanbergite-Goyazite	31.34	0.97	1.74	3.86
MC253-325 APS 09	APS	Svanbergite-Goyazite	29.94	1.01	1.82	4.24
MC253-325 APS 10	APS	Svanbergite-Goyazite	29.79	0.98	1.76	4.28
MC208-553.3 APS 01	APS	Svanbergite-Goyazite	30.45	0.72	2.40	5.36
MC208-553.3 APS 02	APS	Svanbergite-Goyazite	30.66	0.98	2.67	5.64
MC208-553.3 APS 03	APS	Svanbergite-Goyazite	28.56	0.52	2.62	5.55
MC208-553.3 APS 04	APS	Florencite	27.35	1.96	3.81	7.86
MC208-553.3 APS 05	APS	Florencite	27.66	2.18	3.72	6.87
MC208-553.3 APS 06	APS	Florencite	30.03	0.88	3.66	7.65
MC208-553.3 APS 07	APS	Florencite	29.95	1.06	3.65	7.91
MC208-553.3 APS 08	APS	Florencite	30.00	0.93	3.90	7.53
MC208-553.3 APS 09	APS	Florencite	28.80	1.82	3.79	6.95
MC208-553.3 APS 10	APS	Florencite	27.49	2.88	3.45	6.31
MC208-553.3 APS 11	APS	Florencite	29.32	2.20	3.79	7.25
MC253-552 APS 01	APS	Florencite	30.05	0.93	3.70	7.11
MC253-552 APS 02	APS	Svanbergite-Goyazite	29.09	1.06	3.60	6.50
MC253-552 APS 03	APS	Florencite	29.30	1.12	3.42	6.98
MC253-552 APS 04	APS	Florencite	30.51	1.17	3.64	7.36
MC253-552 APS 05	APS	Florencite	30.22	0.99	3.71	6.94
MC253-552 APS 06	APS	Florencite	29.25	1.30	3.58	6.61
MC253-552 APS 07	APS	Svanbergite-Goyazite	29.08	1.17	3.27	6.20
MC253-552 APS 08	APS	Florencite	29.89	0.88	3.60	7.18
MC253-552 APS 09	APS	Florencite	29.47	1.29	3.67	7.26
MC253-552 APS 10	APS	Florencite	29.04	1.24	3.49	6.98

Appendix G

EPMA APS Mineral Data

Sample No.	Mineral Group	Mineral	Nd2O3 (wt.%)	Pr2O3 (wt.%)	CaO (wt.%)	SrO (wt.%)	BaO (wt.%)
MAC250-335.10 APS 01	APS	Svanbergite-Goyazite	0.71	0.52	1.98	13.98	0.00
MAC250-335.10 APS 02	APS	Svanbergite-Goyazite	0.98	0.23	2.18	13.38	0.00
MAC250-335.10 APS 03	APS	Svanbergite-Goyazite	1.26	0.52	2.18	13.28	0.00
MAC250-335.10 APS 04	APS	Svanbergite-Goyazite	0.93	0.19	2.00	14.62	0.00
MAC250-335.10 APS 05	APS	Svanbergite-Goyazite	0.85	0.25	1.92	14.29	0.00
MAC250-335.10 APS 06	APS	Svanbergite-Goyazite	0.58	0.23	2.05	14.96	0.00
MAC250-335.10 APS 07	APS	Svanbergite-Goyazite	0.93	0.29	1.98	14.06	0.00
MAC250-335.10 APS 08	APS	Svanbergite-Goyazite	0.52	0.31	2.05	12.72	0.00
MAC250-335.10 APS 09	APS	Svanbergite-Goyazite	0.77	0.00	2.00	14.38	0.00
MAC250-335.10 APS 10	APS	Svanbergite-Goyazite	0.78	0.35	2.00	14.73	0.00
MAC250-335.10 APS 11	APS	Svanbergite-Goyazite	0.55	0.06	2.06	14.92	0.00
MAC246-333.8 APS 01	APS	Svanbergite-Goyazite	1.15	0.00	3.02	8.66	0.00
MAC246-333.8 APS 02	APS	Svanbergite-Goyazite	1.16	0.30	3.05	8.02	0.00
MAC246-333.8 APS 03	APS	Svanbergite-Goyazite	1.10	0.42	3.06	10.03	0.00
MAC246-333.8 APS 04	APS	Svanbergite-Goyazite	1.36	0.55	3.13	9.77	0.00
MAC246-333.8 APS 05	APS	Svanbergite-Goyazite	1.55	0.10	2.88	9.57	0.00
MAC246-333.8 APS 06	APS	Svanbergite-Goyazite	1.29	0.29	2.50	9.83	0.00
MAC246-333.8 APS 07	APS	Svanbergite-Goyazite	1.23	0.42	2.71	12.12	0.00
MAC246-333.8 APS 08	APS	Svanbergite-Goyazite	0.27	0.29	2.41	14.88	0.00
MAC246-333.8 APS 09	APS	Svanbergite-Goyazite	1.18	0.35	2.40	11.83	0.00
MAC246-333.8 APS 10	APS	Svanbergite-Goyazite	1.12	0.62	2.19	11.65	0.00
MAC246-333.8 APS 11	APS	Svanbergite-Goyazite	0.67	0.10	2.59	13.59	0.00
MAC246-333.8 APS 12	APS	Svanbergite-Goyazite	1.15	0.08	2.28	11.29	0.00
MAC246-333.8 APS 13	APS	Svanbergite-Goyazite	0.42	0.04	2.40	14.21	0.00
MAC246-508.8 APS 01	APS	Florencite	2.80	0.51	1.90	7.48	0.00
MAC255-564.36 APS 01	APS	Florencite	1.76	0.85	2.78	7.77	0.31
MAC255-564.36 APS 02	APS	Svanbergite-Goyazite	1.34	0.30	2.71	8.28	0.38
MAC255-564.36 APS 03	APS	Florencite	1.95	0.72	2.72	7.71	0.16
MAC255-564.36 APS 04	APS	Florencite	2.00	0.74	2.86	7.39	0.31
MAC253-382 APS 01	APS	Svanbergite-Goyazite	0.75	0.08	2.23	13.17	0.31
MAC253-382 APS 02	APS	Svanbergite-Goyazite	0.45	0.14	2.27	15.48	0.13
MAC253-382 APS 03	APS	Svanbergite-Goyazite	0.65	0.04	2.25	14.78	0.37
MAC253-382 APS 04	APS	Svanbergite-Goyazite	0.85	0.04	2.75	12.13	0.58
MAC253-382 APS 05	APS	Svanbergite-Goyazite	0.83	0.17	2.71	11.55	0.84
MAC253-382 APS 06	APS	Svanbergite-Goyazite	1.16	0.31	2.52	11.77	0.69
MAC253-382 APS 07	APS	Svanbergite-Goyazite	1.29	0.37	2.20	11.06	0.74
MAC253-382 APS 08	APS	Svanbergite-Goyazite	1.33	0.25	2.08	11.77	0.76
MAC253-382 APS 09	APS	Svanbergite-Goyazite	0.57	0.37	2.52	14.24	0.50
MAC253-382 APS 10	APS	Svanbergite-Goyazite	0.65	0.17	2.52	12.36	0.53
MAC253-382 APS 11	APS	Svanbergite-Goyazite	1.36	0.38	2.51	11.39	0.47
MAC253-382 APS 12	APS	Svanbergite-Goyazite	0.48	0.00	2.37	14.76	0.27
MAC253-382 APS 13	APS	Svanbergite-Goyazite	2.26	0.69	1.75	10.32	0.75
MAC253-382 APS 14	APS	Svanbergite-Goyazite	1.29	0.42	1.81	13.09	0.43
MAC253-382 APS 15	APS	Svanbergite-Goyazite	2.24	0.52	1.75	10.44	0.57
MAC253-382 APS 16	APS	Svanbergite-Goyazite	1.36	0.10	1.82	13.64	0.53
MAC252-342.5 APS 01	APS	Svanbergite-Goyazite	1.70	0.38	1.54	12.58	0.63
MAC252-342.5 APS 02	APS	Svanbergite-Goyazite	1.73	0.61	1.60	12.51	0.56
MAC255-559 APS 01	APS	Florencite	1.25	0.51	2.34	6.85	0.21
MAC255-559 APS 02	APS	Florencite	1.51	0.81	2.03	7.55	0.11
MAC255-559 APS 03	APS	Florencite	1.22	0.17	2.34	7.38	0.13
MAC255-559 APS 04	APS	Florencite	1.50	0.78	2.53	7.00	0.13
MAC255-559 APS 05	APS	Florencite	1.53	0.70	2.68	7.13	0.25
MAC255-559 APS 06	APS	Florencite	1.63	0.70	2.18	7.04	0.24
MAC255-559 APS 07	APS	Florencite	1.24	0.59	2.23	7.53	0.13
MAC255-559 APS 08	APS	Florencite	1.13	0.53	2.55	7.53	0.11
MAC255-559 APS 09	APS	Florencite	1.21	0.46	2.26	7.24	0.21
MAC255-559 APS 10	APS	Florencite	1.05	0.74	2.50	7.13	0.08

Appendix G

EPMA APS Mineral Data

Sample No.	Mineral Group	Mineral	Nd2O3 (wt.%)	Pr2O3 (wt.%)	CaO (wt.%)	SrO (wt.%)	BaO (wt.%)
MAC255-559 APS 11	APS	Florencite	1.13	0.49	2.38	7.44	0.23
MC336-455.5 APS 01	APS	Svanbergite-Goyazite	1.40	0.52	3.15	8.16	1.53
MC336-455.5 APS 02	APS	Svanbergite-Goyazite	1.38	0.25	2.83	8.73	0.97
MC336-455.5 APS 03	APS	Svanbergite-Goyazite	1.32	0.33	3.09	8.14	1.10
MC336-455.5 APS 04	APS	Svanbergite-Goyazite	1.72	0.38	2.14	8.41	1.06
MC336-455.5 APS 05	APS	Svanbergite-Goyazite	1.56	0.36	1.80	7.51	1.05
MC336-455.5 APS 06	APS	Svanbergite-Goyazite	2.03	0.63	1.76	7.34	0.96
MC336-455.5 APS 07	APS	Svanbergite-Goyazite	1.58	0.40	2.57	9.45	0.91
MC336-455.5 APS 08	APS	Svanbergite-Goyazite	1.30	0.52	2.20	9.82	0.82
MC434-253.64 APS 01	APS	Svanbergite-Goyazite	1.18	0.19	1.98	12.18	0.66
MC434-253.64 APS 02	APS	Svanbergite-Goyazite	1.01	0.40	2.10	11.99	0.81
MC434-253.64 APS 03	APS	Svanbergite-Goyazite	0.70	0.15	2.20	13.20	0.59
MC434-253.64 APS 04	APS	Svanbergite-Goyazite	0.66	0.23	2.20	13.98	0.46
MC434-253.64 APS 05	APS	Svanbergite-Goyazite	0.78	0.17	2.02	14.22	0.42
MC434-253.64 APS 06	APS	Svanbergite-Goyazite	0.65	0.39	1.97	13.31	0.27
MC434-253.64 APS 07	APS	Svanbergite-Goyazite	0.60	0.08	1.84	14.65	0.38
MC434-253.64 APS 08	APS	Svanbergite-Goyazite	0.42	0.27	1.82	14.91	0.25
MC434-253.64 APS 09	APS	Svanbergite-Goyazite	1.11	0.29	2.14	11.75	0.58
MC434-253.64 APS 10	APS	Svanbergite-Goyazite	1.21	0.27	2.17	12.12	0.72
MAC256-543 APS 01	APS	Svanbergite-Goyazite	2.36	0.08	1.73	8.51	1.33
MC344-492.93 APS 01	APS	Svanbergite-Goyazite	1.73	0.67	2.77	7.23	0.98
MC344-492.93 APS 02	APS	Svanbergite-Goyazite	1.53	0.23	3.05	7.85	0.88
MC344-492.93 APS 03	APS	Svanbergite-Goyazite	1.68	0.63	3.15	7.23	1.43
MC344-492.93 APS 04	APS	Svanbergite-Goyazite	1.66	0.44	3.13	6.70	0.78
MC434-054.07 APS 01	APS	Svanbergite-Goyazite	1.25	0.02	2.12	9.42	1.64
MC434-054.07 APS 02	APS	Svanbergite-Goyazite	1.65	0.46	1.75	8.44	1.95
MC434-054.07 APS 03	APS	Svanbergite-Goyazite	1.45	0.17	2.17	9.68	1.30
MC253-325 APS 01	APS	Svanbergite-Goyazite	1.16	0.25	2.30	11.85	0.68
MC253-325 APS 02	APS	Svanbergite-Goyazite	0.49	0.02	3.61	11.08	1.34
MC253-325 APS 03	APS	Svanbergite-Goyazite	0.92	0.08	3.42	10.19	1.41
MC253-325 APS 04	APS	Svanbergite-Goyazite	1.26	0.38	2.62	10.68	0.66
MC253-325 APS 05	APS	Svanbergite-Goyazite	0.97	0.19	2.80	11.62	0.88
MC253-325 APS 06	APS	Svanbergite-Goyazite	1.10	0.15	3.69	8.87	1.24
MC253-325 APS 07	APS	Svanbergite-Goyazite	1.41	0.38	2.56	10.52	0.77
MC253-325 APS 08	APS	Svanbergite-Goyazite	1.37	0.23	2.60	10.79	0.63
MC253-325 APS 09	APS	Svanbergite-Goyazite	1.16	0.58	3.25	9.20	1.19
MC253-325 APS 10	APS	Svanbergite-Goyazite	1.41	0.46	3.49	9.04	1.11
MC208-553.3 APS 01	APS	Svanbergite-Goyazite	2.99	0.75	1.62	9.38	0.99
MC208-553.3 APS 02	APS	Svanbergite-Goyazite	3.35	0.73	1.57	8.60	1.16
MC208-553.3 APS 03	APS	Svanbergite-Goyazite	2.76	0.65	1.62	9.19	1.18
MC208-553.3 APS 04	APS	Florencite	2.71	0.32	2.65	6.00	1.00
MC208-553.3 APS 05	APS	Florencite	2.07	1.01	2.71	6.89	0.52
MC208-553.3 APS 06	APS	Florencite	2.93	0.95	1.62	8.05	0.23
MC208-553.3 APS 07	APS	Florencite	2.89	0.95	1.44	7.23	0.27
MC208-553.3 APS 08	APS	Florencite	2.84	1.14	1.46	7.60	0.35
MC208-553.3 APS 09	APS	Florencite	2.16	0.53	2.85	7.32	0.56
MC208-553.3 APS 10	APS	Florencite	1.72	0.51	2.95	7.54	0.83
MC208-553.3 APS 11	APS	Florencite	2.21	0.36	2.51	6.57	0.90
MC253-552 APS 01	APS	Florencite	2.63	0.86	2.08	8.07	0.86
MC253-552 APS 02	APS	Svanbergite-Goyazite	1.92	0.76	2.03	8.25	0.83
MC253-552 APS 03	APS	Florencite	2.05	0.46	2.08	8.07	0.99
MC253-552 APS 04	APS	Florencite	2.54	0.65	2.08	7.78	0.83
MC253-552 APS 05	APS	Florencite	2.23	0.48	1.99	7.57	1.08
MC253-552 APS 06	APS	Florencite	1.95	0.78	2.60	7.67	0.67
MC253-552 APS 07	APS	Svanbergite-Goyazite	1.87	0.42	2.57	7.52	0.91
MC253-552 APS 08	APS	Florencite	2.24	0.44	1.85	7.52	0.97
MC253-552 APS 09	APS	Florencite	2.09	0.93	2.12	7.72	0.93
MC253-552 APS 10	APS	Florencite	1.80	0.59	2.15	7.84	1.00

Appendix G

EPMA APS Mineral Data

Sample No.	Mineral Group	Mineral	F (wt.%)	O = F (wt.%)	H2O (assumed) (wt.%)	Total (wt.%)
MAC250-335.10 APS 01	APS	Svanbergite-Goyazite	0.48	-0.20	13.00	96.66
MAC250-335.10 APS 02	APS	Svanbergite-Goyazite	0.48	-0.20	13.00	96.37
MAC250-335.10 APS 03	APS	Svanbergite-Goyazite	0.68	-0.29	13.00	96.80
MAC250-335.10 APS 04	APS	Svanbergite-Goyazite	0.24	-0.10	13.00	97.46
MAC250-335.10 APS 05	APS	Svanbergite-Goyazite	0.45	-0.19	13.00	97.25
MAC250-335.10 APS 06	APS	Svanbergite-Goyazite	0.60	-0.25	13.00	94.88
MAC250-335.10 APS 07	APS	Svanbergite-Goyazite	0.42	-0.18	13.00	96.13
MAC250-335.10 APS 08	APS	Svanbergite-Goyazite	0.39	-0.16	13.00	94.48
MAC250-335.10 APS 09	APS	Svanbergite-Goyazite	0.60	-0.25	13.00	94.19
MAC250-335.10 APS 10	APS	Svanbergite-Goyazite	0.49	-0.21	13.00	97.78
MAC250-335.10 APS 11	APS	Svanbergite-Goyazite	0.53	-0.22	13.00	95.08
MAC246-333.8 APS 01	APS	Svanbergite-Goyazite	1.43	-0.60	13.00	92.70
MAC246-333.8 APS 02	APS	Svanbergite-Goyazite	1.21	-0.51	13.00	92.27
MAC246-333.8 APS 03	APS	Svanbergite-Goyazite	1.25	-0.53	13.00	94.69
MAC246-333.8 APS 04	APS	Svanbergite-Goyazite	1.15	-0.49	13.00	94.79
MAC246-333.8 APS 05	APS	Svanbergite-Goyazite	1.13	-0.48	13.00	92.25
MAC246-333.8 APS 06	APS	Svanbergite-Goyazite	1.15	-0.48	13.00	93.95
MAC246-333.8 APS 07	APS	Svanbergite-Goyazite	0.71	-0.30	13.00	96.86
MAC246-333.8 APS 08	APS	Svanbergite-Goyazite	0.78	-0.33	13.00	95.71
MAC246-333.8 APS 09	APS	Svanbergite-Goyazite	0.71	-0.30	13.00	94.32
MAC246-333.8 APS 10	APS	Svanbergite-Goyazite	0.77	-0.32	13.00	96.17
MAC246-333.8 APS 11	APS	Svanbergite-Goyazite	0.43	-0.18	13.00	98.09
MAC246-333.8 APS 12	APS	Svanbergite-Goyazite	0.71	-0.30	13.00	95.31
MAC246-333.8 APS 13	APS	Svanbergite-Goyazite	0.74	-0.31	13.00	91.30
MAC246-508.8 APS 01	APS	Florencite	0.65	-0.28	13.00	95.87
MAC255-564.36 APS 01	APS	Florencite	1.10	-0.46	13.00	96.36
MAC255-564.36 APS 02	APS	Svanbergite-Goyazite	0.99	-0.42	13.00	95.52
MAC255-564.36 APS 03	APS	Florencite	0.81	-0.34	13.00	95.13
MAC255-564.36 APS 04	APS	Florencite	0.84	-0.35	13.00	94.85
MAC253-382 APS 01	APS	Svanbergite-Goyazite	0.79	-0.33	13.00	96.15
MAC253-382 APS 02	APS	Svanbergite-Goyazite	0.63	-0.27	13.00	97.98
MAC253-382 APS 03	APS	Svanbergite-Goyazite	0.69	-0.29	13.00	98.34
MAC253-382 APS 04	APS	Svanbergite-Goyazite	0.78	-0.33	13.00	94.79
MAC253-382 APS 05	APS	Svanbergite-Goyazite	1.12	-0.47	13.00	95.00
MAC253-382 APS 06	APS	Svanbergite-Goyazite	1.27	-0.53	13.00	95.12
MAC253-382 APS 07	APS	Svanbergite-Goyazite	0.66	-0.28	13.00	95.14
MAC253-382 APS 08	APS	Svanbergite-Goyazite	0.67	-0.28	13.00	96.49
MAC253-382 APS 09	APS	Svanbergite-Goyazite	0.63	-0.26	13.00	97.25
MAC253-382 APS 10	APS	Svanbergite-Goyazite	0.78	-0.33	13.00	95.99
MAC253-382 APS 11	APS	Svanbergite-Goyazite	0.79	-0.33	13.00	97.71
MAC253-382 APS 12	APS	Svanbergite-Goyazite	0.79	-0.33	13.00	97.08
MAC253-382 APS 13	APS	Svanbergite-Goyazite	0.52	-0.22	13.00	99.76
MAC253-382 APS 14	APS	Svanbergite-Goyazite	0.61	-0.26	13.00	98.58
MAC253-382 APS 15	APS	Svanbergite-Goyazite	0.71	-0.30	13.00	99.96
MAC253-382 APS 16	APS	Svanbergite-Goyazite	0.78	-0.33	13.00	99.83
MAC252-342.5 APS 01	APS	Svanbergite-Goyazite	0.85	-0.36	13.00	99.54
MAC252-342.5 APS 02	APS	Svanbergite-Goyazite	0.72	-0.30	13.00	99.18
MAC255-559 APS 01	APS	Florencite	1.40	-0.59	13.00	92.71
MAC255-559 APS 02	APS	Florencite	1.17	-0.49	13.00	96.54
MAC255-559 APS 03	APS	Florencite	1.45	-0.61	13.00	93.49
MAC255-559 APS 04	APS	Florencite	1.48	-0.62	13.00	95.06
MAC255-559 APS 05	APS	Florencite	1.41	-0.59	13.00	96.43
MAC255-559 APS 06	APS	Florencite	1.00	-0.42	13.00	96.27
MAC255-559 APS 07	APS	Florencite	1.27	-0.53	13.00	97.10
MAC255-559 APS 08	APS	Florencite	1.00	-0.42	13.00	97.13
MAC255-559 APS 09	APS	Florencite	1.06	-0.44	13.00	96.35
MAC255-559 APS 10	APS	Florencite	1.00	-0.42	13.00	96.32

Appendix G

EPMA APS Mineral Data

Sample No.	Mineral Group	Mineral	F (wt.%)	O = F (wt.%)	H2O (assumed) (wt.%)	Total (wt.%)
MAC255-559 APS 11	APS	Florencite	1.00	-0.42	13.00	95.52
MC336-455.5 APS 01	APS	Svanbergite-Goyazite	1.36	-0.57	13.00	96.12
MC336-455.5 APS 02	APS	Svanbergite-Goyazite	1.18	-0.50	13.00	94.68
MC336-455.5 APS 03	APS	Svanbergite-Goyazite	0.90	-0.38	13.00	94.02
MC336-455.5 APS 04	APS	Svanbergite-Goyazite	0.98	-0.41	13.00	89.87
MC336-455.5 APS 05	APS	Svanbergite-Goyazite	0.60	-0.25	13.00	88.84
MC336-455.5 APS 06	APS	Svanbergite-Goyazite	0.79	-0.33	13.00	83.58
MC336-455.5 APS 07	APS	Svanbergite-Goyazite	1.09	-0.46	13.00	95.21
MC336-455.5 APS 08	APS	Svanbergite-Goyazite	0.84	-0.35	13.00	93.74
MC434-253.64 APS 01	APS	Svanbergite-Goyazite	0.74	-0.31	13.00	96.86
MC434-253.64 APS 02	APS	Svanbergite-Goyazite	0.87	-0.36	13.00	97.45
MC434-253.64 APS 03	APS	Svanbergite-Goyazite	1.08	-0.46	13.00	94.50
MC434-253.64 APS 04	APS	Svanbergite-Goyazite	0.82	-0.35	13.00	94.55
MC434-253.64 APS 05	APS	Svanbergite-Goyazite	0.86	-0.36	13.00	95.35
MC434-253.64 APS 06	APS	Svanbergite-Goyazite	0.72	-0.30	13.00	94.74
MC434-253.64 APS 07	APS	Svanbergite-Goyazite	0.77	-0.32	13.00	97.00
MC434-253.64 APS 08	APS	Svanbergite-Goyazite	0.77	-0.32	13.00	96.88
MC434-253.64 APS 09	APS	Svanbergite-Goyazite	1.01	-0.42	13.00	95.81
MC434-253.64 APS 10	APS	Svanbergite-Goyazite	1.03	-0.43	13.00	95.76
MAC256-543 APS 01	APS	Svanbergite-Goyazite	0.54	-0.23	13.00	94.86
MC344-492.93 APS 01	APS	Svanbergite-Goyazite	1.35	-0.57	13.00	94.37
MC344-492.93 APS 02	APS	Svanbergite-Goyazite	1.02	-0.43	13.00	93.63
MC344-492.93 APS 03	APS	Svanbergite-Goyazite	0.82	-0.34	13.00	93.46
MC344-492.93 APS 04	APS	Svanbergite-Goyazite	0.98	-0.41	13.00	91.97
MC434-054.07 APS 01	APS	Svanbergite-Goyazite	0.55	-0.23	13.00	94.82
MC434-054.07 APS 02	APS	Svanbergite-Goyazite	0.70	-0.29	13.00	92.64
MC434-054.07 APS 03	APS	Svanbergite-Goyazite	0.45	-0.19	13.00	94.16
MC253-325 APS 01	APS	Svanbergite-Goyazite	0.64	-0.27	13.00	96.15
MC253-325 APS 02	APS	Svanbergite-Goyazite	0.97	-0.41	13.00	96.69
MC253-325 APS 03	APS	Svanbergite-Goyazite	0.95	-0.40	13.00	93.95
MC253-325 APS 04	APS	Svanbergite-Goyazite	0.93	-0.39	13.00	95.40
MC253-325 APS 05	APS	Svanbergite-Goyazite	0.82	-0.35	13.00	94.87
MC253-325 APS 06	APS	Svanbergite-Goyazite	1.04	-0.44	13.00	93.49
MC253-325 APS 07	APS	Svanbergite-Goyazite	0.66	-0.28	13.00	95.07
MC253-325 APS 08	APS	Svanbergite-Goyazite	0.73	-0.31	13.00	96.27
MC253-325 APS 09	APS	Svanbergite-Goyazite	0.99	-0.42	13.00	94.84
MC253-325 APS 10	APS	Svanbergite-Goyazite	0.83	-0.35	13.00	94.95
MC208-553.3 APS 01	APS	Svanbergite-Goyazite	0.32	-0.14	13.00	98.06
MC208-553.3 APS 02	APS	Svanbergite-Goyazite	0.48	-0.20	13.00	98.75
MC208-553.3 APS 03	APS	Svanbergite-Goyazite	0.29	-0.12	13.00	95.23
MC208-553.3 APS 04	APS	Florencite	0.88	-0.37	13.00	93.83
MC208-553.3 APS 05	APS	Florencite	1.17	-0.49	13.00	94.49
MC208-553.3 APS 06	APS	Florencite	0.44	-0.18	13.00	98.32
MC208-553.3 APS 07	APS	Florencite	0.00	0.00	13.00	96.15
MC208-553.3 APS 08	APS	Florencite	0.22	-0.09	13.00	97.66
MC208-553.3 APS 09	APS	Florencite	1.20	-0.51	13.00	95.77
MC208-553.3 APS 10	APS	Florencite	0.81	-0.34	13.00	93.95
MC208-553.3 APS 11	APS	Florencite	1.07	-0.45	13.00	95.20
MC253-552 APS 01	APS	Florencite	0.84	-0.35	13.00	98.95
MC253-552 APS 02	APS	Svanbergite-Goyazite	0.84	-0.36	13.00	95.72
MC253-552 APS 03	APS	Florencite	0.78	-0.33	13.00	95.79
MC253-552 APS 04	APS	Florencite	0.68	-0.29	13.00	97.89
MC253-552 APS 05	APS	Florencite	0.75	-0.32	13.00	97.52
MC253-552 APS 06	APS	Florencite	0.85	-0.36	13.00	96.23
MC253-552 APS 07	APS	Svanbergite-Goyazite	0.51	-0.21	13.00	93.79
MC253-552 APS 08	APS	Florencite	0.75	-0.31	13.00	95.33
MC253-552 APS 09	APS	Florencite	0.86	-0.36	13.00	96.54
MC253-552 APS 10	APS	Florencite	0.87	-0.37	13.00	96.00

Appendix H

EPMA Silicate Clay Mineral Summary Data

Appendix H

EPMA Silicate Clay Mineral Summary Data

Mineral	C1 Chlorite		C2 Chlorite		I1 Illite		K1 Dickite		LOD
	Avg. (n=4)	±1σ	Avg. (n=5)	±1σ	Avg. (n=13)	±1σ	Avg. (n=6)	±1σ	Avg. (n=28)
Oxide (wt. %)									
SiO2	36.88	6.13	35.46	1.76	45.52	2.09	46.31	0.26	0.12
Al2O3	30.62	6.23	32.37	2.71	33.77	1.76	39.70	0.35	0.10
TiO2	0.04	1.10	0.01	0.01	0.17	0.21	<DL	-	0.03
V2O3	<DL	-	0.03	0.03	0.09	0.00	<DL	-	0.09
FeO	1.60	0.96	2.60	2.28	0.87	0.21	0.10	0.04	0.06
MnO	<DL	-	0.01	0.01	<DL	-	<DL	-	0.07
MgO	6.66	0.86	13.34	2.75	1.00	0.94	0.08	0.04	0.05
CaO	0.20	0.08	0.29	0.09	0.15	0.06	0.07	0.01	0.03
Na2O	0.13	0.04	0.07	0.04	0.19	0.07	0.09	0.01	0.07
K2O	3.07	1.92	0.90	0.97	9.31	0.97	0.20	0.32	0.03
F	0.41	0.08	0.56	0.30	0.48	0.14	0.28	0.02	0.26
Cl	0.29	0.34	0.12	0.09	0.08	0.08	0.04	0.01	0.01
Analytical total	79.74	-	85.78	-	91.34	4.20	86.68	-	-
H2O*	13.00	-	13.00	-	6.00	-	14.00	-	-
O = F	-0.07	0.09	-0.24	0.13	-0.08	0.14	0.03	0.01	-
O = Cl	-0.07	0.08	-0.03	0.02	-0.01	0.02	0.01	0.00	-
Total	92.48	13.10	98.52	4.40	97.07	4.03	100.38	0.50	-
Structural Formula									
Tetrahedral sites									
Si	3.65	0.08	3.29	0.13	3.14	0.06	1.99	0.01	-
AlIV	0.35	0.08	0.71	0.13	0.86	0.06	0.01	0.01	-
Sum	4.00	0.00	4.00	0.00	4	0	2.00	0.00	-
Octahedral sites									
AlVI	3.21	0.13	2.82	0.27	1.89	0.05	2.00	0.00	-
Fe	0.14	0.10	0.20	0.18	0.05	0.01	0.00	0.00	-
Mn	<DL	-	0.00	0.00	<DL	-	<DL	-	-
Mg	1.00	0.12	1.84	0.35	0.10	0.10	0.01	0.00	-
Ti	0.00	0.00	0.00	0.00	0.01	0.01	<DL	-	-
V	<DL	-	0.00	0.00			<DL	-	-
Sum	4.35	0.11	4.86	0.23	2.05	0.07	2.00	0.00	-
Vacancy	1.65	0.11	1.14	0.23	n.a.	-	n.a.	-	-
Interlayer sites									
Ca	0.02	0.01	0.03	0.01	0.01	0.00	0.00	0.00	-
Na	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.00	-
K	0.38	0.21	0.11	0.11	0.82	0.07	0.01	0.02	-
Sum	0.42	0.22	0.15	0.11	0.85	0.07	0.02	0.01	-
Vacancy	n.a.	-	n.a.	-	0.15	0.07	n.a.	-	-
Anions									
F-	0.12	0.02	0.16	0.09	0.10	0.03	0.04	0.00	-
Cl-	0.06	0.08	0.02	0.01	0.01	0.01	0.00	0.00	-
H+	8.82	1.79	8.05	0.42	2.77	0.13	4.01	0.02	-
O2-	14.00	0.00	14.00	0.00	11.00	0.00	7.00	0.00	-
Total measured cations	8.77	0.13	9.01	0.13	6.90	0.03	4.01	0.01	-

Appendix I

EPMA Tourmaline Mineral Summary Data

Appendix I

EPMA Tourmaline Mineral Summary Data

Mineral	T1 Tourmaline Interstitial (Alkali-deficient Dravite)			T2 Tourmaline Veins (Alkali-deficient Dravite)		
	Avg (n=3)	±1σ	LOD	Avg (n=1)	±1σ	LOD
Oxide (wt. %)						
SiO2	37.04	0.35	0.12	35.33	1.48	0.12
Al2O3	38.26	0.62	0.10	39.49	1.15	0.10
TiO2	0.03	0.77	0.03	<DL	<DL	0.03
V2O3	<DL	0.16	0.09	0.38	0.16	0.09
FeO	0.73	0.68	0.05	0.14	0.03	0.05
MnO	<DL	-	0.07	<DL	<DL	0.07
MgO	7.86	0.49	0.05	8.18	0.55	0.05
CaO	0.17	0.04	0.03	0.18	0.03	0.03
Na2O	0.74	0.13	0.07	0.50	0.03	0.07
K2O	0.30	0.37	0.03	0.03	<DL	0.03
F	0.25	0.00	0.23	<DL	<DL	0.24
Cl	0.05	0.05	0.01	0.02	0.01	0.01
Analytical total	85.23	0.14	-	84.25	-	-
B2O3*	10.90	-	-	3.80	0.00	-
H2O*	3.80	-	-	10.90	0.00	-
Total	99.85	0.30	-	98.87	1.25	-
O = F	0.05	0.02	-	0.03	0.03	-
O = Cl	0.01	0.01	-	0.00	0.00	-
Total	99.79	0.30	-	98.84	1.23	-
Atomic proportions on the basis of 31 anions (O, OH, Cl, F)						
Tetrahedral sites						
Si	5.85	0.07	-	5.63	-	-
AlIV	0.15	0.07	-	0.37	-	-
Sum	6.00	0.00	-	6.00	-	-
B	3.00		-	3.00	-	-
Octahedral Z sites						
AlVI	6.00	0.00	-	6.00	-	-
Fe2+	0.00	0.00	-	0.00	-	-
Mg	0.00	0.00	-	0.00	-	-
Sum	6.00	0.00	-	6.00	-	-
Octahedral Y sites						
AlVI	0.98	0.04	-	1.04	-	-
Ti	0.00	0.00	-	0.00	-	-
V	0.00	0.00	-	0.04	-	-
Mg	1.85	0.11	-	1.94	-	-
Mn	0.00	0.00	-	0.00	-	-
Fe2+	0.10	0.09	-	0.02	-	-
Ca	0.00	0.00	-	0.00	-	-
Sum	2.92	-	-	3.04	-	-
9-fold X site						
Ca	0.03	0.01	-	0.03	-	-
Mg	0.00	0.00	-	0.00	-	-
Na	0.23	0.04	-	0.16	-	-
K	0.04	0.07	-	0.00	-	-
Sum	0.30	-	-	0.18	-	-
Vacancy	0.70	-	-	0.82	-	-
Anions						
Cl	0.01	0.01	-	0.00	-	-
F	0.02	0.02	-	0.00	-	-
OH	3.97	0.03	-	4.00	-	-
Sum	4.00	0.00	-	4.00	-	-

Appendix J

EPMA Silicate Mineral Chemistry Data

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	SO3 (wt.%)	P2O5 (wt.%)	As2O5 (wt.%)	ThO2 (wt.%)
MAC-246-449.02	Tourmaline	drv	36.65	38.66	<DL	<DL
MAC-246-449.02	Tourmaline	drv	36.59	38.56	<DL	<DL
MAC-246-449.02	Tourmaline	drv	36.66	38.62	<DL	<DL
MAC-246-449.02	Tourmaline	drv	36.63	39.00	<DL	<DL
MAC-246-449.02	Tourmaline	drv	37.01	38.54	<DL	<DL
MAC-246-449.02	Tourmaline	drv	37.83	37.82	<DL	<DL
MAC-246-449.02	Tourmaline	drv	37.60	38.26	<DL	<DL
MAC-246-508.8	Tourmaline	drv	34.95	39.87	<DL	0.45
MAC-246-508.8	Tourmaline	drv	35.34	39.33	<DL	0.44
MAC-246-508.8	Tourmaline	drv	38.88	37.33	<DL	0.26
MAC-246-508.8	Tourmaline	drv	34.56	40.42	<DL	0.57
MAC-246-508.8	Tourmaline	drv	35.37	38.61	<DL	0.43
MAC-246-508.8	Tourmaline	drv	34.64	40.93	<DL	<DL
MAC-246-508.8	Tourmaline	drv	34.45	40.23	<DL	0.13
MAC-246-508.8	Tourmaline	drv	34.41	39.17	<DL	<DL
MAC-252-55.62	Tourmaline	drv	37.36	38.37	<DL	<DL
MAC-252-55.62	Tourmaline	drv	37.57	38.18	<DL	<DL
MAC-252-55.62	Tourmaline	drv	36.90	38.33	0.03	<DL
MAC-252-55.62	Tourmaline	drv	36.31	39.40	<DL	<DL
MAC-252-55.62	Tourmaline	drv	35.76	39.09	<DL	<DL
MAC-252-55.62	Tourmaline	drv	36.38	39.22	<DL	<DL
MAC-252-55.62	Tourmaline	drv	36.30	38.57	<DL	<DL
MAC-252-55.62	Tourmaline	drv	37.20	38.67	<DL	<DL
MAC-252-331.7	Tourmaline	drv	37.42	37.27	<DL	<DL
MAC-252-331.7	Tourmaline	drv	37.35	37.56	<DL	<DL
MAC-252-331.7	Tourmaline	drv	37.47	37.83	<DL	<DL
MAC-208-237	Chlorite		43.38	34.64	<DL	<DL
MAC-208-237	Chlorite		42.11	31.02	<DL	<DL
MAC-208-237	Chlorite		42.77	34.08	0.04	<DL
MAC-208-237	Chlorite		41.15	33.05	<DL	<DL
MAC-208-237	Chlorite		42.54	35.17	<DL	<DL
MAC-208-237	Chlorite		40.97	31.75	<DL	<DL
MAC-208-237	Chlorite		41.80	35.18	<DL	<DL
MAC-208-237	Chlorite		42.40	34.63	<DL	<DL
MAC-246-475.33	Chlorite		35.31	33.46	<DL	<DL
MAC-246-475.33	Chlorite		33.82	28.40	<DL	<DL
MAC-246-475.33	Chlorite		36.24	32.58	<DL	<DL
MAC-246-475.33	Chlorite		44.04	35.78	<DL	<DL
MAC-246-475.33	Chlorite		36.18	31.28	<DL	<DL
MAC-246-475.33	Chlorite		34.63	30.37	<DL	<DL
MAC-246-475.33	Chlorite		42.55	30.87	<DL	<DL
MAC-246-475.33	Chlorite		34.35	30.73	<DL	<DL
MAC-246-475.33	Chlorite		30.71	28.30	<DL	<DL
MAC-252-271.2	Chlorite		37.03	33.97	<DL	<DL
MAC-252-271.2	Chlorite		38.61	34.93	<DL	<DL
MAC-252-271.2	Chlorite		41.44	31.83	<DL	<DL
MAC-252-271.2	Chlorite		37.69	32.22	<DL	<DL
MAC-252-271.2	Chlorite		37.11	33.83	<DL	<DL
MAC-252-271.2	Chlorite		41.42	32.57	<DL	<DL
MAC-252-271.2	Chlorite		40.74	36.01	<DL	<DL
MAC-252-271.2	Chlorite		36.94	34.29	<DL	<DL
MAC-252-271.2	Chlorite		39.56	33.69	<DL	<DL

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	SO3 (wt.%)	P2O5 (wt.%)	As2O5 (wt.%)	ThO2 (wt.%)
MAC-252-271.2	Chlorite		41.83	34.44	<DL	<DL
MAC-252-271.2	Chlorite		39.42	32.54	<DL	<DL
MAC-253-325	Chlorite		28.05	21.28	<DL	<DL
MAC-255-559	Chlorite		35.42	30.05	<DL	<DL
MAC-255-559	Chlorite		35.06	28.77	<DL	<DL
MAC-255-559	Chlorite		34.97	30.45	<DL	<DL
MAC-255-559	Chlorite		35.62	28.92	<DL	<DL
MAC-255-559	Chlorite		35.76	29.25	<DL	<DL
MAC-255-559	Chlorite		34.54	30.24	<DL	<DL
MAC-255-559	Chlorite		33.01	28.43	<DL	<DL
MAC-255-559	Chlorite		34.53	27.76	<DL	<DL
MAC-255-559	Chlorite		34.94	28.98	<DL	<DL
MAC-255-559	Chlorite		34.11	29.40	<DL	<DL
MAC-255-564.36	Chlorite		36.43	32.73	<DL	<DL
MAC-255-564.36	Chlorite		34.45	31.70	<DL	<DL
MAC-255-564.36	Chlorite		35.27	34.61	<DL	<DL
MAC-255-564.36	Chlorite		35.51	34.41	<DL	0.10
MAC-255-564.36	Chlorite		35.06	32.32	<DL	<DL
MAC-255-564.36	Chlorite		36.51	33.19	0.04	<DL
MAC-255-564.36	Chlorite		35.51	33.36	<DL	<DL
MAC-255-564.36	Chlorite		35.54	32.24	<DL	<DL
MAC-255-564.36	Chlorite		36.47	34.31	<DL	<DL
MAC-255-564.36	Chlorite		35.56	35.03	<DL	<DL
MC-413-183.26	Chlorite		41.97	36.70	<DL	<DL
MC-413-183.26	Chlorite		39.62	36.41	<DL	<DL
MC-413-183.26	Chlorite		33.76	30.10	<DL	<DL
MC-413-183.26	Chlorite		39.85	31.94	<DL	<DL
MC-413-183.26	Chlorite		42.21	36.96	<DL	<DL
MC-413-183.26	Chlorite		41.71	36.94	<DL	<DL
MC-413-183.26	Chlorite		35.72	33.48	<DL	<DL
MC-413-183.26	Chlorite		33.57	31.17	<DL	<DL
MC-413-183.26	Chlorite		37.84	34.24	<DL	<DL
MC-413-183.26	Chlorite		34.65	30.52	<DL	<DL
MC-413-603.83	Chlorite		37.53	35.72	<DL	<DL
MC-413-603.83	Chlorite		41.07	35.18	0.05	<DL
MC-413-603.83	Chlorite		41.04	35.52	0.04	<DL
MC-366-570	Chlorite		35.22	36.19	<DL	<DL
MC-366-570	Chlorite		35.01	36.20	<DL	<DL
MC-366-570	Chlorite		35.62	34.08	<DL	<DL
MC-366-570	Chlorite		35.45	35.95	<DL	<DL
MC-366-570	Chlorite		33.61	35.68	<DL	<DL
MC-366-570	Chlorite		35.87	35.13	<DL	<DL
MC-366-570	Chlorite		35.20	34.48	<DL	<DL
MC-366-570	Chlorite		36.46	34.68	<DL	<DL
MAC-208-237	Illite		43.54	30.37	0.06	0.09
MAC-208-290.5	Illite		44.14	33.49	<DL	<DL
MAC-208-290.5	Illite		46.47	33.25	<DL	<DL
MAC-208-290.5	Illite		46.40	34.32	<DL	<DL
MAC-208-290.5	Illite		45.05	32.89	<DL	<DL
MAC-208-290.5	Illite		47.41	33.81	<DL	<DL
MAC-208-290.5	Illite		49.57	30.48	<DL	<DL
MAC-208-290.5	Illite		45.87	33.62	<DL	<DL

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	SO3 (wt.%)	P2O5 (wt.%)	As2O5 (wt.%)	ThO2 (wt.%)
MAC-208-290.5	Illite		47.12	34.65	<DL	<DL
MAC-208-290.5	Illite		46.80	33.07	<DL	<DL
MAC-208-290.5	Illite		45.91	33.99	<DL	<DL
MAC-246-333.8	Illite		47.09	34.92	<DL	<DL
MAC-246-333.8	Illite		47.49	34.59	<DL	<DL
MAC-246-333.8	Illite		47.37	35.04	<DL	<DL
MAC-246-333.8	Illite		47.81	34.75	<DL	<DL
MAC-246-333.8	Illite		47.37	32.90	<DL	<DL
MAC-246-333.8	Illite		47.28	33.96	<DL	<DL
MAC-246-333.8	Illite		47.55	35.12	<DL	<DL
MAC-246-333.8	Illite		46.90	34.26	<DL	<DL
MAC-246-333.8	Illite		47.56	35.23	<DL	<DL
MAC-246-333.8	Illite		46.03	36.03	0.19	<DL
MAC-246-333.8	Illite		47.67	34.85	0.08	<DL
MAC-246-333.8	Illite		48.12	34.58	0.08	<DL
MAC-246-475.33	Illite		45.88	36.15	<DL	<DL
MAC-246-475.33	Illite		45.95	36.78	<DL	<DL
MAC-246-475.33	Illite		45.03	38.57	<DL	<DL
MAC-252-331.7	Illite		45.43	32.33	<DL	<DL
MAC-252-331.7	Illite		43.63	33.91	<DL	<DL
MAC-252-331.7	Illite		41.80	34.11	<DL	<DL
MAC-252-331.7	Illite		37.27	28.55	<DL	<DL
MAC-252-331.7	Illite		39.09	33.90	<DL	<DL
MAC-252-331.7	Illite		36.33	31.73	<DL	<DL
MAC-252-331.7	Illite		38.27	32.50	<DL	<DL
MAC-252-331.7	Illite		47.03	34.70	<DL	<DL
MAC-252-331.7	Illite		44.40	32.75	<DL	<DL
MAC-252-331.7	Illite		46.65	33.28	<DL	<DL
MAC-252-331.7	Illite		46.72	34.72	<DL	<DL
MAC-252-271.2	Illite		44.99	33.43	<DL	<DL
MAC-252-271.2	Illite		45.72	33.54	<DL	<DL
MAC-252-271.2	Illite		45.65	33.61	<DL	<DL
MAC-252-271.2	Illite		47.02	33.52	<DL	<DL
MAC-252-271.2	Illite		44.17	32.17	<DL	<DL
MAC-252-271.2	Illite		46.54	34.17	<DL	<DL
MAC-252-271.2	Illite		46.93	34.43	<DL	<DL
MAC-252-271.2	Illite		46.57	34.23	<DL	<DL
MAC-252-271.2	Illite		46.51	33.85	<DL	<DL
MAC-252-271.2	Illite		47.53	35.04	0.14	<DL
MAC-252-271.2	Illite		45.06	33.02	<DL	<DL
MAC-253-325	Illite		41.65	31.49	<DL	<DL
MAC-253-325	Illite		43.82	32.57	<DL	<DL
MAC-253-325	Illite		38.65	29.86	<DL	<DL
MAC-255-501.32	Illite		47.51	35.89	<DL	<DL
MAC-255-501.32	Illite		46.26	35.07	<DL	<DL
MAC-255-501.32	Illite		44.87	34.68	<DL	<DL
MAC-255-501.32	Illite		48.11	34.48	<DL	<DL
MAC-255-501.32	Illite		47.43	33.97	<DL	<DL
MAC-255-501.32	Illite		47.16	35.24	<DL	<DL
MAC-255-501.32	Illite		47.37	35.40	<DL	<DL
MAC-255-501.32	Illite		47.91	35.16	<DL	<DL
MAC-255-501.32	Illite		47.43	34.63	<DL	<DL

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	SO3 (wt.%)	P2O5 (wt.%)	As2O5 (wt.%)	ThO2 (wt.%)
MAC-255-501.32	Illite		46.50	35.80	<DL	<DL
MAC-255-501.32	Illite		45.95	35.90	<DL	<DL
MC-338-559	Illite		48.10	34.51	<DL	<DL
MC-338-559	Illite		46.94	35.35	<DL	<DL
MC-338-559	Illite		48.08	33.93	<DL	<DL
MC-338-559	Illite		46.61	33.52	<DL	<DL
MC-338-559	Illite		48.06	34.35	<DL	<DL
MC-338-559	Illite		46.27	34.19	<DL	0.08
MC-338-559	Illite		47.62	34.79	0.07	<DL
MC-338-559	Illite		47.15	33.84	<DL	<DL
MC-366-570	Illite		46.86	33.56	<DL	<DL
MC-366-570	Illite		46.04	34.42	<DL	<DL
MC-413-603.83	Illite		48.22	34.38	<DL	<DL
MC-413-603.83	Illite		48.70	34.65	<DL	<DL
MC-413-603.83	Illite		46.73	35.30	<DL	<DL
MC-413-603.83	Illite		48.38	33.47	0.03	<DL
MC-413-603.83	Illite		45.78	35.23	1.30	0.08
MC-413-603.83	Illite		45.59	35.14	0.82	<DL
MC-413-603.83	Illite		45.52	34.78	1.04	<DL
MC-413-603.83	Illite		47.11	33.59	0.18	<DL
MC-413-603.83	Illite		45.80	35.34	0.28	<DL
MC-413-603.83	Illite		45.67	35.45	0.45	<DL
MC-434-253.64	Illite		44.16	32.75	<DL	<DL
MC-434-253.64	Illite		43.24	32.57	<DL	<DL
MC-434-253.64	Illite		43.34	31.81	<DL	<DL
MC-434-54.07	Illite		47.94	35.66	0.09	<DL
MC-434-54.07	Illite		47.24	34.81	0.07	<DL
MC-434-54.07	Illite		48.43	34.44	0.04	<DL
MAC-208-237	Muscovite		44.57	32.87	0.90	<DL
MAC-208-290.5	Muscovite		46.75	34.53	<DL	<DL
MAC-255-564.36	Muscovite		44.49	38.69	0.04	<DL
MAC-255-564.36	Muscovite		45.62	37.44	0.03	<DL
MAC-255-564.36	Muscovite		45.20	35.46	1.04	<DL
MC-338-559	Muscovite		44.17	32.52	0.77	<DL
MC-338-559	Muscovite		44.03	33.11	0.75	<DL
MC-338-559	Muscovite		46.81	30.03	0.14	<DL
MC-338-559	Muscovite		45.38	31.02	0.20	<DL
MC-338-559	Muscovite		47.97	35.72	<DL	<DL
MC-336-570	Muscovite		44.43	35.41	0.86	<DL
MC-336-570	Muscovite		44.40	35.31	0.98	<DL
MC-336-570	Muscovite		44.58	36.22	1.16	<DL
MC-336-570	Muscovite		44.08	36.88	1.17	<DL
MC-336-570	Muscovite		44.88	37.64	<DL	<DL
MC-434-183.4	Muscovite		45.66	35.03	0.31	<DL
MC-434-183.4	Muscovite		45.57	34.74	0.33	<DL
MC-434-183.4	Muscovite		45.22	35.16	0.40	<DL
MC-434-183.4	Muscovite		45.07	34.83	0.38	<DL
MC-434-183.4	Muscovite		45.45	34.44	0.45	<DL
MAC-246-333.8	Kaolin	dck	46.24	38.34	<DL	<DL
MAC-246-333.8	Kaolin	dck	46.46	39.79	<DL	<DL
MAC-246-333.8	Kaolin	dck	47.40	39.44	<DL	<DL
MAC-246-333.8	Kaolin	dck	46.07	39.93	<DL	<DL

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	SO3 (wt.%)	P2O5 (wt.%)	As2O5 (wt.%)	ThO2 (wt.%)
MAC-246-333.8	Kaolin	dck	46.81	39.22	<DL	<DL
MAC-246-333.8	Kaolin	dck	46.34	39.45	<DL	<DL
MAC-246-333.8	Kaolin	dck	45.76	40.11	<DL	<DL
MAC-246-333.8	Kaolin	dck	46.22	40.35	<DL	<DL
MAC-246-543	Kaolin	dck	46.97	39.88	<DL	<DL
MAC-246-543	Kaolin	dck	45.39	40.51	<DL	<DL
MAC-246-543	Kaolin	dck	47.00	40.53	<DL	<DL
MAC-246-543	Kaolin	dck	46.78	39.69	<DL	<DL
MAC-246-543	Kaolin	dck	47.13	39.80	<DL	<DL
MAC-246-543	Kaolin	dck	47.12	39.99	<DL	<DL
MAC-246-543	Kaolin	dck	46.35	39.21	<DL	<DL
MAC-246-543	Kaolin	dck	47.50	40.02	<DL	<DL
MAC-246-543	Kaolin	dck	47.19	39.94	<DL	<DL
MAC-246-543	Kaolin	dck	46.55	40.31	<DL	<DL
MAC-246-543	Kaolin	dck	46.58	40.17	<DL	<DL
MAC-246-543	Kaolin	dck	47.47	39.97	<DL	<DL
MAC-246-543	Kaolin	dck	45.96	39.38	<DL	<DL
MAC-246-543	Kaolin	dck	46.91	40.72	<DL	<DL
MC-434-183.4	Kaolin	dck	45.97	39.91	<DL	<DL
MC-434-183.4	Kaolin	dck	46.38	39.01	<DL	<DL
MC-434-183.4	Kaolin	dck	46.57	40.00	<DL	<DL
MC-434-183.4	Kaolin	dck	46.28	39.46	<DL	<DL
MC-434-183.4	Kaolin	dck	45.68	40.05	<DL	<DL
MC-434-183.4	Kaolin	dck	46.76	39.38	<DL	<DL
MC-434-183.4	Kaolin	dck	45.24	40.63	<DL	<DL
MC-434-183.4	Kaolin	dck	46.26	39.86	<DL	<DL
MC-434-183.4	Kaolin	dck	46.08	40.15	<DL	<DL
MC-434-183.4	Kaolin	dck	46.17	39.92	<DL	<DL
MC-434-183.4	Kaolin	dck	46.07	40.32	<DL	<DL
MC-434-397.53	Kaolin	dck	46.67	39.90	<DL	<DL
MC-434-397.53	Kaolin	dck	46.33	40.42	<DL	<DL
MC-434-397.53	Kaolin	dck	46.06	39.92	<DL	<DL
MC-434-397.53	Kaolin	dck	46.52	40.86	<DL	<DL
MC-434-397.53	Kaolin	dck	45.76	39.54	<DL	<DL
MC-434-397.53	Kaolin	dck	45.05	38.82	<DL	<DL
MC-434-397.53	Kaolin	dck	46.71	39.62	<DL	<DL
MC-434-397.53	Kaolin	dck	45.80	39.79	<DL	<DL
MC-434-397.53	Kaolin	dck	46.47	39.59	<DL	<DL
MC-434-397.53	Kaolin	dck	47.37	39.17	<DL	<DL
MC-434-397.53	Kaolin	dck	46.91	39.43	<DL	<DL
MC-434-397.53	Kaolin	dck	46.58	40.00	<DL	<DL
MC-434-397.53	Kaolin	dck	45.83	40.36	<DL	<DL
MC-434-421.67	Kaolin	dck	46.66	39.36	<DL	<DL
MC-434-421.67	Kaolin	dck	45.47	38.90	<DL	<DL
MC-434-421.67	Kaolin	dck	46.00	38.52	<DL	<DL
MC-434-421.67	Kaolin	dck	45.52	39.17	<DL	<DL
MC-434-421.67	Kaolin	dck	45.96	38.42	<DL	<DL
MC-434-421.67	Kaolin	dck	46.90	39.22	<DL	<DL
MC-434-421.67	Kaolin	dck	46.43	39.59	<DL	<DL
MC-434-421.67	Kaolin	dck	46.91	38.88	<DL	<DL
MC-434-421.67	Kaolin	dck	45.87	39.29	<DL	<DL
MC-434-421.67	Kaolin	dck	45.63	39.14	<DL	<DL

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	SO3 (wt.%)	P2O5 (wt.%)	As2O5 (wt.%)	ThO2 (wt.%)
MC-434-54.07	Kaolin	dck	46.22	39.56	<DL	<DL
MC-434-54.07	Kaolin	dck	46.39	39.97	<DL	<DL
MC-434-54.07	Kaolin	dck	45.33	39.77	<DL	<DL
MC-434-54.07	Kaolin	dck	46.02	39.97	<DL	<DL
MC-434-54.07	Kaolin	dck	46.56	39.61	<DL	<DL
MC-434-54.07	Kaolin	dck	46.06	40.26	<DL	<DL
MC-434-54.07	Kaolin	dck	46.34	39.96	<DL	<DL
MC-434-54.07	Kaolin	dck	45.38	40.74	<DL	<DL
MC-434-54.07	Kaolin	dck	46.42	39.79	<DL	<DL
MC-434-54.07	Kaolin	dck	46.27	39.43	<DL	<DL

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Al2O3 (wt.%)	Fe2O3 (wt.%)	La2O3 (wt.%)	Ce2O3 (wt.%)
MAC-246-449.02	Tourmaline	drv	0.20	<DL	8.23	0.17
MAC-246-449.02	Tourmaline	drv	0.21	<DL	8.09	0.18
MAC-246-449.02	Tourmaline	drv	0.21	<DL	8.12	0.16
MAC-246-449.02	Tourmaline	drv	0.21	<DL	8.03	0.24
MAC-246-449.02	Tourmaline	drv	0.23	<DL	8.30	0.31
MAC-246-449.02	Tourmaline	drv	0.22	<DL	8.31	0.25
MAC-246-449.02	Tourmaline	drv	0.21	<DL	8.34	0.23
MAC-246-508.8	Tourmaline	drv	0.13	<DL	8.30	0.16
MAC-246-508.8	Tourmaline	drv	0.14	<DL	8.33	0.13
MAC-246-508.8	Tourmaline	drv	0.17	<DL	9.40	<DL
MAC-246-508.8	Tourmaline	drv	0.10	<DL	8.10	0.19
MAC-246-508.8	Tourmaline	drv	0.16	<DL	8.01	0.20
MAC-246-508.8	Tourmaline	drv	0.14	<DL	7.85	0.19
MAC-246-508.8	Tourmaline	drv	0.12	<DL	7.73	0.21
MAC-246-508.8	Tourmaline	drv	0.19	<DL	7.71	0.19
MAC-252-55.62	Tourmaline	drv	0.45	<DL	8.21	0.16
MAC-252-55.62	Tourmaline	drv	0.39	<DL	8.11	0.16
MAC-252-55.62	Tourmaline	drv	0.51	<DL	8.06	0.16
MAC-252-55.62	Tourmaline	drv	0.53	<DL	7.87	0.20
MAC-252-55.62	Tourmaline	drv	0.53	<DL	7.90	0.18
MAC-252-55.62	Tourmaline	drv	0.48	<DL	8.11	0.17
MAC-252-55.62	Tourmaline	drv	0.21	<DL	8.25	0.14
MAC-252-55.62	Tourmaline	drv	0.68	<DL	8.05	0.16
MAC-252-331.7	Tourmaline	drv	1.58	<DL	7.31	0.12
MAC-252-331.7	Tourmaline	drv	1.49	<DL	7.25	0.14
MAC-252-331.7	Tourmaline	drv	1.45	<DL	7.34	0.14
MAC-208-237	Chlorite		0.92	<DL	4.09	0.28
MAC-208-237	Chlorite		0.64	<DL	9.14	0.29
MAC-208-237	Chlorite		0.65	<DL	6.43	0.41
MAC-208-237	Chlorite		0.82	<DL	8.43	0.33
MAC-208-237	Chlorite		0.77	<DL	8.23	0.25
MAC-208-237	Chlorite		0.67	<DL	9.01	0.33
MAC-208-237	Chlorite		0.63	<DL	4.51	0.35
MAC-208-237	Chlorite		0.66	<DL	5.51	0.18
MAC-246-475.33	Chlorite		0.65	<DL	9.71	0.27
MAC-246-475.33	Chlorite		0.84	<DL	8.48	0.27
MAC-246-475.33	Chlorite		0.41	<DL	6.92	0.26
MAC-246-475.33	Chlorite		0.18	<DL	0.37	0.17
MAC-246-475.33	Chlorite		0.83	<DL	10.57	0.28
MAC-246-475.33	Chlorite		0.76	<DL	9.06	0.28
MAC-246-475.33	Chlorite		0.50	<DL	0.76	0.18
MAC-246-475.33	Chlorite		0.75	<DL	10.06	0.18
MAC-246-475.33	Chlorite		0.56	<DL	9.16	0.19
MAC-252-271.2	Chlorite		0.82	<DL	11.22	0.26
MAC-252-271.2	Chlorite		0.81	<DL	9.54	0.19
MAC-252-271.2	Chlorite		0.90	<DL	7.61	0.25
MAC-252-271.2	Chlorite		0.89	<DL	9.69	0.32
MAC-252-271.2	Chlorite		0.86	<DL	9.27	0.21
MAC-252-271.2	Chlorite		0.84	<DL	4.38	0.20
MAC-252-271.2	Chlorite		0.95	<DL	6.78	0.28
MAC-252-271.2	Chlorite		0.85	<DL	9.12	0.23
MAC-252-271.2	Chlorite		0.86	<DL	7.71	0.18

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Al2O3 (wt.%)	Fe2O3 (wt.%)	La2O3 (wt.%)	Ce2O3 (wt.%)
MAC-252-271.2	Chlorite		0.88	<DL	5.31	0.17
MAC-252-271.2	Chlorite		0.97	<DL	4.28	0.20
MAC-253-325	Chlorite		2.11	<DL	5.73	0.15
MAC-255-559	Chlorite		6.44	<DL	14.42	0.30
MAC-255-559	Chlorite		7.01	<DL	15.03	0.28
MAC-255-559	Chlorite		5.82	<DL	14.37	0.27
MAC-255-559	Chlorite		6.74	<DL	15.17	0.25
MAC-255-559	Chlorite		6.27	<DL	14.38	0.26
MAC-255-559	Chlorite		5.26	<DL	16.60	0.37
MAC-255-559	Chlorite		5.79	<DL	18.54	0.38
MAC-255-559	Chlorite		6.55	<DL	17.06	0.23
MAC-255-559	Chlorite		6.35	<DL	15.45	0.27
MAC-255-559	Chlorite		6.57	<DL	16.78	0.27
MAC-255-564.36	Chlorite		2.17	<DL	15.87	0.32
MAC-255-564.36	Chlorite		2.03	<DL	14.68	0.48
MAC-255-564.36	Chlorite		1.45	<DL	14.32	0.25
MAC-255-564.36	Chlorite		1.40	<DL	14.15	0.30
MAC-255-564.36	Chlorite		1.95	<DL	15.72	0.37
MAC-255-564.36	Chlorite		1.94	<DL	15.98	0.51
MAC-255-564.36	Chlorite		2.02	<DL	15.23	0.46
MAC-255-564.36	Chlorite		2.27	<DL	15.31	0.32
MAC-255-564.36	Chlorite		1.91	<DL	15.06	0.53
MAC-255-564.36	Chlorite		1.08	<DL	14.22	0.30
MC-413-183.26	Chlorite		2.05	<DL	4.37	0.19
MC-413-183.26	Chlorite		3.10	<DL	5.85	0.13
MC-413-183.26	Chlorite		6.71	<DL	4.35	0.16
MC-413-183.26	Chlorite		4.95	<DL	3.46	0.16
MC-413-183.26	Chlorite		0.43	<DL	4.75	0.09
MC-413-183.26	Chlorite		0.35	<DL	6.26	0.08
MC-413-183.26	Chlorite		2.56	<DL	11.17	0.10
MC-413-183.26	Chlorite		2.45	<DL	9.15	<DL
MC-413-183.26	Chlorite		2.05	<DL	6.68	0.10
MC-413-183.26	Chlorite		2.36	<DL	6.55	0.13
MC-413-603.83	Chlorite		1.02	<DL	12.59	0.19
MC-413-603.83	Chlorite		1.31	<DL	9.34	0.23
MC-413-603.83	Chlorite		0.99	<DL	9.89	0.23
MC-366-570	Chlorite		1.00	<DL	13.09	0.19
MC-366-570	Chlorite		1.11	<DL	13.01	0.20
MC-366-570	Chlorite		1.09	<DL	11.47	0.30
MC-366-570	Chlorite		1.17	<DL	12.53	0.30
MC-366-570	Chlorite		1.36	<DL	13.02	0.35
MC-366-570	Chlorite		1.74	<DL	14.55	0.28
MC-366-570	Chlorite		1.34	<DL	12.99	0.29
MC-366-570	Chlorite		1.01	<DL	12.08	0.21
MAC-208-237	Illite		0.97	<DL	1.07	0.08
MAC-208-290.5	Illite		0.89	<DL	0.49	0.25
MAC-208-290.5	Illite		0.93	<DL	0.60	0.25
MAC-208-290.5	Illite		1.12	<DL	0.60	0.28
MAC-208-290.5	Illite		0.99	<DL	0.78	0.23
MAC-208-290.5	Illite		0.98	<DL	0.51	0.18
MAC-208-290.5	Illite		1.04	<DL	2.20	0.13
MAC-208-290.5	Illite		1.02	<DL	0.61	0.20

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Al2O3 (wt.%)	Fe2O3 (wt.%)	La2O3 (wt.%)	Ce2O3 (wt.%)
MAC-208-290.5	Illite		0.84	<DL	0.58	0.18
MAC-208-290.5	Illite		1.08	<DL	0.62	0.19
MAC-208-290.5	Illite		0.95	<DL	0.65	0.22
MAC-246-333.8	Illite		0.93	<DL	0.55	0.20
MAC-246-333.8	Illite		0.93	<DL	0.58	0.15
MAC-246-333.8	Illite		0.95	<DL	0.59	0.13
MAC-246-333.8	Illite		0.90	<DL	0.55	0.13
MAC-246-333.8	Illite		1.02	<DL	0.65	0.18
MAC-246-333.8	Illite		0.84	<DL	0.55	0.10
MAC-246-333.8	Illite		0.84	<DL	0.55	0.11
MAC-246-333.8	Illite		0.85	<DL	0.55	0.13
MAC-246-333.8	Illite		1.05	<DL	0.68	0.11
MAC-246-333.8	Illite		1.29	<DL	0.54	0.10
MAC-246-333.8	Illite		1.02	<DL	0.86	0.13
MAC-246-333.8	Illite		1.07	<DL	0.76	0.12
MAC-246-475.33	Illite		0.75	<DL	0.15	0.12
MAC-246-475.33	Illite		0.89	<DL	0.14	0.11
MAC-246-475.33	Illite		0.50	<DL	0.06	<DL
MAC-252-331.7	Illite		0.97	<DL	2.54	0.15
MAC-252-331.7	Illite		0.99	<DL	4.29	0.20
MAC-252-331.7	Illite		1.71	<DL	5.60	0.17
MAC-252-331.7	Illite		2.66	<DL	3.14	0.15
MAC-252-331.7	Illite		0.94	<DL	7.68	0.19
MAC-252-331.7	Illite		0.93	<DL	8.32	0.18
MAC-252-331.7	Illite		0.87	<DL	6.39	0.14
MAC-252-331.7	Illite		0.91	<DL	2.37	0.10
MAC-252-331.7	Illite		1.85	<DL	0.73	0.14
MAC-252-331.7	Illite		1.25	<DL	1.11	0.15
MAC-252-331.7	Illite		0.88	<DL	0.76	0.14
MAC-252-271.2	Illite		0.79	<DL	2.10	0.13
MAC-252-271.2	Illite		0.72	<DL	1.77	0.20
MAC-252-271.2	Illite		0.74	<DL	1.07	0.15
MAC-252-271.2	Illite		0.77	<DL	1.09	0.20
MAC-252-271.2	Illite		0.74	<DL	0.74	0.17
MAC-252-271.2	Illite		0.75	<DL	1.29	0.25
MAC-252-271.2	Illite		0.82	<DL	0.79	0.14
MAC-252-271.2	Illite		0.77	<DL	0.86	0.16
MAC-252-271.2	Illite		0.71	<DL	0.82	0.14
MAC-252-271.2	Illite		0.85	<DL	0.78	0.19
MAC-252-271.2	Illite		0.77	<DL	0.60	0.21
MAC-253-325	Illite		0.75	<DL	0.57	0.09
MAC-253-325	Illite		0.83	<DL	0.56	0.08
MAC-253-325	Illite		0.92	<DL	0.71	0.07
MAC-255-501.32	Illite		1.14	<DL	0.40	0.20
MAC-255-501.32	Illite		1.09	<DL	0.45	0.31
MAC-255-501.32	Illite		1.08	<DL	0.46	0.38
MAC-255-501.32	Illite		0.93	<DL	0.87	0.28
MAC-255-501.32	Illite		0.99	<DL	0.81	0.37
MAC-255-501.32	Illite		0.87	<DL	0.47	0.12
MAC-255-501.32	Illite		0.75	<DL	0.43	0.14
MAC-255-501.32	Illite		0.81	<DL	0.52	0.26
MAC-255-501.32	Illite		0.95	<DL	0.50	0.61

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EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Al2O3 (wt.%)	Fe2O3 (wt.%)	La2O3 (wt.%)	Ce2O3 (wt.%)
MAC-255-501.32	Illite		0.90	<DL	0.42	0.24
MAC-255-501.32	Illite		0.87	<DL	0.48	0.40
MC-338-559	Illite		0.85	<DL	0.84	0.16
MC-338-559	Illite		0.76	<DL	1.48	0.20
MC-338-559	Illite		0.75	<DL	1.18	0.23
MC-338-559	Illite		0.73	<DL	0.81	0.26
MC-338-559	Illite		0.74	<DL	0.78	0.11
MC-338-559	Illite		0.78	<DL	0.71	0.17
MC-338-559	Illite		0.82	<DL	0.82	0.14
MC-338-559	Illite		0.88	<DL	0.99	0.20
MC-366-570	Illite		0.77	<DL	0.78	0.15
MC-366-570	Illite		0.81	<DL	1.86	0.26
MC-413-603.83	Illite		0.69	<DL	0.81	0.22
MC-413-603.83	Illite		0.86	<DL	0.86	0.33
MC-413-603.83	Illite		0.88	<DL	1.93	0.17
MC-413-603.83	Illite		0.85	<DL	1.35	0.09
MC-413-603.83	Illite		1.48	<DL	0.60	0.07
MC-413-603.83	Illite		1.30	<DL	0.90	0.06
MC-413-603.83	Illite		1.37	<DL	0.92	0.06
MC-413-603.83	Illite		1.17	<DL	1.34	0.21
MC-413-603.83	Illite		1.38	<DL	1.07	<DL
MC-413-603.83	Illite		1.38	<DL	0.93	<DL
MC-434-253.64	Illite		0.58	<DL	0.44	0.10
MC-434-253.64	Illite		0.69	<DL	0.39	0.08
MC-434-253.64	Illite		0.57	<DL	0.42	0.08
MC-434-54.07	Illite		0.51	<DL	0.53	0.13
MC-434-54.07	Illite		0.52	<DL	0.43	0.12
MC-434-54.07	Illite		0.48	<DL	0.48	0.10
MAC-208-237	Muscovite		4.01	<DL	0.70	0.06
MAC-208-290.5	Muscovite		1.01	<DL	0.72	0.28
MAC-255-564.36	Muscovite		0.09	<DL	<DL	<DL
MAC-255-564.36	Muscovite		0.28	<DL	0.35	<DL
MAC-255-564.36	Muscovite		1.34	<DL	0.67	<DL
MC-338-559	Muscovite		4.30	<DL	0.63	0.07
MC-338-559	Muscovite		4.61	<DL	0.52	0.04
MC-338-559	Muscovite		4.65	0.08	1.60	0.07
MC-338-559	Muscovite		4.33	<DL	1.39	0.12
MC-338-559	Muscovite		0.68	<DL	0.60	0.13
MC-336-570	Muscovite		2.22	<DL	0.36	<DL
MC-336-570	Muscovite		2.04	<DL	0.41	<DL
MC-336-570	Muscovite		0.91	<DL	0.18	<DL
MC-336-570	Muscovite		1.03	<DL	0.24	<DL
MC-336-570	Muscovite		0.57	<DL	0.17	0.07
MC-434-183.4	Muscovite		2.46	<DL	0.86	0.04
MC-434-183.4	Muscovite		2.58	<DL	0.73	0.04
MC-434-183.4	Muscovite		2.54	<DL	0.73	<DL
MC-434-183.4	Muscovite		2.65	0.09	0.67	0.04
MC-434-183.4	Muscovite		2.45	<DL	0.59	<DL
MAC-246-333.8	Kaolin	dck	0.29	<DL	0.15	0.10
MAC-246-333.8	Kaolin	dck	0.14	<DL	<DL	<DL
MAC-246-333.8	Kaolin	dck	<DL	<DL	<DL	<DL
MAC-246-333.8	Kaolin	dck	0.11	<DL	<DL	0.08

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Al2O3 (wt.%)	Fe2O3 (wt.%)	La2O3 (wt.%)	Ce2O3 (wt.%)
MAC-246-333.8	Kaolin	dck	0.09	<DL	<DL	0.06
MAC-246-333.8	Kaolin	dck	<DL	<DL	<DL	0.08
MAC-246-333.8	Kaolin	dck	0.08	<DL	<DL	0.04
MAC-246-333.8	Kaolin	dck	0.08	<DL	<DL	<DL
MAC-246-543	Kaolin	dck	0.07	<DL	<DL	0.09
MAC-246-543	Kaolin	dck	<DL	<DL	<DL	0.07
MAC-246-543	Kaolin	dck	0.08	<DL	<DL	0.06
MAC-246-543	Kaolin	dck	0.07	<DL	<DL	<DL
MAC-246-543	Kaolin	dck	<DL	<DL	<DL	0.06
MAC-246-543	Kaolin	dck	<DL	<DL	<DL	0.12
MAC-246-543	Kaolin	dck	0.13	<DL	0.05	0.11
MAC-246-543	Kaolin	dck	0.07	<DL	<DL	0.09
MAC-246-543	Kaolin	dck	0.06	<DL	<DL	0.08
MAC-246-543	Kaolin	dck	0.10	<DL	<DL	0.08
MAC-246-543	Kaolin	dck	0.12	<DL	<DL	0.08
MAC-246-543	Kaolin	dck	0.09	<DL	<DL	0.10
MAC-246-543	Kaolin	dck	0.07	<DL	<DL	0.10
MAC-246-543	Kaolin	dck	0.12	<DL	<DL	0.05
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.07
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.12
MC-434-183.4	Kaolin	dck	<DL	<DL	0.06	<DL
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.07
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.06
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.06
MC-434-183.4	Kaolin	dck	0.07	<DL	<DL	0.04
MC-434-183.4	Kaolin	dck	0.06	<DL	<DL	<DL
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.04
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.04
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.05
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.04
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.06
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.05
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-397.53	Kaolin	dck	0.06	<DL	<DL	<DL
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.06
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.06
MC-434-397.53	Kaolin	dck	0.08	<DL	<DL	0.06
MC-434-421.67	Kaolin	dck	0.07	<DL	<DL	0.07
MC-434-421.67	Kaolin	dck	0.11	<DL	<DL	0.04
MC-434-421.67	Kaolin	dck	0.80	<DL	<DL	0.06
MC-434-421.67	Kaolin	dck	0.14	<DL	<DL	0.04
MC-434-421.67	Kaolin	dck	<DL	<DL	<DL	0.05
MC-434-421.67	Kaolin	dck	0.06	<DL	<DL	0.03
MC-434-421.67	Kaolin	dck	0.06	<DL	<DL	0.05
MC-434-421.67	Kaolin	dck	<DL	<DL	<DL	0.07
MC-434-421.67	Kaolin	dck	0.07	<DL	<DL	0.05
MC-434-421.67	Kaolin	dck	0.06	<DL	<DL	0.06

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Al2O3 (wt.%)	Fe2O3 (wt.%)	La2O3 (wt.%)	Ce2O3 (wt.%)
MC-434-54.07	Kaolin	dck	0.06	<DL	0.09	0.07
MC-434-54.07	Kaolin	dck	0.12	<DL	<DL	0.07
MC-434-54.07	Kaolin	dck	0.06	<DL	<DL	0.11
MC-434-54.07	Kaolin	dck	0.12	<DL	<DL	0.10
MC-434-54.07	Kaolin	dck	0.07	<DL	<DL	0.08
MC-434-54.07	Kaolin	dck	0.08	<DL	<DL	0.08
MC-434-54.07	Kaolin	dck	<DL	<DL	<DL	0.04
MC-434-54.07	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-54.07	Kaolin	dck	<DL	<DL	<DL	0.06
MC-434-54.07	Kaolin	dck	0.06	<DL	<DL	0.05

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EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Nd2O3 (wt.%)	Pr2O3 (wt.%)	CaO (wt.%)	SrO (wt.%)
MAC-246-449.02	Tourmaline	drv	0.61	<DL	<DL	0.03
MAC-246-449.02	Tourmaline	drv	0.59	<DL	<DL	0.05
MAC-246-449.02	Tourmaline	drv	0.47	<DL	<DL	0.04
MAC-246-449.02	Tourmaline	drv	0.61	<DL	<DL	0.08
MAC-246-449.02	Tourmaline	drv	0.62	<DL	0.25	0.33
MAC-246-449.02	Tourmaline	drv	0.68	<DL	<DL	0.12
MAC-246-449.02	Tourmaline	drv	0.60	<DL	<DL	0.08
MAC-246-508.8	Tourmaline	drv	0.52	<DL	<DL	<DL
MAC-246-508.8	Tourmaline	drv	0.52	<DL	<DL	0.01
MAC-246-508.8	Tourmaline	drv	0.49	<DL	<DL	<DL
MAC-246-508.8	Tourmaline	drv	0.49	<DL	<DL	0.02
MAC-246-508.8	Tourmaline	drv	0.55	<DL	<DL	0.02
MAC-246-508.8	Tourmaline	drv	0.44	<DL	<DL	0.02
MAC-246-508.8	Tourmaline	drv	0.49	0.03	<DL	0.04
MAC-246-508.8	Tourmaline	drv	0.52	<DL	<DL	0.02
MAC-252-55.62	Tourmaline	drv	0.80	<DL	0.25	0.02
MAC-252-55.62	Tourmaline	drv	0.88	0.03	<DL	0.02
MAC-252-55.62	Tourmaline	drv	0.86	<DL	<DL	<DL
MAC-252-55.62	Tourmaline	drv	0.66	0.04	<DL	0.03
MAC-252-55.62	Tourmaline	drv	0.62	<DL	0.25	<DL
MAC-252-55.62	Tourmaline	drv	0.68	<DL	<DL	<DL
MAC-252-55.62	Tourmaline	drv	0.83	<DL	0.25	0.02
MAC-252-55.62	Tourmaline	drv	0.80	<DL	<DL	<DL
MAC-252-331.7	Tourmaline	drv	0.88	0.35	<DL	<DL
MAC-252-331.7	Tourmaline	drv	0.86	0.64	<DL	<DL
MAC-252-331.7	Tourmaline	drv	0.86	0.71	<DL	0.02
MAC-208-237	Chlorite		0.21	6.96	<DL	0.04
MAC-208-237	Chlorite		0.11	3.30	<DL	0.25
MAC-208-237	Chlorite		0.19	5.47	<DL	0.11
MAC-208-237	Chlorite		0.09	3.45	0.37	0.24
MAC-208-237	Chlorite		0.17	4.32	<DL	0.09
MAC-208-237	Chlorite		<DL	3.19	<DL	0.25
MAC-208-237	Chlorite		0.19	6.60	<DL	0.02
MAC-208-237	Chlorite		0.19	5.96	<DL	0.04
MAC-246-475.33	Chlorite		<DL	2.13	0.40	0.08
MAC-246-475.33	Chlorite		0.12	1.87	0.90	0.09
MAC-246-475.33	Chlorite		<DL	2.16	0.51	0.09
MAC-246-475.33	Chlorite		<DL	1.62	<DL	0.07
MAC-246-475.33	Chlorite		<DL	1.97	0.51	0.06
MAC-246-475.33	Chlorite		<DL	2.07	<DL	0.06
MAC-246-475.33	Chlorite		<DL	3.19	<DL	0.12
MAC-246-475.33	Chlorite		<DL	1.85	0.54	0.06
MAC-246-475.33	Chlorite		<DL	1.32	<DL	0.07
MAC-252-271.2	Chlorite		0.12	2.01	0.44	0.07
MAC-252-271.2	Chlorite		<DL	3.44	0.58	0.05
MAC-252-271.2	Chlorite		0.15	4.75	0.59	0.06
MAC-252-271.2	Chlorite		0.09	2.96	<DL	0.06
MAC-252-271.2	Chlorite		<DL	3.13	0.29	0.04
MAC-252-271.2	Chlorite		<DL	6.41	0.30	0.03
MAC-252-271.2	Chlorite		<DL	5.16	0.37	0.08
MAC-252-271.2	Chlorite		0.08	3.29	0.58	0.05
MAC-252-271.2	Chlorite		0.07	4.73	0.62	0.05

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EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Nd2O3 (wt.%)	Pr2O3 (wt.%)	CaO (wt.%)	SrO (wt.%)
MAC-252-271.2	Chlorite		0.11	6.33	0.37	0.04
MAC-252-271.2	Chlorite		0.28	5.71	0.85	0.04
MAC-253-325	Chlorite		<DL	2.28	<DL	0.80
MAC-255-559	Chlorite		0.10	0.12	0.31	0.26
MAC-255-559	Chlorite		<DL	0.22	0.34	0.30
MAC-255-559	Chlorite		<DL	0.06	0.45	0.25
MAC-255-559	Chlorite		0.08	0.23	0.52	0.27
MAC-255-559	Chlorite		<DL	0.57	0.45	0.26
MAC-255-559	Chlorite		<DL	0.19	0.66	0.26
MAC-255-559	Chlorite		<DL	0.14	0.79	0.22
MAC-255-559	Chlorite		0.07	0.18	0.45	0.23
MAC-255-559	Chlorite		<DL	0.07	0.34	0.29
MAC-255-559	Chlorite		<DL	0.14	0.38	0.29
MAC-255-564.36	Chlorite		0.13	0.17	1.33	0.14
MAC-255-564.36	Chlorite		0.15	0.20	0.85	0.18
MAC-255-564.36	Chlorite		0.12	0.24	0.54	0.11
MAC-255-564.36	Chlorite		0.08	0.45	0.64	0.07
MAC-255-564.36	Chlorite		0.08	0.17	0.64	0.15
MAC-255-564.36	Chlorite		0.12	0.18	1.20	0.12
MAC-255-564.36	Chlorite		<DL	0.16	0.85	0.11
MAC-255-564.36	Chlorite		<DL	0.24	0.95	0.12
MAC-255-564.36	Chlorite		<DL	0.19	0.92	0.12
MAC-255-564.36	Chlorite		<DL	0.37	0.79	0.04
MC-413-183.26	Chlorite		<DL	1.09	<DL	0.08
MC-413-183.26	Chlorite		<DL	0.61	0.57	0.09
MC-413-183.26	Chlorite		0.09	0.54	0.21	0.27
MC-413-183.26	Chlorite		0.09	0.66	<DL	0.19
MC-413-183.26	Chlorite		<DL	0.89	<DL	0.13
MC-413-183.26	Chlorite		<DL	0.80	<DL	0.12
MC-413-183.26	Chlorite		<DL	0.76	<DL	0.20
MC-413-183.26	Chlorite		<DL	0.50	<DL	0.22
MC-413-183.26	Chlorite		<DL	0.57	0.29	0.21
MC-413-183.26	Chlorite		<DL	1.00	<DL	0.39
MC-413-603.83	Chlorite		<DL	1.56	<DL	<DL
MC-413-603.83	Chlorite		<DL	3.89	<DL	0.06
MC-413-603.83	Chlorite		0.10	3.49	<DL	0.03
MC-366-570	Chlorite		0.10	0.73	0.75	0.02
MC-366-570	Chlorite		<DL	0.93	0.47	0.03
MC-366-570	Chlorite		0.14	1.52	0.79	0.04
MC-366-570	Chlorite		<DL	1.22	0.72	0.02
MC-366-570	Chlorite		<DL	0.61	0.54	0.04
MC-366-570	Chlorite		<DL	0.42	0.75	0.06
MC-366-570	Chlorite		<DL	0.79	0.36	0.03
MC-366-570	Chlorite		<DL	1.56	0.54	0.03
MAC-208-237	Illite		0.22	8.25	<DL	0.25
MAC-208-290.5	Illite		0.21	9.65	0.62	0.06
MAC-208-290.5	Illite		<DL	9.71	0.51	0.04
MAC-208-290.5	Illite		0.15	9.68	<DL	0.04
MAC-208-290.5	Illite		0.10	9.32	<DL	0.05
MAC-208-290.5	Illite		<DL	10.07	<DL	0.02
MAC-208-290.5	Illite		<DL	10.26	0.55	<DL
MAC-208-290.5	Illite		<DL	9.72	0.44	0.03

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Nd2O3 (wt.%)	Pr2O3 (wt.%)	CaO (wt.%)	SrO (wt.%)
MAC-208-290.5	Illite		0.08	10.21	<DL	0.03
MAC-208-290.5	Illite		<DL	9.74	0.44	0.04
MAC-208-290.5	Illite		0.10	9.77	0.55	0.06
MAC-246-333.8	Illite		0.12	9.85	0.29	0.03
MAC-246-333.8	Illite		<DL	10.04	<DL	0.03
MAC-246-333.8	Illite		0.11	9.96	<DL	0.02
MAC-246-333.8	Illite		0.10	9.93	<DL	0.03
MAC-246-333.8	Illite		<DL	9.91	<DL	0.05
MAC-246-333.8	Illite		0.09	9.92	<DL	0.04
MAC-246-333.8	Illite		<DL	10.02	<DL	0.03
MAC-246-333.8	Illite		<DL	9.62	0.43	0.03
MAC-246-333.8	Illite		0.23	9.77	<DL	0.02
MAC-246-333.8	Illite		0.45	10.38	0.36	0.03
MAC-246-333.8	Illite		0.23	10.18	0.29	0.03
MAC-246-333.8	Illite		0.17	10.14	0.54	<DL
MAC-246-475.33	Illite		0.40	10.65	0.33	<DL
MAC-246-475.33	Illite		0.29	10.70	0.40	0.02
MAC-246-475.33	Illite		0.22	11.27	<DL	0.02
MAC-252-331.7	Illite		0.09	8.23	0.47	0.05
MAC-252-331.7	Illite		<DL	7.12	0.46	0.04
MAC-252-331.7	Illite		<DL	5.92	<DL	0.03
MAC-252-331.7	Illite		<DL	6.37	0.28	0.05
MAC-252-331.7	Illite		0.08	4.13	0.28	0.04
MAC-252-331.7	Illite		<DL	3.34	<DL	0.05
MAC-252-331.7	Illite		<DL	4.79	0.42	0.03
MAC-252-331.7	Illite		0.19	8.79	0.40	0.03
MAC-252-331.7	Illite		0.10	9.02	0.47	0.03
MAC-252-331.7	Illite		0.14	9.15	0.47	0.03
MAC-252-331.7	Illite		0.15	9.74	0.47	0.04
MAC-252-271.2	Illite		0.12	8.48	0.40	0.03
MAC-252-271.2	Illite		0.12	8.88	0.87	0.05
MAC-252-271.2	Illite		0.14	9.14	0.80	0.02
MAC-252-271.2	Illite		0.09	9.31	0.59	0.03
MAC-252-271.2	Illite		0.13	8.49	0.37	0.05
MAC-252-271.2	Illite		0.11	9.28	0.69	0.04
MAC-252-271.2	Illite		<DL	9.84	<DL	0.05
MAC-252-271.2	Illite		0.09	9.21	1.05	0.07
MAC-252-271.2	Illite		0.09	9.53	0.62	0.07
MAC-252-271.2	Illite		0.30	9.80	0.62	0.03
MAC-252-271.2	Illite		<DL	9.43	0.51	0.06
MAC-253-325	Illite		0.07	8.69	<DL	0.25
MAC-253-325	Illite		<DL	8.86	<DL	0.18
MAC-253-325	Illite		0.11	8.48	<DL	0.21
MAC-255-501.32	Illite		0.15	9.22	0.37	0.02
MAC-255-501.32	Illite		0.15	9.44	0.48	0.02
MAC-255-501.32	Illite		0.12	9.58	1.05	0.03
MAC-255-501.32	Illite		0.23	9.83	0.62	0.02
MAC-255-501.32	Illite		0.17	9.83	0.88	<DL
MAC-255-501.32	Illite		0.09	8.95	0.62	0.03
MAC-255-501.32	Illite		0.13	8.00	0.62	0.01
MAC-255-501.32	Illite		0.18	8.48	0.95	<DL
MAC-255-501.32	Illite		0.25	9.45	1.16	0.04

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EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Nd2O3 (wt.%)	Pr2O3 (wt.%)	CaO (wt.%)	SrO (wt.%)
MAC-255-501.32	Illite		0.17	9.51	0.87	0.02
MAC-255-501.32	Illite		0.22	9.63	0.55	<DL
MC-338-559	Illite		0.11	9.73	0.29	0.03
MC-338-559	Illite		0.21	8.77	0.91	0.02
MC-338-559	Illite		<DL	9.34	0.77	0.03
MC-338-559	Illite		<DL	9.75	0.40	<DL
MC-338-559	Illite		<DL	10.14	<DL	0.02
MC-338-559	Illite		<DL	9.91	0.37	0.03
MC-338-559	Illite		<DL	9.77	0.73	0.02
MC-338-559	Illite		0.14	9.25	0.51	0.03
MC-366-570	Illite		0.14	10.01	<DL	0.02
MC-366-570	Illite		0.30	8.60	0.37	0.03
MC-413-603.83	Illite		0.10	9.76	<DL	0.02
MC-413-603.83	Illite		0.11	9.65	<DL	0.04
MC-413-603.83	Illite		<DL	9.19	<DL	0.02
MC-413-603.83	Illite		0.09	9.63	<DL	0.02
MC-413-603.83	Illite		0.59	10.47	<DL	<DL
MC-413-603.83	Illite		0.47	10.69	<DL	0.04
MC-413-603.83	Illite		0.45	10.70	<DL	<DL
MC-413-603.83	Illite		0.33	9.73	0.51	0.04
MC-413-603.83	Illite		0.46	10.84	0.51	<DL
MC-413-603.83	Illite		0.44	10.82	<DL	<DL
MC-434-253.64	Illite		<DL	9.31	<DL	0.14
MC-434-253.64	Illite		<DL	9.38	<DL	0.19
MC-434-253.64	Illite		<DL	8.86	<DL	0.21
MC-434-54.07	Illite		0.16	9.85	0.32	0.07
MC-434-54.07	Illite		0.15	9.76	<DL	0.07
MC-434-54.07	Illite		0.16	9.82	<DL	0.06
MAC-208-237	Muscovite		0.45	10.65	<DL	<DL
MAC-208-290.5	Muscovite		0.10	9.75	<DL	0.03
MAC-255-564.36	Muscovite		0.57	10.80	0.69	<DL
MAC-255-564.36	Muscovite		0.51	10.56	<DL	0.01
MAC-255-564.36	Muscovite		0.79	10.32	0.44	<DL
MC-338-559	Muscovite		0.23	11.13	0.92	<DL
MC-338-559	Muscovite		0.20	10.94	<DL	<DL
MC-338-559	Muscovite		0.24	10.87	0.74	<DL
MC-338-559	Muscovite		0.25	10.68	1.20	<DL
MC-338-559	Muscovite		0.11	10.38	<DL	<DL
MC-336-570	Muscovite		0.68	10.29	<DL	<DL
MC-336-570	Muscovite		0.68	10.32	0.76	<DL
MC-336-570	Muscovite		0.69	10.38	0.33	<DL
MC-336-570	Muscovite		0.77	10.31	<DL	<DL
MC-336-570	Muscovite		0.74	10.35	0.51	<DL
MC-434-183.4	Muscovite		0.55	10.49	<DL	0.02
MC-434-183.4	Muscovite		0.57	10.59	<DL	0.01
MC-434-183.4	Muscovite		0.61	10.60	<DL	0.01
MC-434-183.4	Muscovite		0.58	10.60	0.28	<DL
MC-434-183.4	Muscovite		0.54	10.43	<DL	0.04
MAC-246-333.8	Kaolin	dck	<DL	2.04	<DL	0.05
MAC-246-333.8	Kaolin	dck	<DL	1.11	<DL	0.02
MAC-246-333.8	Kaolin	dck	<DL	<DL	<DL	0.01
MAC-246-333.8	Kaolin	dck	<DL	0.06	<DL	0.02

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EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Nd2O3 (wt.%)	Pr2O3 (wt.%)	CaO (wt.%)	SrO (wt.%)
MAC-246-333.8	Kaolin	dck	<DL	<DL	<DL	0.04
MAC-246-333.8	Kaolin	dck	<DL	0.16	0.30	0.02
MAC-246-333.8	Kaolin	dck	<DL	<DL	<DL	0.02
MAC-246-333.8	Kaolin	dck	<DL	<DL	<DL	0.02
MAC-246-543	Kaolin	dck	0.09	<DL	<DL	0.03
MAC-246-543	Kaolin	dck	<DL	0.03	<DL	<DL
MAC-246-543	Kaolin	dck	0.08	<DL	<DL	<DL
MAC-246-543	Kaolin	dck	<DL	<DL	<DL	<DL
MAC-246-543	Kaolin	dck	<DL	0.09	<DL	0.03
MAC-246-543	Kaolin	dck	0.10	0.06	<DL	0.04
MAC-246-543	Kaolin	dck	<DL	0.17	0.26	0.04
MAC-246-543	Kaolin	dck	<DL	<DL	<DL	0.03
MAC-246-543	Kaolin	dck	<DL	0.05	<DL	0.03
MAC-246-543	Kaolin	dck	<DL	<DL	0.26	0.02
MAC-246-543	Kaolin	dck	0.07	<DL	<DL	0.01
MAC-246-543	Kaolin	dck	<DL	<DL	<DL	0.02
MAC-246-543	Kaolin	dck	<DL	0.05	0.26	0.04
MAC-246-543	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-183.4	Kaolin	dck	<DL	0.09	<DL	0.03
MC-434-183.4	Kaolin	dck	0.07	0.06	<DL	0.03
MC-434-183.4	Kaolin	dck	<DL	0.03	<DL	<DL
MC-434-183.4	Kaolin	dck	<DL	0.06	<DL	0.04
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-183.4	Kaolin	dck	<DL	0.06	<DL	0.02
MC-434-183.4	Kaolin	dck	<DL	0.04	<DL	0.02
MC-434-183.4	Kaolin	dck	<DL	0.04	<DL	<DL
MC-434-183.4	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-183.4	Kaolin	dck	<DL	0.04	<DL	0.04
MC-434-183.4	Kaolin	dck	<DL	0.06	<DL	0.03
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-397.53	Kaolin	dck	0.08	0.07	<DL	0.08
MC-434-397.53	Kaolin	dck	<DL	0.06	<DL	0.07
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.03
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.04
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.02
MC-434-397.53	Kaolin	dck	<DL	0.04	<DL	<DL
MC-434-397.53	Kaolin	dck	<DL	<DL	<DL	0.03
MC-434-421.67	Kaolin	dck	<DL	0.04	<DL	0.05
MC-434-421.67	Kaolin	dck	<DL	0.06	<DL	0.07
MC-434-421.67	Kaolin	dck	0.07	0.09	<DL	0.07
MC-434-421.67	Kaolin	dck	<DL	0.08	<DL	0.05
MC-434-421.67	Kaolin	dck	0.10	0.08	<DL	0.08
MC-434-421.67	Kaolin	dck	<DL	0.07	<DL	0.05
MC-434-421.67	Kaolin	dck	<DL	0.09	<DL	0.03
MC-434-421.67	Kaolin	dck	<DL	0.07	<DL	0.09
MC-434-421.67	Kaolin	dck	<DL	0.04	<DL	0.06
MC-434-421.67	Kaolin	dck	0.13	0.06	<DL	0.10

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Nd2O3 (wt.%)	Pr2O3 (wt.%)	CaO (wt.%)	SrO (wt.%)
MC-434-54.07	Kaolin	dck	<DL	0.06	<DL	0.03
MC-434-54.07	Kaolin	dck	<DL	<DL	<DL	0.04
MC-434-54.07	Kaolin	dck	<DL	<DL	<DL	0.03
MC-434-54.07	Kaolin	dck	<DL	<DL	0.29	0.03
MC-434-54.07	Kaolin	dck	<DL	0.03	<DL	0.04
MC-434-54.07	Kaolin	dck	<DL	<DL	<DL	0.04
MC-434-54.07	Kaolin	dck	<DL	0.07	<DL	0.04
MC-434-54.07	Kaolin	dck	<DL	<DL	<DL	<DL
MC-434-54.07	Kaolin	dck	0.09	0.12	<DL	0.05
MC-434-54.07	Kaolin	dck	0.08	0.12	<DL	0.06

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EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	BaO (wt.%)	F (wt.%)	O = F (wt.%)	H2O (assumed) (wt.%)
MAC-246-449.02	Tourmaline	drv	3.80	10.90	0.05	0.01
MAC-246-449.02	Tourmaline	drv	3.80	10.90	0.00	0.01
MAC-246-449.02	Tourmaline	drv	3.80	10.90	0.00	0.01
MAC-246-449.02	Tourmaline	drv	3.80	10.90	0.00	0.02
MAC-246-449.02	Tourmaline	drv	3.80	10.90	0.10	0.07
MAC-246-449.02	Tourmaline	drv	3.80	10.90	0.00	0.03
MAC-246-449.02	Tourmaline	drv	3.80	10.90	0.06	0.02
MAC-246-508.8	Tourmaline	drv	3.80	10.90	0.00	0.00
MAC-246-508.8	Tourmaline	drv	3.80	10.90	0.06	0.00
MAC-246-508.8	Tourmaline	drv	3.80	10.90	0.08	0.00
MAC-246-508.8	Tourmaline	drv	3.80	10.90	0.00	0.00
MAC-246-508.8	Tourmaline	drv	3.80	10.90	0.03	0.00
MAC-246-508.8	Tourmaline	drv	3.80	10.90	0.03	0.01
MAC-246-508.8	Tourmaline	drv	3.80	10.90	0.03	0.01
MAC-246-508.8	Tourmaline	drv	3.80	10.90	0.00	0.00
MAC-252-55.62	Tourmaline	drv	3.80	10.90	0.10	0.01
MAC-252-55.62	Tourmaline	drv	3.80	10.90	0.04	0.00
MAC-252-55.62	Tourmaline	drv	3.80	10.90	0.00	0.00
MAC-252-55.62	Tourmaline	drv	3.80	10.90	0.04	0.01
MAC-252-55.62	Tourmaline	drv	3.80	10.90	0.10	0.00
MAC-252-55.62	Tourmaline	drv	3.80	10.90	0.00	0.00
MAC-252-55.62	Tourmaline	drv	3.80	10.90	0.10	0.00
MAC-252-55.62	Tourmaline	drv	3.80	10.90	0.09	0.00
MAC-252-331.7	Tourmaline	drv	3.80	10.90	0.00	0.00
MAC-252-331.7	Tourmaline	drv	3.80	10.90	0.09	0.00
MAC-252-331.7	Tourmaline	drv	3.80	10.90	0.09	0.00
MAC-208-237	Chlorite		13.00		0.00	-0.01
MAC-208-237	Chlorite		13.00		0.00	-0.06
MAC-208-237	Chlorite		13.00		0.00	-0.02
MAC-208-237	Chlorite		13.00		-0.15	-0.06
MAC-208-237	Chlorite		13.00		-0.02	-0.02
MAC-208-237	Chlorite		13.00		0.00	-0.06
MAC-208-237	Chlorite		13.00		-0.02	-0.01
MAC-208-237	Chlorite		13.00		-0.05	-0.01
MAC-246-475.33	Chlorite		13.00		-0.17	-0.02
MAC-246-475.33	Chlorite		13.00		-0.38	-0.02
MAC-246-475.33	Chlorite		13.00		-0.22	-0.02
MAC-246-475.33	Chlorite		13.00		-0.11	-0.01
MAC-246-475.33	Chlorite		13.00		-0.21	-0.01
MAC-246-475.33	Chlorite		13.00		-0.03	-0.01
MAC-246-475.33	Chlorite		13.00		0.00	-0.03
MAC-246-475.33	Chlorite		13.00		-0.23	-0.01
MAC-246-475.33	Chlorite		13.00		-0.02	-0.02
MAC-252-271.2	Chlorite		13.00		-0.18	-0.02
MAC-252-271.2	Chlorite		13.00		-0.25	-0.01
MAC-252-271.2	Chlorite		13.00		-0.25	-0.01
MAC-252-271.2	Chlorite		13.00		-0.08	-0.01
MAC-252-271.2	Chlorite		13.00		-0.12	-0.01
MAC-252-271.2	Chlorite		13.00		-0.13	-0.01
MAC-252-271.2	Chlorite		13.00		-0.16	-0.02
MAC-252-271.2	Chlorite		13.00		-0.25	-0.01
MAC-252-271.2	Chlorite		13.00		-0.26	-0.01

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	BaO	F	O = F	H2O (assumed)
			(wt.%)	(wt.%)	(wt.%)	(wt.%)
MAC-252-271.2	Chlorite		13.00		-0.16	-0.01
MAC-252-271.2	Chlorite		13.00		-0.36	-0.01
MAC-253-325	Chlorite		13.00		0.00	-0.18
MAC-255-559	Chlorite		13.00		-0.13	-0.06
MAC-255-559	Chlorite		13.00		-0.14	-0.07
MAC-255-559	Chlorite		13.00		-0.19	-0.06
MAC-255-559	Chlorite		13.00		-0.22	-0.06
MAC-255-559	Chlorite		13.00		-0.19	-0.06
MAC-255-559	Chlorite		13.00		-0.28	-0.06
MAC-255-559	Chlorite		13.00		-0.33	-0.05
MAC-255-559	Chlorite		13.00		-0.19	-0.05
MAC-255-559	Chlorite		13.00		-0.14	-0.07
MAC-255-559	Chlorite		13.00		-0.16	-0.07
MAC-255-564.36	Chlorite		13.00		-0.56	-0.03
MAC-255-564.36	Chlorite		13.00		-0.36	-0.04
MAC-255-564.36	Chlorite		13.00		-0.23	-0.02
MAC-255-564.36	Chlorite		13.00		-0.27	-0.02
MAC-255-564.36	Chlorite		13.00		-0.27	-0.03
MAC-255-564.36	Chlorite		13.00		-0.51	-0.03
MAC-255-564.36	Chlorite		13.00		-0.36	-0.02
MAC-255-564.36	Chlorite		13.00		-0.40	-0.03
MAC-255-564.36	Chlorite		13.00		-0.39	-0.03
MAC-255-564.36	Chlorite		13.00		-0.33	-0.01
MC-413-183.26	Chlorite		13.00		-0.09	-0.02
MC-413-183.26	Chlorite		13.00		-0.24	-0.02
MC-413-183.26	Chlorite		13.00		-0.09	-0.06
MC-413-183.26	Chlorite		13.00		-0.06	-0.04
MC-413-183.26	Chlorite		13.00		-0.02	-0.03
MC-413-183.26	Chlorite		13.00		-0.05	-0.03
MC-413-183.26	Chlorite		13.00		0.00	-0.05
MC-413-183.26	Chlorite		13.00		-0.05	-0.05
MC-413-183.26	Chlorite		13.00		-0.12	-0.05
MC-413-183.26	Chlorite		13.00		0.00	-0.09
MC-413-603.83	Chlorite		13.00		0.00	0.00
MC-413-603.83	Chlorite		13.00		-0.02	-0.01
MC-413-603.83	Chlorite		13.00		-0.06	-0.01
MC-366-570	Chlorite		13.00		-0.32	0.00
MC-366-570	Chlorite		13.00		-0.20	-0.01
MC-366-570	Chlorite		13.00		-0.33	-0.01
MC-366-570	Chlorite		13.00		-0.30	-0.01
MC-366-570	Chlorite		13.00		-0.23	-0.01
MC-366-570	Chlorite		13.00		-0.31	-0.01
MC-366-570	Chlorite		13.00		-0.15	-0.01
MC-366-570	Chlorite		13.00		-0.23	-0.01
MAC-208-237	Illite		6.00		-0.09	-0.06
MAC-208-290.5	Illite		6.00		-0.26	-0.01
MAC-208-290.5	Illite		6.00		-0.22	-0.01
MAC-208-290.5	Illite		6.00		-0.12	-0.01
MAC-208-290.5	Illite		6.00		-0.08	-0.01
MAC-208-290.5	Illite		6.00		-0.08	-0.01
MAC-208-290.5	Illite		6.00		-0.23	0.00
MAC-208-290.5	Illite		6.00		-0.18	-0.01

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	BaO (wt.%)	F (wt.%)	O = F (wt.%)	H2O (assumed) (wt.%)
MAC-208-290.5	Illite		6.00		-0.06	-0.01
MAC-208-290.5	Illite		6.00		-0.19	-0.01
MAC-208-290.5	Illite		6.00		-0.23	-0.01
MAC-246-333.8	Illite		6.00		0.12	0.01
MAC-246-333.8	Illite		6.00		0.05	0.01
MAC-246-333.8	Illite		6.00		0.09	0.01
MAC-246-333.8	Illite		6.00		0.02	0.01
MAC-246-333.8	Illite		6.00		0.06	0.01
MAC-246-333.8	Illite		6.00		0.03	0.01
MAC-246-333.8	Illite		6.00		0.02	0.01
MAC-246-333.8	Illite		6.00		0.18	0.01
MAC-246-333.8	Illite		6.00		0.08	0.00
MAC-246-333.8	Illite		6.00		0.15	0.01
MAC-246-333.8	Illite		6.00		0.12	0.01
MAC-246-333.8	Illite		6.00		0.23	0.00
MAC-246-475.33	Illite		6.00		-0.14	0.00
MAC-246-475.33	Illite		6.00		-0.17	0.00
MAC-246-475.33	Illite		6.00		0.00	0.00
MAC-252-331.7	Illite		6.00		0.20	0.01
MAC-252-331.7	Illite		6.00		0.20	0.01
MAC-252-331.7	Illite		6.00		0.09	0.01
MAC-252-331.7	Illite		6.00		0.12	0.01
MAC-252-331.7	Illite		6.00		0.12	0.01
MAC-252-331.7	Illite		6.00		0.03	0.01
MAC-252-331.7	Illite		6.00		0.18	0.01
MAC-252-331.7	Illite		6.00		0.17	0.01
MAC-252-331.7	Illite		6.00		0.20	0.01
MAC-252-331.7	Illite		6.00		0.20	0.01
MAC-252-331.7	Illite		6.00		0.20	0.01
MAC-252-271.2	Illite		6.00		-0.17	-0.01
MAC-252-271.2	Illite		6.00		-0.37	-0.01
MAC-252-271.2	Illite		6.00		-0.34	0.00
MAC-252-271.2	Illite		6.00		-0.25	-0.01
MAC-252-271.2	Illite		6.00		-0.15	-0.01
MAC-252-271.2	Illite		6.00		-0.29	-0.01
MAC-252-271.2	Illite		6.00		-0.06	-0.01
MAC-252-271.2	Illite		6.00		-0.44	-0.02
MAC-252-271.2	Illite		6.00		-0.26	-0.02
MAC-252-271.2	Illite		6.00		-0.26	-0.01
MAC-252-271.2	Illite		6.00		-0.22	-0.01
MAC-253-325	Illite		6.00		-0.09	-0.06
MAC-253-325	Illite		6.00		-0.06	-0.04
MAC-253-325	Illite		6.00		-0.06	-0.05
MAC-255-501.32	Illite		6.00		-0.15	-0.01
MAC-255-501.32	Illite		6.00		-0.20	0.00
MAC-255-501.32	Illite		6.00		-0.44	-0.01
MAC-255-501.32	Illite		6.00		-0.26	-0.01
MAC-255-501.32	Illite		6.00		-0.37	0.00
MAC-255-501.32	Illite		6.00		-0.26	-0.01
MAC-255-501.32	Illite		6.00		-0.26	0.00
MAC-255-501.32	Illite		6.00		-0.40	0.00
MAC-255-501.32	Illite		6.00		-0.49	-0.01

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	BaO	F	O = F	H2O (assumed)
			(wt.%)	(wt.%)	(wt.%)	(wt.%)
MAC-255-501.32	Illite		6.00		-0.37	-0.01
MAC-255-501.32	Illite		6.00		-0.23	0.00
MC-338-559	Illite		6.00		-0.12	-0.01
MC-338-559	Illite		6.00		-0.38	0.00
MC-338-559	Illite		6.00		-0.32	-0.01
MC-338-559	Illite		6.00		-0.17	0.00
MC-338-559	Illite		6.00		-0.11	0.00
MC-338-559	Illite		6.00		-0.15	-0.01
MC-338-559	Illite		6.00		-0.31	0.00
MC-338-559	Illite		6.00		-0.22	-0.01
MC-366-570	Illite		6.00		-0.02	0.00
MC-366-570	Illite		6.00		-0.15	-0.01
MC-413-603.83	Illite		6.00		-0.06	0.00
MC-413-603.83	Illite		6.00		-0.11	-0.01
MC-413-603.83	Illite		6.00		0.00	0.00
MC-413-603.83	Illite		6.00		0.00	0.00
MC-413-603.83	Illite		6.00		0.00	0.00
MC-413-603.83	Illite		6.00		-0.06	-0.01
MC-413-603.83	Illite		6.00		-0.06	0.00
MC-413-603.83	Illite		6.00		-0.22	-0.01
MC-413-603.83	Illite		6.00		-0.21	0.00
MC-413-603.83	Illite		6.00		-0.05	0.00
MC-434-253.64	Illite		6.00		0.00	0.03
MC-434-253.64	Illite		6.00		0.06	0.04
MC-434-253.64	Illite		6.00		0.00	0.05
MC-434-54.07	Illite		6.00		0.13	0.01
MC-434-54.07	Illite		6.00		0.03	0.02
MC-434-54.07	Illite		6.00		0.00	0.01
MAC-208-237	Muscovite		4.50		-0.06	0.00
MAC-208-290.5	Muscovite		4.50		-0.09	-0.01
MAC-255-564.36	Muscovite		4.50		-0.29	0.00
MAC-255-564.36	Muscovite		4.50		-0.06	0.00
MAC-255-564.36	Muscovite		4.50		-0.18	0.00
MC-338-559	Muscovite		4.50		-0.39	0.00
MC-338-559	Muscovite		4.50		-0.09	0.00
MC-338-559	Muscovite		4.50		-0.31	0.00
MC-338-559	Muscovite		4.50		-0.50	0.00
MC-338-559	Muscovite		4.50		0.00	0.00
MC-336-570	Muscovite		4.50		-0.06	0.00
MC-336-570	Muscovite		4.50		-0.32	0.00
MC-336-570	Muscovite		4.50		-0.14	0.00
MC-336-570	Muscovite		4.50		-0.08	0.00
MC-336-570	Muscovite		4.50		-0.21	0.00
MC-434-183.4	Muscovite		4.50		0.00	0.00
MC-434-183.4	Muscovite		4.50		0.00	0.00
MC-434-183.4	Muscovite		4.50		0.00	0.00
MC-434-183.4	Muscovite		4.50		0.12	0.00
MC-434-183.4	Muscovite		4.50		0.01	0.01
MAC-246-333.8	Kaolin	dck	14.00			0.01
MAC-246-333.8	Kaolin	dck	14.00			0.00
MAC-246-333.8	Kaolin	dck	14.00			0.00
MAC-246-333.8	Kaolin	dck	14.00			0.01

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	BaO (wt.%)	F (wt.%)	O = F (wt.%)	H2O (assumed) (wt.%)
MAC-246-333.8	Kaolin	dck	14.00			0.01
MAC-246-333.8	Kaolin	dck	14.00			0.01
MAC-246-333.8	Kaolin	dck	14.00			0.01
MAC-246-333.8	Kaolin	dck	14.00			0.00
MAC-246-543	Kaolin	dck	14.00			0.01
MAC-246-543	Kaolin	dck	14.00			0.00
MAC-246-543	Kaolin	dck	14.00			0.00
MAC-246-543	Kaolin	dck	14.00			0.00
MAC-246-543	Kaolin	dck	14.00			0.01
MAC-246-543	Kaolin	dck	14.00			0.01
MAC-246-543	Kaolin	dck	14.00			0.01
MAC-246-543	Kaolin	dck	14.00			0.01
MAC-246-543	Kaolin	dck	14.00			0.01
MAC-246-543	Kaolin	dck	14.00			0.01
MAC-246-543	Kaolin	dck	14.00			0.00
MAC-246-543	Kaolin	dck	14.00			0.00
MAC-246-543	Kaolin	dck	14.00			0.01
MAC-246-543	Kaolin	dck	14.00			0.00
MC-434-183.4	Kaolin	dck	14.00			0.01
MC-434-183.4	Kaolin	dck	14.00			0.01
MC-434-183.4	Kaolin	dck	14.00			0.00
MC-434-183.4	Kaolin	dck	14.00			0.01
MC-434-183.4	Kaolin	dck	14.00			0.01
MC-434-183.4	Kaolin	dck	14.00			0.01
MC-434-183.4	Kaolin	dck	14.00			0.01
MC-434-183.4	Kaolin	dck	14.00			0.00
MC-434-183.4	Kaolin	dck	14.00			0.00
MC-434-183.4	Kaolin	dck	14.00			0.01
MC-434-183.4	Kaolin	dck	14.00			0.01
MC-434-397.53	Kaolin	dck	14.00			0.00
MC-434-397.53	Kaolin	dck	14.00			0.00
MC-434-397.53	Kaolin	dck	14.00			0.01
MC-434-397.53	Kaolin	dck	14.00			0.00
MC-434-397.53	Kaolin	dck	14.00			0.02
MC-434-397.53	Kaolin	dck	14.00			0.02
MC-434-397.53	Kaolin	dck	14.00			0.01
MC-434-397.53	Kaolin	dck	14.00			0.01
MC-434-397.53	Kaolin	dck	14.00			0.00
MC-434-397.53	Kaolin	dck	14.00			0.01
MC-434-397.53	Kaolin	dck	14.00			0.01
MC-434-397.53	Kaolin	dck	14.00			0.00
MC-434-397.53	Kaolin	dck	14.00			0.01
MC-434-421.67	Kaolin	dck	14.00			0.01
MC-434-421.67	Kaolin	dck	14.00			0.02
MC-434-421.67	Kaolin	dck	14.00			0.02
MC-434-421.67	Kaolin	dck	14.00			0.01
MC-434-421.67	Kaolin	dck	14.00			0.02
MC-434-421.67	Kaolin	dck	14.00			0.01
MC-434-421.67	Kaolin	dck	14.00			0.01
MC-434-421.67	Kaolin	dck	14.00			0.02
MC-434-421.67	Kaolin	dck	14.00			0.01
MC-434-421.67	Kaolin	dck	14.00			0.02

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	BaO (wt.%)	F (wt.%)	O = F (wt.%)	H2O (assumed) (wt.%)
MC-434-54.07	Kaolin	dck	14.00			0.01
MC-434-54.07	Kaolin	dck	14.00			0.01
MC-434-54.07	Kaolin	dck	14.00			0.01
MC-434-54.07	Kaolin	dck	14.00			0.01
MC-434-54.07	Kaolin	dck	14.00			0.01
MC-434-54.07	Kaolin	dck	14.00			0.01
MC-434-54.07	Kaolin	dck	14.00			0.01
MC-434-54.07	Kaolin	dck	14.00			0.00
MC-434-54.07	Kaolin	dck	14.00			0.01
MC-434-54.07	Kaolin	dck	14.00			0.01

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Total (wt.%)
MAC-246-449.02	Tourmaline	drv	99.31
MAC-246-449.02	Tourmaline	drv	98.95
MAC-246-449.02	Tourmaline	drv	98.97
MAC-246-449.02	Tourmaline	drv	99.50
MAC-246-449.02	Tourmaline	drv	99.96
MAC-246-449.02	Tourmaline	drv	99.97
MAC-246-449.02	Tourmaline	drv	100.05
MAC-246-508.8	Tourmaline	drv	99.08
MAC-246-508.8	Tourmaline	drv	98.97
MAC-246-508.8	Tourmaline	drv	101.30
MAC-246-508.8	Tourmaline	drv	99.17
MAC-246-508.8	Tourmaline	drv	98.11
MAC-246-508.8	Tourmaline	drv	98.93
MAC-246-508.8	Tourmaline	drv	98.13
MAC-246-508.8	Tourmaline	drv	97.03
MAC-252-55.62	Tourmaline	drv	100.15
MAC-252-55.62	Tourmaline	drv	100.08
MAC-252-55.62	Tourmaline	drv	99.63
MAC-252-55.62	Tourmaline	drv	99.77
MAC-252-55.62	Tourmaline	drv	98.86
MAC-252-55.62	Tourmaline	drv	99.75
MAC-252-55.62	Tourmaline	drv	99.15
MAC-252-55.62	Tourmaline	drv	100.38
MAC-252-331.7	Tourmaline	drv	99.69
MAC-252-331.7	Tourmaline	drv	100.09
MAC-252-331.7	Tourmaline	drv	100.56
MAC-208-237	Chlorite		103.59
MAC-208-237	Chlorite		99.79
MAC-208-237	Chlorite		103.14
MAC-208-237	Chlorite		100.81
MAC-208-237	Chlorite		104.56
MAC-208-237	Chlorite		99.18
MAC-208-237	Chlorite		102.32
MAC-208-237	Chlorite		102.68
MAC-246-475.33	Chlorite		94.91
MAC-246-475.33	Chlorite		87.42
MAC-246-475.33	Chlorite		92.00
MAC-246-475.33	Chlorite		95.49
MAC-246-475.33	Chlorite		94.55
MAC-246-475.33	Chlorite		90.36
MAC-246-475.33	Chlorite		91.18
MAC-246-475.33	Chlorite		91.35
MAC-246-475.33	Chlorite		83.39
MAC-252-271.2	Chlorite		98.79
MAC-252-271.2	Chlorite		100.98
MAC-252-271.2	Chlorite		100.33
MAC-252-271.2	Chlorite		97.03
MAC-252-271.2	Chlorite		97.65
MAC-252-271.2	Chlorite		99.07
MAC-252-271.2	Chlorite		103.23
MAC-252-271.2	Chlorite		98.22
MAC-252-271.2	Chlorite		100.19

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Total (wt.%)
MAC-252-271.2	Chlorite		102.32
MAC-252-271.2	Chlorite		96.96
MAC-253-325	Chlorite		73.31
MAC-255-559	Chlorite		100.30
MAC-255-559	Chlorite		99.97
MAC-255-559	Chlorite		99.52
MAC-255-559	Chlorite		100.59
MAC-255-559	Chlorite		100.10
MAC-255-559	Chlorite		100.85
MAC-255-559	Chlorite		99.97
MAC-255-559	Chlorite		99.86
MAC-255-559	Chlorite		99.55
MAC-255-559	Chlorite		100.79
MAC-255-564.36	Chlorite		101.73
MAC-255-564.36	Chlorite		97.36
MAC-255-564.36	Chlorite		99.73
MAC-255-564.36	Chlorite		99.83
MAC-255-564.36	Chlorite		99.17
MAC-255-564.36	Chlorite		102.35
MAC-255-564.36	Chlorite		100.42
MAC-255-564.36	Chlorite		99.69
MAC-255-564.36	Chlorite		102.19
MAC-255-564.36	Chlorite		100.20
MC-413-183.26	Chlorite		99.62
MC-413-183.26	Chlorite		99.13
MC-413-183.26	Chlorite		89.05
MC-413-183.26	Chlorite		94.39
MC-413-183.26	Chlorite		98.50
MC-413-183.26	Chlorite		99.36
MC-413-183.26	Chlorite		97.04
MC-413-183.26	Chlorite		90.16
MC-413-183.26	Chlorite		94.85
MC-413-183.26	Chlorite		88.57
MC-413-603.83	Chlorite		101.69
MC-413-603.83	Chlorite		104.22
MC-413-603.83	Chlorite		104.41
MC-366-570	Chlorite		100.01
MC-366-570	Chlorite		99.82
MC-366-570	Chlorite		97.76
MC-366-570	Chlorite		100.08
MC-366-570	Chlorite		98.16
MC-366-570	Chlorite		101.51
MC-366-570	Chlorite		98.41
MC-366-570	Chlorite		99.39
MAC-208-237	Illite		90.97
MAC-208-290.5	Illite		95.58
MAC-208-290.5	Illite		97.63
MAC-208-290.5	Illite		98.76
MAC-208-290.5	Illite		95.59
MAC-208-290.5	Illite		99.14
MAC-208-290.5	Illite		100.09
MAC-208-290.5	Illite		97.39

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EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Total (wt.%)
MAC-208-290.5	Illite		99.77
MAC-208-290.5	Illite		97.90
MAC-208-290.5	Illite		98.01
MAC-246-333.8	Illite		99.73
MAC-246-333.8	Illite		99.87
MAC-246-333.8	Illite		100.19
MAC-246-333.8	Illite		100.21
MAC-246-333.8	Illite		98.13
MAC-246-333.8	Illite		98.79
MAC-246-333.8	Illite		100.37
MAC-246-333.8	Illite		98.48
MAC-246-333.8	Illite		100.71
MAC-246-333.8	Illite		101.11
MAC-246-333.8	Illite		101.09
MAC-246-333.8	Illite		101.16
MAC-246-475.33	Illite		100.38
MAC-246-475.33	Illite		101.19
MAC-246-475.33	Illite		101.73
MAC-252-331.7	Illite		95.84
MAC-252-331.7	Illite		96.36
MAC-252-331.7	Illite		95.44
MAC-252-331.7	Illite		84.30
MAC-252-331.7	Illite		92.12
MAC-252-331.7	Illite		86.98
MAC-252-331.7	Illite		89.13
MAC-252-331.7	Illite		100.26
MAC-252-331.7	Illite		95.09
MAC-252-331.7	Illite		97.85
MAC-252-331.7	Illite		99.23
MAC-252-271.2	Illite		96.31
MAC-252-271.2	Illite		97.54
MAC-252-271.2	Illite		96.99
MAC-252-271.2	Illite		98.38
MAC-252-271.2	Illite		92.86
MAC-252-271.2	Illite		98.84
MAC-252-271.2	Illite		99.13
MAC-252-271.2	Illite		98.56
MAC-252-271.2	Illite		98.08
MAC-252-271.2	Illite		101.08
MAC-252-271.2	Illite		95.51
MAC-253-325	Illite		89.64
MAC-253-325	Illite		93.06
MAC-253-325	Illite		85.04
MAC-255-501.32	Illite		100.75
MAC-255-501.32	Illite		99.10
MAC-255-501.32	Illite		97.83
MAC-255-501.32	Illite		101.12
MAC-255-501.32	Illite		100.13
MAC-255-501.32	Illite		99.31
MAC-255-501.32	Illite		98.60
MAC-255-501.32	Illite		99.92
MAC-255-501.32	Illite		100.55

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Total (wt.%)
MAC-255-501.32	Illite		100.09
MAC-255-501.32	Illite		99.81
MC-338-559	Illite		100.52
MC-338-559	Illite		100.30
MC-338-559	Illite		100.11
MC-338-559	Illite		97.96
MC-338-559	Illite		100.40
MC-338-559	Illite		98.37
MC-338-559	Illite		100.55
MC-338-559	Illite		98.83
MC-366-570	Illite		98.38
MC-366-570	Illite		98.53
MC-413-603.83	Illite		100.34
MC-413-603.83	Illite		101.36
MC-413-603.83	Illite		100.34
MC-413-603.83	Illite		99.89
MC-413-603.83	Illite		101.64
MC-413-603.83	Illite		101.14
MC-413-603.83	Illite		100.97
MC-413-603.83	Illite		100.01
MC-413-603.83	Illite		101.54
MC-413-603.83	Illite		101.24
MC-434-253.64	Illite		93.48
MC-434-253.64	Illite		92.57
MC-434-253.64	Illite		91.28
MC-434-54.07	Illite		100.95
MC-434-54.07	Illite		99.20
MC-434-54.07	Illite		99.99
MAC-208-237	Muscovite		98.80
MAC-208-290.5	Muscovite		97.79
MAC-255-564.36	Muscovite		99.69
MAC-255-564.36	Muscovite		99.41
MAC-255-564.36	Muscovite		99.69
MC-338-559	Muscovite		98.88
MC-338-559	Muscovite		98.87
MC-338-559	Muscovite		99.41
MC-338-559	Muscovite		98.64
MC-338-559	Muscovite		100.11
MC-336-570	Muscovite		98.91
MC-336-570	Muscovite		99.12
MC-336-570	Muscovite		98.90
MC-336-570	Muscovite		99.11
MC-336-570	Muscovite		99.23
MC-434-183.4	Muscovite		99.96
MC-434-183.4	Muscovite		99.70
MC-434-183.4	Muscovite		99.86
MC-434-183.4	Muscovite		99.47
MC-434-183.4	Muscovite		98.93
MAC-246-333.8	Kaolin	dck	101.32
MAC-246-333.8	Kaolin	dck	101.69
MAC-246-333.8	Kaolin	dck	100.97
MAC-246-333.8	Kaolin	dck	100.36

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Total (wt.%)
MAC-246-333.8	Kaolin	dck	100.29
MAC-246-333.8	Kaolin	dck	100.25
MAC-246-333.8	Kaolin	dck	100.03
MAC-246-333.8	Kaolin	dck	100.77
MAC-246-543	Kaolin	dck	101.22
MAC-246-543	Kaolin	dck	100.09
MAC-246-543	Kaolin	dck	101.78
MAC-246-543	Kaolin	dck	100.63
MAC-246-543	Kaolin	dck	101.20
MAC-246-543	Kaolin	dck	101.51
MAC-246-543	Kaolin	dck	100.14
MAC-246-543	Kaolin	dck	101.88
MAC-246-543	Kaolin	dck	101.42
MAC-246-543	Kaolin	dck	101.23
MAC-246-543	Kaolin	dck	101.03
MAC-246-543	Kaolin	dck	101.80
MAC-246-543	Kaolin	dck	99.66
MAC-246-543	Kaolin	dck	101.93
MC-434-183.4	Kaolin	dck	100.22
MC-434-183.4	Kaolin	dck	99.71
MC-434-183.4	Kaolin	dck	100.75
MC-434-183.4	Kaolin	dck	100.06
MC-434-183.4	Kaolin	dck	99.96
MC-434-183.4	Kaolin	dck	100.41
MC-434-183.4	Kaolin	dck	100.10
MC-434-183.4	Kaolin	dck	100.31
MC-434-183.4	Kaolin	dck	100.39
MC-434-183.4	Kaolin	dck	100.24
MC-434-183.4	Kaolin	dck	100.59
MC-434-397.53	Kaolin	dck	100.82
MC-434-397.53	Kaolin	dck	100.92
MC-434-397.53	Kaolin	dck	100.13
MC-434-397.53	Kaolin	dck	101.59
MC-434-397.53	Kaolin	dck	99.60
MC-434-397.53	Kaolin	dck	98.16
MC-434-397.53	Kaolin	dck	100.59
MC-434-397.53	Kaolin	dck	99.71
MC-434-397.53	Kaolin	dck	100.15
MC-434-397.53	Kaolin	dck	100.74
MC-434-397.53	Kaolin	dck	100.53
MC-434-397.53	Kaolin	dck	100.78
MC-434-397.53	Kaolin	dck	100.47
MC-434-421.67	Kaolin	dck	100.39
MC-434-421.67	Kaolin	dck	98.70
MC-434-421.67	Kaolin	dck	99.62
MC-434-421.67	Kaolin	dck	99.06
MC-434-421.67	Kaolin	dck	98.77
MC-434-421.67	Kaolin	dck	100.45
MC-434-421.67	Kaolin	dck	100.39
MC-434-421.67	Kaolin	dck	100.13
MC-434-421.67	Kaolin	dck	99.36
MC-434-421.67	Kaolin	dck	99.17

Appendix J

EPMA Silicate Mineral Data

Sample No.	Mineral Group	Mineral	Total (wt.%)
MC-434-54.07	Kaolin	dck	100.12
MC-434-54.07	Kaolin	dck	100.68
MC-434-54.07	Kaolin	dck	99.40
MC-434-54.07	Kaolin	dck	100.30
MC-434-54.07	Kaolin	dck	100.44
MC-434-54.07	Kaolin	dck	100.62
MC-434-54.07	Kaolin	dck	100.53
MC-434-54.07	Kaolin	dck	100.26
MC-434-54.07	Kaolin	dck	100.57
MC-434-54.07	Kaolin	dck	100.07

Appendix K

LA-ICP-MS Mineral Chemistry Data

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Ablation Target
MAC-208-237	C1 Chlorite	Chlorite 1
MAC-208-237	C1 Chlorite	Chlorite 1
MAC-208-237	C1 Chlorite	Chlorite 2
MAC-252-271.2	C1 Chlorite	Chlorite 1
MAC-252-271.2	C1 Chlorite	Chlorite 1
MAC-253-325	C1 Chlorite	Chlorite 1
MAC-253-325	C1 Chlorite	Chlorite 2
MAC-253-325	C1 Chlorite	Chlorite 2
MC-413-183.26	C1 Chlorite	Chlorite 1
MC-413-183.26	C1 Chlorite	Chlorite 1
MC-413-183.26	C1 Chlorite	Chlorite 1
MC-413-183.26	C1 Chlorite	Chlorite 2
MC-413-183.26	C1 Chlorite	Chlorite 2
MC-413-183.26	C1 Chlorite	Chlorite 2
MAC-208-487	C2 Chlorite	Chlorite 1
MAC-208-487	C2 Chlorite	Chlorite 1
MAC-208-487	C2 Chlorite	Chlorite 1
MAC-208-487	C2 Chlorite	Chlorite 3
MAC-208-572	C2 Chlorite	Chlorite (Drv+Chl 2)
MAC-208-572	C2 Chlorite	Chlorite (Drv+Chl 2)
MAC-208-572	C2 Chlorite	Chlorite 3
MAC-208-572	C2 Chlorite	Chlorite 3
MAC-208-572	C2 Chlorite	Chlorite 3
MAC-208-572	C2 Chlorite	Chlorite 3
MAC-246-475.33	C2 Chlorite	Chlorite 1
MAC-246-475.33	C2 Chlorite	Chlorite 1
MAC-246-475.33	C2 Chlorite	Chlorite 2
MAC-246-475.33	C2 Chlorite	Chlorite 2
MAC-255-559	C2 Chlorite	Chlorite (Py 1)
MAC-255-559	C2 Chlorite	Chlorite (Py1)
MAC-255-559	C2 Chlorite	Chlorite 1
MAC-255-559	C2 Chlorite	Chlorite 1
MAC-255-559	C2 Chlorite	Chlorite 3
MAC-255-559	C2 Chlorite	Chlorite 3
MAC-255-559	C2 Chlorite	Chlorite 3
MAC-255-564.36	C2 Chlorite	Chlorite 1
MAC-255-564.36	C2 Chlorite	Chlorite 1
MAC-255-564.36	C2 Chlorite	Chlorite 1
MAC-255-564.36	C2 Chlorite	Chlorite 2
MAC-255-564.36	C2 Chlorite	Chlorite 3
MAC-255-564.36	C2 Chlorite	Chlorite 3
MAC-255-564.36	C2 Chlorite	Chlorite 3
MC-336-570.5	C2 Chlorite	Chlorite (Ilt/Chl 1)
MC-336-570.5	C2 Chlorite	Chlorite 1
MC-336-570.5	C2 Chlorite	Chlorite 2
MC-336-570.5	C2 Chlorite	Chlorite 3
MC-336-570.5	C2 Chlorite	Chlorite 3
MC-336-570.5	C2 Chlorite	Chlorite 3
MAC-208-290.5	Illite	Illite 1
MAC-208-290.5	Illite	Illite 2
MAC-246-333.8	Illite	Illite 1
MAC-246-333.8	Illite	Illite 1
MAC-252-271.2	Illite	Illite 1
MAC-252-271.2	Illite	Illite 1
MAC-252-271.2	Illite	Illite 1
MAC-252-319.44	Illite	Illite 1
MAC-252-319.44	Illite	Illite 1
MAC-253-507.5	Illite	Illite 1 (Musc?)
MAC-255-293.4	Illite	Illite 1

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Ablation Target
MAC-255-293.4	Illite	Illite 1
MAC-255-293.4	Illite	Illite 1
MAC-255-293.4	Illite	Illite 2
MAC-255-293.4	Illite	Illite 2
MAC-255-501.32	Illite	Illite 1
MAC-255-501.32	Illite	Illite 1
MAC-255-501.32	Illite	Illite 1
MAC-255-501.32	Illite	Illite 2
MAC-255-501.32	Illite	Illite 2
MAC-255-501.32	Illite	Illite 2
MAC-255-501.32	Illite	Illite 2
MC-336-506.8	Illite	Illite 1 (Drv contamination)
MC-336-506.8	Illite	Illite 1 (Drv contamination)
MC-336-506.8	Illite	Illite 2 (possibly musc.)
MC-336-570.5	Illite	Illite (Ilt/Chl 1)
MC-338-101	Illite	Illite 1
MC-338-101	Illite	Illite 1
MC-338-101	Illite	Illite 2
MC-338-101	Illite	Illite 2
MC-338-319	Illite	Illite 1
MC-338-319	Illite	Illite 2
MC-338-319	Illite	Illite 2
MC-338-319	Illite	Illite 2 (best)
MC-338-559	Illite	Illite 1
MC-338-559	Illite	Illite 2 (ICLM)
MC-338-559	Illite	Illite 2 (ICML)
MC-413-299	Illite	Illite 1
MC-413-299	Illite	Illite 2
MC-413-603.83	Illite	Ilite 1 (best)
MC-413-603.83	Illite	Illite 1
MC-413-603.83	Illite	Illite 1
MC-413-603.83	Illite	Illite 2
MC-413-603.83	Illite	Illite 2
MC-413-603.83	Illite	Ilt 3
MC-413-603.83	Illite	Ilt 3
MC-413-603.83	Illite	Ilt 3
MC-434-253.64	Illite	Illite (Ilt/Chl 1)
MC-434-253.64	Illite	Illite 2
MC-434-253.64	Illite	Illite 2
MC-434-54.07	Illite	Illite 1
MC-434-54.07	Illite	Illite 1
MAC-246-508.8	Drv Veins	Drv 1
MAC-246-508.8	Drv Veins	Drv 1
MAC-246-508.8	Drv Veins	Drv 1
MAC-246-508.8	Drv Veins	Drv 2
MAC-253-265.3	Drv Veins	Dravite 3
MAC-253-265.3	Drv Veins	Dravite 3
MAC-253-265.3	Drv Veins	Dravite 4
MAC-253-265.3	Drv Veins	Dravite 4
MAC-253-265.3	Drv Veins	Dravite 4
MAC-253-538	Drv Veins	Dravite 1
MAC-253-538	Drv Veins	Dravite 1
MAC-253-538	Drv Veins	Dravite 2
MAC-253-538	Drv Veins	Dravite 2
MAC-253-538	Drv Veins	Dravite 2
MC-344-100.1	Drv Veins	Dravite 1
MC-344-100.1	Drv Veins	Dravite 1
MC-344-100.1	Drv Veins	Dravite 2
MC-344-100.1	Drv Veins	Dravite 2

Sample No.	Mineral	Ablation Target
MC-344-100.1	Drv Veins	Dravite 2
MC-344-100.1	Drv Veins	Dravite 3
MC-344-100.1	Drv Veins	Dravite 3
MC-415-497.66	Drv Veins	Dravite 1
MC-415-497.66	Drv Veins	Dravite 1
MC-415-497.66	Drv Veins	Dravite 1
MC-415-497.66	Drv Veins	Dravite 1
MAC-208-10.2	Interstitial Drv	Dravite 1
MAC-208-10.2	Interstitial Drv	Dravite 2
MAC-208-572	Interstitial Drv	Dravite (Drv+Chl 2)
MAC-208-572	Interstitial Drv	Dravite 1
MAC-208-572	Interstitial Drv	Dravite 1
MAC-208-572	Interstitial Drv	Dravite 4
MAC-208-572	Interstitial Drv	Dravite 4
MAC-246-142.86	Interstitial Drv	Dravite 1
MAC-246-142.86	Interstitial Drv	Dravite 2
MAC-246-142.86	Interstitial Drv	Dravite 2
MAC-246-142.86	Interstitial Drv	Dravite 3
MAC-246-142.86	Interstitial Drv	Dravite 3
MAC-246-213.43	Interstitial Drv	Dravite 1
MAC-246-213.43	Interstitial Drv	Dravite 2
MAC-246-213.43	Interstitial Drv	Dravite 2
MAC-246-4.33	Interstitial Drv	Dravite 1
MAC-246-4.33	Interstitial Drv	Dravite 2
MAC-246-4.33	Interstitial Drv	Dravite 2
MAC-246-475.33	Interstitial Drv	Dravite 1
MAC-246-475.33	Interstitial Drv	Dravite 1
MAC-246-475.33	Interstitial Drv	Dravite 1
MAC-246-475.33	Interstitial Drv	Dravite 2
MAC-246-475.33	Interstitial Drv	Dravite 2
MAC-246-475.33	Interstitial Drv	Dravite 3
MAC-246-475.33	Interstitial Drv	Dravite 3
MAC-246-499.02	Interstitial Drv	Dravite 1
MAC-252-199.86	Interstitial Drv	Dravite 2
MAC-252-199.86	Interstitial Drv	Dravite 3
MAC-252-342.5	Interstitial Drv	Dravite (APS 2)
MAC-252-342.5	Interstitial Drv	Dravite (APS 2)
MAC-252-342.5	Interstitial Drv	Dravite 1
MAC-252-342.5	Interstitial Drv	Dravite 1
MAC-252-342.5	Interstitial Drv	Dravite 2
MAC-252-342.5	Interstitial Drv	Dravite 2
MAC-252-55.65	Interstitial Drv	Dravite 1
MAC-252-55.65	Interstitial Drv	Dravite 2
MAC-252-55.65	Interstitial Drv	Dravite 2
MAC-253-205	Interstitial Drv	Dravite 1
MAC-253-205	Interstitial Drv	Dravite 1
MAC-253-205	Interstitial Drv	Dravite 2
MAC-253-205	Interstitial Drv	Dravite 2
MAC-253-205	Interstitial Drv	Dravite 2
MAC-253-205	Interstitial Drv	Dravite 3
MAC-253-205	Interstitial Drv	Dravite 3
MAC-253-265.3	Interstitial Drv	Dravite 1
MAC-253-265.3	Interstitial Drv	Dravite 1
MAC-253-265.3	Interstitial Drv	Dravite 2
MAC-255-6.13	Interstitial Drv	Dravite 1.1 (Hydrothermal)
MAC-255-6.13	Interstitial Drv	Dravite 2
MAC-255-6.13	Interstitial Drv	Dravite 2
MAC-255-6.13	Interstitial Drv	Dravite 3
MC-338-537.64	Interstitial Drv	Dravite 1

Sample No.	Mineral	Ablation Target
MC-338-537.64	Interstitial Drv	Dravite 1
MC-338-537.64	Interstitial Drv	Dravite 1
MC-338-537.64	Interstitial Drv	Dravite 1
MC-338-537.64	Interstitial Drv	Dravite 2
MC-338-537.64	Interstitial Drv	Dravite 2
MC-344-179.8	Interstitial Drv	Dravite 2
MC-344-179.8	Interstitial Drv	Dravite 3
MC-344-179.8	Interstitial Drv	Dravite 3
MC-344-179.8	Interstitial Drv	Dravite 3
MC-413-258.26	Interstitial Drv	Dravite 1
MC-413-258.26	Interstitial Drv	Dravite 1
MC-413-258.26	Interstitial Drv	Dravite 2
MC-413-258.26	Interstitial Drv	Dravite 2
MC-413-258.26	Interstitial Drv	Dravite 3
MC-413-258.26	Interstitial Drv	Dravite 3
MC-413-258.26	Interstitial Drv	Dravite 3
MC-413-649	Interstitial Drv	Dravite 1
MC-415-173.4	Interstitial Drv	Dravite 1
MC-415-173.4	Interstitial Drv	Dravite 1
MC-415-173.4	Interstitial Drv	Dravite 2
MC-415-173.4	Interstitial Drv	Dravite 2
MC-415-389	Interstitial Drv	Dravite 1
MC-415-389	Interstitial Drv	Dravite 1
MC-415-389	Interstitial Drv	Dravite 1
MC-415-389	Interstitial Drv	Dravite 2
MC-415-389	Interstitial Drv	Dravite 2
MC-415-432.38	Interstitial Drv	Dravite 1
MC-415-432.38	Interstitial Drv	Dravite 1
MC-415-432.38	Interstitial Drv	Dravite 2
MC-415-432.38	Interstitial Drv	Dravite 2
MC-415-432.38	Interstitial Drv	Dravite 2
MC-415-490.78	Interstitial Drv	Dravite 1
MC-415-490.78	Interstitial Drv	Dravite 1
MC-415-490.78	Interstitial Drv	Dravite 2
MC-415-490.78	Interstitial Drv	Dravite 3
MC-415-490.78	Interstitial Drv	Dravite 3
MAC-255-6.13	Detrital Tourmaline	Dravite 1 (Detrital Tourmaline)
MAC-255-6.13	Detrital Tourmaline	Dravite 1 (Detrital Tourmaline)
MAC-255-6.13	Detrital Tourmaline	Dravite 1 (Detrital Tourmaline)
MAC-255-6.13	Detrital Tourmaline	Dravite 1 (Detrital Tourmaline)
MAC-246-333.8	APS	APS 1
MAC-246-508.8	APS	APS 1
MAC-246-508.8	APS	APS 3
MAC-252-342.5	APS	APS 1
MAC-252-342.5	APS	APS 1
MAC-252-342.5	APS	APS 1
MAC-252-342.5	APS	APS 3
MAC-253-382	APS	APS 1
MAC-253-382	APS	APS 1
MAC-253-382	APS	APS 1
MAC-253-507.5	APS	APS 3
MAC-253-507.5	APS	APS 3
MAC-253-507.5	APS	APS 4
MAC-255-559	APS	APS 1
MAC-255-559	APS	APS 1
MC-336-570.5	APS	APS 1
MC-434-328.83	APS	APS 1
MC-434-328.83	APS	APS 1
MC-434-328.83	APS	APS 1

Sample No.	Mineral	Ablation Target
MC-434-328.83	APS	APS 2
MC-434-328.83	APS	APS 2
MAC-255-559	Monazite	Monazite
MAC-255-559	Monazite	U-rich inclusion in monazite
MAC-255-559	Monazite	Monazite
MC-413-603.83	Monazite	Monazite replaced by APS 1 (stylolitic replacement of detrital phosphates?)
MC-413-603.83	Monazite	Monazite replaced by APS 2 (all of it; including monazite fragments)
MC-413-603.83	Monazite	Monazite replaced by APS 3 (monazite brights)
MAC-255-564.36	Apatite	Apatite 1
MAC-255-564.36	Apatite	Apatite 1
MAC-255-564.36	Apatite	Apatite 1
MAC-255-564.36	Apatite	Apatite 2
MAC-255-564.36	Apatite	Apatite 2
MAC-255-559	Pyrite	Pyrite 1
MAC-255-559	Pyrite	Pyrite 1
MAC-255-559	Pyrite	Pyrite 2 (rutile with microinclusions contamination)
MAC-255-559	Pyrite	Pyrite 2 (rutile with microinclusions contamination)
MC-336-564	Hematite	Hem after clay (vn margin)
MC-336-564	Hematite	Hem after clay (vn margin)
MC-413-623.78	Hematite	Hematite
MC-413-623.78	Hematite	Hematite
MC-413-623.78	Hematite	Hematite
MC-413-623.78	Hematite	Hematite
MC-413-623.78	Hematite	Hematite
MC-413-623.78	Hematite	Hematite
MC-413-623.78	Hematite	Hematite
MC-413-623.78	Hematite	Hematite after clays
MC-413-623.78	Hematite	Hematite after clays
MC-413-623.78	Hematite	Hematite after clays
MC-413-623.78	Hematite	Hematite after clays
MAC-246-333.8	Rutile	Rutile 1
MAC-246-333.8	Rutile	Rutile 1
MAC-246-508.8	Rutile	Rutile? (APS 2)
MAC-252-342.5	Rutile	Rutile 1
MAC-252-342.5	Rutile	Rutile 1
MAC-246-508.8	Fe(Ti) oxide in Kao	Kao + Hem?
MAC-246-508.8	Fe(Ti) oxide in Kao	Kao 1
MAC-246-508.8	Fe(Ti) oxide in Kao	Kao 1
MC-336-564	Fe-hydroxide vein	Hem Vn
MC-336-564	Fe-hydroxide vein	Hem Vn
MC-336-564	Fe-hydroxide vein	Hem Vn
MC-415-197	Mn(Fe) oxide vein	MnFe Oxide Vein

Appendix K
LA-ICP-MS Analytical Data

Sample No.	Mineral	Ablation Line No.		Scaling Factor Type
MAC-208-237	C1 Chlorite	Line6	10/8/2015 1:01:35 PM	Mg NOIS EMPA same-sample average
MAC-208-237	C1 Chlorite	Line7	10/8/2015 1:04:00 PM	Mg NOIS EMPA same-sample average
MAC-208-237	C1 Chlorite	Line8	10/8/2015 1:06:06 PM	Mg NOIS EMPA same-sample average
MAC-252-271.2	C1 Chlorite	Line8	10/7/2015 4:32:09 PM	Mg NOIS EMPA same-sample average
MAC-252-271.2	C1 Chlorite	Line10	10/7/2015 4:38:42 PM	Mg NOIS EMPA same-sample average
MAC-253-325	C1 Chlorite	Line1	10/8/2015 2:50:18 PM	Mg NOIS EMPA same-sample average
MAC-253-325	C1 Chlorite	Line2	10/8/2015 2:52:03 PM	Mg NOIS EMPA same-sample average
MAC-253-325	C1 Chlorite	Line3	10/8/2015 2:53:50 PM	Mg NOIS EMPA same-sample average
MC-413-183.26	C1 Chlorite	Line8	10/8/2015 10:40:21 AM	Mg NOIS EMPA same-sample average
MC-413-183.26	C1 Chlorite	Line9	10/8/2015 10:41:58 AM	Mg NOIS EMPA same-sample average
MC-413-183.26	C1 Chlorite	Line10	10/8/2015 10:43:35 AM	Mg NOIS EMPA same-sample average
MC-413-183.26	C1 Chlorite	Line12	10/8/2015 10:49:15 AM	Mg NOIS EMPA same-sample average
MC-413-183.26	C1 Chlorite	Line13	10/8/2015 10:51:04 AM	Mg NOIS EMPA same-sample average
MC-413-183.26	C1 Chlorite	Line14	10/8/2015 10:53:22 AM	Mg NOIS EMPA same-sample average
MAC-208-487	C2 Chlorite	1	8/12/2015 5:09:51 PM	Mg NOIS EMPA all-sample average
MAC-208-487	C2 Chlorite	2	8/12/2015 5:12:07 PM	Mg NOIS EMPA all-sample average
MAC-208-487	C2 Chlorite	3	8/12/2015 5:14:26 PM	Mg NOIS EMPA all-sample average
MAC-208-487	C2 Chlorite	5	8/12/2015 5:19:06 PM	Mg NOIS EMPA all-sample average
MAC-208-572	C2 Chlorite	8	8/12/2015 1:22:17 PM	Mg NOIS EMPA all-sample average
MAC-208-572	C2 Chlorite	9	8/12/2015 1:24:40 PM	Mg NOIS EMPA all-sample average
MAC-208-572	C2 Chlorite	11	8/12/2015 1:29:37 PM	Mg NOIS EMPA all-sample average
MAC-208-572	C2 Chlorite	11	8/12/2015 1:29:37 PM	Mg NOIS EMPA all-sample average
MAC-208-572	C2 Chlorite	12	8/12/2015 1:32:26 PM	Mg NOIS EMPA all-sample average
MAC-208-572	C2 Chlorite	12	8/12/2015 1:32:26 PM	Mg NOIS EMPA all-sample average
MAC-246-475.33	C2 Chlorite	Line 7	10/6/2015 1:38:55 PM	Mg NOIS EMPA same-sample average
MAC-246-475.33	C2 Chlorite	Line 8	10/6/2015 1:41:19 PM	Mg NOIS EMPA same-sample average
MAC-246-475.33	C2 Chlorite	Line 10	10/6/2015 1:46:10 PM	Mg NOIS EMPA same-sample average
MAC-246-475.33	C2 Chlorite	Line 11	10/6/2015 1:48:48 PM	Mg NOIS EMPA same-sample average
MAC-255-559	C2 Chlorite	Line13	10/7/2015 10:55:15 AM	Mg NOIS EMPA same-sample average
MAC-255-559	C2 Chlorite	Line15	10/7/2015 11:00:16 AM	Mg NOIS EMPA same-sample average
MAC-255-559	C2 Chlorite	Line27	10/7/2015 11:53:16 AM	Mg NOIS EMPA same-sample average
MAC-255-559	C2 Chlorite	Line28	10/7/2015 11:55:20 AM	Mg NOIS EMPA same-sample average
MAC-255-559	C2 Chlorite	Line29	10/7/2015 11:57:14 AM	Mg NOIS EMPA same-sample average
MAC-255-559	C2 Chlorite	Line30	10/7/2015 11:58:38 AM	Mg NOIS EMPA same-sample average
MAC-255-559	C2 Chlorite	Line31	10/7/2015 12:00:05 PM	Mg NOIS EMPA same-sample average
MAC-255-564.36	C2 Chlorite	Line37	10/6/2015 5:05:26 PM	Mg NOIS EMPA same-sample average
MAC-255-564.36	C2 Chlorite	Line38	10/6/2015 5:08:28 PM	Mg NOIS EMPA same-sample average
MAC-255-564.36	C2 Chlorite	Line39	10/6/2015 5:11:36 PM	Mg NOIS EMPA same-sample average
MAC-255-564.36	C2 Chlorite	Line36	10/6/2015 5:02:19 PM	Mg NOIS EMPA same-sample average
MAC-255-564.36	C2 Chlorite	Line33	10/6/2015 4:56:16 PM	Mg NOIS EMPA same-sample average
MAC-255-564.36	C2 Chlorite	Line34	10/6/2015 4:58:15 PM	Mg NOIS EMPA same-sample average
MAC-255-564.36	C2 Chlorite	Line35	10/6/2015 5:00:13 PM	Mg NOIS EMPA same-sample average
MC-336-570.5	C2 Chlorite	Line18	10/6/2015 4:11:13 PM	Mg NOIS EMPA near-sample average
MC-336-570.5	C2 Chlorite	1	8/12/2015 3:52:21 PM	Mg NOIS EMPA same-sample average
MC-336-570.5	C2 Chlorite	2	8/12/2015 3:55:27 PM	Mg NOIS EMPA same-sample average
MC-336-570.5	C2 Chlorite	Line8	10/6/2015 3:37:59 PM	Mg NOIS EMPA near-sample average
MC-336-570.5	C2 Chlorite	Line9	10/6/2015 3:41:02 PM	Mg NOIS EMPA near-sample average
MC-336-570.5	C2 Chlorite	Line10	10/6/2015 3:44:07 PM	Mg NOIS EMPA near-sample average
MAC-208-290.5	Illite	Line1	10/8/2015 4:07:57 PM	Al NOIS EMPA same-sample average
MAC-208-290.5	Illite	Line2	10/8/2015 4:10:49 PM	Al NOIS EMPA same-sample average
MAC-246-333.8	Illite	Line16	10/7/2015 3:18:49 PM	Al NOIS EMPA same-sample average
MAC-246-333.8	Illite	Line18	10/7/2015 3:23:14 PM	Al NOIS EMPA same-sample average
MAC-252-271.2	Illite	Line13	10/7/2015 4:45:23 PM	Al NOIS EMPA same-sample average
MAC-252-271.2	Illite	Line14	10/7/2015 4:46:59 PM	Al NOIS EMPA same-sample average
MAC-252-271.2	Illite	Line15	10/7/2015 4:48:37 PM	Al NOIS EMPA same-sample average
MAC-252-319.44	Illite	Line12	10/8/2015 3:16:53 PM	Al NOIS EMPA all-sample average
MAC-252-319.44	Illite	Line13	10/8/2015 3:19:43 PM	Al NOIS EMPA all-sample average
MAC-253-507.5	Illite	Line8	10/8/2015 5:21:46 PM	Al NOIS EMPA all-sample average
MAC-255-293.4	Illite	3	8/12/2015 3:58:25 PM	Al NOIS EMPA all-sample average

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Ablation Line No.		Scaling Factor Type
MAC-255-293.4	Illite	4	8/12/2015 4:00:22 PM	Al NOIS EMPA all-sample average
MAC-255-293.4	Illite	5	8/12/2015 4:02:19 PM	Al NOIS EMPA all-sample average
MAC-255-293.4	Illite	6	8/12/2015 4:04:32 PM	Al NOIS EMPA all-sample average
MAC-255-293.4	Illite	7	8/12/2015 4:06:26 PM	Al NOIS EMPA all-sample average
MAC-255-501.32	Illite	Line5	10/7/2015 5:39:16 PM	Al NOIS EMPA same-sample average
MAC-255-501.32	Illite	Line6	10/7/2015 5:42:13 PM	Al NOIS EMPA same-sample average
MAC-255-501.32	Illite	Line7	10/7/2015 5:45:00 PM	Al NOIS EMPA same-sample average
MAC-255-501.32	Illite	Line9	10/7/2015 5:48:45 PM	Al NOIS EMPA same-sample average
MAC-255-501.32	Illite	Line10	10/7/2015 5:50:21 PM	Al NOIS EMPA same-sample average
MAC-255-501.32	Illite	Line11	10/7/2015 5:52:14 PM	Al NOIS EMPA same-sample average
MAC-255-501.32	Illite	Line12	10/7/2015 5:54:14 PM	Al NOIS EMPA same-sample average
MC-336-506.8	Illite	Line4	10/8/2015 4:16:27 PM	Al NOIS EMPA all-sample average
MC-336-506.8	Illite	Line5	10/8/2015 4:19:00 PM	Al NOIS EMPA all-sample average
MC-336-506.8	Illite	Line7	10/8/2015 4:23:37 PM	Al NOIS EMPA all-sample average
MC-336-570.5	Illite	Line17	10/6/2015 4:07:46 PM	Al NOIS EMPA same-sample average
MC-338-101	Illite	Line1	10/8/2015 5:06:45 PM	Al NOIS EMPA all-sample average
MC-338-101	Illite	Line2	10/8/2015 5:09:08 PM	Al NOIS EMPA all-sample average
MC-338-101	Illite	Line3	10/8/2015 5:10:58 PM	Al NOIS EMPA all-sample average
MC-338-101	Illite	Line4	10/8/2015 5:13:13 PM	Al NOIS EMPA all-sample average
MC-338-319	Illite	Line6	10/8/2015 9:31:36 AM	Al NOIS EMPA all-sample average
MC-338-319	Illite	Line9	10/8/2015 9:38:51 AM	Al NOIS EMPA all-sample average
MC-338-319	Illite	Line10	10/8/2015 9:40:58 AM	Al NOIS EMPA all-sample average
MC-338-319	Illite	Line11	10/8/2015 9:43:02 AM	Al NOIS EMPA all-sample average
MC-338-559	Illite	Line3	10/8/2015 10:29:47 AM	Al NOIS EMPA same-sample average
MC-338-559	Illite	Line5	10/8/2015 10:34:38 AM	Al NOIS EMPA same-sample average
MC-338-559	Illite	Line7	10/8/2015 10:38:36 AM	Al NOIS EMPA same-sample average
MC-413-299	Illite	Line13	10/8/2015 12:01:30 PM	Al NOIS EMPA all-sample average
MC-413-299	Illite	Line15	10/8/2015 12:07:09 PM	Al NOIS EMPA all-sample average
MC-413-603.83	Illite	Line45	10/7/2015 1:37:44 PM	Al NOIS EMPA same-sample average
MC-413-603.83	Illite	Line43	10/7/2015 1:32:03 PM	Al NOIS EMPA same-sample average
MC-413-603.83	Illite	Line44	10/7/2015 1:34:57 PM	Al NOIS EMPA same-sample average
MC-413-603.83	Illite	Line46	10/7/2015 1:39:27 PM	Al NOIS EMPA same-sample average
MC-413-603.83	Illite	Line47	10/7/2015 1:41:20 PM	Al NOIS EMPA same-sample average
MC-413-603.83	Illite	Line37	10/7/2015 1:18:19 PM	Al NOIS EMPA same-sample average
MC-413-603.83	Illite	Line38	10/7/2015 1:21:17 PM	Al NOIS EMPA same-sample average
MC-413-603.83	Illite	Line39	10/7/2015 1:23:34 PM	Al NOIS EMPA same-sample average
MC-434-253.64	Illite	6	8/12/2015 5:21:15 PM	Mg NOIS EMPA all-sample average
MC-434-253.64	Illite	7	8/12/2015 5:22:55 PM	Mg NOIS EMPA all-sample average
MC-434-253.64	Illite	8	8/12/2015 5:24:27 PM	Mg NOIS EMPA all-sample average
MC-434-54.07	Illite	Line2	10/8/2015 9:21:46 AM	Al NOIS EMPA same-sample average
MC-434-54.07	Illite	Line3	10/8/2015 9:24:23 AM	Al NOIS EMPA same-sample average
MAC-246-508.8	Drv Veins	Line10	10/7/2015 3:06:57 PM	Mg NOIS EMPA same-sample average
MAC-246-508.8	Drv Veins	Line11	10/7/2015 3:08:37 PM	Mg NOIS EMPA same-sample average
MAC-246-508.8	Drv Veins	Line12	10/7/2015 3:12:10 PM	Mg NOIS EMPA same-sample average
MAC-246-508.8	Drv Veins	Line6	10/7/2015 2:57:18 PM	Mg NOIS EMPA same-sample average
MAC-253-265.3	Drv Veins	7	8/11/2015 6:21:14 PM	Mg NOIS EMPA all-sample average
MAC-253-265.3	Drv Veins	8	8/11/2015 6:24:02 PM	Mg NOIS EMPA all-sample average
MAC-253-265.3	Drv Veins	9	8/11/2015 6:27:28 PM	Mg NOIS EMPA all-sample average
MAC-253-265.3	Drv Veins	10	8/11/2015 6:30:40 PM	Mg NOIS EMPA all-sample average
MAC-253-265.3	Drv Veins	11	8/11/2015 6:34:23 PM	Mg NOIS EMPA all-sample average
MAC-253-538	Drv Veins	9	8/11/2015 3:29:26 PM	Mg NOIS EMPA all-sample average
MAC-253-538	Drv Veins	10	8/11/2015 3:32:40 PM	Mg NOIS EMPA all-sample average
MAC-253-538	Drv Veins	11	8/11/2015 3:35:05 PM	Mg NOIS EMPA all-sample average
MAC-253-538	Drv Veins	12	8/11/2015 3:37:16 PM	Mg NOIS EMPA all-sample average
MAC-253-538	Drv Veins	13	8/11/2015 3:40:07 PM	Mg NOIS EMPA all-sample average
MC-344-100.1	Drv Veins	1	8/12/2015 9:52:36 AM	Mg NOIS EMPA all-sample average
MC-344-100.1	Drv Veins	2 & 3	8/12/2015 9:56:22 AM	Mg NOIS EMPA all-sample average
MC-344-100.1	Drv Veins	2 & 3	8/12/2015 9:56:22 AM	Mg NOIS EMPA all-sample average
MC-344-100.1	Drv Veins	4	8/12/2015 9:58:24 AM	Mg NOIS EMPA all-sample average

Sample No.	Mineral	Ablation Line No.		Scaling Factor Type
MC-344-100.1	Drv Veins	5	8/12/2015 10:00:13 AM	Mg NOIS EMPA all-sample average
MC-344-100.1	Drv Veins	6	8/12/2015 10:02:59 AM	Mg NOIS EMPA all-sample average
MC-344-100.1	Drv Veins	7	8/12/2015 10:06:41 AM	Mg NOIS EMPA all-sample average
MC-415-497.66	Drv Veins	7	8/12/2015 11:25:13 AM	Mg NOIS EMPA all-sample average
MC-415-497.66	Drv Veins	8	8/12/2015 11:28:19 AM	Mg NOIS EMPA all-sample average
MC-415-497.66	Drv Veins	9	8/12/2015 11:31:25 AM	Mg NOIS EMPA all-sample average
MC-415-497.66	Drv Veins	10	8/12/2015 11:34:36 AM	Mg NOIS EMPA all-sample average
MAC-208-10.2	Interstitial Drv	4	8/11/2015 11:03:12 PM	Mg NOIS EMPA all-sample average
MAC-208-10.2	Interstitial Drv	5	8/11/2015 11:05:06 PM	Mg NOIS EMPA all-sample average
MAC-208-572	Interstitial Drv	10	8/12/2015 1:26:42 PM	Mg NOIS EMPA all-sample average
MAC-208-572	Interstitial Drv	6	8/12/2015 1:17:28 PM	Mg NOIS EMPA all-sample average
MAC-208-572	Interstitial Drv	7	8/12/2015 1:19:44 PM	Mg NOIS EMPA all-sample average
MAC-208-572	Interstitial Drv	13	8/12/2015 1:34:32 PM	Mg NOIS EMPA all-sample average
MAC-208-572	Interstitial Drv	14	8/12/2015 1:36:49 PM	Mg NOIS EMPA all-sample average
MAC-246-142.86	Interstitial Drv	4	8/11/2015 8:30:02 PM	Mg NOIS EMPA all-sample average
MAC-246-142.86	Interstitial Drv	5	8/11/2015 8:32:17 PM	Mg NOIS EMPA all-sample average
MAC-246-142.86	Interstitial Drv	6	8/11/2015 8:33:58 PM	Mg NOIS EMPA all-sample average
MAC-246-142.86	Interstitial Drv	7	8/11/2015 8:36:30 PM	Mg NOIS EMPA all-sample average
MAC-246-142.86	Interstitial Drv	8	8/11/2015 8:38:27 PM	Mg NOIS EMPA all-sample average
MAC-246-213.43	Interstitial Drv	12	8/11/2015 6:37:49 PM	Mg NOIS EMPA all-sample average
MAC-246-213.43	Interstitial Drv	13	8/11/2015 6:38:59 PM	Mg NOIS EMPA all-sample average
MAC-246-213.43	Interstitial Drv	14	8/11/2015 6:40:36 PM	Mg NOIS EMPA all-sample average
MAC-246-4.33	Interstitial Drv	1	8/11/2015 10:57:00 PM	Mg NOIS EMPA all-sample average
MAC-246-4.33	Interstitial Drv	2	8/11/2015 10:59:10 PM	Mg NOIS EMPA all-sample average
MAC-246-4.33	Interstitial Drv	3	8/11/2015 11:01:02 PM	Mg NOIS EMPA all-sample average
MAC-246-475.33	Interstitial Drv	1	8/10/2015 2:59:45 PM	Mg NOIS EMPA all-sample average
MAC-246-475.33	Interstitial Drv	2	8/10/2015 3:03:14 PM	Mg NOIS EMPA all-sample average
MAC-246-475.33	Interstitial Drv	Line 5	10/6/2015 1:33:32 PM	Mg NOIS EMPA all-sample average
MAC-246-475.33	Interstitial Drv	3	8/10/2015 3:05:59 PM	Mg NOIS EMPA all-sample average
MAC-246-475.33	Interstitial Drv	4	8/10/2015 3:08:07 PM	Mg NOIS EMPA all-sample average
MAC-246-475.33	Interstitial Drv	5	8/10/2015 3:11:07 PM	Mg NOIS EMPA all-sample average
MAC-246-475.33	Interstitial Drv	6	8/10/2015 3:13:20 PM	Mg NOIS EMPA all-sample average
MAC-246-499.02	Interstitial Drv	1	8/10/2015 4:17:15 PM	Mg NOIS EMPA all-sample average
MAC-252-199.86	Interstitial Drv	2	8/11/2015 8:25:25 PM	Mg NOIS EMPA all-sample average
MAC-252-199.86	Interstitial Drv	3	8/11/2015 8:27:18 PM	Mg NOIS EMPA all-sample average
MAC-252-342.5	Interstitial Drv	Line2	10/8/2015 11:37:56 AM	Mg NOIS EMPA all-sample average
MAC-252-342.5	Interstitial Drv	Line3	10/8/2015 11:40:01 AM	Mg NOIS EMPA all-sample average
MAC-252-342.5	Interstitial Drv	1	8/11/2015 3:09:36 PM	Mg NOIS EMPA all-sample average
MAC-252-342.5	Interstitial Drv	2	8/11/2015 3:12:32 PM	Mg NOIS EMPA all-sample average
MAC-252-342.5	Interstitial Drv	7	8/11/2015 3:24:18 PM	Mg NOIS EMPA all-sample average
MAC-252-342.5	Interstitial Drv	8	8/11/2015 3:27:09 PM	Mg NOIS EMPA all-sample average
MAC-252-55.65	Interstitial Drv	1	8/11/2015 9:42:43 PM	Mg NOIS EMPA all-sample average
MAC-252-55.65	Interstitial Drv	2	8/11/2015 9:44:34 PM	Mg NOIS EMPA all-sample average
MAC-252-55.65	Interstitial Drv	3	8/11/2015 9:46:11 PM	Mg NOIS EMPA all-sample average
MAC-253-205	Interstitial Drv	9	8/12/2015 10:11:27 AM	Mg NOIS EMPA all-sample average
MAC-253-205	Interstitial Drv	10	8/12/2015 10:13:40 AM	Mg NOIS EMPA all-sample average
MAC-253-205	Interstitial Drv	11	8/12/2015 10:16:13 AM	Mg NOIS EMPA all-sample average
MAC-253-205	Interstitial Drv	12	8/12/2015 10:18:00 AM	Mg NOIS EMPA all-sample average
MAC-253-205	Interstitial Drv	13	8/12/2015 10:20:44 AM	Mg NOIS EMPA all-sample average
MAC-253-205	Interstitial Drv	8	8/12/2015 10:08:45 AM	Mg NOIS EMPA all-sample average
MAC-253-205	Interstitial Drv	14	8/12/2015 10:22:19 AM	Mg NOIS EMPA all-sample average
MAC-253-265.3	Interstitial Drv	1	8/11/2015 6:09:21 PM	Mg NOIS EMPA all-sample average
MAC-253-265.3	Interstitial Drv	2	8/11/2015 6:11:13 PM	Mg NOIS EMPA all-sample average
MAC-253-265.3	Interstitial Drv	3	8/11/2015 6:13:23 PM	Mg NOIS EMPA all-sample average
MAC-255-6.13	Interstitial Drv	8	8/11/2015 9:57:19 PM	Mg NOIS EMPA all-sample average
MAC-255-6.13	Interstitial Drv	9	8/11/2015 9:59:11 PM	Mg NOIS EMPA all-sample average
MAC-255-6.13	Interstitial Drv	10	8/11/2015 10:01:06 PM	Mg NOIS EMPA all-sample average
MAC-255-6.13	Interstitial Drv	11	8/11/2015 10:03:04 PM	Mg NOIS EMPA all-sample average
MC-338-537.64	Interstitial Drv	1	8/10/2015 9:13:42 PM	Mg NOIS EMPA all-sample average

Sample No.	Mineral	Ablation Line No.		Scaling Factor Type
MC-338-537.64	Interstitial Drv	2	8/10/2015 9:16:34 PM	Mg NOIS EMPA all-sample average
MC-338-537.64	Interstitial Drv	3	8/10/2015 9:19:33 PM	Mg NOIS EMPA all-sample average
MC-338-537.64	Interstitial Drv	4	8/10/2015 9:23:01 PM	Mg NOIS EMPA all-sample average
MC-338-537.64	Interstitial Drv	5	8/10/2015 9:25:59 PM	Mg NOIS EMPA all-sample average
MC-338-537.64	Interstitial Drv	6	8/10/2015 9:29:10 PM	Mg NOIS EMPA all-sample average
MC-344-179.8	Interstitial Drv	2	8/12/2015 1:08:30 PM	Mg NOIS EMPA all-sample average
MC-344-179.8	Interstitial Drv	3	8/12/2015 1:10:45 PM	Mg NOIS EMPA all-sample average
MC-344-179.8	Interstitial Drv	4	8/12/2015 1:12:57 PM	Mg NOIS EMPA all-sample average
MC-344-179.8	Interstitial Drv	5	8/12/2015 1:15:17 PM	Mg NOIS EMPA all-sample average
MC-413-258.26	Interstitial Drv	1	8/11/2015 4:42:47 PM	Mg NOIS EMPA all-sample average
MC-413-258.26	Interstitial Drv	2	8/11/2015 4:46:04 PM	Mg NOIS EMPA all-sample average
MC-413-258.26	Interstitial Drv	3	8/11/2015 4:48:04 PM	Mg NOIS EMPA all-sample average
MC-413-258.26	Interstitial Drv	4	8/11/2015 4:50:12 PM	Mg NOIS EMPA all-sample average
MC-413-258.26	Interstitial Drv	5	8/11/2015 4:51:55 PM	Mg NOIS EMPA all-sample average
MC-413-258.26	Interstitial Drv	6	8/11/2015 4:53:41 PM	Mg NOIS EMPA all-sample average
MC-413-258.26	Interstitial Drv	7	8/11/2015 4:56:00 PM	Mg NOIS EMPA all-sample average
MC-413-649	Interstitial Drv	1	8/10/2015 12:47:13 PM	Mg NOIS EMPA all-sample average
MC-415-173.4	Interstitial Drv	8	8/11/2015 4:58:32 PM	Mg NOIS EMPA all-sample average
MC-415-173.4	Interstitial Drv	9	8/11/2015 5:00:12 PM	Mg NOIS EMPA all-sample average
MC-415-173.4	Interstitial Drv	10	8/11/2015 5:02:04 PM	Mg NOIS EMPA all-sample average
MC-415-173.4	Interstitial Drv	11	8/11/2015 5:03:47 PM	Mg NOIS EMPA all-sample average
MC-415-389	Interstitial Drv	7	8/11/2015 1:35:07 PM	Mg NOIS EMPA all-sample average
MC-415-389	Interstitial Drv	8	8/11/2015 1:38:02 PM	Mg NOIS EMPA all-sample average
MC-415-389	Interstitial Drv	9	8/11/2015 1:40:43 PM	Mg NOIS EMPA all-sample average
MC-415-389	Interstitial Drv	10	8/11/2015 1:44:12 PM	Mg NOIS EMPA all-sample average
MC-415-389	Interstitial Drv	11	8/11/2015 1:46:17 PM	Mg NOIS EMPA all-sample average
MC-415-432.38	Interstitial Drv	2	8/11/2015 1:19:41 PM	Mg NOIS EMPA all-sample average
MC-415-432.38	Interstitial Drv	3	8/11/2015 1:22:22 PM	Mg NOIS EMPA all-sample average
MC-415-432.38	Interstitial Drv	4	8/11/2015 1:26:20 PM	Mg NOIS EMPA all-sample average
MC-415-432.38	Interstitial Drv	5	8/11/2015 1:29:00 PM	Mg NOIS EMPA all-sample average
MC-415-432.38	Interstitial Drv	6	8/11/2015 1:32:43 PM	Mg NOIS EMPA all-sample average
MC-415-490.78	Interstitial Drv	1	8/12/2015 11:08:42 AM	Mg NOIS EMPA all-sample average
MC-415-490.78	Interstitial Drv	3	8/12/2015 11:12:54 AM	Mg NOIS EMPA all-sample average
MC-415-490.78	Interstitial Drv	4	8/12/2015 11:14:44 AM	Mg NOIS EMPA all-sample average
MC-415-490.78	Interstitial Drv	5	8/12/2015 11:18:00 AM	Mg NOIS EMPA all-sample average
MC-415-490.78	Interstitial Drv	6	8/12/2015 11:21:28 AM	Mg NOIS EMPA all-sample average
MAC-255-6.13	Detrital Tourmaline	4	8/11/2015 9:48:30 PM	Mg NOIS EMPA all-sample average
MAC-255-6.13	Detrital Tourmaline	5	8/11/2015 9:50:49 PM	Mg NOIS EMPA all-sample average
MAC-255-6.13	Detrital Tourmaline	6	8/11/2015 9:53:02 PM	Mg NOIS EMPA all-sample average
MAC-255-6.13	Detrital Tourmaline	7	8/11/2015 9:55:11 PM	Mg NOIS EMPA all-sample average
MAC-246-333.8	APS	Line22	10/7/2015 3:30:22 PM	Sr NOIS EMPA same-sample average
MAC-246-508.8	APS	Line2	10/7/2015 2:42:26 PM	Sr NOIS EMPA same-sample average
MAC-246-508.8	APS	Line8	10/7/2015 3:02:37 PM	Sr NOIS EMPA same-sample average
MAC-252-342.5	APS	4	8/11/2015 3:16:43 PM	Sr NOIS EMPA same-sample average
MAC-252-342.5	APS	5	8/11/2015 3:19:09 PM	Sr NOIS EMPA same-sample average
MAC-252-342.5	APS	6	8/11/2015 3:21:09 PM	Sr NOIS EMPA same-sample average
MAC-252-342.5	APS	Line1	10/8/2015 11:35:57 AM	Sr NOIS EMPA same-sample average
MAC-253-382	APS	Line2	10/8/2015 12:50:42 PM	Sr NOIS EMPA same-sample average
MAC-253-382	APS	Line3	10/8/2015 12:53:26 PM	Sr NOIS EMPA same-sample average
MAC-253-382	APS	Line4	10/8/2015 12:56:21 PM	Sr NOIS EMPA same-sample average
MAC-253-507.5	APS	Line6	10/8/2015 5:17:41 PM	Sr + LREE NOIS EMPA all-sample average
MAC-253-507.5	APS	Line7	10/8/2015 5:19:19 PM	Sr + LREE NOIS EMPA all-sample average
MAC-253-507.5	APS	Line12	10/8/2015 5:30:56 PM	Sr + LREE NOIS EMPA all-sample average
MAC-255-559	APS	Line23	10/7/2015 11:37:40 AM	Sr NOIS EMPA same-sample average
MAC-255-559	APS	Line25	10/7/2015 11:48:43 AM	Sr NOIS EMPA same-sample average
MC-336-570.5	APS	Line2	10/6/2015 3:20:15 PM	Sr+LREE NOIS EMPA all-sample average
MC-434-328.83	APS	Line2	10/7/2015 4:16:46 PM	Sr NOIS EMPA same-sample average
MC-434-328.83	APS	Line3	10/7/2015 4:19:06 PM	Sr NOIS EMPA same-sample average
MC-434-328.83	APS	Line4	10/7/2015 4:21:29 PM	Sr NOIS EMPA same-sample average

Sample No.	Mineral	Ablation Line No.		Scaling Factor Type
MC-434-328.83	APS	Line5	10/7/2015 4:23:09 PM	Sr NOIS EMPA same-sample average
MC-434-328.83	APS	Line6	10/7/2015 4:24:56 PM	Sr NOIS EMPA same-sample average
MAC-255-559	Monazite	Line3	10/7/2015 10:26:48 AM	
MAC-255-559	Monazite	Line18	10/7/2015 11:12:19 AM	
MAC-255-559	Monazite	Line5	10/7/2015 10:30:51 AM	
MC-413-603.83	Monazite	Line32	10/7/2015 1:04:18 PM	Sr+LREE NOIS EMPA all-sample average
MC-413-603.83	Monazite	Line34	10/7/2015 1:10:35 PM	Sr+LREE NOIS EMPA all-sample average
MC-413-603.83	Monazite	Line36	10/7/2015 1:15:50 PM	Sr+LREE NOIS EMPA all-sample average
MAC-255-564.36	Apatite	Line23	10/6/2015 4:36:12 PM	
MAC-255-564.36	Apatite	Line24	10/6/2015 4:38:08 PM	
MAC-255-564.36	Apatite	Line25	10/6/2015 4:40:15 PM	
MAC-255-564.36	Apatite	Line30	10/6/2015 4:50:30 PM	
MAC-255-564.36	Apatite	Line31	10/6/2015 4:52:21 PM	
MAC-255-559	Pyrite	Line14	10/7/2015 10:57:44 AM	
MAC-255-559	Pyrite	Line16	10/7/2015 11:02:15 AM	
MAC-255-559	Pyrite	Line8	10/7/2015 10:40:42 AM	
MAC-255-559	Pyrite	Line10	10/7/2015 10:47:11 AM	
MC-336-564	Hematite	Line1	10/7/2015 5:28:38 PM	
MC-336-564	Hematite	Line2	10/7/2015 5:31:46 PM	
MC-413-623.78	Hematite	6	8/12/2015 2:55:04 PM	
MC-413-623.78	Hematite	7	8/12/2015 2:59:47 PM	
MC-413-623.78	Hematite	8	8/12/2015 3:04:45 PM	
MC-413-623.78	Hematite	2	8/12/2015 2:38:10 PM	
MC-413-623.78	Hematite	3	8/12/2015 2:41:33 PM	
MC-413-623.78	Hematite	4	8/12/2015 2:45:36 PM	
MC-413-623.78	Hematite	5	8/12/2015 2:50:25 PM	
MC-413-623.78	Hematite	2	8/12/2015 2:38:10 PM	
MC-413-623.78	Hematite	3	8/12/2015 2:41:33 PM	
MC-413-623.78	Hematite	4	8/12/2015 2:45:36 PM	
MC-413-623.78	Hematite	5	8/12/2015 2:50:25 PM	
MAC-246-333.8	Rutile	Line14	10/7/2015 3:14:59 PM	Ti stoichiometric factor
MAC-246-333.8	Rutile	Line15	10/7/2015 3:16:27 PM	Ti stoichiometric factor
MAC-246-508.8	Rutile	Line7	10/7/2015 3:00:14 PM	Ti stoichiometric factor
MAC-252-342.5	Rutile	Line10	10/8/2015 11:54:05 AM	Ti stoichiometric factor
MAC-252-342.5	Rutile	Line11	10/8/2015 11:55:48 AM	Ti stoichiometric factor
MAC-246-508.8	Fe(Ti) oxide in Kao	Line5	10/7/2015 2:54:28 PM	Al NOIS EMPA all-sample dickite average
MAC-246-508.8	Fe(Ti) oxide in Kao	Line3	10/7/2015 2:47:37 PM	Al NOIS EMPA all-sample dickite average
MAC-246-508.8	Fe(Ti) oxide in Kao	Line4	10/7/2015 2:51:23 PM	Al NOIS EMPA all-sample dickite average
MC-336-564	Fe-hydroxide vein	Line1	10/7/2015 5:28:38 PM	
MC-336-564	Fe-hydroxide vein	Line2	10/7/2015 5:31:46 PM	
MC-336-564	Fe-hydroxide vein	Line3	10/7/2015 5:34:03 PM	
MC-415-197	Mn(Fe) oxide vein	1	8/12/2015 2:34:22 PM	

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Major Element Scaling Factor	Integration Length (µm)	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)
MAC-208-237	C1 Chlorite	1.46	32	77	<DL	105	<DL	40,902
MAC-208-237	C1 Chlorite	1.47	87	68	<DL	136	<DL	40,902
MAC-208-237	C1 Chlorite	2.12	58	75	<DL	137	<DL	40,902
MAC-252-271.2	C1 Chlorite	4.31	56	75	<DL	1,038	<DL	46,769
MAC-252-271.2	C1 Chlorite	2.60	45	<DL	<DL	165	127,866	46,769
MAC-253-325	C1 Chlorite	2.68	44	78	<DL	261	<DL	47,101
MAC-253-325	C1 Chlorite	3.47	49	74	<DL	161	<DL	47,101
MAC-253-325	C1 Chlorite	2.98	31	82	<DL	166	<DL	47,101
MC-413-183.26	C1 Chlorite	1.70	31	46	<DL	37	<DL	39,701
MC-413-183.26	C1 Chlorite	0.69	37	43	<DL	25	<DL	39,701
MC-413-183.26	C1 Chlorite	0.92	40	46	<DL	25	<DL	39,701
MC-413-183.26	C1 Chlorite	1.12	36	44	<DL	32	<DL	39,701
MC-413-183.26	C1 Chlorite	1.09	44	39	<DL	22	<DL	39,701
MC-413-183.26	C1 Chlorite	1.00	81	44	<DL	36	<DL	39,701
MAC-208-487	C2 Chlorite	1.80	93	384				81,079
MAC-208-487	C2 Chlorite	1.93	79	374				81,079
MAC-208-487	C2 Chlorite	1.84	86	353				81,079
MAC-208-487	C2 Chlorite	2.31	99	338				81,079
MAC-208-572	C2 Chlorite	1.84	25	277				81,079
MAC-208-572	C2 Chlorite	1.62	40	272				81,079
MAC-208-572	C2 Chlorite	1.63	54	414				81,079
MAC-208-572	C2 Chlorite	1.26	52	450				81,079
MAC-208-572	C2 Chlorite	1.21	81	443				81,079
MAC-208-572	C2 Chlorite	1.18	20	443				81,079
MAC-246-475.33	C2 Chlorite	1.34	96	127		413		60,845
MAC-246-475.33	C2 Chlorite	1.20	101	122		376		60,845
MAC-246-475.33	C2 Chlorite	1.91	35	113		707		60,845
MAC-246-475.33	C2 Chlorite	1.78	41	108		2,353		60,845
MAC-255-559	C2 Chlorite	1.44	57	714	30	499	<DL	95,020
MAC-255-559	C2 Chlorite	1.18	172	681	24	439	<DL	95,020
MAC-255-559	C2 Chlorite	1.14	49	691	29	513	<DL	95,020
MAC-255-559	C2 Chlorite	1.08	86	683	28	483	<DL	95,020
MAC-255-559	C2 Chlorite	1.09	52	383	14	206	<DL	95,020
MAC-255-559	C2 Chlorite	0.94	50	311	11	173	<DL	95,020
MAC-255-559	C2 Chlorite	1.02	71	437	15	267	<DL	95,020
MAC-255-564.36	C2 Chlorite	1.45	38	284		112		90,532
MAC-255-564.36	C2 Chlorite	1.20	230	307		131		90,532
MAC-255-564.36	C2 Chlorite	1.15	205	309		128		90,532
MAC-255-564.36	C2 Chlorite	1.61	119	244		103		90,532
MAC-255-564.36	C2 Chlorite	1.54	156	311		141		90,532
MAC-255-564.36	C2 Chlorite	1.29	126	318		154		90,532
MAC-255-564.36	C2 Chlorite	1.27	163	314		169		90,532
MC-336-570.5	C2 Chlorite	2.79	90	82		296		90,532
MC-336-570.5	C2 Chlorite	2.43	86	150				77,445
MC-336-570.5	C2 Chlorite	2.11	72	162				77,445
MC-336-570.5	C2 Chlorite	1.28	45	175		127		77,919
MC-336-570.5	C2 Chlorite	1.26	102	178		121		77,919
MC-336-570.5	C2 Chlorite	1.42	38	168		116		77,919
MAC-208-290.5	Illite	1.67	18	12	<DL	290	<DL	5,378
MAC-208-290.5	Illite	3.92	109	20	<DL	1,037	92,345	29,935
MAC-246-333.8	Illite	1.77	38	<DL	<DL	<DL	<DL	3,337
MAC-246-333.8	Illite	1.14	36	14	<DL	<DL	<DL	2,834
MAC-252-271.2	Illite	1.25	91	18	<DL	191	<DL	5,909
MAC-252-271.2	Illite	1.28	109	18	<DL	350	<DL	6,853
MAC-252-271.2	Illite	1.25	52	17	<DL	160	<DL	5,251
MAC-252-319.44	Illite	1.28	121	<DL	<DL	287	<DL	3,464
MAC-252-319.44	Illite	1.44	163	<DL	<DL	267	<DL	3,417
MAC-253-507.5	Illite	1.74	109	15	<DL	375	<DL	4,555
MAC-255-293.4	Illite	3.65	77	191				18,056

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LA-ICP-MS Analytical Data

Sample No.	Mineral	Major Element Scaling Factor	Integration Length (µm)	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)
MAC-255-293.4	Illite	2.35	32	175				18,162
MAC-255-293.4	Illite	2.79	20	190				20,717
MAC-255-293.4	Illite	3.41	36	177				17,837
MAC-255-293.4	Illite	4.37	14	184				15,659
MAC-255-501.32	Illite	1.49	143	98	<DL	227	<DL	2,455
MAC-255-501.32	Illite	1.34	284	100	<DL	253	<DL	2,530
MAC-255-501.32	Illite	1.33	375	107	<DL	232	<DL	2,506
MAC-255-501.32	Illite	1.55	49	155	<DL	251	<DL	2,616
MAC-255-501.32	Illite	1.53	28	139	<DL	294	<DL	2,484
MAC-255-501.32	Illite	1.38	44	155	<DL	301	<DL	2,240
MAC-255-501.32	Illite	1.36	36	149	<DL	281	<DL	2,356
MC-336-506.8	Illite	2.81	149	27	<DL	1,377	90,880	37,106
MC-336-506.8	Illite	3.05	56	30	<DL	773	117,262	48,226
MC-336-506.8	Illite	2.51	83	31	<DL	360	<DL	18,018
MC-336-570.5	Illite	1.83	92	26		301		31,715
MC-338-101	Illite	3.06	51	28	<DL	433	<DL	4,381
MC-338-101	Illite	2.38	109	29	<DL	422	<DL	3,903
MC-338-101	Illite	4.07	40	73	<DL	747	<DL	6,956
MC-338-101	Illite	3.41	46	72	<DL	724	<DL	5,802
MC-338-319	Illite	1.58	60	102	<DL	624	<DL	5,210
MC-338-319	Illite	1.99	141	30	<DL	350	<DL	6,097
MC-338-319	Illite	1.73	57	31	<DL	451	<DL	5,848
MC-338-319	Illite	1.87	54	31	<DL	700	<DL	5,484
MC-338-559	Illite	1.60	200	25	<DL	644	<DL	8,961
MC-338-559	Illite	5.00	53	<DL	<DL	1,293	<DL	28,440
MC-338-559	Illite	3.97	23	<DL	<DL	1,133	130,980	50,502
MC-413-299	Illite	2.77	113	<DL	<DL	285	<DL	5,240
MC-413-299	Illite	1.65	132	<DL	<DL	252	<DL	6,092
MC-413-603.83	Illite	1.31	456	119	<DL	373	<DL	8,072
MC-413-603.83	Illite	1.73	327	113	<DL	349	<DL	7,609
MC-413-603.83	Illite	1.34	308	121	<DL	411	<DL	8,338
MC-413-603.83	Illite	1.94	83	125	<DL	373	<DL	4,356
MC-413-603.83	Illite	1.65	92	122	<DL	360	<DL	4,986
MC-413-603.83	Illite	1.94	133	144	<DL	347	<DL	9,565
MC-413-603.83	Illite	1.44	201	170	<DL	377	<DL	8,489
MC-413-603.83	Illite	1.44	126	161	<DL	328	<DL	9,287
MC-434-253.64	Illite	1.36	54	45				2,867
MC-434-253.64	Illite	2.11	54	33				5,720
MC-434-253.64	Illite	2.29	27	28				3,223
MC-434-54.07	Illite	2.65	160	<DL	<DL	558	<DL	5,213
MC-434-54.07	Illite	2.65	162	<DL	<DL	523	<DL	5,533
MAC-246-508.8	Drv Veins	2.31	102	<DL	29	10,694	<DL	49,892
MAC-246-508.8	Drv Veins	1.76	95	<DL	28	11,896	<DL	49,892
MAC-246-508.8	Drv Veins	1.57	68	<DL	24	12,219	<DL	49,892
MAC-246-508.8	Drv Veins	1.55	62	<DL	20	11,531	<DL	49,892
MAC-253-265.3	Drv Veins	1.66	95	9				48,095
MAC-253-265.3	Drv Veins	1.59	56	9				48,095
MAC-253-265.3	Drv Veins	1.63	277	9				48,095
MAC-253-265.3	Drv Veins	1.31	255	8				48,095
MAC-253-265.3	Drv Veins	1.24	349	8				48,095
MAC-253-538	Drv Veins	2.28	156	<DL				48,095
MAC-253-538	Drv Veins	1.79	183	<DL				48,095
MAC-253-538	Drv Veins	2.42	253	<DL				48,095
MAC-253-538	Drv Veins	2.13	156	<DL				48,095
MAC-253-538	Drv Veins	1.89	86	<DL				48,095
MC-344-100.1	Drv Veins	1.80	23	9				48,095
MC-344-100.1	Drv Veins	1.95	52	9				48,095
MC-344-100.1	Drv Veins	2.15	91	16				48,095
MC-344-100.1	Drv Veins	2.18	56	15				48,095

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LA-ICP-MS Analytical Data

Sample No.	Mineral	Major Element Scaling Factor	Integration Length (µm)	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)
MC-344-100.1	Drv Veins	2.32	31	12				48,095
MC-344-100.1	Drv Veins	2.03	41	15				48,095
MC-344-100.1	Drv Veins	2.37	31	14				48,095
MC-415-497.66	Drv Veins	1.89	99	<DL				48,095
MC-415-497.66	Drv Veins	1.52	99	<DL				48,095
MC-415-497.66	Drv Veins	1.52	163	<DL				48,095
MC-415-497.66	Drv Veins	1.41	142	<DL				48,095
MAC-208-10.2	Interstitial Drv	1.56	53	21				48,095
MAC-208-10.2	Interstitial Drv	2.79	18	8				48,095
MAC-208-572	Interstitial Drv	1.25	120	49				48,095
MAC-208-572	Interstitial Drv	2.01	160	11				48,095
MAC-208-572	Interstitial Drv	1.58	56	31				48,095
MAC-208-572	Interstitial Drv	1.61	59	26				48,095
MAC-208-572	Interstitial Drv	1.25	86	90				48,095
MAC-246-142.86	Interstitial Drv	2.50	61	<DL				48,095
MAC-246-142.86	Interstitial Drv	1.61	47	<DL				48,095
MAC-246-142.86	Interstitial Drv	1.46	68	<DL				48,095
MAC-246-142.86	Interstitial Drv	1.66	110	<DL				48,095
MAC-246-142.86	Interstitial Drv	1.41	77	<DL				48,095
MAC-246-213.43	Interstitial Drv	3.97	63	29				48,095
MAC-246-213.43	Interstitial Drv	2.38	16	19				48,095
MAC-246-213.43	Interstitial Drv	2.20	14	21				48,095
MAC-246-4.33	Interstitial Drv	2.20	13	12				48,095
MAC-246-4.33	Interstitial Drv	2.56	90	23				48,095
MAC-246-4.33	Interstitial Drv	1.82	23	10				48,095
MAC-246-475.33	Interstitial Drv	3.38	88	<DL				48,095
MAC-246-475.33	Interstitial Drv	2.57	63	<DL				48,095
MAC-246-475.33	Interstitial Drv	2.16	25	26		7,686		48,095
MAC-246-475.33	Interstitial Drv	3.01	127	<DL				48,095
MAC-246-475.33	Interstitial Drv	3.08	99	<DL				48,095
MAC-246-475.33	Interstitial Drv	1.61	52	<DL				48,095
MAC-246-475.33	Interstitial Drv	2.16	52	<DL				48,095
MAC-246-499.02	Interstitial Drv	1.93	128	12				48,095
MAC-252-199.86	Interstitial Drv	3.43	57	<DL				48,095
MAC-252-199.86	Interstitial Drv	2.46	27	<DL				48,095
MAC-252-342.5	Interstitial Drv	2.15	29	<DL	<DL	11,582	<DL	48,095
MAC-252-342.5	Interstitial Drv	1.71	33	<DL	<DL	13,188	<DL	48,095
MAC-252-342.5	Interstitial Drv	8.15	31	<DL				48,095
MAC-252-342.5	Interstitial Drv	4.48	36	<DL				48,095
MAC-252-342.5	Interstitial Drv	2.31	65	<DL				48,095
MAC-252-342.5	Interstitial Drv	1.64	52	<DL				48,095
MAC-252-55.65	Interstitial Drv	1.84	16	35				48,095
MAC-252-55.65	Interstitial Drv	1.57	36	31				48,095
MAC-252-55.65	Interstitial Drv	1.53	45	49				48,095
MAC-253-205	Interstitial Drv	1.17	20	9				48,095
MAC-253-205	Interstitial Drv	1.43	41	11				48,095
MAC-253-205	Interstitial Drv	1.45	87	15				48,095
MAC-253-205	Interstitial Drv	1.68	101	17				48,095
MAC-253-205	Interstitial Drv	1.48	124	15				48,095
MAC-253-205	Interstitial Drv	1.59	23	10				48,095
MAC-253-205	Interstitial Drv	1.97	50	11				48,095
MAC-253-265.3	Interstitial Drv	3.84	29	<DL				48,095
MAC-253-265.3	Interstitial Drv	3.41	38	12				48,095
MAC-253-265.3	Interstitial Drv	2.37	52	30				48,095
MAC-255-6.13	Interstitial Drv	1.91	77	<DL				48,095
MAC-255-6.13	Interstitial Drv	2.23	22	<DL				48,095
MAC-255-6.13	Interstitial Drv	2.11	98	<DL				48,095
MAC-255-6.13	Interstitial Drv	2.92	50	<DL				48,095
MC-338-537.64	Interstitial Drv	2.89	92	<DL				48,095

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LA-ICP-MS Analytical Data

Sample No.	Mineral	Major Element Scaling Factor	Integration Length	Li	Be	B	Na	Mg
			(µm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-338-537.64	Interstitial Drv	1.30	111	9				48,095
MC-338-537.64	Interstitial Drv	1.39	135	10				48,095
MC-338-537.64	Interstitial Drv	1.35	120	10				48,095
MC-338-537.64	Interstitial Drv	3.08	291	16				48,095
MC-338-537.64	Interstitial Drv	1.90	239	15				48,095
MC-344-179.8	Interstitial Drv	1.83	183	13				48,095
MC-344-179.8	Interstitial Drv	2.07	38	12				48,095
MC-344-179.8	Interstitial Drv	1.67	147	14				48,095
MC-344-179.8	Interstitial Drv	1.56	93	12				48,095
MC-413-258.26	Interstitial Drv	3.01	120	14				48,095
MC-413-258.26	Interstitial Drv	2.83	84	14				48,095
MC-413-258.26	Interstitial Drv	1.83	39	20				48,095
MC-413-258.26	Interstitial Drv	2.21	151	15				48,095
MC-413-258.26	Interstitial Drv	1.71	65	17				48,095
MC-413-258.26	Interstitial Drv	1.90	105	16				48,095
MC-413-258.26	Interstitial Drv	1.62	49	13				48,095
MC-413-649	Interstitial Drv	2.01	182	20				48,095
MC-415-173.4	Interstitial Drv	1.97	51	25				48,095
MC-415-173.4	Interstitial Drv	1.74	65	30				48,095
MC-415-173.4	Interstitial Drv	1.89	104	32				48,095
MC-415-173.4	Interstitial Drv	1.88	74	45				48,095
MC-415-389	Interstitial Drv	2.33	239	12				48,095
MC-415-389	Interstitial Drv	1.49	319	14				48,095
MC-415-389	Interstitial Drv	1.49	244	14				48,095
MC-415-389	Interstitial Drv	2.97	140	<DL				48,095
MC-415-389	Interstitial Drv	2.50	45	<DL				48,095
MC-415-432.38	Interstitial Drv	1.99	204	10				48,095
MC-415-432.38	Interstitial Drv	1.47	163	13				48,095
MC-415-432.38	Interstitial Drv	2.34	220	10				48,095
MC-415-432.38	Interstitial Drv	1.55	122	12				48,095
MC-415-432.38	Interstitial Drv	1.44	146	11				48,095
MC-415-490.78	Interstitial Drv	3.01	47	<DL				48,095
MC-415-490.78	Interstitial Drv	1.72	47	<DL				48,095
MC-415-490.78	Interstitial Drv	2.41	104	<DL				48,095
MC-415-490.78	Interstitial Drv	1.93	288	<DL				48,095
MC-415-490.78	Interstitial Drv	1.42	345	<DL				48,095
MAC-255-6.13	Detrital Tourmaline	2.83	122	<DL				48,095
MAC-255-6.13	Detrital Tourmaline	2.10	81	<DL				48,095
MAC-255-6.13	Detrital Tourmaline	1.57	56	<DL				48,095
MAC-255-6.13	Detrital Tourmaline	1.79	72	<DL				48,095
MAC-246-333.8	APS	1.58	116	32	55	<DL	<DL	1,265
MAC-246-508.8	APS	5.31	23	<DL	113	1,636	<DL	7,313
MAC-246-508.8	APS	1.51	20	26	75	967	<DL	5,104
MAC-252-342.5	APS	2.83	40	61				4,733
MAC-252-342.5	APS	3.40	59	<DL				51,506
MAC-252-342.5	APS	2.69	63	53				31,535
MAC-252-342.5	APS	1.90	207	46	52	230	<DL	1,272
MAC-253-382	APS	1.96	81	40	19	106	<DL	634
MAC-253-382	APS	1.63	73	46	19	140	<DL	883
MAC-253-382	APS	1.77	61	44	25	150	<DL	1,030
MAC-253-507.5	APS	7.25	37	<DL	8	155	26,814	8,403
MAC-253-507.5	APS	4.76	40	56	11	163	28,435	8,684
MAC-253-507.5	APS	4.38	56	52	144	703	<DL	24,732
MAC-255-559	APS	1.80	47	171	102	1,759	<DL	20,619
MAC-255-559	APS	1.96	68	297	116	1,912	<DL	42,846
MC-336-570.5	APS	7.65	52	140		1,549		138,412
MC-434-328.83	APS	2.01	60	39	21	88	<DL	528
MC-434-328.83	APS	1.73	168	39	19	91	<DL	556
MC-434-328.83	APS	1.93	105	37	21	87	<DL	896

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Major Element Scaling Factor	Integration Length (µm)	Li (ppm)	Be (ppm)	B (ppm)	Na (ppm)	Mg (ppm)
MC-434-328.83	APS	1.73	90	40	19	72	<DL	395
MC-434-328.83	APS	1.50	134	40	18	64	<DL	501
MAC-255-559	Monazite	1.00	29	24	8	61	<DL	727
MAC-255-559	Monazite	1.00	12	336	48	916	<DL	38,456
MAC-255-559	Monazite	1.00	18	<DL	<DL	55	<DL	<DL
MC-413-603.83	Monazite	2.70	37	56	286	2,349	<DL	8,569
MC-413-603.83	Monazite	2.31	113	135	365	3,358	<DL	10,509
MC-413-603.83	Monazite	2.99	32	40	363	1,963	<DL	5,428
MAC-255-564.36	Apatite	1.00	67	74		475		21,786
MAC-255-564.36	Apatite	1.00	61	36		106		9,674
MAC-255-564.36	Apatite	1.00	57	48		152		14,358
MAC-255-564.36	Apatite	1.00	33	31		427		10,298
MAC-255-564.36	Apatite	1.00	47	38		149		11,978
MAC-255-559	Pyrite	1.00	16	231	10	158	<DL	37,896
MAC-255-559	Pyrite	1.00	34	300	13	184	<DL	52,923
MAC-255-559	Pyrite	1.00	20	15	<DL	33	<DL	4,354
MAC-255-559	Pyrite	1.00	34	48	8	103	<DL	10,930
MC-336-564	Hematite	1.00	61	<DL	<DL	122	24,501	7,650
MC-336-564	Hematite	1.00	65	<DL	14	157	<DL	3,579
MC-413-623.78	Hematite	1.00	300	<DL				69
MC-413-623.78	Hematite	1.00	232	<DL				81
MC-413-623.78	Hematite	1.00	226	<DL				62
MC-413-623.78	Hematite	1.00	81	<DL				55
MC-413-623.78	Hematite	1.00	137	<DL				188
MC-413-623.78	Hematite	1.00	111	<DL				253
MC-413-623.78	Hematite	1.00	483	<DL				<DL
MC-413-623.78	Hematite	1.00	167	<DL				65
MC-413-623.78	Hematite	1.00	117	<DL				82
MC-413-623.78	Hematite	1.00	120	<DL				166
MC-413-623.78	Hematite	1.00	93	<DL				72
MAC-246-333.8	Rutile	1.39	42	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Rutile	1.14	14	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Rutile	1.41	25	<DL	<DL	<DL	<DL	846
MAC-252-342.5	Rutile	1.08	107	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	1.05	60	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	1.27	267	71	<DL	843	<DL	3,421
MAC-246-508.8	Fe(Ti) oxide in Kao	1.58	26	60	<DL	1,028	<DL	4,614
MAC-246-508.8	Fe(Ti) oxide in Kao	1.24	43	96	<DL	899	<DL	3,736
MC-336-564	Fe-hydroxide vein	1.00	49	<DL	14	62	24,740	6,977
MC-336-564	Fe-hydroxide vein	1.00	30	<DL	16	76	<DL	3,518
MC-336-564	Fe-hydroxide vein	1.00	86	<DL	18	95	<DL	2,776
MC-415-197	Mn(Fe) oxide vein	1.00	74	9				2,298

Sample No.	Mineral	Al	Si	P	S	K	Ca (43)	Ca (44)
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite	119,923	<DL	744	<DL	25,357	<DL	<DL
MAC-208-237	C1 Chlorite	117,295	<DL	1,270	<DL	24,841	<DL	<DL
MAC-208-237	C1 Chlorite	134,363	<DL	1,758	<DL	28,218	<DL	<DL
MAC-252-271.2	C1 Chlorite	190,093	<DL	743	<DL	72,883	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL	878,927	<DL	<DL	19,173	84,462	93,573
MAC-253-325	C1 Chlorite	143,473	<DL	857	<DL	66,248	<DL	<DL
MAC-253-325	C1 Chlorite	132,673	<DL	1,892	<DL	51,047	<DL	<DL
MAC-253-325	C1 Chlorite	164,411	<DL	1,639	<DL	57,455	<DL	<DL
MC-413-183.26	C1 Chlorite	129,288	<DL	<DL	<DL	6,810	<DL	<DL
MC-413-183.26	C1 Chlorite	124,651	<DL	96	<DL	5,476	<DL	<DL
MC-413-183.26	C1 Chlorite	143,487	<DL	<DL	<DL	6,334	<DL	<DL
MC-413-183.26	C1 Chlorite	156,573	<DL	263	<DL	6,897	<DL	<DL
MC-413-183.26	C1 Chlorite	153,313	<DL	229	<DL	5,097	<DL	<DL
MC-413-183.26	C1 Chlorite	139,623	<DL	260	<DL	6,403	<DL	<DL
MAC-208-487	C2 Chlorite	246,769	353,225	<DL	492		58,276	57,184
MAC-208-487	C2 Chlorite	272,254	390,917	<DL	542		63,044	61,893
MAC-208-487	C2 Chlorite	274,299	377,705	<DL	526		60,632	59,663
MAC-208-487	C2 Chlorite	311,700	476,872	259	680		77,976	77,193
MAC-208-572	C2 Chlorite	196,140	<DL	112	510		<DL	<DL
MAC-208-572	C2 Chlorite	189,134	306,713	99	482		<DL	<DL
MAC-208-572	C2 Chlorite	171,304	<DL	108	482		<DL	<DL
MAC-208-572	C2 Chlorite	157,580	239,763	108	380		<DL	<DL
MAC-208-572	C2 Chlorite	160,631	239,900	156	386		<DL	<DL
MAC-208-572	C2 Chlorite	150,948	232,305	202	396		<DL	<DL
MAC-246-475.33	C2 Chlorite	177,722	<DL	<DL	<DL		<DL	<DL
MAC-246-475.33	C2 Chlorite	180,730	<DL	<DL	<DL		<DL	<DL
MAC-246-475.33	C2 Chlorite	170,310	<DL	213	<DL		<DL	<DL
MAC-246-475.33	C2 Chlorite	195,262	<DL	300	<DL		<DL	<DL
MAC-255-559	C2 Chlorite	163,915	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	149,748	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	165,499	<DL	310	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	160,583	<DL	244	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	119,867	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	109,847	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	125,631	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	172,086	<DL	118	<DL		<DL	<DL
MAC-255-564.36	C2 Chlorite	168,168	<DL	128	<DL		<DL	<DL
MAC-255-564.36	C2 Chlorite	168,014	<DL	124	<DL		<DL	<DL
MAC-255-564.36	C2 Chlorite	190,897	<DL	130	<DL		<DL	<DL
MAC-255-564.36	C2 Chlorite	187,372	<DL	<DL	<DL		<DL	<DL
MAC-255-564.36	C2 Chlorite	175,098	<DL	161	<DL		<DL	<DL
MAC-255-564.36	C2 Chlorite	185,579	<DL	110	<DL		<DL	<DL
MC-336-570.5	C2 Chlorite	190,514	<DL	522	<DL		90,116	124,696
MC-336-570.5	C2 Chlorite	187,816	<DL	<DL	783		<DL	<DL
MC-336-570.5	C2 Chlorite	160,238	430,094	<DL	909		<DL	<DL
MC-336-570.5	C2 Chlorite	161,822	<DL	329	<DL		<DL	22,591
MC-336-570.5	C2 Chlorite	173,482	<DL	317	<DL		<DL	19,818
MC-336-570.5	C2 Chlorite	171,843	<DL	539	<DL		<DL	26,854
MAC-208-290.5	Illite	180,163	<DL	303	<DL	116,078	<DL	<DL
MAC-208-290.5	Illite	180,163	<DL	595	<DL	135,863	<DL	<DL
MAC-246-333.8	Illite	183,596	<DL	147	<DL	94,365	<DL	<DL
MAC-246-333.8	Illite	183,596	254,565	149	<DL	86,035	<DL	<DL
MAC-252-271.2	Illite	182,951	<DL	159	<DL	102,227	<DL	<DL
MAC-252-271.2	Illite	182,951	<DL	171	<DL	101,077	<DL	<DL
MAC-252-271.2	Illite	182,951	<DL	160	<DL	99,468	<DL	<DL
MAC-252-319.44	Illite	183,945	<DL	747	<DL	130,571	<DL	<DL
MAC-252-319.44	Illite	183,945	<DL	283	<DL	131,734	<DL	<DL
MAC-253-507.5	Illite	185,116	<DL	310	<DL	117,861	<DL	<DL
MAC-255-293.4	Illite	183,945	<DL	<DL	985		<DL	<DL

Sample No.	Mineral	Al (ppm)	Si (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (43) (ppm)	Ca (44) (ppm)
MAC-255-293.4	Illite	183,945	459,398	<DL	986		<DL	<DL
MAC-255-293.4	Illite	183,945	597,504	<DL	884		<DL	<DL
MAC-255-293.4	Illite	183,945	791,125	361	1,026		<DL	<DL
MAC-255-293.4	Illite	183,945	1,232,410	<DL	1,234		<DL	<DL
MAC-255-501.32	Illite	186,293	<DL	<DL	<DL	107,310	<DL	<DL
MAC-255-501.32	Illite	186,293	<DL	153	<DL	117,870	<DL	<DL
MAC-255-501.32	Illite	186,293	<DL	146	<DL	110,362	<DL	<DL
MAC-255-501.32	Illite	186,293	<DL	591	<DL	111,284	<DL	<DL
MAC-255-501.32	Illite	186,293	<DL	286	<DL	115,088	<DL	<DL
MAC-255-501.32	Illite	186,293	<DL	331	<DL	110,457	<DL	<DL
MAC-255-501.32	Illite	186,293	<DL	474	<DL	107,916	<DL	<DL
MC-336-506.8	Illite	182,731	<DL	433	<DL	108,209	59,511	60,487
MC-336-506.8	Illite	182,731	<DL	<DL	<DL	113,183	78,681	80,129
MC-336-506.8	Illite	185,116	<DL	<DL	<DL	99,361	<DL	<DL
MC-336-570.5	Illite	183,945	<DL	304	<DL		<DL	57,979
MC-338-101	Illite	183,945	<DL	347	<DL	143,737	<DL	<DL
MC-338-101	Illite	183,945	<DL	271	<DL	158,433	<DL	<DL
MC-338-101	Illite	183,945	<DL	658	<DL	192,109	<DL	<DL
MC-338-101	Illite	183,945	<DL	568	<DL	158,468	<DL	<DL
MC-338-319	Illite	183,945	<DL	<DL	<DL	124,935	<DL	<DL
MC-338-319	Illite	183,945	<DL	<DL	<DL	135,040	<DL	<DL
MC-338-319	Illite	183,945	<DL	<DL	<DL	117,478	<DL	<DL
MC-338-319	Illite	183,945	<DL	<DL	<DL	126,301	<DL	<DL
MC-338-559	Illite	182,249	<DL	410	<DL	102,701	<DL	<DL
MC-338-559	Illite	182,249	<DL	727	<DL	129,134	<DL	<DL
MC-338-559	Illite	182,249	<DL	642	<DL	115,601	89,308	90,511
MC-413-299	Illite	183,945	<DL	910	<DL	103,058	<DL	<DL
MC-413-299	Illite	183,945	<DL	141	<DL	100,620	<DL	<DL
MC-413-603.83	Illite	181,450	<DL	<DL	<DL	103,465	<DL	<DL
MC-413-603.83	Illite	181,450	<DL	<DL	<DL	91,639	<DL	<DL
MC-413-603.83	Illite	181,450	<DL	<DL	<DL	104,504	<DL	<DL
MC-413-603.83	Illite	181,450	<DL	<DL	<DL	90,563	<DL	<DL
MC-413-603.83	Illite	181,450	<DL	<DL	<DL	93,564	<DL	<DL
MC-413-603.83	Illite	181,450	<DL	859	<DL	85,785	<DL	<DL
MC-413-603.83	Illite	181,450	<DL	<DL	<DL	101,053	<DL	<DL
MC-413-603.83	Illite	184,389	<DL	<DL	<DL	101,457	<DL	<DL
MC-434-253.64	Illite	183,945	291,321	<DL	604		45,412	44,825
MC-434-253.64	Illite	183,945	420,744	<DL	774		72,991	72,871
MC-434-253.64	Illite	183,945	497,486	<DL	611		76,464	75,772
MC-434-54.07	Illite	185,177	<DL	<DL	<DL	148,560	<DL	<DL
MC-434-54.07	Illite	185,177	<DL	<DL	<DL	149,445	<DL	<DL
MAC-246-508.8	Drv Veins	227,327	<DL	482	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	213,910	<DL	462	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	188,966	<DL	477	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	214,067	<DL	515	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	202,291	301,882	<DL	473		<DL	<DL
MAC-253-265.3	Drv Veins	204,304	290,540	<DL	454		<DL	<DL
MAC-253-265.3	Drv Veins	189,097	294,476	<DL	475		<DL	<DL
MAC-253-265.3	Drv Veins	178,222	254,670	<DL	367		<DL	<DL
MAC-253-265.3	Drv Veins	176,625	241,496	<DL	347		<DL	<DL
MAC-253-538	Drv Veins	107,817	<DL	<DL	533		<DL	<DL
MAC-253-538	Drv Veins	54,573	461,477	<DL	479		87,578	89,282
MAC-253-538	Drv Veins	119,116	<DL	<DL	519		<DL	<DL
MAC-253-538	Drv Veins	113,197	<DL	<DL	483		<DL	<DL
MAC-253-538	Drv Veins	99,230	441,958	<DL	440		<DL	<DL
MC-344-100.1	Drv Veins	82,162	<DL	<DL	1,046		<DL	<DL
MC-344-100.1	Drv Veins	61,642	<DL	<DL	964		<DL	<DL
MC-344-100.1	Drv Veins	163,935	<DL	<DL	733		<DL	<DL
MC-344-100.1	Drv Veins	167,213	<DL	<DL	765		<DL	<DL

Sample No.	Mineral	Al	Si	P	S	K	Ca (43)	Ca (44)
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-344-100.1	Drv Veins	123,362	<DL	<DL	878		<DL	<DL
MC-344-100.1	Drv Veins	151,483	<DL	<DL	733		<DL	<DL
MC-344-100.1	Drv Veins	146,058	<DL	<DL	875		<DL	<DL
MC-415-497.66	Drv Veins	216,559	347,484	<DL	487		50,056	49,554
MC-415-497.66	Drv Veins	204,666	295,674	<DL	388		36,560	36,138
MC-415-497.66	Drv Veins	200,697	291,447	<DL	390		<DL	<DL
MC-415-497.66	Drv Veins	192,501	273,906	<DL	358		<DL	<DL
MAC-208-10.2	Interstitial Drv	202,370	<DL	<DL	465		34,402	34,960
MAC-208-10.2	Interstitial Drv	212,623	<DL	<DL	720		61,374	62,965
MAC-208-572	Interstitial Drv	153,979	243,686	76	336		<DL	<DL
MAC-208-572	Interstitial Drv	191,805	<DL	112	513		<DL	<DL
MAC-208-572	Interstitial Drv	170,884	<DL	121	410		<DL	<DL
MAC-208-572	Interstitial Drv	164,950	<DL	89	439		<DL	<DL
MAC-208-572	Interstitial Drv	143,210	238,609	77	335		<DL	<DL
MAC-246-142.86	Interstitial Drv	238,142	451,024	<DL	619		<DL	<DL
MAC-246-142.86	Interstitial Drv	220,383	301,211	<DL	422		<DL	<DL
MAC-246-142.86	Interstitial Drv	208,604	285,813	<DL	426		<DL	<DL
MAC-246-142.86	Interstitial Drv	204,283	330,670	<DL	491		<DL	<DL
MAC-246-142.86	Interstitial Drv	203,443	275,994	<DL	365		<DL	<DL
MAC-246-213.43	Interstitial Drv	184,903	863,490	<DL	1,484		<DL	<DL
MAC-246-213.43	Interstitial Drv	178,272	409,624	<DL	744		<DL	<DL
MAC-246-213.43	Interstitial Drv	173,664	407,875	<DL	663		<DL	<DL
MAC-246-4.33	Interstitial Drv	201,035	<DL	<DL	552		50,169	51,825
MAC-246-4.33	Interstitial Drv	201,560	<DL	<DL	635		56,351	58,084
MAC-246-4.33	Interstitial Drv	183,143	<DL	<DL	504		40,315	41,075
MAC-246-475.33	Interstitial Drv	235,532	<DL	<DL	1,316		<DL	<DL
MAC-246-475.33	Interstitial Drv	229,533	<DL	123	1,060		<DL	<DL
MAC-246-475.33	Interstitial Drv	199,568	<DL	<DL	<DL		<DL	<DL
MAC-246-475.33	Interstitial Drv	230,271	<DL	<DL	1,139		<DL	<DL
MAC-246-475.33	Interstitial Drv	232,962	<DL	<DL	1,198		<DL	<DL
MAC-246-475.33	Interstitial Drv	215,557	<DL	126	558		<DL	<DL
MAC-246-475.33	Interstitial Drv	234,040	<DL	121	762		<DL	<DL
MAC-246-499.02	Interstitial Drv	200,010	325,820	142	544		<DL	<DL
MAC-252-199.86	Interstitial Drv	167,978	617,834	<DL	951		<DL	<DL
MAC-252-199.86	Interstitial Drv	103,332	490,063	<DL	1,006		<DL	<DL
MAC-252-342.5	Interstitial Drv	183,806	<DL	411	<DL	3,804	<DL	<DL
MAC-252-342.5	Interstitial Drv	205,910	<DL	719	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	255,184	<DL	<DL	1,092		<DL	<DL
MAC-252-342.5	Interstitial Drv	209,168	<DL	<DL	645		<DL	<DL
MAC-252-342.5	Interstitial Drv	226,748	<DL	<DL	389		<DL	<DL
MAC-252-342.5	Interstitial Drv	202,304	<DL	<DL	262		<DL	<DL
MAC-252-55.65	Interstitial Drv	170,722	<DL	<DL	512		<DL	<DL
MAC-252-55.65	Interstitial Drv	166,950	286,168	166	452		<DL	<DL
MAC-252-55.65	Interstitial Drv	156,698	285,117	168	459		<DL	<DL
MAC-253-205	Interstitial Drv	144,322	<DL	<DL	343		<DL	<DL
MAC-253-205	Interstitial Drv	180,815	<DL	<DL	420		<DL	<DL
MAC-253-205	Interstitial Drv	158,726	<DL	<DL	464		<DL	<DL
MAC-253-205	Interstitial Drv	166,018	<DL	<DL	466		<DL	<DL
MAC-253-205	Interstitial Drv	167,685	<DL	<DL	446		<DL	<DL
MAC-253-205	Interstitial Drv	60,541	<DL	<DL	898		76,956	79,180
MAC-253-205	Interstitial Drv	173,991	<DL	<DL	607		<DL	<DL
MAC-253-265.3	Interstitial Drv	223,195	568,040	<DL	996		<DL	<DL
MAC-253-265.3	Interstitial Drv	234,808	535,622	<DL	862		<DL	<DL
MAC-253-265.3	Interstitial Drv	276,379	446,848	<DL	671		<DL	<DL
MAC-255-6.13	Interstitial Drv	178,693	387,580	<DL	479		<DL	<DL
MAC-255-6.13	Interstitial Drv	192,442	<DL	197	616		<DL	<DL
MAC-255-6.13	Interstitial Drv	200,926	<DL	196	553		<DL	<DL
MAC-255-6.13	Interstitial Drv	192,092	<DL	<DL	1,072		91,678	93,104
MC-338-537.64	Interstitial Drv	221,252	<DL	76	857		<DL	<DL

Sample No.	Mineral	Al	Si	P	S	K	Ca (43)	Ca (44)
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-338-537.64	Interstitial Drv	84,962	373,844	75	504		62,005	62,854
MC-338-537.64	Interstitial Drv	126,324	355,082	93	499		<DL	48,800
MC-338-537.64	Interstitial Drv	112,741	365,843	92	515		51,361	52,667
MC-338-537.64	Interstitial Drv	232,828	<DL	184	1,019		<DL	<DL
MC-338-537.64	Interstitial Drv	197,059	<DL	170	592		<DL	<DL
MC-344-179.8	Interstitial Drv	173,886	<DL	172	580		<DL	<DL
MC-344-179.8	Interstitial Drv	200,161	394,975	287	611		<DL	<DL
MC-344-179.8	Interstitial Drv	193,667	317,705	294	507		<DL	<DL
MC-344-179.8	Interstitial Drv	180,608	298,658	204	505		<DL	<DL
MC-413-258.26	Interstitial Drv	234,854	<DL	<DL	764		<DL	<DL
MC-413-258.26	Interstitial Drv	235,089	<DL	249	742		<DL	<DL
MC-413-258.26	Interstitial Drv	207,503	342,284	<DL	517		<DL	<DL
MC-413-258.26	Interstitial Drv	227,926	<DL	201	601		<DL	<DL
MC-413-258.26	Interstitial Drv	206,960	319,602	155	551		<DL	<DL
MC-413-258.26	Interstitial Drv	208,551	<DL	185	573		<DL	<DL
MC-413-258.26	Interstitial Drv	208,669	312,600	188	469		<DL	<DL
MC-413-649	Interstitial Drv	239,669	<DL	<DL	830		<DL	<DL
MC-415-173.4	Interstitial Drv	203,449	373,610	<DL	544		<DL	<DL
MC-415-173.4	Interstitial Drv	202,504	325,692	<DL	474		<DL	<DL
MC-415-173.4	Interstitial Drv	214,285	360,009	<DL	553		<DL	<DL
MC-415-173.4	Interstitial Drv	189,230	385,015	<DL	515		<DL	<DL
MC-415-389	Interstitial Drv	226,280	<DL	<DL	433		<DL	<DL
MC-415-389	Interstitial Drv	203,452	<DL	<DL	280		<DL	<DL
MC-415-389	Interstitial Drv	205,621	<DL	<DL	281		<DL	<DL
MC-415-389	Interstitial Drv	229,888	<DL	<DL	554		<DL	<DL
MC-415-389	Interstitial Drv	222,513	<DL	<DL	475		<DL	<DL
MC-415-432.38	Interstitial Drv	230,463	<DL	<DL	392		<DL	<DL
MC-415-432.38	Interstitial Drv	209,803	<DL	<DL	278		<DL	<DL
MC-415-432.38	Interstitial Drv	228,882	<DL	<DL	430		<DL	<DL
MC-415-432.38	Interstitial Drv	211,819	<DL	<DL	283		<DL	<DL
MC-415-432.38	Interstitial Drv	213,645	<DL	<DL	266		<DL	<DL
MC-415-490.78	Interstitial Drv	262,294	553,734	<DL	722		110,483	109,613
MC-415-490.78	Interstitial Drv	252,556	340,195	<DL	442		59,673	59,191
MC-415-490.78	Interstitial Drv	251,571	441,170	<DL	585		80,585	79,958
MC-415-490.78	Interstitial Drv	238,837	358,801	<DL	495		60,874	60,227
MC-415-490.78	Interstitial Drv	215,620	283,611	<DL	357		41,975	41,449
MAC-255-6.13	Detrital Tourmaline	154,653	552,543	<DL	683		<DL	<DL
MAC-255-6.13	Detrital Tourmaline	150,673	421,353	<DL	505		<DL	<DL
MAC-255-6.13	Detrital Tourmaline	148,451	331,957	<DL	391		48,503	48,982
MAC-255-6.13	Detrital Tourmaline	150,037	345,159	<DL	485		55,059	<DL
MAC-246-333.8	APS	282,823	<DL	167,962	3,875	5,907	399,475	260,792
MAC-246-508.8	APS	214,173	1,475,958	180,781	<DL	<DL	264,691	182,124
MAC-246-508.8	APS	215,355	<DL	142,389	3,229	<DL	248,836	162,438
MAC-252-342.5	APS	258,987	<DL	45,297	6,895		346,589	260,135
MAC-252-342.5	APS	222,641	<DL	45,992	6,349		442,011	363,536
MAC-252-342.5	APS	265,037	<DL	47,207	6,218		429,615	325,755
MAC-252-342.5	APS	310,401	<DL	218,540	3,383	6,318	368,891	236,872
MAC-253-382	APS	278,141	<DL	182,708	3,302	7,538	371,572	239,993
MAC-253-382	APS	272,524	<DL	197,693	3,658	9,668	377,095	245,129
MAC-253-382	APS	295,304	<DL	198,054	3,462	10,237	358,959	248,104
MAC-253-507.5	APS	59,970	<DL	62,938	876	6,030	59,822	48,488
MAC-253-507.5	APS	88,209	<DL	57,669	913	8,962	69,192	64,137
MAC-253-507.5	APS	388,073	<DL	203,620	5,116	8,028	495,216	353,976
MAC-255-559	APS	335,485	<DL	173,797	2,048	<DL	269,470	179,346
MAC-255-559	APS	379,399	<DL	183,648	2,302	<DL	280,004	193,660
MC-336-570.5	APS	394,563	<DL	190,102	8,652		766,247	564,607
MC-434-328.83	APS	308,719	<DL	271,367	5,589	3,943	474,325	273,834
MC-434-328.83	APS	306,699	<DL	297,756	5,239	6,715	467,154	270,803
MC-434-328.83	APS	312,563	<DL	319,662	5,641	3,459	454,739	300,845

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Al (ppm)	Si (ppm)	P (ppm)	S (ppm)	K (ppm)	Ca (43) (ppm)	Ca (44) (ppm)
MC-434-328.83	APS	314,249	<DL	345,286	6,251	3,197	488,122	313,845
MC-434-328.83	APS	299,802	<DL	319,043	5,094	2,593	483,435	289,351
MAC-255-559	Monazite	<DL	<DL	123,831	2,747	1,871	34,269	33,513
MAC-255-559	Monazite	164,990	<DL	64,623	891	<DL	88,516	61,369
MAC-255-559	Monazite	<DL	296,290	84,751	1,665	<DL	<DL	18,554
MC-413-603.83	Monazite	370,354	<DL	201,723	2,826	5,879	346,606	245,685
MC-413-603.83	Monazite	410,070	<DL	234,985	2,882	11,929	364,539	255,909
MC-413-603.83	Monazite	298,780	<DL	286,305	3,152	3,587	409,763	316,954
MAC-255-564.36	Apatite	45,485	<DL	139,331	<DL		474,299	467,418
MAC-255-564.36	Apatite	<DL	<DL	186,001	<DL		601,338	606,326
MAC-255-564.36	Apatite	23,241	<DL	180,238	<DL		608,670	602,173
MAC-255-564.36	Apatite	<DL	<DL	128,596	1,921		471,233	473,289
MAC-255-564.36	Apatite	<DL	<DL	162,384	<DL		557,881	545,750
MAC-255-559	Pyrite	48,875	<DL	<DL	23,036	<DL	<DL	<DL
MAC-255-559	Pyrite	67,494	<DL	<DL	18,379	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	33,083	<DL	<DL	<DL
MAC-255-559	Pyrite	11,720	<DL	<DL	21,599	1,771	<DL	<DL
MC-336-564	Hematite	33,594	<DL	3,643	<DL	19,960	<DL	14,732
MC-336-564	Hematite	38,823	<DL	7,192	<DL	17,013	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	215		<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	156		<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	159		<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	194		<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	185		<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	185		<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	181		<DL	<DL
MC-413-623.78	Hematite	5,295	<DL	<DL	180		<DL	<DL
MC-413-623.78	Hematite	5,020	<DL	<DL	174		<DL	<DL
MC-413-623.78	Hematite	5,020	<DL	<DL	182		<DL	<DL
MC-413-623.78	Hematite	3,803	<DL	<DL	209		<DL	<DL
MAC-246-333.8	Rutile	<DL	<DL	265	<DL	<DL	<DL	<DL
MAC-246-333.8	Rutile	<DL	<DL	258	<DL	<DL	<DL	<DL
MAC-246-508.8	Rutile	<DL	<DL	374	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	209,334	295,152	1,368	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	209,334	346,918	1,167	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	209,334	296,126	812	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	10,555	<DL	8,239	<DL	3,547	<DL	13,967
MC-336-564	Fe-hydroxide vein	9,655	<DL	10,209	<DL	2,072	<DL	<DL
MC-336-564	Fe-hydroxide vein	15,375	<DL	11,776	<DL	3,641	<DL	<DL
MC-415-197	Mn(Fe) oxide vein	21,937	161,008	<DL	183		<DL	<DL

Sample No.	Mineral	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)
MAC-208-237	C1 Chlorite	8	402	29	62	35	5,664	11	103
MAC-208-237	C1 Chlorite	9	162	32	54	40	5,162	11	119
MAC-208-237	C1 Chlorite	13	470	36	76	41	4,920	<DL	100
MAC-252-271.2	C1 Chlorite	42	<DL	87	98	133	9,549	<DL	200
MAC-252-271.2	C1 Chlorite	31	<DL	<DL	30	108	<DL	<DL	54
MAC-253-325	C1 Chlorite	<DL	<DL	77	62	<DL	5,673	<DL	166
MAC-253-325	C1 Chlorite	<DL	<DL	78	113	<DL	26,532	<DL	150
MAC-253-325	C1 Chlorite	<DL	<DL	80	105	<DL	29,451	<DL	171
MC-413-183.26	C1 Chlorite	12	261	28	22	<DL	2,369	<DL	67
MC-413-183.26	C1 Chlorite	4	119	23	16	<DL	1,759	<DL	60
MC-413-183.26	C1 Chlorite	5	149	22	19	<DL	2,227	<DL	69
MC-413-183.26	C1 Chlorite	<DL	84	32	28	<DL	19,520	<DL	67
MC-413-183.26	C1 Chlorite	<DL	91	27	22	<DL	13,853	<DL	72
MC-413-183.26	C1 Chlorite	5	98	32	19	<DL	22,844	<DL	66
MAC-208-487	C2 Chlorite	<DL	<DL	108	90	<DL	11,886	<DL	151
MAC-208-487	C2 Chlorite	<DL	<DL	132	110	<DL	13,946	<DL	163
MAC-208-487	C2 Chlorite	15	<DL	134	119	<DL	13,642	<DL	156
MAC-208-487	C2 Chlorite	25	<DL	155	144	<DL	19,773	22	178
MAC-208-572	C2 Chlorite	11	<DL	128	28	<DL	9,249	17	117
MAC-208-572	C2 Chlorite	12	<DL	142	32	<DL	9,604	15	119
MAC-208-572	C2 Chlorite	15	<DL	121	23	<DL	8,683	21	138
MAC-208-572	C2 Chlorite	15	<DL	111	19	<DL	8,889	21	140
MAC-208-572	C2 Chlorite	14	<DL	138	26	<DL	9,394	25	145
MAC-208-572	C2 Chlorite	14	<DL	136	25	<DL	9,158	24	145
MAC-246-475.33	C2 Chlorite	<DL	<DL	47	178	<DL	7,775	9	100
MAC-246-475.33	C2 Chlorite	<DL	<DL	41	151	<DL	7,701	8	100
MAC-246-475.33	C2 Chlorite	<DL	123	41	87	<DL	7,638	11	97
MAC-246-475.33	C2 Chlorite	<DL	<DL	81	170	<DL	5,995	12	92
MAC-255-559	C2 Chlorite	<DL	<DL	161	446	<DL	59,402	124	300
MAC-255-559	C2 Chlorite	<DL	<DL	165	363	<DL	57,188	98	287
MAC-255-559	C2 Chlorite	<DL	<DL	142	455	97	64,981	170	369
MAC-255-559	C2 Chlorite	<DL	<DL	142	423	93	61,131	151	343
MAC-255-559	C2 Chlorite	<DL	<DL	132	59	<DL	48,164	34	207
MAC-255-559	C2 Chlorite	<DL	<DL	123	53	<DL	51,221	33	208
MAC-255-559	C2 Chlorite	<DL	<DL	171	69	<DL	55,244	39	210
MAC-255-564.36	C2 Chlorite	<DL	171	262	117	<DL	24,871	24	647
MAC-255-564.36	C2 Chlorite	<DL	183	279	121	<DL	26,982	21	689
MAC-255-564.36	C2 Chlorite	<DL	207	270	117	<DL	27,371	20	680
MAC-255-564.36	C2 Chlorite	<DL	<DL	285	130	<DL	16,904	<DL	972
MAC-255-564.36	C2 Chlorite	<DL	<DL	281	192	<DL	24,482	<DL	904
MAC-255-564.36	C2 Chlorite	<DL	104	290	197	<DL	23,753	<DL	878
MAC-255-564.36	C2 Chlorite	<DL	103	299	192	<DL	23,649	<DL	936
MC-336-570.5	C2 Chlorite	<DL	338	165	115	<DL	13,389	<DL	80
MC-336-570.5	C2 Chlorite	17	<DL	151	80	<DL	11,624	66	111
MC-336-570.5	C2 Chlorite	17	<DL	109	59	<DL	9,558	39	83
MC-336-570.5	C2 Chlorite	<DL	132	190	164	<DL	13,341	24	117
MC-336-570.5	C2 Chlorite	<DL	114	176	133	<DL	14,221	23	119
MC-336-570.5	C2 Chlorite	<DL	124	159	127	<DL	14,705	23	109
MAC-208-290.5	Illite	10	212	41	32	<DL	6,887	<DL	<DL
MAC-208-290.5	Illite	21	<DL	51	99	<DL	9,078	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL	43	21	<DL	7,158	<DL	<DL
MAC-246-333.8	Illite	13	165	37	19	33	6,393	<DL	<DL
MAC-252-271.2	Illite	10	<DL	52	54	38	6,140	<DL	21
MAC-252-271.2	Illite	12	280	59	54	46	6,260	<DL	22
MAC-252-271.2	Illite	11	188	56	52	53	5,978	<DL	20
MAC-252-319.44	Illite	<DL	<DL	43	40	<DL	6,022	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	45	43	<DL	6,048	<DL	<DL
MAC-253-507.5	Illite	16	61	226	37	<DL	7,121	12	<DL
MAC-255-293.4	Illite	<DL	<DL	62	91	<DL	9,748	<DL	78

Sample No.	Mineral	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)
MAC-255-293.4	Illite	6	<DL	56	47	<DL	10,063	<DL	67
MAC-255-293.4	Illite	9	<DL	51	47	<DL	11,573	<DL	64
MAC-255-293.4	Illite	12	<DL	80	44	<DL	10,311	<DL	84
MAC-255-293.4	Illite	25	<DL	476	1,495	<DL	10,134	<DL	111
MAC-255-501.32	Illite	15	84	139	65	29	7,224	<DL	<DL
MAC-255-501.32	Illite	15	76	149	73	26	7,875	<DL	<DL
MAC-255-501.32	Illite	15	77	139	70	25	7,931	<DL	<DL
MAC-255-501.32	Illite	19	99	148	84	35	31,933	<DL	38
MAC-255-501.32	Illite	15	90	136	76	31	11,355	<DL	<DL
MAC-255-501.32	Illite	15	82	127	78	27	11,855	<DL	<DL
MAC-255-501.32	Illite	15	85	129	78	27	12,121	<DL	<DL
MC-336-506.8	Illite	27	1,620	37	66	<DL	16,511	<DL	27
MC-336-506.8	Illite	23	774	29	66	<DL	10,304	<DL	<DL
MC-336-506.8	Illite	14	<DL	25	73	124	6,463	<DL	38
MC-336-570.5	Illite	<DL	216	136	79	<DL	12,352	<DL	<DL
MC-338-101	Illite	21	122	51	66	<DL	6,700	<DL	<DL
MC-338-101	Illite	16	78	43	63	<DL	7,346	<DL	<DL
MC-338-101	Illite	20	130	59	124	<DL	8,986	<DL	<DL
MC-338-101	Illite	17	146	60	130	<DL	12,045	<DL	<DL
MC-338-319	Illite	9	337	50	<DL	28	10,910	<DL	<DL
MC-338-319	Illite	10	1,315	113	119	44	11,329	<DL	<DL
MC-338-319	Illite	10	1,368	113	115	50	11,567	<DL	<DL
MC-338-319	Illite	11	1,287	113	116	49	11,185	<DL	<DL
MC-338-559	Illite	16	136	70	43	<DL	5,653	<DL	<DL
MC-338-559	Illite	33	865	93	86	<DL	7,974	<DL	<DL
MC-338-559	Illite	30	686	76	61	<DL	7,736	<DL	<DL
MC-413-299	Illite	<DL	207	80	75	<DL	37,329	<DL	<DL
MC-413-299	Illite	<DL	130	35	28	<DL	3,841	<DL	<DL
MC-413-603.83	Illite	30	3,166	126	131	<DL	7,553	20	<DL
MC-413-603.83	Illite	<DL	414	108	132	<DL	6,363	21	<DL
MC-413-603.83	Illite	29	1,689	125	136	<DL	7,568	20	<DL
MC-413-603.83	Illite	<DL	<DL	84	73	<DL	4,623	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	83	78	<DL	4,809	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	113	109	<DL	6,466	28	<DL
MC-413-603.83	Illite	<DL	<DL	109	117	<DL	7,095	28	<DL
MC-413-603.83	Illite	<DL	<DL	108	111	<DL	6,992	27	<DL
MC-434-253.64	Illite	<DL	<DL	94	45	<DL	7,885	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	90	46	<DL	6,797	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	79	40	<DL	6,642	<DL	<DL
MC-434-54.07	Illite	12	181	70	151	116	5,721	<DL	<DL
MC-434-54.07	Illite	12	171	75	152	116	7,575	<DL	<DL
MAC-246-508.8	Drv Veins	24	<DL	2,867	73	<DL	<DL	31	52
MAC-246-508.8	Drv Veins	20	<DL	2,377	94	<DL	<DL	28	50
MAC-246-508.8	Drv Veins	17	<DL	2,142	101	<DL	2,252	30	46
MAC-246-508.8	Drv Veins	18	<DL	2,520	58	55	4,228	27	56
MAC-253-265.3	Drv Veins	4	<DL	70	15	<DL	2,746	10	36
MAC-253-265.3	Drv Veins	4	<DL	72	16	<DL	2,983	10	38
MAC-253-265.3	Drv Veins	<DL	<DL	65	20	<DL	4,782	12	58
MAC-253-265.3	Drv Veins	<DL	<DL	66	18	<DL	4,349	10	57
MAC-253-265.3	Drv Veins	<DL	<DL	66	19	<DL	3,892	10	47
MAC-253-538	Drv Veins	<DL	<DL	45	33	<DL	6,399	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	3,310	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	7,112	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	42	<DL	<DL	6,996	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	33	<DL	<DL	6,487	<DL	<DL
MC-344-100.1	Drv Veins	9	<DL	307	22	<DL	<DL	<DL	18
MC-344-100.1	Drv Veins	7	<DL	315	28	<DL	<DL	<DL	12
MC-344-100.1	Drv Veins	8	<DL	589	42	<DL	<DL	9	38
MC-344-100.1	Drv Veins	8	<DL	637	38	<DL	<DL	8	31

Sample No.	Mineral	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)
MC-344-100.1	Drv Veins	16	<DL	458	26	<DL	<DL	<DL	27
MC-344-100.1	Drv Veins	8	<DL	520	34	<DL	<DL	7	28
MC-344-100.1	Drv Veins	6	<DL	575	39	<DL	<DL	8	28
MC-415-497.66	Drv Veins	14	<DL	26	28	<DL	13,046	8	27
MC-415-497.66	Drv Veins	13	<DL	27	25	<DL	13,885	6	24
MC-415-497.66	Drv Veins	12	<DL	28	27	<DL	14,610	5	22
MC-415-497.66	Drv Veins	9	<DL	26	21	<DL	14,210	4	20
MAC-208-10.2	Interstitial Drv	19	3,059	230	47	<DL	3,760	<DL	61
MAC-208-10.2	Interstitial Drv	<DL	<DL	245	59	<DL	<DL	<DL	60
MAC-208-572	Interstitial Drv	8	<DL	123	37	<DL	8,673	5	49
MAC-208-572	Interstitial Drv	6	<DL	59	67	<DL	9,472	<DL	30
MAC-208-572	Interstitial Drv	9	<DL	75	58	<DL	10,986	<DL	34
MAC-208-572	Interstitial Drv	7	<DL	105	36	<DL	7,644	<DL	46
MAC-208-572	Interstitial Drv	9	<DL	132	35	<DL	8,960	9	57
MAC-246-142.86	Interstitial Drv	<DL	<DL	40	31	<DL	5,454	<DL	47
MAC-246-142.86	Interstitial Drv	<DL	<DL	57	43	<DL	6,338	<DL	44
MAC-246-142.86	Interstitial Drv	<DL	<DL	49	45	<DL	6,181	<DL	43
MAC-246-142.86	Interstitial Drv	<DL	<DL	34	44	<DL	4,029	<DL	42
MAC-246-142.86	Interstitial Drv	<DL	<DL	29	37	<DL	3,645	<DL	39
MAC-246-213.43	Interstitial Drv	<DL	<DL	46	80	<DL	14,444	<DL	58
MAC-246-213.43	Interstitial Drv	<DL	<DL	34	51	<DL	13,513	11	42
MAC-246-213.43	Interstitial Drv	<DL	<DL	35	53	<DL	12,867	13	40
MAC-246-4.33	Interstitial Drv	<DL	<DL	45	39	<DL	<DL	<DL	39
MAC-246-4.33	Interstitial Drv	<DL	<DL	73	49	<DL	6,787	<DL	54
MAC-246-4.33	Interstitial Drv	<DL	<DL	62	38	<DL	9,291	<DL	29
MAC-246-475.33	Interstitial Drv	13	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	11	<DL	<DL	<DL	<DL	<DL	<DL	34
MAC-246-475.33	Interstitial Drv	<DL	<DL	25	36	<DL	3,657	16	36
MAC-246-475.33	Interstitial Drv	12	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	12	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	8	<DL	30	<DL	<DL	2,584	<DL	34
MAC-246-475.33	Interstitial Drv	10	<DL	26	<DL	<DL	2,485	<DL	34
MAC-246-499.02	Interstitial Drv	14	<DL	84	14	<DL	4,650	15	23
MAC-252-199.86	Interstitial Drv	<DL	<DL	99	103	<DL	<DL	<DL	60
MAC-252-199.86	Interstitial Drv	<DL	<DL	73	72	<DL	<DL	<DL	48
MAC-252-342.5	Interstitial Drv	<DL	199	<DL	47	<DL	16,454	<DL	45
MAC-252-342.5	Interstitial Drv	<DL	131	<DL	43	<DL	14,750	<DL	39
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	171	<DL	15,165	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	107	<DL	13,690	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	11,275	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	32	<DL	13,481	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	105	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	94	<DL	<DL	8,478	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	1,651	84	56	<DL	12,698	<DL	64
MAC-253-205	Interstitial Drv	8	<DL	184	51	<DL	4,320	4	40
MAC-253-205	Interstitial Drv	11	<DL	230	52	<DL	4,581	5	34
MAC-253-205	Interstitial Drv	7	<DL	147	46	<DL	3,525	9	46
MAC-253-205	Interstitial Drv	6	<DL	142	51	<DL	4,023	10	57
MAC-253-205	Interstitial Drv	8	<DL	164	47	<DL	3,415	9	45
MAC-253-205	Interstitial Drv	9	256	252	18	<DL	<DL	<DL	10
MAC-253-205	Interstitial Drv	7	<DL	157	43	<DL	3,060	<DL	43
MAC-253-265.3	Interstitial Drv	<DL	<DL	50	11	<DL	<DL	<DL	33
MAC-253-265.3	Interstitial Drv	<DL	<DL	60	17	<DL	2,933	<DL	32
MAC-253-265.3	Interstitial Drv	<DL	<DL	80	37	<DL	3,758	<DL	60
MAC-255-6.13	Interstitial Drv	9	1,309	63	<DL	<DL	7,846	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	46	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	10	<DL	42	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	17	<DL	120	11	<DL	<DL	<DL	33

Sample No.	Mineral	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)
MC-338-537.64	Interstitial Drv	13	<DL	68	9	<DL	1,395	<DL	17
MC-338-537.64	Interstitial Drv	13	<DL	89	11	<DL	1,440	<DL	23
MC-338-537.64	Interstitial Drv	13	<DL	87	12	<DL	1,348	<DL	20
MC-338-537.64	Interstitial Drv	19	<DL	167	15	<DL	2,818	<DL	35
MC-338-537.64	Interstitial Drv	15	<DL	147	12	<DL	2,326	16	36
MC-344-179.8	Interstitial Drv	3	<DL	90	68	<DL	10,046	<DL	45
MC-344-179.8	Interstitial Drv	6	<DL	89	73	<DL	10,547	9	45
MC-344-179.8	Interstitial Drv	5	84	90	91	<DL	10,117	7	41
MC-344-179.8	Interstitial Drv	4	<DL	89	79	<DL	9,724	6	37
MC-413-258.26	Interstitial Drv	<DL	<DL	50	14	2,268	<DL	28	38
MC-413-258.26	Interstitial Drv	<DL	<DL	53	15	2,826	<DL	29	48
MC-413-258.26	Interstitial Drv	<DL	<DL	49	18	2,238	<DL	45	38
MC-413-258.26	Interstitial Drv	<DL	<DL	50	15	1,858	<DL	34	36
MC-413-258.26	Interstitial Drv	<DL	<DL	62	24	3,674	<DL	50	33
MC-413-258.26	Interstitial Drv	<DL	<DL	60	25	3,076	<DL	38	36
MC-413-258.26	Interstitial Drv	<DL	<DL	58	22	2,280	<DL	37	29
MC-413-649	Interstitial Drv	39	<DL	397	185	<DL	11,196	<DL	28
MC-415-173.4	Interstitial Drv	<DL	<DL	88	17	1,928	<DL	47	29
MC-415-173.4	Interstitial Drv	<DL	<DL	89	17	1,920	<DL	45	33
MC-415-173.4	Interstitial Drv	<DL	<DL	82	24	2,607	<DL	53	38
MC-415-173.4	Interstitial Drv	<DL	<DL	77	23	2,953	<DL	65	50
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	15,461	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	9	<DL	16,477	<DL	22
MC-415-389	Interstitial Drv	<DL	<DL	<DL	8	<DL	15,549	<DL	22
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	15,072	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	16,085	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	15	<DL	13,278	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	18	<DL	15,687	<DL	20
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	13	<DL	16,109	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	15	<DL	16,082	<DL	26
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	18	<DL	17,490	<DL	26
MC-415-490.78	Interstitial Drv	24	209	31	53	58	6,430	18	42
MC-415-490.78	Interstitial Drv	16	<DL	24	41	17	10,272	9	27
MC-415-490.78	Interstitial Drv	16	<DL	23	37	<DL	11,438	14	32
MC-415-490.78	Interstitial Drv	13	<DL	19	30	<DL	12,665	11	29
MC-415-490.78	Interstitial Drv	11	<DL	18	28	<DL	13,950	11	25
MAC-255-6.13	Detrital Tourmaline	16	1,395	76	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	18	1,763	89	<DL	<DL	8,474	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	17	2,175	89	<DL	<DL	9,101	<DL	66
MAC-255-6.13	Detrital Tourmaline	15	1,767	68	<DL	<DL	9,059	<DL	<DL
MAC-246-333.8	APS	<DL	169	69	36	164	12,511	<DL	<DL
MAC-246-508.8	APS	69	<DL	438	113	343	14,547	50	94
MAC-246-508.8	APS	<DL	<DL	354	50	156	9,452	21	<DL
MAC-252-342.5	APS	<DL	<DL	165	112	527	95,087	<DL	<DL
MAC-252-342.5	APS	<DL	<DL	145	75	217	32,282	<DL	<DL
MAC-252-342.5	APS	<DL	<DL	134	70	216	26,747	<DL	<DL
MAC-252-342.5	APS	<DL	226	101	54	150	8,718	<DL	<DL
MAC-253-382	APS	9	727	83	32	74	10,236	<DL	<DL
MAC-253-382	APS	8	2,262	98	30	64	12,081	<DL	<DL
MAC-253-382	APS	11	1,479	109	29	85	18,675	<DL	<DL
MAC-253-507.5	APS	7	82	24	21	37	1,762	7	<DL
MAC-253-507.5	APS	7	76	32	23	38	1,495	6	<DL
MAC-253-507.5	APS	43	3,744	198	163	509	32,201	39	<DL
MAC-255-559	APS	<DL	2,324	438	212	386	47,922	39	80
MAC-255-559	APS	<DL	1,653	509	285	430	66,459	57	152
MC-336-570.5	APS	<DL	898	150	229	<DL	39,725	<DL	<DL
MC-434-328.83	APS	<DL	369	115	113	99	11,347	<DL	<DL
MC-434-328.83	APS	<DL	354	137	118	86	9,190	<DL	<DL
MC-434-328.83	APS	<DL	<DL	134	126	92	9,054	<DL	<DL

Sample No.	Mineral	Sc (ppm)	Ti (ppm)	V (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)
MC-434-328.83	APS	<DL	<DL	178	137	96	7,028	15	<DL
MC-434-328.83	APS	<DL	<DL	130	114	91	5,852	13	<DL
MAC-255-559	Monazite	77	1,345	42	14	<DL	115,495	148	531
MAC-255-559	Monazite	271	2,461	232	199	238	43,643	61	150
MAC-255-559	Monazite	69	1,545	42	<DL	<DL	65,852	85	219
MC-413-603.83	Monazite	480	1,955	456	325	665	72,628	1,620	757
MC-413-603.83	Monazite	185	1,023	413	287	614	80,860	587	265
MC-413-603.83	Monazite	687	1,020	377	246	1,052	108,529	3,856	1,822
MAC-255-564.36	Apatite	<DL	251	681	62	<DL	16,760	<DL	162
MAC-255-564.36	Apatite	<DL	207	619	28	<DL	10,251	<DL	85
MAC-255-564.36	Apatite	<DL	238	816	36	<DL	11,491	<DL	118
MAC-255-564.36	Apatite	<DL	168	499	38	<DL	27,593	21	125
MAC-255-564.36	Apatite	<DL	207	682	45	<DL	13,343	<DL	104
MAC-255-559	Pyrite	<DL	3,346	206	176	<DL	711,435	136	357
MAC-255-559	Pyrite	<DL	1,913	255	244	<DL	512,405	435	843
MAC-255-559	Pyrite	25	99,121	843	249	<DL	1,243,935	483	738
MAC-255-559	Pyrite	26	193,404	747	206	<DL	738,227	316	844
MC-336-564	Hematite	<DL	89	134	46	72	289,988	22	47
MC-336-564	Hematite	<DL	60	217	68	102	570,970	31	66
MC-413-623.78	Hematite	<DL	501	51	<DL	<DL	757,477	4	5
MC-413-623.78	Hematite	<DL	586	49	<DL	<DL	775,608	<DL	<DL
MC-413-623.78	Hematite	<DL	532	46	<DL	<DL	770,239	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	843,118	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	965,550	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	885,454	<DL	<DL
MC-413-623.78	Hematite	<DL	638	49	<DL	<DL	678,261	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	37	<DL	<DL	858,345	4	7
MC-413-623.78	Hematite	<DL	<DL	35	<DL	<DL	948,826	4	7
MC-413-623.78	Hematite	<DL	<DL	35	<DL	<DL	940,025	4	7
MC-413-623.78	Hematite	<DL	135	76	<DL	<DL	775,872	5	8
MAC-246-333.8	Rutile	21	584,280	611	862	197	14,102	<DL	<DL
MAC-246-333.8	Rutile	13	584,280	604	758	160	15,774	<DL	<DL
MAC-246-508.8	Rutile	29	584,280	116	72	<DL	11,439	<DL	<DL
MAC-252-342.5	Rutile	<DL	584,280	461	1,659	72	16,493	<DL	<DL
MAC-252-342.5	Rutile	<DL	584,280	514	1,642	78	16,302	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	15	18,822	1,566	353	115	78,043	12	21
MAC-246-508.8	Fe(Ti) oxide in Kao	16	13,779	1,132	329	103	54,977	14	26
MAC-246-508.8	Fe(Ti) oxide in Kao	13	10,950	1,078	249	71	40,790	<DL	20
MC-336-564	Fe-hydroxide vein	<DL	68	155	17	85	583,073	23	43
MC-336-564	Fe-hydroxide vein	<DL	53	170	28	102	922,221	37	82
MC-336-564	Fe-hydroxide vein	<DL	50	213	49	106	895,952	32	65
MC-415-197	Mn(Fe) oxide vein	<DL	<DL	1,619	<DL	416,457	3,691	112	76

Sample No.	Mineral	Cu (63)	Cu (65)	Zn (66)	Zn (67)	Ga	Ge	As	Se	Cl
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite	52	57	25	<DL	52	<DL	4	<DL	
MAC-208-237	C1 Chlorite	49	51	23	<DL	48	<DL	4	<DL	
MAC-208-237	C1 Chlorite	74	68	59	<DL	52	<DL	11	<DL	
MAC-252-271.2	C1 Chlorite	185	276	165	124	84	<DL	69	4	
MAC-252-271.2	C1 Chlorite	106	72	62	81	<DL	<DL	1,284	3	
MAC-253-325	C1 Chlorite	169	112	92	1,002	72	<DL	16	4	
MAC-253-325	C1 Chlorite	81	82	<DL	<DL	73	<DL	27	4	
MAC-253-325	C1 Chlorite	79	71	46	<DL	68	<DL	19	4	
MC-413-183.26	C1 Chlorite	138	52	57	31	44	<DL	15	<DL	
MC-413-183.26	C1 Chlorite	23	23	6	10	37	<DL	<DL	<DL	
MC-413-183.26	C1 Chlorite	26	26	7	13	44	<DL	<DL	<DL	
MC-413-183.26	C1 Chlorite	51	52	8	11	50	<DL	14	<DL	
MC-413-183.26	C1 Chlorite	39	39	7	14	49	<DL	9	<DL	
MC-413-183.26	C1 Chlorite	45	46	9	14	46	<DL	12	1	
MAC-208-487	C2 Chlorite	60	59	14	18	75	<DL	<DL	0	
MAC-208-487	C2 Chlorite	60	60	14	21	85	<DL	<DL	<DL	
MAC-208-487	C2 Chlorite	59	57	15	21	80	<DL	<DL	1	
MAC-208-487	C2 Chlorite	92	91	37	38	120	<DL	<DL	<DL	
MAC-208-572	C2 Chlorite	130	133	<DL	<DL	62	<DL	<DL	<DL	
MAC-208-572	C2 Chlorite	168	166	<DL	<DL	58	1	<DL	0	
MAC-208-572	C2 Chlorite	139	136	<DL	<DL	68	1	<DL	0	
MAC-208-572	C2 Chlorite	128	131	<DL	<DL	71	1	<DL	0	
MAC-208-572	C2 Chlorite	175	172	<DL	<DL	68	1	8	1	
MAC-208-572	C2 Chlorite	154	150	<DL	<DL	68	2	18	1	
MAC-246-475.33	C2 Chlorite	69	64	22	27	40	<DL	22	1	
MAC-246-475.33	C2 Chlorite	62	63	21	28	40	<DL	18	<DL	
MAC-246-475.33	C2 Chlorite	80	77	<DL	<DL	44	<DL	41	<DL	
MAC-246-475.33	C2 Chlorite	78	71	<DL	32	40	<DL	17	<DL	
MAC-255-559	C2 Chlorite	33	34	74	57	72	<DL	30	<DL	
MAC-255-559	C2 Chlorite	35	33	69	59	68	<DL	20	<DL	
MAC-255-559	C2 Chlorite	51	51	81	77	72	<DL	<DL	2	
MAC-255-559	C2 Chlorite	47	46	83	74	70	<DL	<DL	1	
MAC-255-559	C2 Chlorite	32	33	31	<DL	57	<DL	<DL	1	
MAC-255-559	C2 Chlorite	32	33	31	<DL	50	<DL	<DL	1	
MAC-255-559	C2 Chlorite	34	34	36	40	58	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite	<DL	<DL	35	30	59	<DL	<DL	2	
MAC-255-564.36	C2 Chlorite	<DL	28	34	31	56	<DL	<DL	1	
MAC-255-564.36	C2 Chlorite	<DL	28	33	34	53	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	59	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite	<DL	<DL	29	30	62	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite	<DL	28	28	25	60	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite	<DL	28	28	31	61	<DL	<DL	<DL	
MC-336-570.5	C2 Chlorite	89	82	<DL	98	81	<DL	1,060	<DL	
MC-336-570.5	C2 Chlorite	65	<DL	<DL	117	66	<DL	153	<DL	
MC-336-570.5	C2 Chlorite	61	<DL	229	27	56	<DL	469	<DL	
MC-336-570.5	C2 Chlorite	70	69	54	57	74	<DL	205	3	
MC-336-570.5	C2 Chlorite	68	65	53	64	66	<DL	175	1	
MC-336-570.5	C2 Chlorite	68	70	60	53	67	<DL	240	1	
MAC-208-290.5	Illite	54	59	18	15	38	<DL	84	3	
MAC-208-290.5	Illite	170	182	<DL	42	60	<DL	842	4	
MAC-246-333.8	Illite	39	37	<DL	<DL	40	<DL	6	2	
MAC-246-333.8	Illite	28	29	<DL	31	43	<DL	4	1	
MAC-252-271.2	Illite	35	34	16	27	41	<DL	4	<DL	
MAC-252-271.2	Illite	36	35	17	34	43	<DL	2	1	
MAC-252-271.2	Illite	35	35	19	30	41	<DL	7	<DL	
MAC-252-319.44	Illite	26	26	<DL	<DL	40	<DL	14	2	
MAC-252-319.44	Illite	28	28	<DL	<DL	41	<DL	12	2	
MAC-253-507.5	Illite	42	42	<DL	21	67	<DL	11	3	
MAC-255-293.4	Illite	68	<DL	<DL	<DL	76	<DL	11	<DL	

Sample No.	Mineral	Cu (63) (ppm)	Cu (65) (ppm)	Zn (66) (ppm)	Zn (67) (ppm)	Ga (ppm)	Ge (ppm)	As (ppm)	Se (ppm)	Cl (ppm)
MAC-255-293.4	Illite	43	<DL	<DL	8	64	<DL	26	2	
MAC-255-293.4	Illite	61	<DL	<DL	19	68	<DL	128	2	
MAC-255-293.4	Illite	86	765	<DL	75	68	<DL	17	2	
MAC-255-293.4	Illite	1,954	374	620	534	74	<DL	57	6	
MAC-255-501.32	Illite	36	35	25	32	32	<DL	14	2	
MAC-255-501.32	Illite	37	37	24	38	33	<DL	13	2	
MAC-255-501.32	Illite	36	36	25	36	32	<DL	11	1	
MAC-255-501.32	Illite	67	67	32	37	34	<DL	55	5	
MAC-255-501.32	Illite	36	36	<DL	24	33	<DL	29	6	
MAC-255-501.32	Illite	34	36	<DL	22	30	<DL	33	3	
MAC-255-501.32	Illite	36	37	<DL	30	32	<DL	29	4	
MC-336-506.8	Illite	123	128	39	93	46	<DL	886	3	
MC-336-506.8	Illite	128	130	37	880	47	<DL	1,311	3	
MC-336-506.8	Illite	1,447	602	599	338	38	<DL	478	2	
MC-336-570.5	Illite	59	58	<DL	57	69	<DL	514	2	
MC-338-101	Illite	137	82	<DL	<DL	49	<DL	13	6	
MC-338-101	Illite	57	53	<DL	42	45	<DL	<DL	3	
MC-338-101	Illite	117	116	<DL	<DL	60	<DL	<DL	3	
MC-338-101	Illite	115	103	<DL	<DL	56	<DL	16	5	
MC-338-319	Illite	51	52	<DL	12	54	<DL	<DL	<DL	
MC-338-319	Illite	56	54	<DL	10	59	<DL	<DL	<DL	
MC-338-319	Illite	41	42	<DL	18	55	<DL	<DL	2	
MC-338-319	Illite	41	39	<DL	14	55	<DL	<DL	<DL	
MC-338-559	Illite	57	56	25	36	43	<DL	157	2	
MC-338-559	Illite	161	167	38	55	<DL	<DL	903	<DL	
MC-338-559	Illite	126	173	34	67	<DL	<DL	1,480	11	
MC-413-299	Illite	127	125	<DL	23	<DL	<DL	23	<DL	
MC-413-299	Illite	66	65	<DL	20	40	<DL	<DL	<DL	
MC-413-603.83	Illite	22	<DL	<DL	<DL	52	<DL	<DL	<DL	
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	49	<DL	<DL	<DL	
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	52	<DL	<DL	<DL	
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	
MC-413-603.83	Illite	33	<DL	<DL	<DL	36	<DL	<DL	<DL	
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	45	<DL	<DL	<DL	
MC-413-603.83	Illite	30	<DL	<DL	<DL	40	<DL	<DL	2	
MC-413-603.83	Illite	30	<DL	<DL	<DL	39	<DL	<DL	2	
MC-434-253.64	Illite	55	54	<DL	<DL	51	<DL	<DL	<DL	
MC-434-253.64	Illite	42	42	<DL	<DL	70	<DL	102	<DL	
MC-434-253.64	Illite	42	38	<DL	<DL	73	<DL	<DL	1	
MC-434-54.07	Illite	69	72	<DL	11	74	<DL	<DL	<DL	
MC-434-54.07	Illite	85	71	<DL	16	73	<DL	<DL	3	
MAC-246-508.8	Drv Veins	89	96	<DL	<DL	97	<DL	10	1	
MAC-246-508.8	Drv Veins	88	85	<DL	33	92	<DL	9	2	
MAC-246-508.8	Drv Veins	86	79	<DL	28	90	<DL	7	1	
MAC-246-508.8	Drv Veins	133	136	<DL	36	91	<DL	16	2	
MAC-253-265.3	Drv Veins	45	42	<DL	<DL	67	<DL	<DL	1	
MAC-253-265.3	Drv Veins	42	44	<DL	12	64	<DL	<DL	1	
MAC-253-265.3	Drv Veins	32	119	82	112	72	<DL	12	1	
MAC-253-265.3	Drv Veins	28	27	<DL	10	65	3	<DL	1	
MAC-253-265.3	Drv Veins	34	32	<DL	13	65	<DL	<DL	0	
MAC-253-538	Drv Veins	72	86	228	281	<DL	<DL	852	<DL	
MAC-253-538	Drv Veins	44	34	<DL	<DL	<DL	<DL	1,206	<DL	
MAC-253-538	Drv Veins	58	57	<DL	<DL	<DL	<DL	732	<DL	
MAC-253-538	Drv Veins	49	47	<DL	<DL	<DL	<DL	786	<DL	
MAC-253-538	Drv Veins	50	47	<DL	<DL	<DL	<DL	919	<DL	
MC-344-100.1	Drv Veins	56	77	167	62	50	<DL	1,525	2	
MC-344-100.1	Drv Veins	75	57	<DL	<DL	41	<DL	1,535	1	
MC-344-100.1	Drv Veins	183	174	427	431	108	10	447	1	
MC-344-100.1	Drv Veins	141	150	<DL	<DL	97	9	654	<DL	

Sample No.	Mineral	Cu (63)	Cu (65)	Zn (66)	Zn (67)	Ga	Ge	As	Se	Cl
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-344-100.1	Drv Veins	89	90	<DL	140	109	<DL	1,074	<DL	
MC-344-100.1	Drv Veins	122	113	<DL	<DL	101	10	602	<DL	
MC-344-100.1	Drv Veins	124	121	<DL	<DL	90	8	788	<DL	
MC-415-497.66	Drv Veins	25	24	<DL	<DL	64	32	<DL	2	
MC-415-497.66	Drv Veins	24	24	<DL	<DL	59	28	<DL	1	
MC-415-497.66	Drv Veins	29	29	<DL	<DL	59	28	<DL	<DL	
MC-415-497.66	Drv Veins	23	23	<DL	<DL	55	25	<DL	<DL	
MAC-208-10.2	Interstitial Drv	161	107	259	45	115	<DL	26	1	
MAC-208-10.2	Interstitial Drv	68	67	<DL	<DL	104	<DL	39	<DL	
MAC-208-572	Interstitial Drv	54	53	<DL	<DL	55	1	<DL	<DL	
MAC-208-572	Interstitial Drv	38	38	<DL	71	58	2	<DL	<DL	
MAC-208-572	Interstitial Drv	47	42	<DL	<DL	58	2	<DL	0	
MAC-208-572	Interstitial Drv	35	36	84	<DL	58	2	<DL	1	
MAC-208-572	Interstitial Drv	61	61	<DL	<DL	55	1	<DL	<DL	
MAC-246-142.86	Interstitial Drv	186	115	29	<DL	53	<DL	3	<DL	
MAC-246-142.86	Interstitial Drv	61	61	18	<DL	56	<DL	3	1	
MAC-246-142.86	Interstitial Drv	60	59	12	<DL	57	<DL	16	<DL	
MAC-246-142.86	Interstitial Drv	88	49	11	<DL	55	<DL	14	1	
MAC-246-142.86	Interstitial Drv	46	47	<DL	<DL	55	<DL	27	<DL	
MAC-246-213.43	Interstitial Drv	119	114	59	<DL	71	<DL	<DL	2	
MAC-246-213.43	Interstitial Drv	57	57	<DL	<DL	57	<DL	144	0	
MAC-246-213.43	Interstitial Drv	65	64	<DL	53	60	<DL	136	2	
MAC-246-4.33	Interstitial Drv	53	40	<DL	<DL	99	10	63	0	
MAC-246-4.33	Interstitial Drv	307	9,303	<DL	18	91	9	35	<DL	
MAC-246-4.33	Interstitial Drv	24	37	<DL	<DL	83	<DL	7	<DL	
MAC-246-475.33	Interstitial Drv	<DL	63	<DL	<DL	40	<DL	<DL	2	
MAC-246-475.33	Interstitial Drv	<DL	50	<DL	<DL	36	<DL	<DL	1	
MAC-246-475.33	Interstitial Drv	63	64	<DL	<DL	41	<DL	<DL	3	
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	38	<DL	<DL	1	
MAC-246-475.33	Interstitial Drv	168	<DL	<DL	<DL	38	<DL	<DL	2	
MAC-246-475.33	Interstitial Drv	<DL	34	<DL	<DL	37	<DL	<DL	1	
MAC-246-475.33	Interstitial Drv	<DL	37	<DL	<DL	36	<DL	<DL	1	
MAC-246-499.02	Interstitial Drv	64	61	<DL	31	68	<DL	<DL	<DL	
MAC-252-199.86	Interstitial Drv	71	72	<DL	<DL	75	<DL	198	<DL	
MAC-252-199.86	Interstitial Drv	52	55	16	<DL	56	<DL	608	<DL	
MAC-252-342.5	Interstitial Drv	41	41	<DL	119	57	<DL	<DL	3	
MAC-252-342.5	Interstitial Drv	35	35	<DL	24	53	<DL	16	4	
MAC-252-342.5	Interstitial Drv	<DL	119	<DL	<DL	<DL	<DL	110	8	
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	107	<DL	
MAC-252-342.5	Interstitial Drv	<DL	33	<DL	<DL	64	<DL	<DL	<DL	
MAC-252-342.5	Interstitial Drv	<DL	23	<DL	<DL	53	<DL	<DL	<DL	
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	99	<DL	<DL	<DL	
MAC-252-55.65	Interstitial Drv	45	<DL	<DL	<DL	101	<DL	<DL	<DL	
MAC-252-55.65	Interstitial Drv	43	<DL	<DL	<DL	98	<DL	31	<DL	
MAC-253-205	Interstitial Drv	38	49	<DL	<DL	95	4	<DL	1	
MAC-253-205	Interstitial Drv	49	44	<DL	<DL	99	5	<DL	1	
MAC-253-205	Interstitial Drv	55	52	<DL	<DL	81	<DL	<DL	<DL	
MAC-253-205	Interstitial Drv	52	51	<DL	<DL	83	<DL	<DL	<DL	
MAC-253-205	Interstitial Drv	52	51	42	<DL	85	<DL	<DL	<DL	
MAC-253-205	Interstitial Drv	35	33	<DL	<DL	31	<DL	1,742	<DL	
MAC-253-205	Interstitial Drv	49	71	43	<DL	88	<DL	<DL	1	
MAC-253-265.3	Interstitial Drv	53	57	<DL	<DL	66	<DL	<DL	2	
MAC-253-265.3	Interstitial Drv	57	52	<DL	32	69	<DL	<DL	2	
MAC-253-265.3	Interstitial Drv	68	109	<DL	<DL	91	<DL	<DL	1	
MAC-255-6.13	Interstitial Drv	97	84	<DL	<DL	72	<DL	25	<DL	
MAC-255-6.13	Interstitial Drv	68	<DL	<DL	<DL	107	<DL	<DL	<DL	
MAC-255-6.13	Interstitial Drv	75	<DL	<DL	<DL	104	<DL	<DL	<DL	
MAC-255-6.13	Interstitial Drv	79	<DL	<DL	<DL	85	<DL	107	<DL	
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	47	<DL	107	2	

Sample No.	Mineral	Cu (63) (ppm)	Cu (65) (ppm)	Zn (66) (ppm)	Zn (67) (ppm)	Ga (ppm)	Ge (ppm)	As (ppm)	Se (ppm)	Cl (ppm)
MC-338-537.64	Interstitial Drv	30	29	<DL	35	28	<DL	833	1	
MC-338-537.64	Interstitial Drv	32	32	<DL	29	34	<DL	651	1	
MC-338-537.64	Interstitial Drv	29	35	<DL	39	31	<DL	728	1	
MC-338-537.64	Interstitial Drv	66	71	<DL	37	58	<DL	<DL	2	
MC-338-537.64	Interstitial Drv	57	59	<DL	16	54	<DL	29	1	
MC-344-179.8	Interstitial Drv	33	33	<DL	<DL	99	8	<DL	0	
MC-344-179.8	Interstitial Drv	52	57	<DL	<DL	111	10	<DL	<DL	
MC-344-179.8	Interstitial Drv	42	53	<DL	86	109	10	<DL	1	
MC-344-179.8	Interstitial Drv	38	33	<DL	<DL	97	8	<DL	0	
MC-413-258.26	Interstitial Drv	41	<DL	<DL	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	41	<DL	<DL	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	39	<DL	<DL	62	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	38	<DL	<DL	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	34	<DL	<DL	60	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	35	<DL	<DL	57	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	31	<DL	<DL	54	<DL	<DL	<DL	<DL	
MC-413-649	Interstitial Drv	<DL	<DL	<DL	<DL	56	<DL	<DL	1	
MC-415-173.4	Interstitial Drv	31	31	<DL	62	<DL	<DL	<DL	<DL	
MC-415-173.4	Interstitial Drv	35	53	<DL	62	<DL	<DL	<DL	<DL	
MC-415-173.4	Interstitial Drv	41	<DL	<DL	64	<DL	<DL	<DL	<DL	
MC-415-173.4	Interstitial Drv	34	15	<DL	58	<DL	<DL	<DL	<DL	
MC-415-389	Interstitial Drv	33	33	<DL	<DL	48	<DL	<DL	<DL	
MC-415-389	Interstitial Drv	32	32	<DL	<DL	47	5	<DL	<DL	
MC-415-389	Interstitial Drv	33	45	<DL	<DL	45	4	<DL	<DL	
MC-415-389	Interstitial Drv	37	37	<DL	<DL	39	<DL	<DL	<DL	
MC-415-389	Interstitial Drv	30	31	<DL	<DL	42	<DL	<DL	<DL	
MC-415-432.38	Interstitial Drv	28	27	<DL	<DL	41	<DL	<DL	<DL	
MC-415-432.38	Interstitial Drv	29	28	<DL	<DL	42	<DL	<DL	<DL	
MC-415-432.38	Interstitial Drv	32	32	<DL	<DL	44	<DL	<DL	<DL	
MC-415-432.38	Interstitial Drv	27	27	<DL	<DL	43	<DL	<DL	<DL	
MC-415-432.38	Interstitial Drv	32	31	<DL	<DL	44	<DL	<DL	<DL	
MC-415-490.78	Interstitial Drv	32	28	<DL	<DL	59	41	<DL	5	
MC-415-490.78	Interstitial Drv	31	30	<DL	<DL	47	24	<DL	3	
MC-415-490.78	Interstitial Drv	70	32	<DL	<DL	55	28	<DL	3	
MC-415-490.78	Interstitial Drv	36	35	<DL	<DL	50	21	<DL	2	
MC-415-490.78	Interstitial Drv	33	33	<DL	<DL	46	18	<DL	1	
MAC-255-6.13	Detrital Tourmaline	114	131	<DL	88	<DL	<DL	<DL	<DL	
MAC-255-6.13	Detrital Tourmaline	137	246	<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-6.13	Detrital Tourmaline	119	116	54	<DL	54	<DL	49	<DL	
MAC-255-6.13	Detrital Tourmaline	121	122	<DL	<DL	50	<DL	21	<DL	
MAC-246-333.8	APS	117	115	49	889	485	58	1,183	151	
MAC-246-508.8	APS	754	753	580	1,116	912	95	941	258	
MAC-246-508.8	APS	573	577	63	604	738	65	788	163	
MAC-252-342.5	APS	463	494	355	1,588	1,014	159	2,885	325	
MAC-252-342.5	APS	192	181	222	1,382	931	142	4,197	319	
MAC-252-342.5	APS	207	188	242	1,458	1,033	158	3,280	359	
MAC-252-342.5	APS	102	149	242	1,323	1,096	119	3,267	391	
MAC-253-382	APS	31	31	23	2,490	616	101	2,116	245	
MAC-253-382	APS	34	35	26	2,448	491	77	1,705	185	
MAC-253-382	APS	30	31	30	2,678	735	111	2,548	297	
MAC-253-507.5	APS	40	36	18	74	320	57	732	186	
MAC-253-507.5	APS	33	31	17	97	466	76	833	265	
MAC-253-507.5	APS	720	723	131	1,374	1,718	292	3,962	1,094	
MAC-255-559	APS	286	295	40	395	1,550	147	3,630	91	
MAC-255-559	APS	341	331	51	418	1,689	165	4,653	110	
MC-336-570.5	APS	282	291	141	2,387	1,232	128	18,861	276	
MC-434-328.83	APS	163	184	37	599	382	38	1,484	84	
MC-434-328.83	APS	149	144	37	585	350	37	1,344	91	
MC-434-328.83	APS	151	141	39	560	349	37	1,444	86	

Sample No.	Mineral	Cu (63) (ppm)	Cu (65) (ppm)	Zn (66) (ppm)	Zn (67) (ppm)	Ga (ppm)	Ge (ppm)	As (ppm)	Se (ppm)	Cl (ppm)
MC-434-328.83	APS	163	169	36	678	422	39	1,810	96	
MC-434-328.83	APS	197	182	41	609	444	39	1,977	94	
MAC-255-559	Monazite	97	58	44	200	4,017	741	524	1,566	
MAC-255-559	Monazite	149	143	48	222	477	51	1,680	45	
MAC-255-559	Monazite	49	156	77	138	2,814	536	266	1,156	
MC-413-603.83	Monazite	299	289	246	1,631	1,439	167	1,913	236	
MC-413-603.83	Monazite	704	701	305	2,827	1,560	191	3,428	346	
MC-413-603.83	Monazite	1,036	1,035	284	2,082	1,417	193	2,388	384	
MAC-255-564.36	Apatite	29	26	18	22	44	<DL	53	31	
MAC-255-564.36	Apatite	34	33	<DL	21	45	<DL	72	41	
MAC-255-564.36	Apatite	<DL	22	<DL	<DL	28	<DL	33	27	
MAC-255-564.36	Apatite	48	44	<DL	<DL	<DL	<DL	95	19	
MAC-255-564.36	Apatite	28	27	<DL	<DL	<DL	<DL	38	17	
MAC-255-559	Pyrite	422	426	43	43	30	<DL	316	<DL	
MAC-255-559	Pyrite	262	266	47	33	38	<DL	652	4	
MAC-255-559	Pyrite	198	212	<DL	<DL	<DL	<DL	1,506	3	
MAC-255-559	Pyrite	553	548	30	<DL	<DL	<DL	483	2	
MC-336-564	Hematite	169	168	86	77	<DL	<DL	400	2	
MC-336-564	Hematite	245	247	120	108	<DL	<DL	393	1	
MC-413-623.78	Hematite	14	14	<DL	1	<DL	3	17	<DL	
MC-413-623.78	Hematite	13	14	<DL	<DL	<DL	2	14	<DL	
MC-413-623.78	Hematite	13	14	<DL	<DL	<DL	2	11	<DL	
MC-413-623.78	Hematite	<DL	9	<DL	<DL	<DL	3	<DL	<DL	
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	3	16	<DL	
MC-413-623.78	Hematite	10	10	<DL	<DL	<DL	3	23	<DL	
MC-413-623.78	Hematite	12	12	<DL	<DL	<DL	2	11	<DL	
MC-413-623.78	Hematite	17	17	11	16	6	7	56	<DL	
MC-413-623.78	Hematite	18	18	12	19	6	7	58	<DL	
MC-413-623.78	Hematite	18	18	13	14	6	7	66	<DL	
MC-413-623.78	Hematite	17	18	9	1	6	4	48	<DL	
MAC-246-333.8	Rutile	37	48	36	<DL	<DL	<DL	42	1	<DL
MAC-246-333.8	Rutile	49	40	29	23	<DL	<DL	30	2	<DL
MAC-246-508.8	Rutile	46	60	33	26	<DL	<DL	33	<DL	<DL
MAC-252-342.5	Rutile	31	42	29	10	<DL	<DL	15	<DL	<DL
MAC-252-342.5	Rutile	33	47	31	13	<DL	<DL	15	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	205	196	25	42	25	<DL	146	3	
MAC-246-508.8	Fe(Ti) oxide in Kao	225	218	<DL	29	26	<DL	116	3	
MAC-246-508.8	Fe(Ti) oxide in Kao	169	173	23	42	26	<DL	75	1	
MC-336-564	Fe-hydroxide vein	126	137	160	98	<DL	<DL	629	2	
MC-336-564	Fe-hydroxide vein	215	214	125	112	<DL	<DL	594	2	
MC-336-564	Fe-hydroxide vein	199	205	132	117	<DL	<DL	639	1	
MC-415-197	Mn(Fe) oxide vein	1,931	2,436	212	6,520	20	<DL	161	3	

Sample No.	Mineral	Se (ppm)	Kr (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ru (ppm)
MAC-208-237	C1 Chlorite			24	188	13	86	<DL	<DL	
MAC-208-237	C1 Chlorite			23	299	15	86	<DL	<DL	
MAC-208-237	C1 Chlorite			27	590	23	118	<DL	<DL	
MAC-252-271.2	C1 Chlorite			49	97	<DL	288	<DL	<DL	
MAC-252-271.2	C1 Chlorite			39	58	<DL	95	<DL	<DL	
MAC-253-325	C1 Chlorite			41	103	<DL	68	<DL	<DL	
MAC-253-325	C1 Chlorite			<DL	<DL	<DL	45	<DL	<DL	
MAC-253-325	C1 Chlorite			42	<DL	<DL	49	<DL	<DL	
MC-413-183.26	C1 Chlorite			<DL	<DL	<DL	29	<DL	<DL	
MC-413-183.26	C1 Chlorite			<DL	<DL	<DL	8	<DL	<DL	
MC-413-183.26	C1 Chlorite			<DL	<DL	<DL	16	<DL	<DL	
MC-413-183.26	C1 Chlorite			<DL	<DL	<DL	16	<DL	<DL	
MC-413-183.26	C1 Chlorite			<DL	<DL	<DL	17	<DL	<DL	
MC-413-183.26	C1 Chlorite			<DL	<DL	<DL	12	<DL	<DL	
MAC-208-487	C2 Chlorite	<DL		19	<DL	<DL	65	<DL	<DL	
MAC-208-487	C2 Chlorite	<DL		24	<DL	<DL	82	<DL	<DL	
MAC-208-487	C2 Chlorite	<DL		24	<DL	<DL	83	<DL	<DL	
MAC-208-487	C2 Chlorite	<DL		55	116	23	354	<DL	<DL	
MAC-208-572	C2 Chlorite	<DL		7	68	<DL	27	<DL	<DL	
MAC-208-572	C2 Chlorite	<DL		6	64	<DL	29	<DL	<DL	
MAC-208-572	C2 Chlorite	<DL		4	72	<DL	19	<DL	4	
MAC-208-572	C2 Chlorite	<DL		4	76	<DL	12	<DL	<DL	
MAC-208-572	C2 Chlorite	<DL		5	136	<DL	24	<DL	3	
MAC-208-572	C2 Chlorite	<DL		5	222	<DL	22	<DL	3	
MAC-246-475.33	C2 Chlorite			17	37	<DL	58	<DL	<DL	
MAC-246-475.33	C2 Chlorite			17	35	<DL	52	<DL	<DL	
MAC-246-475.33	C2 Chlorite			17	27	<DL	93	<DL	<DL	
MAC-246-475.33	C2 Chlorite			13	52	<DL	135	<DL	<DL	
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	35	<DL	<DL	
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	23	<DL	<DL	
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	19	<DL	<DL	
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	17	<DL	<DL	
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	13	<DL	<DL	
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite			<DL	52	<DL	<DL	<DL	<DL	
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MC-336-570.5	C2 Chlorite			68	<DL	<DL	92	<DL	<DL	
MC-336-570.5	C2 Chlorite	<DL		25	<DL	<DL	35	<DL	<DL	
MC-336-570.5	C2 Chlorite	<DL		30	56	<DL	89	<DL	<DL	
MC-336-570.5	C2 Chlorite			<DL	46	<DL	20	<DL	<DL	
MC-336-570.5	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL	
MC-336-570.5	C2 Chlorite			<DL	<DL	<DL	21	<DL	<DL	
MAC-208-290.5	Illite			58	41	<DL	22	<DL	<DL	
MAC-208-290.5	Illite			97	53	<DL	78	<DL	<DL	
MAC-246-333.8	Illite			54	<DL	<DL	65	<DL	<DL	
MAC-246-333.8	Illite			67	<DL	<DL	19	<DL	<DL	
MAC-252-271.2	Illite			51	<DL	<DL	20	<DL	<DL	
MAC-252-271.2	Illite			55	<DL	<DL	18	<DL	<DL	
MAC-252-271.2	Illite			52	<DL	<DL	20	<DL	<DL	
MAC-252-319.44	Illite			55	96	<DL	37	<DL	<DL	
MAC-252-319.44	Illite			56	57	<DL	31	<DL	<DL	
MAC-253-507.5	Illite			51	<DL	<DL	<DL	<DL	<DL	
MAC-255-293.4	Illite	<DL		75	257	<DL	142	<DL	<DL	

Sample No.	Mineral	Se (ppm)	Kr (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ru (ppm)
MAC-255-293.4	Illite	<DL		66	278	14	163	<DL	<DL	
MAC-255-293.4	Illite	<DL		70	106	17	177	<DL	<DL	
MAC-255-293.4	Illite	<DL		68	321	21	246	<DL	<DL	
MAC-255-293.4	Illite	<DL		73	462	<DL	160	<DL	<DL	
MAC-255-501.32	Illite			60	<DL	<DL	31	<DL	<DL	
MAC-255-501.32	Illite			62	<DL	<DL	26	<DL	<DL	
MAC-255-501.32	Illite			61	<DL	<DL	29	<DL	<DL	
MAC-255-501.32	Illite			63	33	37	257	<DL	42	
MAC-255-501.32	Illite			68	<DL	<DL	90	<DL	<DL	
MAC-255-501.32	Illite			61	32	15	85	<DL	<DL	
MAC-255-501.32	Illite			61	48	16	93	<DL	11	
MC-336-506.8	Illite			79	68	<DL	260	<DL	<DL	
MC-336-506.8	Illite			85	71	<DL	218	<DL	<DL	
MC-336-506.8	Illite			60	32	<DL	33	<DL	<DL	
MC-336-570.5	Illite			75	<DL	<DL	42	<DL	<DL	
MC-338-101	Illite			65	<DL	<DL	38	<DL	<DL	
MC-338-101	Illite			62	<DL	<DL	39	<DL	<DL	
MC-338-101	Illite			83	98	<DL	64	<DL	<DL	
MC-338-101	Illite			73	104	<DL	93	<DL	<DL	
MC-338-319	Illite			61	146	<DL	105	<DL	<DL	
MC-338-319	Illite			69	46	<DL	232	<DL	<DL	
MC-338-319	Illite			70	34	<DL	236	<DL	<DL	
MC-338-319	Illite			63	38	<DL	231	<DL	<DL	
MC-338-559	Illite			71	106	<DL	28	<DL	<DL	
MC-338-559	Illite			101	138	<DL	88	<DL	<DL	
MC-338-559	Illite			114	151	<DL	120	<DL	<DL	
MC-413-299	Illite			69	74	<DL	<DL	<DL	<DL	
MC-413-299	Illite			69	<DL	<DL	30	<DL	<DL	
MC-413-603.83	Illite			65	<DL	<DL	<DL	24	<DL	
MC-413-603.83	Illite			59	<DL	<DL	35	<DL	<DL	
MC-413-603.83	Illite			64	<DL	<DL	<DL	<DL	<DL	
MC-413-603.83	Illite			42	<DL	<DL	<DL	<DL	<DL	
MC-413-603.83	Illite			43	<DL	<DL	<DL	<DL	<DL	
MC-413-603.83	Illite			52	202	<DL	122	<DL	<DL	
MC-413-603.83	Illite			56	49	<DL	32	<DL	<DL	
MC-413-603.83	Illite			56	<DL	<DL	28	<DL	<DL	
MC-434-253.64	Illite	<DL		55	19	<DL	10	<DL	<DL	
MC-434-253.64	Illite	<DL		63	29	<DL	34	<DL	<DL	
MC-434-253.64	Illite	<DL		60	41	<DL	21	<DL	<DL	
MC-434-54.07	Illite			64	<DL	<DL	56	<DL	<DL	
MC-434-54.07	Illite			62	<DL	<DL	48	<DL	<DL	
MAC-246-508.8	Drv Veins			<DL	65	<DL	43	<DL	<DL	
MAC-246-508.8	Drv Veins			<DL	55	<DL	42	<DL	<DL	
MAC-246-508.8	Drv Veins			<DL	50	<DL	30	<DL	<DL	
MAC-246-508.8	Drv Veins			<DL	48	<DL	50	<DL	<DL	
MAC-253-265.3	Drv Veins	6		<DL	27	<DL	17	<DL	<DL	
MAC-253-265.3	Drv Veins	<DL		<DL	25	<DL	20	<DL	<DL	
MAC-253-265.3	Drv Veins	2		<DL	16	<DL	27	<DL	<DL	
MAC-253-265.3	Drv Veins	<DL		<DL	15	<DL	20	<DL	<DL	
MAC-253-265.3	Drv Veins	<DL		<DL	20	<DL	21	<DL	<DL	
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL	67	<DL	<DL	
MAC-253-538	Drv Veins	<DL		31	<DL	<DL	89	<DL	<DL	
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL	66	<DL	<DL	
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL	66	<DL	<DL	
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL	70	<DL	<DL	
MC-344-100.1	Drv Veins	<DL		26	48	<DL	112	<DL	<DL	
MC-344-100.1	Drv Veins	<DL		27	42	<DL	135	<DL	<DL	
MC-344-100.1	Drv Veins	<DL		10	42	<DL	152	<DL	<DL	
MC-344-100.1	Drv Veins	<DL		14	43	<DL	115	<DL	<DL	

Sample No.	Mineral	Se (ppm)	Kr (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ru (ppm)
MC-344-100.1	Drv Veins	<DL		19	75	<DL	148	<DL	<DL	
MC-344-100.1	Drv Veins	<DL		13	43	<DL	100	<DL	<DL	
MC-344-100.1	Drv Veins	<DL		15	43	<DL	102	<DL	<DL	
MC-415-497.66	Drv Veins	<DL		<DL	38	10	69	<DL	<DL	
MC-415-497.66	Drv Veins	<DL		<DL	32	7	51	<DL	<DL	
MC-415-497.66	Drv Veins	<DL		<DL	33	6	36	<DL	<DL	
MC-415-497.66	Drv Veins	<DL		<DL	27	<DL	45	<DL	<DL	
MAC-208-10.2	Interstitial Drv	<DL		<DL	160	45	520	<DL	<DL	
MAC-208-10.2	Interstitial Drv	<DL		<DL	104	30	340	<DL	<DL	
MAC-208-572	Interstitial Drv	<DL		<DL	25	<DL	13	<DL	<DL	
MAC-208-572	Interstitial Drv	<DL		<DL	35	<DL	<DL	<DL	<DL	
MAC-208-572	Interstitial Drv	<DL		<DL	66	<DL	14	<DL	<DL	
MAC-208-572	Interstitial Drv	<DL		<DL	24	<DL	168	<DL	<DL	
MAC-208-572	Interstitial Drv	<DL		<DL	28	<DL	30	<DL	<DL	
MAC-246-142.86	Interstitial Drv	<DL		<DL	44	<DL	66	<DL	<DL	
MAC-246-142.86	Interstitial Drv	<DL		<DL	35	<DL	72	<DL	<DL	
MAC-246-142.86	Interstitial Drv	<DL		<DL	48	<DL	91	<DL	<DL	
MAC-246-142.86	Interstitial Drv	<DL		<DL	38	<DL	38	<DL	<DL	
MAC-246-142.86	Interstitial Drv	<DL		<DL	50	<DL	33	<DL	<DL	
MAC-246-213.43	Interstitial Drv	<DL		<DL	77	<DL	94	<DL	<DL	
MAC-246-213.43	Interstitial Drv	6		<DL	68	<DL	49	<DL	<DL	
MAC-246-213.43	Interstitial Drv	<DL		<DL	93	<DL	87	<DL	<DL	
MAC-246-4.33	Interstitial Drv	<DL		<DL	82	14	77	<DL	<DL	
MAC-246-4.33	Interstitial Drv	<DL		<DL	56	<DL	41	<DL	<DL	
MAC-246-4.33	Interstitial Drv	<DL		<DL	41	<DL	16	<DL	<DL	
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL	46	<DL	<DL	
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL	43	<DL	<DL	
MAC-246-475.33	Interstitial Drv			<DL	34	<DL	27	<DL	<DL	
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL	<DL	<DL	<DL	
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL	<DL	<DL	<DL	
MAC-246-475.33	Interstitial Drv	<DL		<DL	30	<DL	13	<DL	<DL	
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL	14	<DL	<DL	
MAC-246-499.02	Interstitial Drv	<DL		<DL	37	<DL	40	<DL	8	
MAC-252-199.86	Interstitial Drv	<DL		<DL	69	<DL	58	<DL	<DL	
MAC-252-199.86	Interstitial Drv	<DL		20	52	<DL	60	<DL	<DL	
MAC-252-342.5	Interstitial Drv			<DL	54	<DL	28	<DL	<DL	
MAC-252-342.5	Interstitial Drv			<DL	110	<DL	65	<DL	<DL	
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL	153	<DL	<DL	
MAC-252-342.5	Interstitial Drv	<DL		<DL	132	<DL	<DL	<DL	<DL	
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL	28	<DL	<DL	
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL	15	<DL	<DL	
MAC-252-55.65	Interstitial Drv	<DL		<DL	99	<DL	67	<DL	<DL	
MAC-252-55.65	Interstitial Drv	<DL		<DL	<DL	<DL	71	<DL	<DL	
MAC-252-55.65	Interstitial Drv	<DL		<DL	64	<DL	98	<DL	<DL	
MAC-253-205	Interstitial Drv	<DL		<DL	41	8	102	<DL	<DL	
MAC-253-205	Interstitial Drv	<DL		<DL	61	15	178	<DL	<DL	
MAC-253-205	Interstitial Drv	<DL		<DL	28	11	113	<DL	<DL	
MAC-253-205	Interstitial Drv	<DL		<DL	29	15	158	<DL	<DL	
MAC-253-205	Interstitial Drv	<DL		<DL	36	11	129	<DL	<DL	
MAC-253-205	Interstitial Drv	<DL		30	46	<DL	156	<DL	<DL	
MAC-253-205	Interstitial Drv	<DL		<DL	102	<DL	63	<DL	<DL	
MAC-253-265.3	Interstitial Drv	<DL		<DL	27	<DL	15	<DL	<DL	
MAC-253-265.3	Interstitial Drv	7		15	27	<DL	19	<DL	<DL	
MAC-253-265.3	Interstitial Drv	<DL		18	20	<DL	49	<DL	<DL	
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-6.13	Interstitial Drv	<DL		<DL	75	<DL	252	<DL	<DL	
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	34	467	<DL	<DL	
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	48	606	<DL	<DL	
MC-338-537.64	Interstitial Drv	<DL		<DL	53	<DL	20	<DL	<DL	

Sample No.	Mineral	Se (ppm)	Kr (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ru (ppm)
MC-338-537.64	Interstitial Drv	<DL		26	42	<DL	62	<DL	<DL	
MC-338-537.64	Interstitial Drv	<DL		21	43	<DL	45	<DL	<DL	
MC-338-537.64	Interstitial Drv	<DL		23	43	<DL	51	<DL	<DL	
MC-338-537.64	Interstitial Drv	<DL		<DL	59	<DL	21	<DL	<DL	
MC-338-537.64	Interstitial Drv	<DL		<DL	42	<DL	17	<DL	<DL	
MC-344-179.8	Interstitial Drv	<DL		<DL	99	<DL	30	<DL	<DL	
MC-344-179.8	Interstitial Drv	<DL		<DL	209	18	154	<DL	<DL	
MC-344-179.8	Interstitial Drv	<DL		<DL	249	12	105	<DL	<DL	
MC-344-179.8	Interstitial Drv	<DL		<DL	139	<DL	48	<DL	<DL	
MC-413-258.26	Interstitial Drv	159		17	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	170		26	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	167		31	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	201		16	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	127		20	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	137		16	<DL	<DL	<DL	<DL	<DL	
MC-413-258.26	Interstitial Drv	104		11	<DL	<DL	<DL	<DL	<DL	
MC-413-649	Interstitial Drv	<DL		<DL	<DL	<DL	42	<DL	<DL	
MC-415-173.4	Interstitial Drv	114		53	<DL	<DL	<DL	<DL	<DL	
MC-415-173.4	Interstitial Drv	104		13	<DL	<DL	<DL	<DL	<DL	
MC-415-173.4	Interstitial Drv	67		27	<DL	<DL	<DL	<DL	<DL	
MC-415-173.4	Interstitial Drv	102		90	<DL	<DL	<DL	<DL	<DL	
MC-415-389	Interstitial Drv	<DL		<DL	<DL	<DL	16	<DL	<DL	
MC-415-389	Interstitial Drv	<DL		<DL	39	<DL	12	<DL	<DL	
MC-415-389	Interstitial Drv	<DL		<DL	36	<DL	10	<DL	<DL	
MC-415-389	Interstitial Drv	<DL		<DL	<DL	<DL	11	<DL	<DL	
MC-415-389	Interstitial Drv	<DL		<DL	<DL	<DL	9	<DL	<DL	
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL	16	<DL	<DL	
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL	15	<DL	<DL	
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL	26	<DL	<DL	
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL	21	<DL	<DL	
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL	56	<DL	<DL	
MC-415-490.78	Interstitial Drv	<DL		11	72	23	47	<DL	11	
MC-415-490.78	Interstitial Drv	<DL		6	50	12	18	<DL	5	
MC-415-490.78	Interstitial Drv	<DL		8	57	16	27	<DL	7	
MC-415-490.78	Interstitial Drv	<DL		5	49	12	50	<DL	<DL	
MC-415-490.78	Interstitial Drv	<DL		<DL	40	8	47	<DL	<DL	
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	<DL	<DL	<DL	<DL	
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	<DL	<DL	<DL	<DL	
MAC-246-333.8	APS			<DL	118,562	308	106	<DL	<DL	
MAC-246-508.8	APS			<DL	77,524	156	1,481	<DL	<DL	
MAC-246-508.8	APS			<DL	77,524	71	209	<DL	<DL	
MAC-252-342.5	APS	<DL		<DL	105,107	369	2,153	<DL	<DL	
MAC-252-342.5	APS	<DL		46	105,107	316	2,889	<DL	<DL	
MAC-252-342.5	APS	<DL		<DL	105,107	351	1,775	<DL	<DL	
MAC-252-342.5	APS			<DL	124,960	361	372	<DL	<DL	
MAC-253-382	APS			<DL	129,146	432	34	<DL	<DL	
MAC-253-382	APS			11	129,146	345	68	<DL	<DL	
MAC-253-382	APS			14	129,146	556	82	<DL	<DL	
MAC-253-507.5	APS			10	10,060	59	108	<DL	<DL	
MAC-253-507.5	APS			12	15,757	88	121	<DL	<DL	
MAC-253-507.5	APS			35	97,757	428	1,384	<DL	<DL	
MAC-255-559	APS			<DL	75,624	148	493	<DL	<DL	
MAC-255-559	APS			<DL	75,624	275	1,907	<DL	<DL	
MC-336-570.5	APS			100	135,872	145	4,593	<DL	<DL	
MC-434-328.83	APS			<DL	137,525	193	379	<DL	<DL	
MC-434-328.83	APS			<DL	137,525	177	345	<DL	<DL	
MC-434-328.83	APS			<DL	137,525	181	432	<DL	<DL	

Sample No.	Mineral	Se (ppm)	Kr (ppm)	Rb (ppm)	Sr (ppm)	Y (ppm)	Zr (ppm)	Nb (ppm)	Mo (ppm)	Ru (ppm)
MC-434-328.83	APS			<DL	137,525	152	435	<DL	<DL	
MC-434-328.83	APS			<DL	137,525	152	381	<DL	<DL	
MAC-255-559	Monazite			<DL	2,722	19,050	6,287	<DL	68	
MAC-255-559	Monazite			<DL	26,542	1,906	40,600	<DL	12	
MAC-255-559	Monazite			<DL	1,321	8,153	5,643	<DL	36	
MC-413-603.83	Monazite			<DL	90,654	1,774	62,911	<DL	39	
MC-413-603.83	Monazite			<DL	87,448	1,755	11,220	<DL	144	
MC-413-603.83	Monazite			<DL	84,539	1,987	90,090	<DL	60	
MAC-255-564.36	Apatite			<DL	879	665	74	<DL	14	
MAC-255-564.36	Apatite			<DL	1,699	851	31	<DL	17	
MAC-255-564.36	Apatite			<DL	593	662	27	<DL	21	
MAC-255-564.36	Apatite			<DL	345	690	18	<DL	13	
MAC-255-564.36	Apatite			<DL	309	670	<DL	<DL	17	
MAC-255-559	Pyrite			<DL	113	18	193	<DL	38	
MAC-255-559	Pyrite			<DL	52	21	230	<DL	88	
MAC-255-559	Pyrite			<DL	61	<DL	62	909	224	
MAC-255-559	Pyrite			<DL	130	17	171	454	115	
MC-336-564	Hematite			19	20	13	189	<DL	18	
MC-336-564	Hematite			16	22	12	175	<DL	29	
MC-413-623.78	Hematite	<DL		3	12	<DL	43	<DL	8	
MC-413-623.78	Hematite	<DL		3	<DL	<DL	24	<DL	6	
MC-413-623.78	Hematite	<DL		3	<DL	<DL	18	<DL	5	
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL	<DL	<DL	<DL	
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL	<DL	<DL	4	
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL	<DL	<DL	4	
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL	30	<DL	6	
MC-413-623.78	Hematite	<DL		7	39	<DL	159	<DL	23	
MC-413-623.78	Hematite	<DL		8	44	<DL	166	<DL	30	
MC-413-623.78	Hematite	<DL		8	38	<DL	176	<DL	34	
MC-413-623.78	Hematite	<DL		4	14	<DL	221	<DL	24	
MAC-246-333.8	Rutile	<DL	<DL	<DL	57	18	380	4,707	14	<DL
MAC-246-333.8	Rutile	<DL	<DL	<DL	73	14	238	4,807	13	<DL
MAC-246-508.8	Rutile	<DL	<DL	<DL	169	<DL	380	2,492	14	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	31	<DL	129	4,589	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	32	<DL	133	4,751	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao			<DL	<DL	44	1,237	62	65	
MAC-246-508.8	Fe(Ti) oxide in Kao			<DL	<DL	35	905	57	42	
MAC-246-508.8	Fe(Ti) oxide in Kao			<DL	<DL	29	745	34	32	
MC-336-564	Fe-hydroxide vein			10	<DL	<DL	135	<DL	24	
MC-336-564	Fe-hydroxide vein			<DL	<DL	<DL	42	<DL	36	
MC-336-564	Fe-hydroxide vein			<DL	<DL	<DL	73	<DL	34	
MC-415-197	Mn(Fe) oxide vein	<DL		9	119	116	24	<DL	145	

Sample No.	Mineral	Rh (ppm)	Pd (ppm)	Ag (ppm)	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)
MAC-208-237	C1 Chlorite			<DL		<DL	<DL	<DL		
MAC-208-237	C1 Chlorite			<DL		<DL	<DL	<DL		
MAC-208-237	C1 Chlorite			<DL		<DL	<DL	<DL		
MAC-252-271.2	C1 Chlorite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-271.2	C1 Chlorite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL		<DL	<DL	<DL		
MAC-208-487	C2 Chlorite			<DL		<DL	<DL	<DL		
MAC-208-487	C2 Chlorite			<DL		<DL	<DL	<DL		
MAC-208-487	C2 Chlorite			<DL		<DL	<DL	<DL		
MAC-208-487	C2 Chlorite			<DL		<DL	<DL	<DL		
MAC-208-572	C2 Chlorite			<DL		<DL	10	<DL		
MAC-208-572	C2 Chlorite			<DL		<DL	9	<DL		
MAC-208-572	C2 Chlorite			<DL		<DL	8	<DL		
MAC-208-572	C2 Chlorite			<DL		<DL	7	<DL		
MAC-208-572	C2 Chlorite			<DL		<DL	9	<DL		
MAC-208-572	C2 Chlorite			<DL		<DL	8	<DL		
MAC-246-475.33	C2 Chlorite			<DL		<DL	11	<DL		
MAC-246-475.33	C2 Chlorite			<DL		<DL	10	<DL		
MAC-246-475.33	C2 Chlorite			<DL		<DL	12	<DL		
MAC-246-475.33	C2 Chlorite			<DL		<DL	12	<DL		
MAC-255-559	C2 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	16	<DL		
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	15	<DL		
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	15	<DL		
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	16	<DL		
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	<DL	<DL		
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	12	<DL		
MAC-255-564.36	C2 Chlorite			<DL	<DL	<DL	12	<DL		
MC-336-570.5	C2 Chlorite			<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite			<DL		<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite			<DL		<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite			<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite			<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite			<DL	<DL	<DL	<DL	<DL		
MAC-208-290.5	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-208-290.5	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-333.8	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-333.8	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-271.2	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-271.2	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-271.2	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-319.44	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-252-319.44	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-507.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-293.4	Illite			<DL		<DL	<DL	<DL		

Sample No.	Mineral	Rh (ppm)	Pd (ppm)	Ag (ppm)	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)
MAC-255-293.4	Illite			<DL		<DL	<DL	<DL		
MAC-255-293.4	Illite			<DL		<DL	<DL	<DL		
MAC-255-293.4	Illite			<DL		<DL	<DL	<DL		
MAC-255-293.4	Illite			<DL		<DL	21	<DL		
MAC-255-501.32	Illite		<DL	<DL		<DL	<DL	<DL		
MAC-255-501.32	Illite		<DL	<DL		<DL	<DL	<DL		
MAC-255-501.32	Illite		<DL	<DL		<DL	<DL	<DL		
MAC-255-501.32	Illite		<DL	<DL		<DL	<DL	<DL		
MAC-255-501.32	Illite		<DL	<DL		<DL	11	<DL		
MAC-255-501.32	Illite		<DL	<DL		<DL	10	<DL		
MAC-255-501.32	Illite		<DL	<DL		<DL	11	<DL		
MC-336-506.8	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MC-336-506.8	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MC-336-506.8	Illite	<DL		<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	Illite			<DL	<DL	<DL	<DL	<DL		
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	17	<DL		
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	14	<DL		
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	26	<DL		
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	23	<DL		
MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-338-559	Illite	<DL	<DL	<DL		<DL	<DL	<DL		
MC-338-559	Illite	<DL	<DL	<DL		<DL	<DL	<DL		
MC-338-559	Illite	<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-299	Illite			<DL	<DL	<DL	<DL	<DL		
MC-413-299	Illite			<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite		<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite		<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite		<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite		<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite		<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite		<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite		<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite		<DL	<DL	<DL	<DL	<DL	<DL		
MC-434-253.64	Illite			<DL		<DL	<DL	<DL		
MC-434-253.64	Illite			<DL		<DL	<DL	<DL		
MC-434-253.64	Illite			<DL		<DL	<DL	<DL		
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	20	<DL		
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	22	<DL		
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	<DL	10	<DL		
MAC-253-265.3	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-265.3	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-265.3	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-265.3	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-265.3	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins			<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins			<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins			<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins			<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins			<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins			<DL		<DL	<DL	<DL		

Sample No.	Mineral	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	Cs
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-344-100.1	Drv Veins			<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins			<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins			<DL		<DL	<DL	<DL		
MC-415-497.66	Drv Veins			<DL		5	6	<DL		
MC-415-497.66	Drv Veins			<DL		3	4	<DL		
MC-415-497.66	Drv Veins			<DL		<DL	4	<DL		
MC-415-497.66	Drv Veins			<DL		<DL	<DL	<DL		
MAC-208-10.2	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-208-10.2	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-208-572	Interstitial Drv			<DL		<DL	5	<DL		
MAC-208-572	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-208-572	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-208-572	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-208-572	Interstitial Drv			<DL		<DL	5	<DL		
MAC-246-142.86	Interstitial Drv			<DL		<DL	<DL	3		
MAC-246-142.86	Interstitial Drv			<DL		<DL	<DL	2		
MAC-246-142.86	Interstitial Drv			<DL		<DL	<DL	2		
MAC-246-142.86	Interstitial Drv			<DL		<DL	<DL	1		
MAC-246-142.86	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-213.43	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-213.43	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-213.43	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-4.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-4.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-4.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-246-499.02	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-252-199.86	Interstitial Drv			<DL		<DL	<DL	6		
MAC-252-199.86	Interstitial Drv			<DL		<DL	<DL	4		
MAC-252-342.5	Interstitial Drv			<DL	<DL	<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv			<DL	<DL	<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-252-55.65	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-252-55.65	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-252-55.65	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-265.3	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-265.3	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-253-265.3	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-255-6.13	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-255-6.13	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-255-6.13	Interstitial Drv			<DL		<DL	<DL	<DL		
MAC-255-6.13	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv			<DL		<DL	<DL	<DL		

Sample No.	Mineral	Rh (ppm)	Pd (ppm)	Ag (ppm)	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)
MC-338-537.64	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-344-179.8	Interstitial Drv			<DL		<DL	7	<DL		
MC-344-179.8	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-344-179.8	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-344-179.8	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv			7		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv			7		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv			5		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv			5		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv			6		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv			6		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv			5		<DL	<DL	<DL		
MC-413-649	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-415-173.4	Interstitial Drv			5		<DL	<DL	<DL		
MC-415-173.4	Interstitial Drv			5		<DL	<DL	<DL		
MC-415-173.4	Interstitial Drv			6		<DL	<DL	<DL		
MC-415-173.4	Interstitial Drv			6		<DL	<DL	<DL		
MC-415-389	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-415-389	Interstitial Drv			<DL		<DL	3	<DL		
MC-415-389	Interstitial Drv			<DL		<DL	3	<DL		
MC-415-389	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-415-389	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-415-432.38	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-415-432.38	Interstitial Drv			<DL		<DL	2	<DL		
MC-415-432.38	Interstitial Drv			<DL		<DL	<DL	<DL		
MC-415-432.38	Interstitial Drv			<DL		<DL	3	<DL		
MC-415-432.38	Interstitial Drv			<DL		<DL	3	<DL		
MC-415-490.78	Interstitial Drv			8		15	14	<DL		
MC-415-490.78	Interstitial Drv			4		8	8	<DL		
MC-415-490.78	Interstitial Drv			5		10	10	<DL		
MC-415-490.78	Interstitial Drv			3		7	7	<DL		
MC-415-490.78	Interstitial Drv			<DL		5	5	<DL		
MAC-255-6.13	Detrital Tourmaline			<DL		<DL	<DL	<DL		
MAC-255-6.13	Detrital Tourmaline			<DL		<DL	<DL	<DL		
MAC-255-6.13	Detrital Tourmaline			<DL		<DL	<DL	<DL		
MAC-255-6.13	Detrital Tourmaline			<DL		<DL	<DL	<DL		
MAC-246-333.8	APS	<DL		<DL	<DL	<DL	33	<DL		
MAC-246-508.8	APS	<DL		<DL	<DL	<DL	36	<DL		
MAC-246-508.8	APS	<DL		<DL	<DL	<DL	14	<DL		
MAC-252-342.5	APS			<DL		<DL	<DL	<DL		
MAC-252-342.5	APS			<DL		<DL	<DL	<DL		
MAC-252-342.5	APS			<DL		<DL	<DL	<DL		
MAC-252-342.5	APS			<DL	<DL	<DL	24	<DL		
MAC-253-382	APS			<DL		<DL	14	<DL		
MAC-253-382	APS			<DL		<DL	13	<DL		
MAC-253-382	APS			<DL		<DL	15	<DL		
MAC-253-507.5	APS	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-507.5	APS	<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-507.5	APS	<DL	14	<DL	<DL	<DL	29	<DL		
MAC-255-559	APS		8	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	APS		9	<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	APS			<DL	<DL	<DL	<DL	<DL		
MC-434-328.83	APS	<DL		<DL	<DL	<DL	24	<DL		
MC-434-328.83	APS	<DL		<DL	<DL	<DL	21	<DL		
MC-434-328.83	APS	<DL		<DL	<DL	<DL	20	<DL		

Sample No.	Mineral	Rh (ppm)	Pd (ppm)	Ag (ppm)	Cd (ppm)	In (ppm)	Sn (ppm)	Sb (ppm)	Te (ppm)	Cs (ppm)
MC-434-328.83	APS	<DL		<DL	<DL	<DL	33	<DL		
MC-434-328.83	APS	<DL		<DL	<DL	<DL	63	<DL		
MAC-255-559	Monazite		45	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	Monazite		13	16	<DL	<DL	<DL	<DL		
MAC-255-559	Monazite		18	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Monazite		19	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Monazite		18	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Monazite		22	<DL	<DL	<DL	<DL	<DL		
MAC-255-564.36	Apatite			<DL		<DL	<DL	<DL		<DL
MAC-255-564.36	Apatite			<DL		<DL	<DL	<DL		<DL
MAC-255-564.36	Apatite			<DL		<DL	<DL	<DL		<DL
MAC-255-564.36	Apatite			<DL		<DL	<DL	<DL		<DL
MAC-255-564.36	Apatite			<DL		<DL	<DL	<DL		<DL
MAC-255-559	Pyrite		<DL	<DL	<DL	<DL	<DL	16		
MAC-255-559	Pyrite		<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	Pyrite		<DL	<DL	<DL	<DL	179	18		
MAC-255-559	Pyrite		<DL	<DL	<DL	<DL	125	<DL		
MC-336-564	Hematite		<DL	<DL		<DL	<DL	<DL		
MC-336-564	Hematite		<DL	<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL		<DL	<DL	<DL		
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	373	133	<DL	<DL
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	319	166	<DL	<DL
MAC-246-508.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	289	467	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	324	455	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	<DL	<DL	23	<DL		
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	<DL	<DL	24	<DL		
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	<DL	<DL	16	<DL		
MC-336-564	Fe-hydroxide vein		<DL	<DL		<DL	<DL	<DL		
MC-336-564	Fe-hydroxide vein		<DL	<DL		<DL	<DL	<DL		
MC-336-564	Fe-hydroxide vein		<DL	<DL		<DL	<DL	<DL		
MC-415-197	Mn(Fe) oxide vein			<DL		<DL	<DL	<DL		

Sample No.	Mineral	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)
MAC-208-237	C1 Chlorite	324	10	18	<DL	11	<DL	<DL	<DL
MAC-208-237	C1 Chlorite	479	15	33	<DL	14	<DL	<DL	<DL
MAC-208-237	C1 Chlorite	655	31	78	15	29	13	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL	<DL	33	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	228	<DL	28	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	32	47	<DL	22	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	29	51	<DL	20	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	28	41	<DL	14	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	35	54	<DL	19	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	27	48	<DL	16	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	62	122	11	39	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	79	214	16	43	6	<DL	<DL
MAC-246-475.33	C2 Chlorite	15	<DL	14	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	13	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	20	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	19	19	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	15	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	18	30	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	233	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	107	11	<DL	<DL	8	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	40	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	35	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	48	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	25	<DL	10	<DL	<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	145	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Illite	29	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	25	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	70	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	42	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	24	<DL	<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-507.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	32	59	<DL	25	<DL	<DL	<DL

Sample No.	Mineral	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)
MAC-255-293.4	Illite	<DL	14	22	<DL	15	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	16	23	<DL	11	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	48	101	<DL	37	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	33	55	<DL	23	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	17	29	<DL	16	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	19	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	14	24	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	22	46	<DL	19	<DL	<DL	<DL
MC-336-506.8	Illite	337	<DL	18	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	283	<DL	33	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	71	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	Illite	131	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	42	56	<DL	29	<DL	<DL	<DL
MC-338-101	Illite	<DL	40	53	<DL	29	<DL	<DL	<DL
MC-338-319	Illite	12	20	48	<DL	15	<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL	20	<DL	<DL	<DL	<DL	<DL
MC-338-319	Illite	2	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-319	Illite	1	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-559	Illite	41	24	52	<DL	19	<DL	<DL	<DL
MC-338-559	Illite	180	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-559	Illite	294	<DL	56	<DL	<DL	<DL	<DL	<DL
MC-413-299	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-299	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	43	162	<DL	28	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	34	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	166	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	249	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	136	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	149	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	168	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	341	4	10	<DL	4	<DL	<DL	<DL
MC-344-100.1	Drv Veins	273	5	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	60	4	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	95	4	<DL	<DL	<DL	<DL	<DL	<DL

Sample No.	Mineral	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)
MC-344-100.1	Drv Veins	169	15	26	<DL	11	<DL	<DL	<DL
MC-344-100.1	Drv Veins	97	4	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	114	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-497.66	Drv Veins	<DL	4	3	6	5	5	<DL	6
MC-415-497.66	Drv Veins	<DL	3	2	4	3	3	<DL	<DL
MC-415-497.66	Drv Veins	<DL	2	<DL	<DL	2	<DL	<DL	<DL
MC-415-497.66	Drv Veins	<DL	1	<DL	<DL	2	<DL	<DL	<DL
MAC-208-10.2	Interstitial Drv	89	57	118	14	41	10	<DL	10
MAC-208-10.2	Interstitial Drv	<DL	34	80	<DL	28	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	14	25	<DL	8	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	7	11	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	16	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	14	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	20	<DL	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	27	46	<DL	20	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	14	28	<DL	11	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	23	19	120	<DL	22	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	20	30	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	9	15	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-499.02	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	24	<DL	37	<DL	<DL	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	115	<DL	21	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	45	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	52	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	36	<DL	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	6	12	<DL	6	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	11	23	<DL	8	<DL	<DL	5
MAC-253-205	Interstitial Drv	<DL	4	10	<DL	5	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	6	12	<DL	7	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	7	16	<DL	6	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	323	5	7	<DL	4	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	20	43	8	15	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL

Sample No.	Mineral	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)
MC-338-537.64	Interstitial Drv	223	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	159	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	189	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	16	34	<DL	15	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	50	86	<DL	31	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	49	115	13	37	7	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	26	83	<DL	16	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	8	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-649	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-490.78	Interstitial Drv	<DL	14	12	16	14	15	12	15
MC-415-490.78	Interstitial Drv	<DL	7	6	8	7	7	6	8
MC-415-490.78	Interstitial Drv	<DL	9	7	11	9	10	8	10
MC-415-490.78	Interstitial Drv	<DL	6	5	8	6	7	6	8
MC-415-490.78	Interstitial Drv	<DL	4	4	5	5	4	<DL	5
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	APS	5,217	9,571	21,495	1,962	6,592	887	84	712
MAC-246-508.8	APS	5,606	19,645	44,664	3,330	11,432	1,196	202	733
MAC-246-508.8	APS	3,513	13,156	34,787	2,745	8,558	941	160	591
MAC-252-342.5	APS	7,249	13,713	35,626	3,377	11,606	1,670	249	1,122
MAC-252-342.5	APS	6,875	12,841	37,702	3,239	10,563	1,618	236	1,115
MAC-252-342.5	APS	6,507	13,937	40,372	3,337	11,910	1,813	252	1,197
MAC-252-342.5	APS	7,961	16,700	50,691	4,453	14,766	2,528	364	1,417
MAC-253-382	APS	5,370	9,829	23,590	2,358	8,895	1,472	169	902
MAC-253-382	APS	5,349	8,017	20,459	1,976	7,288	1,231	155	790
MAC-253-382	APS	5,941	11,836	28,637	2,895	11,334	1,863	214	1,134
MAC-253-507.5	APS	397	1,914	8,054	1,334	6,597	1,110	45	369
MAC-253-507.5	APS	421	2,839	12,713	2,012	9,222	1,662	55	535
MAC-253-507.5	APS	6,586	15,362	48,722	7,175	33,566	6,430	346	2,337
MAC-255-559	APS	2,193	67,191	69,737	5,306	11,492	564	44	1,217
MAC-255-559	APS	2,168	68,090	69,841	5,838	12,704	611	47	1,282
MC-336-570.5	APS	10,659	13,095	40,544	3,022	10,048	1,571	196	763
MC-434-328.83	APS	2,769	4,711	15,623	1,225	3,688	551	73	378
MC-434-328.83	APS	2,993	4,435	15,116	1,129	3,589	545	73	383
MC-434-328.83	APS	2,929	4,552	14,791	1,170	3,602	539	74	371

Sample No.	Mineral	Ba (ppm)	La (ppm)	Ce (ppm)	Pr (ppm)	Nd (ppm)	Sm (ppm)	Eu (ppm)	Gd (ppm)
MC-434-328.83	APS	3,585	4,684	18,023	1,305	3,809	568	84	380
MC-434-328.83	APS	3,386	4,943	20,040	1,354	4,096	610	84	409
MAC-255-559	Monazite	1,099	72,309	137,311	16,659	60,543	10,488	259	8,878
MAC-255-559	Monazite	1,019	23,823	25,101	2,091	4,452	270	34	609
MAC-255-559	Monazite	363	48,145	100,154	11,580	43,644	8,252	554	6,023
MC-413-603.83	Monazite	8,932	36,065	56,834	5,103	13,925	1,368	197	1,055
MC-413-603.83	Monazite	16,655	33,190	59,912	5,539	16,493	2,038	280	1,463
MC-413-603.83	Monazite	12,299	32,831	62,824	5,683	16,705	1,938	225	1,339
MAC-255-564.36	Apatite	29	339	621	88	388	146	30	192
MAC-255-564.36	Apatite	88	647	1,021	146	592	189	39	253
MAC-255-564.36	Apatite	22	134	333	48	229	92	22	142
MAC-255-564.36	Apatite	<DL	79	205	26	121	50	15	84
MAC-255-564.36	Apatite	<DL	35	164	21	96	47	15	83
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	18	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	24	<DL	<DL	<DL	<DL	<DL
MC-336-564	Hematite	42	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Hematite	17	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	20	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	135	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	149	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	136	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Rutile	<DL	<DL	25	<DL	16	<DL	<DL	<DL
MAC-246-333.8	Rutile	<DL	<DL	22	<DL	14	<DL	<DL	<DL
MAC-246-508.8	Rutile	30	21	36	<DL	18	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	14	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	41	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	18	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	14	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-197	Mn(Fe) oxide vein	68,943	8	24	<DL	10	11	6	43

Sample No.	Mineral	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
MAC-208-237	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	8	<DL
MAC-208-237	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	9	<DL
MAC-208-237	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	11	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	13	<DL	15	8	<DL	7	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	11	<DL	13	7	<DL	7	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-507.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	<DL	<DL	20	<DL	23	13	<DL	12	<DL

Sample No.	Mineral	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
MAC-255-293.4	Illite	<DL	<DL	<DL	13	<DL	15	9	<DL	10	<DL
MAC-255-293.4	Illite	<DL	<DL	<DL	15	<DL	17	10	<DL	11	<DL
MAC-255-293.4	Illite	<DL	<DL	<DL	19	<DL	21	13	<DL	14	<DL
MAC-255-293.4	Illite	<DL	<DL	<DL	23	<DL	27	16	<DL	15	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	11	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-559	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-559	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-559	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-299	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-299	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	4
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	5
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	11	5
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	5

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	6
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	5
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	6
MC-415-497.66	Drv Veins	7	10	6	<DL	<DL	<DL	<DL	10	8	7
MC-415-497.66	Drv Veins	5	7	<DL	<DL	<DL	<DL	<DL	7	6	4
MC-415-497.66	Drv Veins	4	<DL	<DL	<DL	<DL	<DL	<DL	6	5	4
MC-415-497.66	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	4	2
MAC-208-10.2	Interstitial Drv	<DL	<DL	9	<DL	5	<DL	<DL	<DL	13	<DL
MAC-208-10.2	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	12	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-499.02	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	3
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	5	<DL	7	3
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	3
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	4
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	8	4
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	5
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL

Sample No.	Mineral	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	10	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	9	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	7	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	5	<DL	<DL	<DL	<DL	<DL
MC-413-649	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	7	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-490.78	Interstitial Drv	18	23	18	23	16	25	19	24	18	20
MC-415-490.78	Interstitial Drv	9	12	9	12	8	<DL	10	12	9	10
MC-415-490.78	Interstitial Drv	12	16	12	16	10	<DL	13	17	12	13
MC-415-490.78	Interstitial Drv	9	12	9	12	8	<DL	9	12	9	9
MC-415-490.78	Interstitial Drv	6	8	6	<DL	5	<DL	6	8	7	6
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	APS	600	63	150	22	30	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	APS	530	55	79	<DL	<DL	<DL	<DL	<DL	49	<DL
MAC-246-508.8	APS	357	26	39	<DL	<DL	<DL	<DL	<DL	9	<DL
MAC-252-342.5	APS	892	67	143	<DL	37	<DL	<DL	<DL	47	<DL
MAC-252-342.5	APS	867	66	137	<DL	35	<DL	<DL	<DL	62	<DL
MAC-252-342.5	APS	959	69	144	<DL	38	<DL	<DL	<DL	43	<DL
MAC-252-342.5	APS	1,242	87	178	29	40	<DL	<DL	<DL	<DL	<DL
MAC-253-382	APS	814	77	176	28	43	<DL	17	<DL	<DL	<DL
MAC-253-382	APS	690	66	155	24	36	<DL	13	<DL	<DL	<DL
MAC-253-382	APS	991	90	220	32	53	<DL	18	<DL	<DL	<DL
MAC-253-507.5	APS	380	33	67	<DL	10	<DL	<DL	<DL	<DL	<DL
MAC-253-507.5	APS	546	46	100	13	13	<DL	<DL	<DL	<DL	<DL
MAC-253-507.5	APS	2,160	170	348	51	60	<DL	<DL	<DL	52	<DL
MAC-255-559	APS	241	<DL	46	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	APS	262	<DL	66	<DL	37	<DL	46	<DL	53	<DL
MC-336-570.5	APS	594	<DL	<DL	<DL	<DL	<DL	<DL	<DL	125	<DL
MC-434-328.83	APS	348	39	84	<DL	23	<DL	<DL	<DL	16	<DL
MC-434-328.83	APS	331	37	78	<DL	21	<DL	<DL	<DL	14	<DL
MC-434-328.83	APS	329	39	81	<DL	21	<DL	<DL	<DL	17	<DL

Sample No.	Mineral	Gd (ppm)	Tb (ppm)	Dy (ppm)	Ho (ppm)	Er (ppm)	Tm (ppm)	Yb (ppm)	Lu (ppm)	Hf (ppm)	Ta (ppm)
MC-434-328.83	APS	327	35	70	<DL	18	<DL	<DL	<DL	16	<DL
MC-434-328.83	APS	341	35	72	<DL	18	<DL	<DL	<DL	14	<DL
MAC-255-559	Monazite	8,549	1,129	5,500	855	1,763	162	798	84	153	<DL
MAC-255-559	Monazite	243	51	391	85	257	52	388	54	1,328	<DL
MAC-255-559	Monazite	5,814	647	2,653	397	729	72	312	37	142	<DL
MC-413-603.83	Monazite	670	77	318	76	195	<DL	197	<DL	1,521	<DL
MC-413-603.83	Monazite	1,047	122	510	97	221	<DL	143	<DL	220	<DL
MC-413-603.83	Monazite	1,013	108	410	88	218	<DL	203	<DL	1,891	<DL
MAC-255-564.36	Apatite	186	31	138	29	68	<DL	49	<DL	<DL	<DL
MAC-255-564.36	Apatite	246	41	187	39	92	<DL	70	<DL	<DL	<DL
MAC-255-564.36	Apatite	143	28	139	30	79	<DL	67	<DL	<DL	<DL
MAC-255-564.36	Apatite	83	20	102	27	79	<DL	70	<DL	<DL	<DL
MAC-255-564.36	Apatite	84	21	109	27	76	<DL	72	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	53
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	20
MC-336-564	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	8	<DL
MC-336-564	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	8	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	18	219
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	14	218
MAC-246-508.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	16	80
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	181
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	182
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	33	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	27	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	22	<DL
MC-336-564	Fe-hydroxide vein	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-197	Mn(Fe) oxide vein	22	8	32	10	20	7	18	<DL	<DL	<DL

Sample No.	Mineral	W (ppm)	Re (ppm)	Os (ppm)	Ir (ppm)	Pt (ppm)	Au (ppm)	Hg (ppm)	Tl (ppm)	Pb 206 (ppm)	Pb 207 (ppm)
MAC-208-237	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-237	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-237	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	26	<DL
MAC-252-271.2	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	32	39
MAC-253-325	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	41
MAC-253-325	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	8
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	23	<DL
MAC-208-572	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	23	<DL
MAC-208-572	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	21	<DL
MAC-208-572	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	29	<DL
MAC-208-572	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	29	<DL
MAC-208-572	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	28	<DL
MAC-208-572	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	27	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	17	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	17	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	28	16
MAC-246-475.33	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	22	10
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	511	<DL
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		1	543	<DL
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	485	<DL
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	472	<DL
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	372	<DL
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	336	<DL
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	385	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	95	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	100	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	97	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	79	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	115	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	109	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	110	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	13	11
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	13	11
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-290.5	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-290.5	Illite	<DL	<DL		<DL	<DL	<DL		<DL	16	<DL
MAC-246-333.8	Illite	<DL	<DL		<DL	<DL	<DL		0	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL		<DL	<DL	<DL		0	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL		<DL	<DL	<DL		0	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL		<DL	<DL	<DL		0	<DL	<DL
MAC-253-507.5	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	<DL		<DL	<DL	<DL		<DL	12	<DL

Sample No.	Mineral	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb 206	Pb 207
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	<DL		<DL	<DL	<DL		<DL	15	10
MAC-255-293.4	Illite	<DL	<DL		<DL	<DL	<DL		<DL	27	21
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	<DL		<DL	55	<DL
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	<DL		<DL	54	<DL
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	<DL		<DL	55	<DL
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	<DL		<DL	106	22
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	<DL		<DL	84	<DL
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	<DL		<DL	81	<DL
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	<DL		<DL	92	15
MC-336-506.8	Illite	<DL	<DL		<DL	<DL	<DL		<DL	15	<DL
MC-336-506.8	Illite	<DL	<DL		<DL	<DL	<DL		<DL	18	14
MC-336-506.8	Illite	<DL	<DL		<DL	<DL	<DL		<DL	13	17
MC-336-570.5	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-559	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	7
MC-338-559	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	20
MC-338-559	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	20
MC-413-299	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-299	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	<DL		<DL	43	<DL
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	<DL		<DL	41	<DL
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	<DL		<DL	43	<DL
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	<DL		<DL	38	<DL
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	<DL		<DL	49	<DL
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	<DL		<DL	45	<DL
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	<DL		<DL	44	<DL
MC-434-253.64	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	63	<DL
MAC-246-508.8	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	60	<DL
MAC-246-508.8	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	58	<DL
MAC-246-508.8	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	77	<DL
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	12	<DL
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	12	<DL
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	8	<DL
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-344-100.1	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	23	31
MC-344-100.1	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	16	<DL
MC-344-100.1	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	34	<DL
MC-344-100.1	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	27	<DL

Sample No.	Mineral	W (ppm)	Re (ppm)	Os (ppm)	Ir (ppm)	Pt (ppm)	Au (ppm)	Hg (ppm)	Tl (ppm)	Pb 206 (ppm)	Pb 207 (ppm)
MC-344-100.1	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	24	10
MC-344-100.1	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	24	<DL
MC-344-100.1	Drv Veins	<DL	<DL		<DL	<DL	<DL		<DL	25	<DL
MC-415-497.66	Drv Veins	3	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-415-497.66	Drv Veins	2	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-415-497.66	Drv Veins	1	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-415-497.66	Drv Veins	1	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-208-10.2	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	32	17
MAC-208-10.2	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	29	11
MAC-208-572	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	12	<DL
MAC-208-572	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	9	<DL
MAC-208-572	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	11	<DL
MAC-208-572	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	14	<DL
MAC-208-572	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	15	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	12	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	13	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	13	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	13	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	8	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	15	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-499.02	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	30	<DL
MAC-252-199.86	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	28
MAC-252-199.86	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	18
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	7	<DL
MAC-253-205	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	10	<DL
MAC-253-205	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	7	<DL
MAC-253-205	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	8	<DL
MAC-253-205	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	8	<DL
MAC-253-205	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	13	6
MAC-253-205	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	16	21
MAC-253-265.3	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	16	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	1,047	<DL		<DL	41	<DL

Sample No.	Mineral	W (ppm)	Re (ppm)	Os (ppm)	Ir (ppm)	Pt (ppm)	Au (ppm)	Hg (ppm)	Tl (ppm)	Pb 206 (ppm)	Pb 207 (ppm)
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	447	<DL		<DL	26	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	453	<DL		<DL	31	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	414	<DL		<DL	33	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	896	<DL		<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	525	<DL		<DL	36	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	10	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	17	10
MC-344-179.8	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	18	11
MC-344-179.8	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	11	6
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	10		14	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	10		15	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	9		11	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	9		12	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	14		10	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	9		11	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	7		10	<DL	<DL
MC-413-649	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL		<DL	<DL	19		23	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL		<DL	<DL	19		23	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL		<DL	<DL	13		15	6	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL		<DL	<DL	14		19	6	<DL
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	<DL		<DL	<DL	1
MC-415-490.78	Interstitial Drv	12	<DL		<DL	<DL	<DL		<DL	19	13
MC-415-490.78	Interstitial Drv	6	<DL		<DL	<DL	<DL		<DL	9	<DL
MC-415-490.78	Interstitial Drv	8	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-415-490.78	Interstitial Drv	5	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-415-490.78	Interstitial Drv	3	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MAC-246-333.8	APS	<DL	<DL		<DL	<DL	<DL		1	561	496
MAC-246-508.8	APS	<DL	<DL		<DL	<DL	<DL		1	4,140	854
MAC-246-508.8	APS	<DL	<DL		<DL	<DL	<DL		0	2,871	524
MAC-252-342.5	APS	<DL	<DL		<DL	<DL	<DL		<DL	1,423	1,268
MAC-252-342.5	APS	<DL	<DL		<DL	<DL	<DL		<DL	1,313	1,185
MAC-252-342.5	APS	<DL	<DL		<DL	<DL	<DL		<DL	1,270	1,190
MAC-252-342.5	APS	<DL	<DL		<DL	<DL	<DL		<DL	1,439	1,389
MAC-253-382	APS	<DL	<DL		<DL	<DL	<DL		<DL	906	866
MAC-253-382	APS	<DL	<DL		<DL	<DL	<DL		<DL	886	832
MAC-253-382	APS	<DL	<DL		<DL	<DL	<DL		<DL	1,164	1,143
MAC-253-507.5	APS	<DL	<DL		<DL	<DL	<DL		<DL	49	36
MAC-253-507.5	APS	<DL	<DL		<DL	<DL	<DL		<DL	61	40
MAC-253-507.5	APS	<DL	<DL		<DL	<DL	<DL		<DL	809	420
MAC-255-559	APS	<DL	<DL		<DL	<DL	<DL		<DL	1,354	60
MAC-255-559	APS	<DL	<DL		<DL	<DL	<DL		<DL	1,453	64
MC-336-570.5	APS	<DL	<DL		<DL	<DL	<DL		<DL	843	790
MC-434-328.83	APS	<DL	<DL		<DL	<DL	<DL		<DL	882	800
MC-434-328.83	APS	<DL	<DL		<DL	<DL	<DL		<DL	814	691
MC-434-328.83	APS	<DL	<DL		<DL	<DL	<DL		<DL	861	721

Sample No.	Mineral	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb 206	Pb 207
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-434-328.83	APS	<DL	<DL		<DL	<DL	<DL		<DL	962	841
MC-434-328.83	APS	<DL	<DL		<DL	<DL	<DL		<DL	988	863
MAC-255-559	Monazite	<DL	<DL		<DL	<DL	<DL		2	9,361	1,040
MAC-255-559	Monazite	<DL	<DL		<DL	<DL	<DL		0	842	31
MAC-255-559	Monazite	<DL	<DL		<DL	<DL	<DL		1	3,222	306
MC-413-603.83	Monazite	41	<DL		<DL	<DL	<DL		2	1,636	350
MC-413-603.83	Monazite	<DL	<DL		<DL	<DL	<DL		2	3,197	1,735
MC-413-603.83	Monazite	80	<DL		<DL	<DL	<DL		<DL	4,209	709
MAC-255-564.36	Apatite	<DL	<DL		<DL	<DL	<DL		<DL	268	32
MAC-255-564.36	Apatite	<DL	<DL		<DL	<DL	<DL		<DL	314	40
MAC-255-564.36	Apatite	<DL	<DL		<DL	<DL	<DL		<DL	360	46
MAC-255-564.36	Apatite	<DL	<DL		<DL	<DL	<DL		1	365	62
MAC-255-564.36	Apatite	<DL	<DL		<DL	<DL	<DL		<DL	320	45
MAC-255-559	Pyrite	<DL	<DL		<DL	<DL	<DL		135	7,726	162
MAC-255-559	Pyrite	<DL	<DL		<DL	<DL	<DL		20	1,534	63
MAC-255-559	Pyrite	305	<DL		<DL	<DL	<DL		9	2,236	133
MAC-255-559	Pyrite	229	<DL		<DL	<DL	<DL		8	3,588	212
MC-336-564	Hematite	<DL	<DL		<DL	<DL	<DL		<DL	36	16
MC-336-564	Hematite	<DL	<DL		<DL	<DL	<DL		<DL	61	25
MC-413-623.78	Hematite	5	<DL		<DL	<DL	<DL		<DL	125	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL	<DL		<DL	105	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL	<DL		<DL	90	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL	<DL		<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL	<DL		<DL	18	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL	<DL		<DL	13	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL	<DL		<DL	98	<DL
MC-413-623.78	Hematite	15	<DL		<DL	<DL	<DL		<DL	279	<DL
MC-413-623.78	Hematite	16	<DL		<DL	<DL	<DL		<DL	293	<DL
MC-413-623.78	Hematite	17	<DL		<DL	<DL	<DL		<DL	308	<DL
MC-413-623.78	Hematite	16	<DL		<DL	<DL	<DL		<DL	265	<DL
MAC-246-333.8	Rutile	267	<DL	<DL	<DL	<DL	<DL	<DL	<DL	125	92
MAC-246-333.8	Rutile	271	<DL	<DL	<DL	<DL	<DL	<DL	<DL	102	77
MAC-246-508.8	Rutile	37	<DL	<DL	<DL	<DL	<DL	<DL	0	176	30
MAC-252-342.5	Rutile	313	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	322	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	62	<DL		<DL	<DL	<DL		<DL	153	18
MAC-246-508.8	Fe(Ti) oxide in Kao	51	<DL		<DL	<DL	<DL		<DL	143	19
MAC-246-508.8	Fe(Ti) oxide in Kao	39	<DL		<DL	<DL	<DL		<DL	88	<DL
MC-336-564	Fe-hydroxide vein	<DL	<DL		<DL	<DL	<DL		<DL	59	26
MC-336-564	Fe-hydroxide vein	<DL	<DL		<DL	<DL	<DL		<DL	76	31
MC-336-564	Fe-hydroxide vein	<DL	<DL		<DL	<DL	<DL		<DL	85	35
MC-415-197	Mn(Fe) oxide vein	<DL	<DL		<DL	<DL	<DL		812	<DL	173

Sample No.	Mineral	Pb 208	Bi	Bkg	Th	U		7Li SD	9Be SD	11B SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)		(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite	<DL	<DL		<DL	20	SD	4	<DL	14
MAC-208-237	C1 Chlorite	<DL	<DL		10	30	SD	9	<DL	27
MAC-208-237	C1 Chlorite	359	<DL		21	36	SD	7	<DL	52
MAC-252-271.2	C1 Chlorite	<DL	<DL		38	<DL	SD	11	<DL	174
MAC-252-271.2	C1 Chlorite	39	<DL		<DL	<DL	SD	<DL	<DL	74
MAC-253-325	C1 Chlorite	51	<DL		<DL	<DL	SD	12	<DL	61
MAC-253-325	C1 Chlorite	<DL	<DL		<DL	<DL	SD	6	<DL	28
MAC-253-325	C1 Chlorite	<DL	<DL		<DL	<DL	SD	8	<DL	22
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	SD	7	<DL	7
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	SD	3	<DL	2
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	SD	4	<DL	5
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	SD	3	<DL	4
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	SD	6	<DL	5
MC-413-183.26	C1 Chlorite	<DL	<DL		<DL	<DL	SD	4	<DL	6
MAC-208-487	C2 Chlorite	<DL	<DL		<DL	<DL	SD	21		
MAC-208-487	C2 Chlorite	<DL	<DL		<DL	<DL	SD	16		
MAC-208-487	C2 Chlorite	<DL	<DL		<DL	<DL	SD	23		
MAC-208-487	C2 Chlorite	<DL	<DL		19	34	SD	39		
MAC-208-572	C2 Chlorite	<DL	<DL		11	5	SD	25		
MAC-208-572	C2 Chlorite	<DL	<DL		9	4	SD	20		
MAC-208-572	C2 Chlorite	<DL	<DL		<DL	<DL	SD	30		
MAC-208-572	C2 Chlorite	5	<DL		<DL	<DL	SD	35		
MAC-208-572	C2 Chlorite	5	<DL		11	4	SD	49		
MAC-208-572	C2 Chlorite	5	<DL		15	4	SD	26		
MAC-246-475.33	C2 Chlorite	<DL	<DL		<DL	13	SD	22		94
MAC-246-475.33	C2 Chlorite	<DL	<DL		<DL	12	SD	12		88
MAC-246-475.33	C2 Chlorite	16	<DL		<DL	22	SD	10		140
MAC-246-475.33	C2 Chlorite	<DL	<DL		<DL	35	SD	27		1,205
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	SD	30	5	22
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	SD	52	3	50
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	SD	19	2	15
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	SD	37	4	40
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	SD	24	2	8
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	SD	24	2	16
MAC-255-559	C2 Chlorite	<DL	<DL		<DL	<DL	SD	53	2	27
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	SD	5		11
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	SD	21		12
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	SD	22		10
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	SD	24		12
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	SD	15		11
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	SD	22		18
MAC-255-564.36	C2 Chlorite	<DL	<DL		<DL	<DL	SD	18		14
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	<DL	SD	16		42
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	100	SD	18		
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	<DL	SD	21		
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	20	SD	13		14
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	22	SD	14		16
MC-336-570.5	C2 Chlorite	<DL	<DL		<DL	22	SD	10		16
MAC-208-290.5	Illite	<DL	<DL		<DL	8	SD	2	<DL	13
MAC-208-290.5	Illite	<DL	<DL		<DL	<DL	SD	2	<DL	92
MAC-246-333.8	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL		<DL	<DL	SD	1	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL		<DL	<DL	SD	2	<DL	61
MAC-252-271.2	Illite	<DL	<DL		<DL	<DL	SD	2	<DL	106
MAC-252-271.2	Illite	<DL	<DL		<DL	<DL	SD	1	<DL	15
MAC-252-319.44	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	37
MAC-252-319.44	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	43
MAC-253-507.5	Illite	<DL	<DL		<DL	<DL	SD	1	<DL	36
MAC-255-293.4	Illite	<DL	<DL		15	<DL	SD	25		

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Pb 208 (ppm)	Bi (ppm)	Bkg (ppm)	Th (ppm)	U (ppm)		7Li SD (ppm)	9Be SD (ppm)	11B SD (ppm)
MAC-255-293.4	Illite	<DL	<DL		12	<DL	SD	25		
MAC-255-293.4	Illite	22	<DL		11	<DL	SD	18		
MAC-255-293.4	Illite	<DL	<DL		24	<DL	SD	15		
MAC-255-293.4	Illite	<DL	<DL		<DL	<DL	SD	11		
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	SD	13	<DL	16
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	SD	15	<DL	21
MAC-255-501.32	Illite	<DL	<DL		<DL	<DL	SD	10	<DL	18
MAC-255-501.32	Illite	29	<DL		21	100	SD	16	<DL	40
MAC-255-501.32	Illite	<DL	<DL		<DL	33	SD	12	<DL	30
MAC-255-501.32	Illite	15	<DL		<DL	29	SD	34	<DL	55
MAC-255-501.32	Illite	20	<DL		16	35	SD	10	<DL	23
MC-336-506.8	Illite	13	<DL		<DL	12	SD	4	<DL	1,361
MC-336-506.8	Illite	16	<DL		<DL	<DL	SD	3	<DL	121
MC-336-506.8	Illite	14	<DL		<DL	<DL	SD	4	<DL	45
MC-336-570.5	Illite	<DL	<DL		<DL	<DL	SD	12		37
MC-338-101	Illite	<DL	<DL		<DL	<DL	SD	6	<DL	127
MC-338-101	Illite	<DL	<DL		<DL	<DL	SD	6	<DL	51
MC-338-101	Illite	<DL	<DL		<DL	<DL	SD	9	<DL	84
MC-338-101	Illite	<DL	<DL		<DL	<DL	SD	14	<DL	64
MC-338-319	Illite	<DL	<DL		36	<DL	SD	12	<DL	68
MC-338-319	Illite	<DL	<DL		17	<DL	SD	8	<DL	55
MC-338-319	Illite	<DL	<DL		14	<DL	SD	6	<DL	85
MC-338-319	Illite	<DL	<DL		14	<DL	SD	2	<DL	79
MC-338-559	Illite	<DL	<DL		<DL	<DL	SD	5	<DL	123
MC-338-559	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	261
MC-338-559	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	112
MC-413-299	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	38
MC-413-299	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	28
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	SD	12	<DL	36
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	SD	12	<DL	44
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	SD	12	<DL	64
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	SD	6	<DL	20
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	SD	8	<DL	29
MC-413-603.83	Illite	<DL	<DL		82	<DL	SD	8	<DL	83
MC-413-603.83	Illite	<DL	<DL		21	<DL	SD	14	<DL	41
MC-413-603.83	Illite	<DL	<DL		<DL	<DL	SD	14	<DL	27
MC-434-253.64	Illite	<DL	<DL		<DL	<DL	SD	8		
MC-434-253.64	Illite	<DL	<DL		<DL	<DL	SD	5		
MC-434-253.64	Illite	<DL	<DL		<DL	<DL	SD	3		
MC-434-54.07	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	158
MC-434-54.07	Illite	<DL	<DL		<DL	<DL	SD	<DL	<DL	140
MAC-246-508.8	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL	4	859
MAC-246-508.8	Drv Veins	<DL	<DL		<DL	17	SD	<DL	3	1,986
MAC-246-508.8	Drv Veins	<DL	<DL		<DL	15	SD	<DL	2	2,079
MAC-246-508.8	Drv Veins	<DL	<DL		<DL	38	SD	<DL	4	4,198
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	11	SD	1		
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	11	SD	1		
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	<DL	SD	1		
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	<DL	SD	1		
MAC-253-265.3	Drv Veins	<DL	<DL		<DL	8	SD	1		
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MAC-253-538	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MC-344-100.1	Drv Veins	<DL	<DL		5	<DL	SD	0		
MC-344-100.1	Drv Veins	<DL	<DL		5	16	SD	2		
MC-344-100.1	Drv Veins	<DL	<DL		8	33	SD	4		
MC-344-100.1	Drv Veins	<DL	<DL		6	30	SD	5		

Sample No.	Mineral	Pb 208	Bi	Bkg	Th	U		7Li SD	9Be SD	11B SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)		(ppm)	(ppm)	(ppm)
MC-344-100.1	Drv Veins	22	<DL		8	16	SD	4		
MC-344-100.1	Drv Veins	<DL	<DL		6	22	SD	7		
MC-344-100.1	Drv Veins	<DL	<DL		6	24	SD	3		
MC-415-497.66	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MC-415-497.66	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MC-415-497.66	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MC-415-497.66	Drv Veins	<DL	<DL		<DL	<DL	SD	<DL		
MAC-208-10.2	Interstitial Drv	36	<DL		27	37	SD	7		
MAC-208-10.2	Interstitial Drv	<DL	<DL		26	29	SD	1		
MAC-208-572	Interstitial Drv	<DL	<DL		<DL	<DL	SD	8		
MAC-208-572	Interstitial Drv	<DL	<DL		16	<DL	SD	3		
MAC-208-572	Interstitial Drv	<DL	<DL		10	<DL	SD	22		
MAC-208-572	Interstitial Drv	11	<DL		<DL	6	SD	4		
MAC-208-572	Interstitial Drv	<DL	<DL		<DL	4	SD	27		
MAC-246-142.86	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-142.86	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-142.86	Interstitial Drv	<DL	<DL		15	18	SD	<DL		
MAC-246-142.86	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-142.86	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-213.43	Interstitial Drv	<DL	<DL		<DL	<DL	SD	6		
MAC-246-213.43	Interstitial Drv	<DL	<DL		<DL	<DL	SD	1		
MAC-246-213.43	Interstitial Drv	14	<DL		<DL	<DL	SD	1		
MAC-246-4.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	1		
MAC-246-4.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	5		
MAC-246-4.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	3		
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	12	SD	12		678
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-475.33	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-499.02	Interstitial Drv	5	<DL		<DL	27	SD	3		
MAC-252-199.86	Interstitial Drv	35	<DL		<DL	<DL	SD	<DL		
MAC-252-199.86	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL	<DL	1,299
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL	<DL	1,894
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-252-342.5	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-252-55.65	Interstitial Drv	<DL	<DL		<DL	<DL	SD	2		
MAC-252-55.65	Interstitial Drv	<DL	<DL		<DL	<DL	SD	4		
MAC-252-55.65	Interstitial Drv	<DL	<DL		<DL	<DL	SD	14		
MAC-253-205	Interstitial Drv	<DL	<DL		6	10	SD	1		
MAC-253-205	Interstitial Drv	<DL	<DL		8	12	SD	1		
MAC-253-205	Interstitial Drv	<DL	<DL		5	12	SD	2		
MAC-253-205	Interstitial Drv	<DL	<DL		7	16	SD	2		
MAC-253-205	Interstitial Drv	<DL	<DL		6	14	SD	2		
MAC-253-205	Interstitial Drv	<DL	<DL		5	<DL	SD	1		
MAC-253-205	Interstitial Drv	16	<DL		9	<DL	SD	2		
MAC-253-265.3	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-253-265.3	Interstitial Drv	<DL	<DL		<DL	<DL	SD	1		
MAC-253-265.3	Interstitial Drv	<DL	<DL		<DL	<DL	SD	10		
MAC-255-6.13	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-255-6.13	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-255-6.13	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MAC-255-6.13	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	56	SD	<DL		

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	Pb 208	Bi	Bkg	Th	U		7Li SD	9Be SD	11B SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)		(ppm)	(ppm)	(ppm)
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	18	SD	1		
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	27	SD	1		
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	27	SD	1		
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	<DL	SD	3		
MC-338-537.64	Interstitial Drv	<DL	<DL		<DL	32	SD	2		
MC-344-179.8	Interstitial Drv	10	<DL		13	4	SD	4		
MC-344-179.8	Interstitial Drv	16	<DL		26	10	SD	3		
MC-344-179.8	Interstitial Drv	17	<DL		29	8	SD	2		
MC-344-179.8	Interstitial Drv	12	<DL		15	5	SD	3		
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	SD	1		
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	SD	2		
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	SD	3		
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	SD	3		
MC-413-258.26	Interstitial Drv	<DL	14		<DL	<DL	SD	2		
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	SD	3		
MC-413-258.26	Interstitial Drv	<DL	<DL		<DL	<DL	SD	1		
MC-413-649	Interstitial Drv	<DL	<DL		103	<DL	SD	6		
MC-415-173.4	Interstitial Drv	<DL	<DL		<DL	<DL	SD	2		
MC-415-173.4	Interstitial Drv	<DL	<DL		<DL	<DL	SD	11		
MC-415-173.4	Interstitial Drv	<DL	<DL		<DL	<DL	SD	6		
MC-415-173.4	Interstitial Drv	<DL	<DL		<DL	<DL	SD	10		
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	SD	2		
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	SD	2		
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	SD	1		
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MC-415-389	Interstitial Drv	<DL	<DL		<DL	<DL	SD	<DL		
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	SD	2		
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	SD	2		
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	SD	3		
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	<DL	SD	1		
MC-415-432.38	Interstitial Drv	<DL	<DL		<DL	5	SD	1		
MC-415-490.78	Interstitial Drv	19	9		<DL	<DL	SD	<DL		
MC-415-490.78	Interstitial Drv	10	5		<DL	<DL	SD	<DL		
MC-415-490.78	Interstitial Drv	13	6		<DL	<DL	SD	<DL		
MC-415-490.78	Interstitial Drv	9	4		<DL	<DL	SD	<DL		
MC-415-490.78	Interstitial Drv	<DL	3		<DL	<DL	SD	<DL		
MAC-255-6.13	Detrital Tourmaline	<DL	<DL		<DL	<DL	SD	<DL		
MAC-255-6.13	Detrital Tourmaline	<DL	<DL		<DL	<DL	SD	<DL		
MAC-255-6.13	Detrital Tourmaline	<DL	<DL		<DL	<DL	SD	<DL		
MAC-255-6.13	Detrital Tourmaline	<DL	<DL		<DL	<DL	SD	<DL		
MAC-246-333.8	APS	857	16		2,382	117	SD	6	6	<DL
MAC-246-508.8	APS	1,001	<DL		2,775	526	SD	<DL	22	596
MAC-246-508.8	APS	588	97		1,151	273	SD	2	1	152
MAC-252-342.5	APS	1,899	<DL		5,368	92	SD	29		
MAC-252-342.5	APS	1,673	<DL		4,460	80	SD	<DL		
MAC-252-342.5	APS	1,635	<DL		4,716	72	SD	7		
MAC-252-342.5	APS	1,610	<DL		1,975	85	SD	9	8	57
MAC-253-382	APS	1,018	<DL		792	143	SD	4	3	23
MAC-253-382	APS	986	<DL		670	174	SD	11	2	27
MAC-253-382	APS	1,341	<DL		987	127	SD	5	3	44
MAC-253-507.5	APS	46	<DL		73	27	SD	<DL	2	34
MAC-253-507.5	APS	51	<DL		102	26	SD	21	2	23
MAC-253-507.5	APS	976	<DL		5,647	341	SD	5	24	107
MAC-255-559	APS	286	<DL		4,891	107	SD	41	7	118
MAC-255-559	APS	323	<DL		4,626	276	SD	50	9	83
MC-336-570.5	APS	1,175	<DL		3,044	217	SD	31		178
MC-434-328.83	APS	1,025	<DL		759	24	SD	8	4	22
MC-434-328.83	APS	1,004	<DL		728	22	SD	9	3	18
MC-434-328.83	APS	1,007	<DL		701	26	SD	11	3	28

Sample No.	Mineral	Pb 208	Bi	Bkg	Th	U			7Li SD	9Be SD	11B SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)			(ppm)	(ppm)	(ppm)
MC-434-328.83	APS	1,160	<DL		549	33		SD	12	4	15
MC-434-328.83	APS	1,169	<DL		599	28		SD	9	3	17
MAC-255-559	Monazite	4,506	<DL		76,175	10,179		SD	2	2	5
MAC-255-559	Monazite	146	<DL		5,819	540		SD	30	1	120
MAC-255-559	Monazite	6,263	<DL		53,839	3,184		SD	<DL	<DL	4
MC-413-603.83	Monazite	1,794	<DL		47,419	4,219		SD	18	13	215
MC-413-603.83	Monazite	3,815	<DL		73,803	2,269		SD	26	29	420
MC-413-603.83	Monazite	2,911	<DL		286,332	6,930		SD	10	29	365
MAC-255-564.36	Apatite	44	<DL		510	357		SD	31		331
MAC-255-564.36	Apatite	45	<DL		545	455		SD	7		69
MAC-255-564.36	Apatite	51	<DL		422	441		SD	8		155
MAC-255-564.36	Apatite	68	<DL		165	209		SD	8		277
MAC-255-564.36	Apatite	32	<DL		157	328		SD	11		25
MAC-255-559	Pyrite	326	27		37	38		SD	<DL		
MAC-255-559	Pyrite	101	36		44	50		SD	<DL		
MAC-255-559	Pyrite	141	<DL		93	106		SD	<DL		
MAC-255-559	Pyrite	203	<DL		230	928		SD	<DL		
MC-336-564	Hematite	20	<DL		<DL	729		SD	<DL		
MC-336-564	Hematite	33	<DL		<DL	1,116		SD	<DL		
MC-413-623.78	Hematite	<DL	<DL		<DL	12		SD	6	1	8
MC-413-623.78	Hematite	<DL	<DL		<DL	7		SD	<DL		87
MC-413-623.78	Hematite	<DL	<DL		<DL	6		SD	<DL		39
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL		SD	<DL		56
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL		SD	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	<DL		SD	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	7		SD	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL		7	15		SD	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	16		SD	<DL	<DL	224
MC-413-623.78	Hematite	<DL	<DL		<DL	17		SD	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL		<DL	46		SD	0		137
MAC-246-333.8	Rutile	108	<DL	<DL	90	22	0	<DL	<DL	<DL	8
MAC-246-333.8	Rutile	89	<DL	<DL	63	17	0	<DL	<DL	1	12
MAC-246-508.8	Rutile	22	<DL	<DL	16	73	0	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	27	<DL	0	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	28	<DL	0	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	16	<DL		15	425		SD	<DL	2	9
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL		13	330		SD	<DL	3	9
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL		10	240		SD	<DL	3	27
MC-336-564	Fe-hydroxide vein	35	<DL		<DL	540		SD	26	<DL	209
MC-336-564	Fe-hydroxide vein	42	<DL		<DL	528		SD	1		
MC-336-564	Fe-hydroxide vein	47	<DL		<DL	697		SD	0		1
MC-415-197	Mn(Fe) oxide vein	<DL	<DL		<DL	72		SD	14	<DL	216

Sample No.	Mineral	23Na SD	24Mg SD	27Al SD	29Si SD	31P SD	33S SD	39K SD	43Ca SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite	<DL	2,750	8,331	<DL	96	<DL	2,049	<DL
MAC-208-237	C1 Chlorite	<DL	4,290	5,270	<DL	362	<DL	2,738	<DL
MAC-208-237	C1 Chlorite	<DL	4,488	13,978	<DL	390	<DL	2,787	<DL
MAC-252-271.2	C1 Chlorite	<DL	6,500	29,692	<DL	819	<DL	17,091	<DL
MAC-252-271.2	C1 Chlorite	27,093	11,681	<DL	62,005	<DL	<DL	4,667	23,936
MAC-253-325	C1 Chlorite	<DL	5,510	28,309	<DL	336	<DL	13,441	<DL
MAC-253-325	C1 Chlorite	<DL	12,523	22,653	<DL	153	<DL	6,580	<DL
MAC-253-325	C1 Chlorite	<DL	6,893	18,391	<DL	402	<DL	5,512	<DL
MC-413-183.26	C1 Chlorite	<DL	3,174	13,564	<DL	<DL	<DL	798	<DL
MC-413-183.26	C1 Chlorite	<DL	4,672	4,395	<DL	33	<DL	319	<DL
MC-413-183.26	C1 Chlorite	<DL	2,748	7,011	<DL	<DL	<DL	1,073	<DL
MC-413-183.26	C1 Chlorite	<DL	2,495	12,346	<DL	63	<DL	674	<DL
MC-413-183.26	C1 Chlorite	<DL	1,740	10,191	<DL	67	<DL	933	<DL
MC-413-183.26	C1 Chlorite	<DL	2,393	8,906	<DL	59	<DL	548	<DL
MAC-208-487	C2 Chlorite		2,703	9,455	5,547	<DL	37		182
MAC-208-487	C2 Chlorite		2,434	11,427	6,779	<DL	35		212
MAC-208-487	C2 Chlorite		4,031	11,971	4,977	<DL	21		250
MAC-208-487	C2 Chlorite		6,193	14,041	6,742	69	53		243
MAC-208-572	C2 Chlorite		3,713	9,949	<DL	25	38		<DL
MAC-208-572	C2 Chlorite		4,442	7,387	5,336	16	78		<DL
MAC-208-572	C2 Chlorite		3,189	7,973	<DL	53	36		<DL
MAC-208-572	C2 Chlorite		5,970	6,774	4,665	20	32		<DL
MAC-208-572	C2 Chlorite		5,180	10,659	7,329	55	33		<DL
MAC-208-572	C2 Chlorite		4,058	8,604	4,261	45	19		<DL
MAC-246-475.33	C2 Chlorite		7,699	24,144	<DL	<DL	<DL		<DL
MAC-246-475.33	C2 Chlorite		5,794	11,350	<DL	<DL	<DL		<DL
MAC-246-475.33	C2 Chlorite		10,203	12,647	<DL	116	<DL		<DL
MAC-246-475.33	C2 Chlorite		3,696	13,091	<DL	78	<DL		<DL
MAC-255-559	C2 Chlorite	<DL	2,811	5,736	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	5,782	8,021	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	6,415	7,471	<DL	153	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	6,767	5,709	<DL	63	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	4,853	8,335	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	4,269	6,744	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	8,444	9,276	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite		6,515	6,730	<DL	75	<DL		<DL
MAC-255-564.36	C2 Chlorite		5,126	9,422	<DL	60	<DL		<DL
MAC-255-564.36	C2 Chlorite		6,247	9,354	<DL	66	<DL		<DL
MAC-255-564.36	C2 Chlorite		9,283	10,095	<DL	104	<DL		<DL
MAC-255-564.36	C2 Chlorite		3,881	9,569	<DL	<DL	<DL		<DL
MAC-255-564.36	C2 Chlorite		6,824	9,958	<DL	87	<DL		<DL
MAC-255-564.36	C2 Chlorite		4,682	10,745	<DL	64	<DL		<DL
MC-336-570.5	C2 Chlorite		10,748	28,838	<DL	212	<DL		14,724
MC-336-570.5	C2 Chlorite		6,164	8,663	<DL	<DL	53		<DL
MC-336-570.5	C2 Chlorite		4,662	11,997	14,363	<DL	70		<DL
MC-336-570.5	C2 Chlorite		6,484	8,365	<DL	104	<DL		<DL
MC-336-570.5	C2 Chlorite		6,579	14,751	<DL	82	<DL		<DL
MC-336-570.5	C2 Chlorite		7,520	17,257	<DL	610	<DL		<DL
MAC-208-290.5	Illite	<DL	730	9,220	<DL	78	<DL	12,414	<DL
MAC-208-290.5	Illite	6,097	2,733	25,386	<DL	236	<DL	41,026	<DL
MAC-246-333.8	Illite	<DL	294	10,086	<DL	162	<DL	7,533	<DL
MAC-246-333.8	Illite	<DL	124	4,545	5,154	20	<DL	5,211	<DL
MAC-252-271.2	Illite	<DL	967	21,946	<DL	107	<DL	12,302	<DL
MAC-252-271.2	Illite	<DL	1,665	19,787	<DL	84	<DL	10,820	<DL
MAC-252-271.2	Illite	<DL	879	22,713	<DL	51	<DL	10,653	<DL
MAC-252-319.44	Illite	<DL	455	9,811	<DL	1,434	<DL	10,195	<DL
MAC-252-319.44	Illite	<DL	458	24,230	<DL	111	<DL	24,132	<DL
MAC-253-507.5	Illite	<DL	322	9,700	<DL	125	<DL	8,846	<DL
MAC-255-293.4	Illite		2,505	30,589	<DL	<DL	138		<DL

Sample No.	Mineral	23Na SD (ppm)	24Mg SD (ppm)	27Al SD (ppm)	29Si SD (ppm)	31P SD (ppm)	33S SD (ppm)	39K SD (ppm)	43Ca SD (ppm)
MAC-255-293.4	Illite		877	15,864	24,760	<DL	129		<DL
MAC-255-293.4	Illite		785	11,659	19,919	<DL	68		<DL
MAC-255-293.4	Illite		1,621	9,728	35,186	68	67		<DL
MAC-255-293.4	Illite		859	6,693	9,658	<DL	41		<DL
MAC-255-501.32	Illite	<DL	180	7,370	<DL	<DL	<DL	8,326	<DL
MAC-255-501.32	Illite	<DL	193	11,236	<DL	122	<DL	9,859	<DL
MAC-255-501.32	Illite	<DL	187	8,470	<DL	81	<DL	7,944	<DL
MAC-255-501.32	Illite	<DL	182	13,387	<DL	76	<DL	7,583	<DL
MAC-255-501.32	Illite	<DL	147	9,306	<DL	119	<DL	10,362	<DL
MAC-255-501.32	Illite	<DL	130	9,562	<DL	95	<DL	4,834	<DL
MAC-255-501.32	Illite	<DL	126	7,067	<DL	108	<DL	7,326	<DL
MC-336-506.8	Illite	16,944	7,664	27,335	<DL	280	<DL	18,889	14,438
MC-336-506.8	Illite	14,160	5,041	33,754	<DL	<DL	<DL	20,034	9,849
MC-336-506.8	Illite	<DL	3,558	9,670	<DL	<DL	<DL	7,436	<DL
MC-336-570.5	Illite		5,413	22,635	<DL	107	<DL		<DL
MC-338-101	Illite	<DL	917	45,232	<DL	224	<DL	42,237	<DL
MC-338-101	Illite	<DL	535	18,755	<DL	152	<DL	38,105	<DL
MC-338-101	Illite	<DL	3,116	17,085	<DL	473	<DL	51,897	<DL
MC-338-101	Illite	<DL	1,186	17,276	<DL	354	<DL	22,646	<DL
MC-338-319	Illite	<DL	632	13,739	<DL	<DL	<DL	11,690	<DL
MC-338-319	Illite	<DL	1,267	23,316	<DL	<DL	<DL	28,424	<DL
MC-338-319	Illite	<DL	721	18,258	<DL	<DL	<DL	8,675	<DL
MC-338-319	Illite	<DL	413	16,330	<DL	<DL	<DL	12,134	<DL
MC-338-559	Illite	<DL	1,830	18,529	<DL	141	<DL	9,264	<DL
MC-338-559	Illite	<DL	4,201	41,733	<DL	486	<DL	39,125	<DL
MC-338-559	Illite	23,547	16,316	21,005	<DL	203	<DL	19,362	29,367
MC-413-299	Illite	<DL	932	28,987	<DL	217	<DL	16,407	<DL
MC-413-299	Illite	<DL	663	12,426	<DL	86	<DL	9,344	<DL
MC-413-603.83	Illite	<DL	1,694	10,272	<DL	<DL	<DL	9,827	<DL
MC-413-603.83	Illite	<DL	1,443	13,387	<DL	<DL	<DL	14,414	<DL
MC-413-603.83	Illite	<DL	1,333	11,136	<DL	<DL	<DL	8,769	<DL
MC-413-603.83	Illite	<DL	315	5,323	<DL	<DL	<DL	3,325	<DL
MC-413-603.83	Illite	<DL	638	11,493	<DL	<DL	<DL	7,407	<DL
MC-413-603.83	Illite	<DL	1,239	6,422	<DL	683	<DL	3,418	<DL
MC-413-603.83	Illite	<DL	830	9,149	<DL	<DL	<DL	7,641	<DL
MC-413-603.83	Illite	<DL	892	7,940	<DL	<DL	<DL	8,469	<DL
MC-434-253.64	Illite		175	11,370	10,702	<DL	57		224
MC-434-253.64	Illite		1,290	33,699	6,063	<DL	103		2,038
MC-434-253.64	Illite		290	15,293	26,173	<DL	45		148
MC-434-54.07	Illite	<DL	952	31,397	<DL	<DL	<DL	38,462	<DL
MC-434-54.07	Illite	<DL	1,638	26,994	<DL	<DL	<DL	47,653	<DL
MAC-246-508.8	Drv Veins	<DL	3,313	18,121	<DL	139	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	5,573	19,566	<DL	122	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	4,120	9,571	<DL	120	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	3,679	9,096	<DL	127	<DL	<DL	<DL
MAC-253-265.3	Drv Veins		3,089	10,412	10,370	<DL	31		<DL
MAC-253-265.3	Drv Veins		2,725	11,696	12,854	<DL	41		<DL
MAC-253-265.3	Drv Veins		4,250	7,723	12,839	<DL	33		<DL
MAC-253-265.3	Drv Veins		4,089	10,705	10,439	<DL	23		<DL
MAC-253-265.3	Drv Veins		4,389	8,222	9,359	<DL	22		<DL
MAC-253-538	Drv Veins		4,886	16,500	<DL	<DL	102		<DL
MAC-253-538	Drv Veins		3,166	9,069	19,393	<DL	33		7,657
MAC-253-538	Drv Veins		5,632	30,496	<DL	<DL	72		<DL
MAC-253-538	Drv Veins		4,353	27,479	<DL	<DL	37		<DL
MAC-253-538	Drv Veins		3,960	8,125	12,981	<DL	27		<DL
MC-344-100.1	Drv Veins		2,344	9,133	<DL	<DL	100		<DL
MC-344-100.1	Drv Veins		9,313	9,291	<DL	<DL	58		<DL
MC-344-100.1	Drv Veins		5,241	13,188	<DL	<DL	186		<DL
MC-344-100.1	Drv Veins		3,669	19,513	<DL	<DL	89		<DL

Sample No.	Mineral	23Na SD	24Mg SD	27Al SD	29Si SD	31P SD	33S SD	39K SD	43Ca SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-344-100.1	Drv Veins		16,367	23,968	<DL	<DL	130		<DL
MC-344-100.1	Drv Veins		7,019	14,163	<DL	<DL	118		<DL
MC-344-100.1	Drv Veins		5,982	12,906	<DL	<DL	68		<DL
MC-415-497.66	Drv Veins		2,302	8,680	4,677	<DL	46		137
MC-415-497.66	Drv Veins		2,073	5,545	4,828	<DL	24		131
MC-415-497.66	Drv Veins		3,002	10,000	4,742	<DL	26		<DL
MC-415-497.66	Drv Veins		3,024	5,634	3,762	<DL	21		<DL
MAC-208-10.2	Interstitial Drv		6,099	22,243	<DL	<DL	40		342
MAC-208-10.2	Interstitial Drv		1,831	5,098	<DL	<DL	53		402
MAC-208-572	Interstitial Drv		4,640	7,344	5,646	18	25		<DL
MAC-208-572	Interstitial Drv		4,282	12,882	<DL	16	37		<DL
MAC-208-572	Interstitial Drv		4,533	5,365	<DL	22	31		<DL
MAC-208-572	Interstitial Drv		6,341	9,006	<DL	12	33		<DL
MAC-208-572	Interstitial Drv		6,172	8,610	8,534	16	19		<DL
MAC-246-142.86	Interstitial Drv		1,000	8,984	8,961	<DL	25		<DL
MAC-246-142.86	Interstitial Drv		4,532	19,699	8,774	<DL	27		<DL
MAC-246-142.86	Interstitial Drv		3,680	9,662	8,180	<DL	46		<DL
MAC-246-142.86	Interstitial Drv		5,644	20,428	20,348	<DL	41		<DL
MAC-246-142.86	Interstitial Drv		5,558	24,872	6,560	<DL	28		<DL
MAC-246-213.43	Interstitial Drv		5,677	20,891	80,657	<DL	159		<DL
MAC-246-213.43	Interstitial Drv		2,223	7,182	10,047	<DL	97		<DL
MAC-246-213.43	Interstitial Drv		7,672	511	15,176	<DL	79		<DL
MAC-246-4.33	Interstitial Drv		1,571	2,857	<DL	<DL	5		1,355
MAC-246-4.33	Interstitial Drv		2,799	10,301	<DL	<DL	52		1,481
MAC-246-4.33	Interstitial Drv		7,220	19,845	<DL	<DL	66		827
MAC-246-475.33	Interstitial Drv		2,115	8,326	<DL	<DL	56		<DL
MAC-246-475.33	Interstitial Drv		1,434	8,254	<DL	34	53		<DL
MAC-246-475.33	Interstitial Drv		8,683	31,565	<DL	<DL	<DL		<DL
MAC-246-475.33	Interstitial Drv		4,475	13,637	<DL	<DL	69		<DL
MAC-246-475.33	Interstitial Drv		2,076	7,499	<DL	<DL	41		<DL
MAC-246-475.33	Interstitial Drv		6,177	21,363	<DL	48	27		<DL
MAC-246-475.33	Interstitial Drv		4,734	23,035	<DL	41	34		<DL
MAC-246-499.02	Interstitial Drv		5,385	22,086	46,589	63	25		<DL
MAC-252-199.86	Interstitial Drv		6,111	18,056	26,751	<DL	129		<DL
MAC-252-199.86	Interstitial Drv		6,535	17,887	26,718	<DL	57		<DL
MAC-252-342.5	Interstitial Drv	<DL	7,698	16,622	<DL	260	<DL	538	<DL
MAC-252-342.5	Interstitial Drv	<DL	3,988	18,148	<DL	168	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv		8,351	39,876	<DL	<DL	46		<DL
MAC-252-342.5	Interstitial Drv		10,284	57,856	<DL	<DL	47		<DL
MAC-252-342.5	Interstitial Drv		2,455	11,094	<DL	<DL	94		<DL
MAC-252-342.5	Interstitial Drv		2,248	13,368	<DL	<DL	16		<DL
MAC-252-55.65	Interstitial Drv		5,190	1,732	<DL	<DL	31		<DL
MAC-252-55.65	Interstitial Drv		3,028	12,031	5,011	4	47		<DL
MAC-252-55.65	Interstitial Drv		3,909	10,763	9,382	27	19		<DL
MAC-253-205	Interstitial Drv		4,949	3,508	<DL	<DL	5		<DL
MAC-253-205	Interstitial Drv		3,261	14,602	<DL	<DL	33		<DL
MAC-253-205	Interstitial Drv		6,801	15,490	<DL	<DL	26		<DL
MAC-253-205	Interstitial Drv		4,447	16,664	<DL	<DL	38		<DL
MAC-253-205	Interstitial Drv		6,213	27,994	<DL	<DL	34		<DL
MAC-253-205	Interstitial Drv		6,303	11,361	<DL	<DL	79		7,775
MAC-253-205	Interstitial Drv		8,001	15,459	<DL	<DL	42		<DL
MAC-253-265.3	Interstitial Drv		2,084	6,247	5,916	<DL	50		<DL
MAC-253-265.3	Interstitial Drv		4,937	25,528	16,845	<DL	101		<DL
MAC-253-265.3	Interstitial Drv		5,697	23,235	21,187	<DL	49		<DL
MAC-255-6.13	Interstitial Drv		2,513	10,325	17,645	<DL	39		<DL
MAC-255-6.13	Interstitial Drv		1,395	13,238	<DL	26	27		<DL
MAC-255-6.13	Interstitial Drv		5,109	19,145	<DL	27	34		<DL
MAC-255-6.13	Interstitial Drv		7,825	20,408	<DL	<DL	1,008		2,743
MC-338-537.64	Interstitial Drv		6,125	19,210	<DL	28	62		<DL

Sample No.	Mineral	23Na SD	24Mg SD	27Al SD	29Si SD	31P SD	33S SD	39K SD	43Ca SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-338-537.64	Interstitial Drv		4,702	9,643	34,533	18	31		13,306
MC-338-537.64	Interstitial Drv		6,229	18,312	47,713	15	49		<DL
MC-338-537.64	Interstitial Drv		6,095	18,422	50,977	23	49		17,305
MC-338-537.64	Interstitial Drv		3,740	15,014	<DL	32	78		<DL
MC-338-537.64	Interstitial Drv		4,508	11,093	<DL	28	30		<DL
MC-344-179.8	Interstitial Drv		4,754	11,336	<DL	31	47		<DL
MC-344-179.8	Interstitial Drv		5,170	18,290	10,701	76	32		<DL
MC-344-179.8	Interstitial Drv		3,514	11,668	7,001	41	35		<DL
MC-344-179.8	Interstitial Drv		6,314	15,665	6,533	40	34		<DL
MC-413-258.26	Interstitial Drv		2,246	11,526	<DL	<DL	48		<DL
MC-413-258.26	Interstitial Drv		2,637	14,122	<DL	42	46		<DL
MC-413-258.26	Interstitial Drv		1,945	10,628	10,656	<DL	44		<DL
MC-413-258.26	Interstitial Drv		6,347	24,369	<DL	41	51		<DL
MC-413-258.26	Interstitial Drv		4,742	15,061	6,932	30	47		<DL
MC-413-258.26	Interstitial Drv		6,830	23,929	<DL	32	47		<DL
MC-413-258.26	Interstitial Drv		3,803	10,115	14,756	22	34		<DL
MC-413-649	Interstitial Drv		1,832	13,239	<DL	<DL	47		<DL
MC-415-173.4	Interstitial Drv		3,600	16,474	21,373	<DL	46		<DL
MC-415-173.4	Interstitial Drv		3,409	15,191	13,081	<DL	37		<DL
MC-415-173.4	Interstitial Drv		6,225	20,698	12,345	<DL	36		<DL
MC-415-173.4	Interstitial Drv		8,199	35,800	22,875	<DL	42		<DL
MC-415-389	Interstitial Drv		3,238	11,132	<DL	<DL	23		<DL
MC-415-389	Interstitial Drv		2,071	8,595	<DL	<DL	17		<DL
MC-415-389	Interstitial Drv		2,683	10,192	<DL	<DL	13		<DL
MC-415-389	Interstitial Drv		2,591	10,649	<DL	<DL	30		<DL
MC-415-389	Interstitial Drv		3,826	18,641	<DL	<DL	28		<DL
MC-415-432.38	Interstitial Drv		5,632	23,500	<DL	<DL	17		<DL
MC-415-432.38	Interstitial Drv		5,678	19,698	<DL	<DL	16		<DL
MC-415-432.38	Interstitial Drv		6,616	30,006	<DL	<DL	21		<DL
MC-415-432.38	Interstitial Drv		2,485	9,870	<DL	<DL	13		<DL
MC-415-432.38	Interstitial Drv		2,621	6,228	<DL	<DL	11		<DL
MC-415-490.78	Interstitial Drv		3,371	16,453	3,904	<DL	49		124
MC-415-490.78	Interstitial Drv		1,618	6,829	7,269	<DL	25		138
MC-415-490.78	Interstitial Drv		6,760	34,591	8,948	<DL	57		177
MC-415-490.78	Interstitial Drv		3,250	11,540	4,890	<DL	31		141
MC-415-490.78	Interstitial Drv		2,991	9,527	6,365	<DL	25		246
MAC-255-6.13	Detrital Tourmaline		4,644	14,613	94,685	<DL	66		<DL
MAC-255-6.13	Detrital Tourmaline		3,329	11,112	24,882	<DL	43		<DL
MAC-255-6.13	Detrital Tourmaline		2,189	5,004	23,154	<DL	35		386
MAC-255-6.13	Detrital Tourmaline		3,176	9,575	9,396	<DL	133		72
MAC-246-333.8	APS	<DL	177	22,538	<DL	28,185	551	2,049	66,026
MAC-246-508.8	APS	<DL	3,331	42,006	41,835	38,540	<DL	<DL	37,674
MAC-246-508.8	APS	<DL	1,128	8,090	<DL	15,729	204	<DL	17,744
MAC-252-342.5	APS		2,321	57,761	<DL	12,563	1,831		67,561
MAC-252-342.5	APS		5,022	32,619	<DL	4,626	870		30,526
MAC-252-342.5	APS		2,020	43,729	<DL	4,056	879		25,112
MAC-252-342.5	APS	<DL	448	45,621	<DL	42,098	447	3,934	67,984
MAC-253-382	APS	<DL	144	21,813	<DL	28,040	428	2,230	61,285
MAC-253-382	APS	<DL	479	12,001	<DL	36,744	873	3,943	54,857
MAC-253-382	APS	<DL	321	15,720	<DL	22,639	275	3,169	38,812
MAC-253-507.5	APS	4,549	2,099	10,973	<DL	58,901	215	861	10,320
MAC-253-507.5	APS	5,512	2,456	12,455	<DL	33,257	215	1,148	6,074
MAC-253-507.5	APS	<DL	19,514	57,688	<DL	36,169	571	7,671	56,682
MAC-255-559	APS	<DL	6,626	14,411	<DL	6,838	199	<DL	24,789
MAC-255-559	APS	<DL	8,492	11,708	<DL	5,516	129	<DL	22,952
MC-336-570.5	APS		9,298	86,659	<DL	39,299	801		58,664
MC-434-328.83	APS	<DL	168	47,021	<DL	66,350	978	1,446	77,810
MC-434-328.83	APS	<DL	201	42,993	<DL	99,308	1,247	3,363	74,397
MC-434-328.83	APS	<DL	518	45,023	<DL	87,249	1,547	2,685	83,201

Sample No.	Mineral	23Na SD	24Mg SD	27Al SD	29Si SD	31P SD	33S SD	39K SD	43Ca SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-434-328.83	APS	<DL	143	60,576	<DL	88,291	1,440	1,539	79,734
MC-434-328.83	APS	<DL	155	38,694	<DL	130,894	978	1,457	94,153
MAC-255-559	Monazite	<DL	201	<DL	<DL	17,093	525	313	4,200
MAC-255-559	Monazite	<DL	3,097	6,598	<DL	6,862	93	<DL	3,050
MAC-255-559	Monazite	<DL	<DL	<DL	32,977	9,815	306	<DL	<DL
MC-413-603.83	Monazite	<DL	2,049	16,029	<DL	4,340	466	2,096	15,151
MC-413-603.83	Monazite	<DL	1,143	14,401	<DL	13,591	236	3,378	17,371
MC-413-603.83	Monazite	<DL	1,338	21,455	<DL	12,609	352	1,544	23,324
MAC-255-564.36	Apatite		8,092	14,148	<DL	27,132	<DL		117,828
MAC-255-564.36	Apatite		3,593	<DL	<DL	8,001	<DL		79,583
MAC-255-564.36	Apatite		3,779	5,925	<DL	10,055	<DL		75,704
MAC-255-564.36	Apatite		2,777	<DL	<DL	20,566	1,866		77,730
MAC-255-564.36	Apatite		3,448	<DL	<DL	11,797	<DL		37,059
MAC-255-559	Pyrite		49	<DL	<DL	<DL	16		<DL
MAC-255-559	Pyrite		51	<DL	<DL	<DL	19		<DL
MAC-255-559	Pyrite		<DL	<DL	<DL	<DL	51		<DL
MAC-255-559	Pyrite		6	144	<DL	<DL	15		<DL
MC-336-564	Hematite		21	160	<DL	<DL	10		<DL
MC-336-564	Hematite		13	200	<DL	<DL	18		<DL
MC-413-623.78	Hematite	<DL	1,261	1,672	<DL	<DL	1,517	257	<DL
MC-413-623.78	Hematite		2,904	<DL	<DL	138	<DL		7,086
MC-413-623.78	Hematite		2,457	<DL	<DL	175	<DL		8,204
MC-413-623.78	Hematite		2,699	<DL	<DL	139	<DL		8,801
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	64	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	104	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	116,735	51,089	<DL	449,400	4,249	<DL	27,939	88,529
MC-413-623.78	Hematite	<DL	1,110	<DL	<DL	185	<DL	<DL	<DL
MC-413-623.78	Hematite		542	<DL	<DL	<DL	<DL		<DL
MAC-246-333.8	Rutile	2,386	978	2,546	<DL	327	<DL	1,700	<DL
MAC-246-333.8	Rutile	<DL	564	2,676	<DL	602	<DL	1,411	<DL
MAC-246-508.8	Rutile	<DL	22	<DL	<DL	<DL	29	<DL	<DL
MAC-252-342.5	Rutile	<DL	18	<DL	<DL	<DL	8	<DL	<DL
MAC-252-342.5	Rutile	<DL	13	<DL	<DL	<DL	6	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	6,716	3,024	1,961	<DL	1,163	<DL	1,025	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	1,140	2,317	<DL	1,467	<DL	376	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	1,816	4,617	<DL	743	<DL	1,269	<DL
MC-336-564	Fe-hydroxide vein	<DL	978	22,238	19,147	272	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein		887	5,278	17,814	<DL	25		<DL
MC-336-564	Fe-hydroxide vein		52	2,587	<DL	2,596	416		8,685
MC-415-197	Mn(Fe) oxide vein	<DL	922	10,746	17,800	140	<DL	<DL	<DL

Sample No.	Mineral	44Ca SD	45Sc SD	47Ti SD	51V SD	52Cr SD	55Mn SD	57Fe SD	59Co SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite	<DL	1	344	2	4	3	644	0
MAC-208-237	C1 Chlorite	<DL	1	53	3	5	4	472	1
MAC-208-237	C1 Chlorite	<DL	2	468	5	28	9	1,661	<DL
MAC-252-271.2	C1 Chlorite	<DL	5	<DL	12	20	35	1,324	<DL
MAC-252-271.2	C1 Chlorite	24,896	4	<DL	<DL	16	14	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	22	2	<DL	1,707	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	8	10	<DL	4,470	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	6	21	<DL	2,598	<DL
MC-413-183.26	C1 Chlorite	<DL	1	63	3	2	<DL	313	<DL
MC-413-183.26	C1 Chlorite	<DL	0	82	1	2	<DL	86	<DL
MC-413-183.26	C1 Chlorite	<DL	1	61	3	2	<DL	286	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	4	3	4	<DL	1,488	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	14	4	2	<DL	2,780	<DL
MC-413-183.26	C1 Chlorite	<DL	1	21	4	3	<DL	5,573	<DL
MAC-208-487	C2 Chlorite	129	<DL	<DL	6	6	<DL	609	<DL
MAC-208-487	C2 Chlorite	171	<DL	<DL	10	6	<DL	845	<DL
MAC-208-487	C2 Chlorite	193	1	<DL	8	8	<DL	756	<DL
MAC-208-487	C2 Chlorite	201	2	<DL	10	7	<DL	3,038	2
MAC-208-572	C2 Chlorite	<DL	1	<DL	5	2	<DL	1,122	3
MAC-208-572	C2 Chlorite	<DL	1	<DL	7	4	<DL	349	0
MAC-208-572	C2 Chlorite	<DL	1	<DL	23	2	<DL	688	1
MAC-208-572	C2 Chlorite	<DL	1	<DL	8	2	<DL	690	2
MAC-208-572	C2 Chlorite	<DL	2	<DL	7	2	<DL	653	1
MAC-208-572	C2 Chlorite	<DL	1	<DL	7	1	<DL	299	2
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	10	64	<DL	1,031	1
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	10	26	<DL	1,082	1
MAC-246-475.33	C2 Chlorite	<DL	<DL	57	5	14	<DL	1,081	1
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	16	67	<DL	1,409	1
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	9	23	<DL	2,785	9
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	9	59	<DL	4,090	19
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	10	19	3	4,400	18
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	17	19	6	4,359	10
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	15	5	<DL	3,153	3
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	9	4	<DL	2,738	2
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	23	9	<DL	5,914	5
MAC-255-564.36	C2 Chlorite	<DL	<DL	34	26	12	<DL	1,640	2
MAC-255-564.36	C2 Chlorite	<DL	<DL	58	21	13	<DL	3,258	3
MAC-255-564.36	C2 Chlorite	<DL	<DL	56	20	11	<DL	2,623	2
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	34	29	<DL	3,278	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	19	18	<DL	2,217	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	11	21	13	<DL	1,604	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	9	20	13	<DL	1,745	<DL
MC-336-570.5	C2 Chlorite	18,595	<DL	35	18	32	<DL	2,724	<DL
MC-336-570.5	C2 Chlorite	<DL	2	<DL	19	7	<DL	882	8
MC-336-570.5	C2 Chlorite	<DL	2	<DL	15	5	<DL	860	4
MC-336-570.5	C2 Chlorite	4,700	<DL	14	23	22	<DL	1,215	2
MC-336-570.5	C2 Chlorite	5,701	<DL	16	19	28	<DL	1,373	2
MC-336-570.5	C2 Chlorite	5,535	<DL	17	7	12	<DL	2,662	1
MAC-208-290.5	Illite	<DL	1	100	3	3	<DL	593	<DL
MAC-208-290.5	Illite	<DL	2	<DL	10	14	<DL	1,079	<DL
MAC-246-333.8	Illite	<DL	<DL	<DL	4	2	<DL	800	<DL
MAC-246-333.8	Illite	<DL	1	23	1	1	2	341	<DL
MAC-252-271.2	Illite	<DL	1	<DL	6	11	2	838	<DL
MAC-252-271.2	Illite	<DL	1	33	6	4	2	895	<DL
MAC-252-271.2	Illite	<DL	1	24	5	9	7	521	<DL
MAC-252-319.44	Illite	<DL	<DL	<DL	4	3	<DL	543	<DL
MAC-252-319.44	Illite	<DL	<DL	<DL	5	6	<DL	1,031	<DL
MAC-253-507.5	Illite	<DL	1	7	12	5	<DL	535	0
MAC-255-293.4	Illite	<DL	<DL	<DL	6	10	<DL	1,229	<DL

Sample No.	Mineral	44Ca SD	45Sc SD	47Ti SD	51V SD	52Cr SD	55Mn SD	57Fe SD	59Co SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite	<DL	1	<DL	11	6	<DL	1,282	<DL
MAC-255-293.4	Illite	<DL	1	<DL	5	4	<DL	620	<DL
MAC-255-293.4	Illite	<DL	1	<DL	7	2	<DL	825	<DL
MAC-255-293.4	Illite	<DL	3	<DL	571	2,034	<DL	679	<DL
MAC-255-501.32	Illite	<DL	1	6	20	5	2	635	<DL
MAC-255-501.32	Illite	<DL	1	6	10	8	1	1,164	<DL
MAC-255-501.32	Illite	<DL	1	5	11	5	1	644	<DL
MAC-255-501.32	Illite	<DL	2	7	19	7	1	6,523	<DL
MAC-255-501.32	Illite	<DL	1	11	19	9	3	633	<DL
MAC-255-501.32	Illite	<DL	1	5	9	8	1	599	<DL
MAC-255-501.32	Illite	<DL	1	5	6	4	2	392	<DL
MC-336-506.8	Illite	15,186	13	612	11	14	<DL	4,133	<DL
MC-336-506.8	Illite	12,697	3	155	3	9	<DL	2,911	<DL
MC-336-506.8	Illite	<DL	2	<DL	4	75	253	2,036	<DL
MC-336-570.5	Illite	13,436	<DL	36	17	16	<DL	2,522	<DL
MC-338-101	Illite	<DL	2	55	12	7	<DL	1,815	<DL
MC-338-101	Illite	<DL	1	11	5	7	<DL	959	<DL
MC-338-101	Illite	<DL	2	42	11	7	<DL	1,061	<DL
MC-338-101	Illite	<DL	2	33	18	8	<DL	3,741	<DL
MC-338-319	Illite	<DL	2	114	5	<DL	4	1,837	<DL
MC-338-319	Illite	<DL	2	337	24	30	9	2,324	<DL
MC-338-319	Illite	<DL	1	553	15	18	11	1,551	<DL
MC-338-319	Illite	<DL	3	196	10	14	8	1,386	<DL
MC-338-559	Illite	<DL	1	9	8	6	<DL	723	<DL
MC-338-559	Illite	<DL	6	458	30	13	<DL	1,662	<DL
MC-338-559	Illite	28,725	4	410	9	6	<DL	1,803	<DL
MC-413-299	Illite	<DL	<DL	8	11	8	<DL	6,844	<DL
MC-413-299	Illite	<DL	<DL	6	3	3	<DL	343	<DL
MC-413-603.83	Illite	<DL	5	2,805	14	15	<DL	609	2
MC-413-603.83	Illite	<DL	<DL	302	23	19	<DL	1,071	2
MC-413-603.83	Illite	<DL	6	1,197	15	15	<DL	594	2
MC-413-603.83	Illite	<DL	<DL	<DL	3	4	<DL	247	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	6	4	<DL	427	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	10	13	<DL	454	2
MC-413-603.83	Illite	<DL	<DL	<DL	9	11	<DL	525	2
MC-413-603.83	Illite	<DL	<DL	<DL	12	7	<DL	484	2
MC-434-253.64	Illite	160	<DL	<DL	10	2	<DL	1,464	<DL
MC-434-253.64	Illite	2,540	<DL	<DL	15	9	<DL	1,105	<DL
MC-434-253.64	Illite	136	<DL	<DL	6	2	<DL	794	<DL
MC-434-54.07	Illite	<DL	3	25	11	30	19	883	<DL
MC-434-54.07	Illite	<DL	4	11	26	40	32	5,347	<DL
MAC-246-508.8	Drv Veins	<DL	2	<DL	227	10	<DL	<DL	2
MAC-246-508.8	Drv Veins	<DL	1	<DL	330	12	<DL	<DL	2
MAC-246-508.8	Drv Veins	<DL	1	<DL	244	21	<DL	343	2
MAC-246-508.8	Drv Veins	<DL	1	<DL	383	21	5	601	3
MAC-253-265.3	Drv Veins	<DL	1	<DL	4	1	<DL	324	1
MAC-253-265.3	Drv Veins	<DL	1	<DL	6	2	<DL	375	0
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	10	3	<DL	839	2
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	11	3	<DL	634	2
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	8	3	<DL	1,177	1
MAC-253-538	Drv Veins	<DL	<DL	<DL	30	88	<DL	2,725	<DL
MAC-253-538	Drv Veins	6,738	<DL	<DL	<DL	<DL	<DL	651	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	1,896	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	17	<DL	<DL	1,979	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	3	<DL	<DL	838	<DL
MC-344-100.1	Drv Veins	<DL	3	<DL	42	4	<DL	<DL	<DL
MC-344-100.1	Drv Veins	<DL	2	<DL	108	13	<DL	<DL	<DL
MC-344-100.1	Drv Veins	<DL	2	<DL	116	8	<DL	<DL	1
MC-344-100.1	Drv Veins	<DL	2	<DL	231	5	<DL	<DL	2

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	44Ca SD	45Sc SD	47Ti SD	51V SD	52Cr SD	55Mn SD	57Fe SD	59Co SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-344-100.1	Drv Veins	<DL	5	<DL	155	9	<DL	<DL	<DL
MC-344-100.1	Drv Veins	<DL	1	<DL	51	8	<DL	<DL	0
MC-344-100.1	Drv Veins	<DL	2	<DL	75	5	<DL	<DL	2
MC-415-497.66	Drv Veins	67	1	<DL	2	3	<DL	854	0
MC-415-497.66	Drv Veins	64	1	<DL	2	2	<DL	699	1
MC-415-497.66	Drv Veins	<DL	1	<DL	3	4	<DL	992	0
MC-415-497.66	Drv Veins	<DL	1	<DL	2	4	<DL	895	1
MAC-208-10.2	Interstitial Drv	300	4	1,239	30	8	<DL	2,076	<DL
MAC-208-10.2	Interstitial Drv	216	<DL	<DL	12	4	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	1	<DL	20	8	<DL	1,512	1
MAC-208-572	Interstitial Drv	<DL	1	<DL	8	8	<DL	1,071	<DL
MAC-208-572	Interstitial Drv	<DL	2	<DL	20	8	<DL	773	<DL
MAC-208-572	Interstitial Drv	<DL	1	<DL	17	3	<DL	455	<DL
MAC-208-572	Interstitial Drv	<DL	1	<DL	46	3	<DL	645	2
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	7	3	<DL	643	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	22	9	<DL	1,798	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	13	7	<DL	1,053	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	5	5	<DL	749	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	4	4	<DL	293	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	6	17	<DL	1,938	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	3	4	<DL	689	0
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	5	4	<DL	378	0
MAC-246-4.33	Interstitial Drv	1,694	<DL	<DL	3	8	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	1,690	<DL	<DL	14	8	<DL	634	<DL
MAC-246-4.33	Interstitial Drv	767	<DL	<DL	5	4	<DL	3,120	<DL
MAC-246-475.33	Interstitial Drv	<DL	1	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	1	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	4	17	<DL	1,203	1
MAC-246-475.33	Interstitial Drv	<DL	1	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	1	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	1	<DL	5	<DL	<DL	652	<DL
MAC-246-475.33	Interstitial Drv	<DL	1	<DL	8	<DL	<DL	559	<DL
MAC-246-499.02	Interstitial Drv	<DL	2	<DL	13	5	<DL	1,747	1
MAC-252-199.86	Interstitial Drv	<DL	<DL	<DL	16	8	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	<DL	<DL	<DL	15	13	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	92	<DL	5	<DL	1,686	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	7	<DL	6	<DL	934	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	18	<DL	3,761	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	8	<DL	3,062	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	799	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	3	<DL	1,257	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	22	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	4	<DL	<DL	1,621	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	1,199	17	11	<DL	1,546	<DL
MAC-253-205	Interstitial Drv	<DL	0	<DL	23	3	<DL	153	1
MAC-253-205	Interstitial Drv	<DL	2	<DL	40	8	<DL	558	1
MAC-253-205	Interstitial Drv	<DL	1	<DL	30	8	<DL	470	1
MAC-253-205	Interstitial Drv	<DL	2	<DL	24	7	<DL	667	1
MAC-253-205	Interstitial Drv	<DL	3	<DL	31	8	<DL	593	1
MAC-253-205	Interstitial Drv	8,374	3	308	78	3	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	2	<DL	27	5	<DL	261	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	1	3	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	5	2	<DL	374	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	12	7	<DL	620	<DL
MAC-255-6.13	Interstitial Drv	<DL	2	1,178	12	<DL	<DL	614	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	4	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	4	<DL	8	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	3,254	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	2	<DL	10	3	<DL	<DL	<DL

Sample No.	Mineral	44Ca SD (ppm)	45Sc SD (ppm)	47Ti SD (ppm)	51V SD (ppm)	52Cr SD (ppm)	55Mn SD (ppm)	57Fe SD (ppm)	59Co SD (ppm)
MC-338-537.64	Interstitial Drv	12,804	1	<DL	15	2	<DL	329	<DL
MC-338-537.64	Interstitial Drv	12,243	2	<DL	10	2	<DL	297	<DL
MC-338-537.64	Interstitial Drv	14,212	2	<DL	24	5	<DL	269	<DL
MC-338-537.64	Interstitial Drv	<DL	1	<DL	29	21	<DL	502	<DL
MC-338-537.64	Interstitial Drv	<DL	1	<DL	16	2	<DL	301	1
MC-344-179.8	Interstitial Drv	<DL	1	<DL	13	12	<DL	1,372	<DL
MC-344-179.8	Interstitial Drv	<DL	1	<DL	11	11	<DL	1,445	1
MC-344-179.8	Interstitial Drv	<DL	1	237	7	9	<DL	795	1
MC-344-179.8	Interstitial Drv	<DL	1	<DL	9	14	<DL	1,018	1
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	3	2	282	<DL	3
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	5	2	556	<DL	6
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	3	2	267	<DL	6
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	6	3	478	<DL	11
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	9	3	295	<DL	4
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	9	5	894	<DL	9
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	8	2	226	<DL	9
MC-413-649	Interstitial Drv	<DL	11	<DL	30	19	<DL	886	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	10	2	314	<DL	6
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	11	2	364	<DL	11
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	19	2	211	<DL	4
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	18	3	538	<DL	13
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	1,698	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	3	<DL	927	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	3	<DL	914	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	967	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	1,338	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	3	<DL	1,414	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	4	<DL	1,584	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	6	<DL	2,088	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	3	<DL	1,268	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	2	<DL	947	<DL
MC-415-490.78	Interstitial Drv	89	1	12	2	3	4	1,064	0
MC-415-490.78	Interstitial Drv	111	1	<DL	2	3	1	392	0
MC-415-490.78	Interstitial Drv	279	1	<DL	2	2	<DL	2,360	1
MC-415-490.78	Interstitial Drv	60	1	<DL	2	2	<DL	1,220	1
MC-415-490.78	Interstitial Drv	79	1	<DL	2	3	<DL	933	1
MAC-255-6.13	Detrital Tourmaline	<DL	4	416	10	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	2	307	22	<DL	<DL	849	<DL
MAC-255-6.13	Detrital Tourmaline	375	1	147	8	<DL	<DL	560	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	2	216	40	<DL	<DL	3,396	<DL
MAC-246-333.8	APS	22,899	<DL	24	6	4	15	1,779	<DL
MAC-246-508.8	APS	22,552	0	<DL	145	17	90	3,468	1
MAC-246-508.8	APS	15,854	<DL	<DL	52	6	25	1,058	3
MAC-252-342.5	APS	73,171	<DL	<DL	40	99	552	124,056	<DL
MAC-252-342.5	APS	16,862	<DL	<DL	28	11	47	2,642	<DL
MAC-252-342.5	APS	16,094	<DL	<DL	16	7	51	2,258	<DL
MAC-252-342.5	APS	32,033	<DL	32	18	10	17	4,883	<DL
MAC-253-382	APS	28,058	1	575	11	4	9	5,450	<DL
MAC-253-382	APS	27,310	1	940	24	5	7	4,592	<DL
MAC-253-382	APS	16,329	2	395	10	4	4	5,925	<DL
MAC-253-507.5	APS	5,095	1	16	5	7	6	679	1
MAC-253-507.5	APS	7,558	1	14	6	4	6	295	0
MAC-253-507.5	APS	24,136	10	1,357	31	30	69	5,415	5
MAC-255-559	APS	13,392	<DL	1,246	19	15	22	5,056	8
MAC-255-559	APS	11,718	<DL	1,121	33	23	24	5,147	12
MC-336-570.5	APS	80,990	<DL	118	20	27	<DL	7,084	<DL
MC-434-328.83	APS	52,080	<DL	334	11	25	20	2,328	<DL
MC-434-328.83	APS	34,389	<DL	256	38	41	11	2,145	<DL
MC-434-328.83	APS	57,690	<DL	<DL	27	38	14	2,134	<DL

Appendix K
LA-ICP-MS Analytical Data

Sample No.	Mineral	44Ca SD (ppm)	45Sc SD (ppm)	47Ti SD (ppm)	51V SD (ppm)	52Cr SD (ppm)	55Mn SD (ppm)	57Fe SD (ppm)	59Co SD (ppm)
MC-434-328.83	APS	46,609	<DL	<DL	36	37	13	1,679	1
MC-434-328.83	APS	45,150	<DL	<DL	28	26	21	1,503	1
MAC-255-559	Monazite	3,032	12	275	7	3	<DL	28,668	36
MAC-255-559	Monazite	237	96	42	26	7	10	1,673	7
MAC-255-559	Monazite	903	19	1,340	20	<DL	<DL	12,927	9
MC-413-603.83	Monazite	12,855	106	1,181	69	98	53	10,888	1,121
MC-413-603.83	Monazite	13,406	36	767	77	56	64	5,309	105
MC-413-603.83	Monazite	23,855	44	175	45	39	44	7,552	3,678
MAC-255-564.36	Apatite	100,959	<DL	148	281	11	<DL	2,929	<DL
MAC-255-564.36	Apatite	41,629	<DL	82	107	5	<DL	2,458	<DL
MAC-255-564.36	Apatite	43,419	<DL	95	257	6	<DL	1,183	<DL
MAC-255-564.36	Apatite	75,211	<DL	50	130	13	<DL	27,822	16
MAC-255-564.36	Apatite	30,001	<DL	36	82	14	<DL	4,474	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	29,512	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	31,686	<DL
MAC-255-559	Pyrite	<DL	<DL	181	5	<DL	<DL	42,248	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	3	<DL	<DL	22,216	0
MC-336-564	Hematite	<DL	<DL	<DL	4	<DL	<DL	52,009	0
MC-336-564	Hematite	<DL	<DL	58	6	<DL	<DL	42,548	1
MC-413-623.78	Hematite	<DL	3	15,598	223	55	<DL	34,744	33
MC-413-623.78	Hematite	9,317	<DL	33	14	6	1,759	49,564	<DL
MC-413-623.78	Hematite	11,307	<DL	19	36	4	2,255	62,591	<DL
MC-413-623.78	Hematite	9,718	<DL	11	55	6	2,371	46,576	<DL
MC-413-623.78	Hematite	<DL	3	98,794	156	259	60	4,251	<DL
MC-413-623.78	Hematite	<DL	3	4,803	9	107	10	1,576	<DL
MC-413-623.78	Hematite	<DL	<DL	95,707	106	254	18	2,778	<DL
MC-413-623.78	Hematite	<DL	<DL	95,689	61	272	13	2,030	<DL
MC-413-623.78	Hematite	137,005	32	180,346	637	1,666	262	38,437	13
MC-413-623.78	Hematite	<DL	3	57,430	37	17	<DL	3,246	<DL
MC-413-623.78	Hematite	<DL	<DL	4,364	74	29	35	42,857	0
MAC-246-333.8	Rutile	2,155	<DL	20	9	2	4	27,588	1
MAC-246-333.8	Rutile	<DL	<DL	4	10	3	3	31,744	1
MAC-246-508.8	Rutile	<DL	<DL	69	3	<DL	<DL	19,724	0
MAC-252-342.5	Rutile	<DL	<DL	75	3	<DL	<DL	19,724	<DL
MAC-252-342.5	Rutile	<DL	<DL	54	3	<DL	<DL	21,629	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	5,261	<DL	16	28	2	11	105,638	4
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	5	28	3	11	73,346	7
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	8	30	12	10	66,150	3
MC-336-564	Fe-hydroxide vein	<DL	2	4,366	281	63	27	19,091	1
MC-336-564	Fe-hydroxide vein	<DL	<DL	<DL	131	<DL	42,642	676	17
MC-336-564	Fe-hydroxide vein	5,893	<DL	20	0	0	13	8,929	17
MC-415-197	Mn(Fe) oxide vein	<DL	1	1,412	154	29	4	3,247	<DL

Sample No.	Mineral	60Ni SD	63Cu SD	65Cu SD	66Zn SD	67Zn SD	71Ga SD	72Ge SD	75As SD	77Se SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite	7	3	3	4	<DL	4	<DL	2	<DL
MAC-208-237	C1 Chlorite	51	4	6	10	<DL	3	<DL	3	<DL
MAC-208-237	C1 Chlorite	12	31	18	58	<DL	5	<DL	8	<DL
MAC-252-271.2	C1 Chlorite	37	118	267	142	146	10	<DL	135	5
MAC-252-271.2	C1 Chlorite	53	111	35	53	56	<DL	<DL	334	5
MAC-253-325	C1 Chlorite	18	129	58	32	1,992	10	<DL	4	2
MAC-253-325	C1 Chlorite	13	8	10	<DL	<DL	4	<DL	7	2
MAC-253-325	C1 Chlorite	17	25	6	5	<DL	6	<DL	5	4
MC-413-183.26	C1 Chlorite	7	167	10	84	25	3	<DL	22	<DL
MC-413-183.26	C1 Chlorite	5	2	2	1	4	1	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	8	8	7	2	6	4	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	5	3	6	1	5	7	<DL	3	<DL
MC-413-183.26	C1 Chlorite	10	7	7	1	4	5	<DL	3	<DL
MC-413-183.26	C1 Chlorite	5	5	5	2	4	2	<DL	4	1
MAC-208-487	C2 Chlorite	8	5	4	3	7	4	<DL	<DL	1
MAC-208-487	C2 Chlorite	8	2	3	2	9	7	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	8	4	3	3	10	3	<DL	<DL	1
MAC-208-487	C2 Chlorite	13	5	5	5	9	5	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	8	11	19	<DL	<DL	8	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	11	77	70	<DL	<DL	4	0	<DL	1
MAC-208-572	C2 Chlorite	7	8	6	<DL	<DL	11	1	<DL	1
MAC-208-572	C2 Chlorite	12	8	20	<DL	<DL	5	0	<DL	1
MAC-208-572	C2 Chlorite	14	46	48	<DL	<DL	5	1	13	1
MAC-208-572	C2 Chlorite	12	10	10	<DL	<DL	3	1	20	1
MAC-246-475.33	C2 Chlorite	18	12	12	4	14	4	<DL	20	3
MAC-246-475.33	C2 Chlorite	9	5	6	4	9	5	<DL	5	<DL
MAC-246-475.33	C2 Chlorite	14	10	16	<DL	<DL	3	<DL	30	<DL
MAC-246-475.33	C2 Chlorite	16	8	8	<DL	20	4	<DL	5	<DL
MAC-255-559	C2 Chlorite	12	2	4	6	20	5	<DL	4	<DL
MAC-255-559	C2 Chlorite	26	4	4	9	19	3	<DL	5	<DL
MAC-255-559	C2 Chlorite	41	14	16	8	17	4	<DL	<DL	3
MAC-255-559	C2 Chlorite	21	4	4	7	15	5	<DL	<DL	2
MAC-255-559	C2 Chlorite	9	2	3	4	<DL	2	<DL	<DL	1
MAC-255-559	C2 Chlorite	21	3	4	4	<DL	2	<DL	<DL	1
MAC-255-559	C2 Chlorite	22	6	6	4	11	4	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	28	<DL	<DL	6	9	2	<DL	<DL	3
MAC-255-564.36	C2 Chlorite	70	<DL	3	5	11	4	<DL	<DL	2
MAC-255-564.36	C2 Chlorite	53	<DL	3	5	11	4	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	107	<DL	<DL	<DL	<DL	5	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	103	<DL	<DL	3	15	4	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	80	<DL	3	5	8	5	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	74	<DL	3	4	9	4	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	14	8	6	<DL	33	13	<DL	140	<DL
MC-336-570.5	C2 Chlorite	12	5	<DL	<DL	386	3	<DL	48	<DL
MC-336-570.5	C2 Chlorite	10	7	<DL	713	8	5	<DL	94	<DL
MC-336-570.5	C2 Chlorite	9	5	5	8	12	21	<DL	45	3
MC-336-570.5	C2 Chlorite	22	5	5	6	22	4	<DL	46	1
MC-336-570.5	C2 Chlorite	4	6	5	29	25	4	<DL	46	2
MAC-208-290.5	Illite	<DL	2	6	1	13	2	<DL	23	5
MAC-208-290.5	Illite	<DL	16	36	<DL	19	6	<DL	103	5
MAC-246-333.8	Illite	<DL	3	3	<DL	<DL	3	<DL	3	2
MAC-246-333.8	Illite	<DL	2	3	<DL	11	3	<DL	2	2
MAC-252-271.2	Illite	2	3	4	3	10	4	<DL	3	<DL
MAC-252-271.2	Illite	4	4	5	3	14	4	<DL	2	2
MAC-252-271.2	Illite	3	2	4	3	10	5	<DL	5	<DL
MAC-252-319.44	Illite	<DL	2	3	<DL	<DL	4	<DL	4	2
MAC-252-319.44	Illite	<DL	2	3	<DL	<DL	4	<DL	4	2
MAC-253-507.5	Illite	<DL	3	3	<DL	10	6	<DL	11	3
MAC-255-293.4	Illite	10	7	<DL	<DL	<DL	9	<DL	6	<DL

Sample No.	Mineral	60Ni SD	63Cu SD	65Cu SD	66Zn SD	67Zn SD	71Ga SD	72Ge SD	75As SD	77Se SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite	7	3	<DL	<DL	8	7	<DL	8	3
MAC-255-293.4	Illite	2	11	<DL	<DL	11	1	<DL	72	2
MAC-255-293.4	Illite	19	24	1,129	<DL	67	7	<DL	13	3
MAC-255-293.4	Illite	29	155	308	98	432	5	<DL	61	0
MAC-255-501.32	Illite	<DL	3	4	3	12	2	<DL	4	2
MAC-255-501.32	Illite	<DL	3	4	3	11	2	<DL	5	2
MAC-255-501.32	Illite	<DL	3	3	3	12	2	<DL	4	2
MAC-255-501.32	Illite	6	7	9	5	11	3	<DL	9	4
MAC-255-501.32	Illite	<DL	2	3	<DL	8	2	<DL	8	5
MAC-255-501.32	Illite	<DL	1	2	<DL	9	2	<DL	4	3
MAC-255-501.32	Illite	<DL	3	2	<DL	7	1	<DL	3	3
MC-336-506.8	Illite	9	18	20	9	62	7	<DL	231	3
MC-336-506.8	Illite	<DL	10	19	6	2,437	4	<DL	427	5
MC-336-506.8	Illite	29	4,579	1,559	1,501	479	3	<DL	197	4
MC-336-570.5	Illite	<DL	5	6	<DL	29	10	<DL	111	3
MC-338-101	Illite	<DL	91	23	<DL	<DL	6	<DL	12	6
MC-338-101	Illite	<DL	9	8	<DL	143	7	<DL	<DL	3
MC-338-101	Illite	<DL	21	13	<DL	<DL	6	<DL	<DL	3
MC-338-101	Illite	<DL	30	9	<DL	<DL	6	<DL	7	3
MC-338-319	Illite	<DL	5	6	<DL	10	5	<DL	<DL	<DL
MC-338-319	Illite	<DL	10	5	<DL	14	7	<DL	<DL	<DL
MC-338-319	Illite	<DL	6	5	<DL	9	4	<DL	<DL	2
MC-338-319	Illite	<DL	8	7	<DL	11	4	<DL	<DL	<DL
MC-338-559	Illite	<DL	9	9	7	11	4	<DL	46	3
MC-338-559	Illite	<DL	24	26	6	47	<DL	<DL	162	<DL
MC-338-559	Illite	<DL	14	91	9	23	<DL	<DL	480	3
MC-413-299	Illite	<DL	15	18	<DL	13	<DL	<DL	6	<DL
MC-413-299	Illite	<DL	6	7	<DL	9	3	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	2	<DL	<DL	<DL	5	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	8	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	5	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	5	<DL	<DL	<DL	2	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	4	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	2	<DL	<DL	<DL	3	<DL	<DL	3
MC-413-603.83	Illite	<DL	2	<DL	<DL	<DL	2	<DL	<DL	2
MC-434-253.64	Illite	<DL	6	7	<DL	<DL	4	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	6	5	<DL	<DL	13	<DL	78	<DL
MC-434-253.64	Illite	<DL	2	3	<DL	<DL	14	<DL	<DL	2
MC-434-54.07	Illite	<DL	4	11	<DL	15	11	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	72	14	<DL	38	13	<DL	<DL	5
MAC-246-508.8	Drv Veins	5	8	30	<DL	<DL	11	<DL	7	3
MAC-246-508.8	Drv Veins	5	9	13	<DL	14	5	<DL	4	3
MAC-246-508.8	Drv Veins	3	11	5	<DL	12	14	<DL	3	2
MAC-246-508.8	Drv Veins	3	16	15	<DL	9	8	<DL	5	2
MAC-253-265.3	Drv Veins	4	5	4	<DL	<DL	4	<DL	<DL	2
MAC-253-265.3	Drv Veins	8	3	4	<DL	5	4	<DL	<DL	1
MAC-253-265.3	Drv Veins	11	4	591	515	623	7	<DL	30	1
MAC-253-265.3	Drv Veins	13	5	4	<DL	6	7	1	<DL	1
MAC-253-265.3	Drv Veins	13	6	6	<DL	6	6	<DL	<DL	1
MAC-253-538	Drv Veins	<DL	58	71	778	738	<DL	<DL	204	<DL
MAC-253-538	Drv Veins	<DL	47	4	<DL	<DL	<DL	<DL	126	<DL
MAC-253-538	Drv Veins	<DL	8	9	<DL	<DL	<DL	<DL	205	<DL
MAC-253-538	Drv Veins	<DL	11	10	<DL	<DL	<DL	<DL	158	<DL
MAC-253-538	Drv Veins	<DL	5	5	<DL	<DL	<DL	<DL	78	<DL
MC-344-100.1	Drv Veins	4	12	53	196	77	13	<DL	90	5
MC-344-100.1	Drv Veins	5	34	9	<DL	<DL	7	<DL	130	2
MC-344-100.1	Drv Veins	11	31	34	1,422	1,087	10	2	113	2
MC-344-100.1	Drv Veins	10	20	35	<DL	<DL	12	2	156	<DL

Sample No.	Mineral	60Ni SD (ppm)	63Cu SD (ppm)	65Cu SD (ppm)	66Zn SD (ppm)	67Zn SD (ppm)	71Ga SD (ppm)	72Ge SD (ppm)	75As SD (ppm)	77Se SD (ppm)
MC-344-100.1	Drv Veins	8	16	26	<DL	179	94	<DL	261	<DL
MC-344-100.1	Drv Veins	4	24	7	<DL	<DL	18	2	228	<DL
MC-344-100.1	Drv Veins	6	18	18	<DL	<DL	6	2	195	<DL
MC-415-497.66	Drv Veins	9	3	4	<DL	<DL	3	3	<DL	2
MC-415-497.66	Drv Veins	6	3	3	<DL	<DL	3	3	<DL	1
MC-415-497.66	Drv Veins	2	4	5	<DL	<DL	3	4	<DL	<DL
MC-415-497.66	Drv Veins	2	4	4	<DL	<DL	3	3	<DL	<DL
MAC-208-10.2	Interstitial Drv	15	201	54	587	15	20	<DL	21	1
MAC-208-10.2	Interstitial Drv	2	2	9	<DL	<DL	7	<DL	5	<DL
MAC-208-572	Interstitial Drv	6	9	10	<DL	<DL	7	0	<DL	<DL
MAC-208-572	Interstitial Drv	5	4	5	<DL	390	6	1	<DL	<DL
MAC-208-572	Interstitial Drv	11	9	6	<DL	<DL	8	0	<DL	1
MAC-208-572	Interstitial Drv	11	3	4	285	<DL	6	0	<DL	2
MAC-208-572	Interstitial Drv	10	10	10	<DL	<DL	5	0	<DL	<DL
MAC-246-142.86	Interstitial Drv	13	303	49	13	<DL	1	<DL	2	<DL
MAC-246-142.86	Interstitial Drv	5	5	5	8	<DL	4	<DL	2	1
MAC-246-142.86	Interstitial Drv	6	3	3	1	<DL	4	<DL	10	<DL
MAC-246-142.86	Interstitial Drv	4	134	8	5	<DL	7	<DL	5	1
MAC-246-142.86	Interstitial Drv	6	5	5	<DL	<DL	7	<DL	14	<DL
MAC-246-213.43	Interstitial Drv	11	82	90	101	<DL	7	<DL	<DL	4
MAC-246-213.43	Interstitial Drv	4	3	2	<DL	<DL	2	<DL	80	2
MAC-246-213.43	Interstitial Drv	3	3	5	<DL	76	2	<DL	42	2
MAC-246-4.33	Interstitial Drv	5	20	0	<DL	<DL	2	4	27	1
MAC-246-4.33	Interstitial Drv	12	815	35,481	<DL	69	5	1	56	<DL
MAC-246-4.33	Interstitial Drv	5	5	27	<DL	<DL	16	<DL	2	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	12	<DL	<DL	2	<DL	<DL	4
MAC-246-475.33	Interstitial Drv	3	<DL	10	<DL	<DL	2	<DL	<DL	2
MAC-246-475.33	Interstitial Drv	13	15	13	<DL	<DL	8	<DL	<DL	3
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	2	<DL	<DL	3
MAC-246-475.33	Interstitial Drv	<DL	568	<DL	<DL	<DL	2	<DL	<DL	4
MAC-246-475.33	Interstitial Drv	6	<DL	5	<DL	<DL	4	<DL	<DL	2
MAC-246-475.33	Interstitial Drv	6	<DL	4	<DL	<DL	2	<DL	<DL	3
MAC-246-499.02	Interstitial Drv	5	10	12	<DL	75	10	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	10	4	5	<DL	<DL	5	<DL	69	<DL
MAC-252-199.86	Interstitial Drv	3	4	5	4	<DL	13	<DL	75	<DL
MAC-252-342.5	Interstitial Drv	5	2	4	<DL	176	7	<DL	<DL	3
MAC-252-342.5	Interstitial Drv	4	5	5	<DL	12	4	<DL	3	2
MAC-252-342.5	Interstitial Drv	<DL	<DL	7	<DL	<DL	<DL	<DL	57	5
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	18	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	33	<DL	<DL	7	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	12	<DL	<DL	5	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	8	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	10	<DL	<DL	<DL	5	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	11	3	<DL	<DL	<DL	8	<DL	29	<DL
MAC-253-205	Interstitial Drv	4	3	6	<DL	<DL	33	1	<DL	1
MAC-253-205	Interstitial Drv	7	8	5	<DL	<DL	11	1	<DL	1
MAC-253-205	Interstitial Drv	8	8	7	<DL	<DL	12	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	10	5	6	<DL	<DL	10	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	10	9	8	196	<DL	13	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	4	6	5	<DL	<DL	6	<DL	208	<DL
MAC-253-205	Interstitial Drv	17	11	58	93	<DL	21	<DL	<DL	3
MAC-253-265.3	Interstitial Drv	3	1	3	<DL	<DL	3	<DL	<DL	2
MAC-253-265.3	Interstitial Drv	5	12	2	<DL	101	6	<DL	<DL	2
MAC-253-265.3	Interstitial Drv	10	59	174	<DL	<DL	9	<DL	<DL	1
MAC-255-6.13	Interstitial Drv	<DL	15	12	<DL	<DL	5	<DL	8	<DL
MAC-255-6.13	Interstitial Drv	<DL	10	<DL	<DL	<DL	9	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	11	<DL	<DL	<DL	15	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	11	<DL	<DL	<DL	13	<DL	99	<DL
MC-338-537.64	Interstitial Drv	2	<DL	<DL	<DL	<DL	2	<DL	91	3

Sample No.	Mineral	60Ni SD (ppm)	63Cu SD (ppm)	65Cu SD (ppm)	66Zn SD (ppm)	67Zn SD (ppm)	71Ga SD (ppm)	72Ge SD (ppm)	75As SD (ppm)	77Se SD (ppm)
MC-338-537.64	Interstitial Drv	4	5	7	<DL	10	11	<DL	146	1
MC-338-537.64	Interstitial Drv	8	6	7	<DL	14	3	<DL	223	1
MC-338-537.64	Interstitial Drv	5	6	31	<DL	39	5	<DL	231	1
MC-338-537.64	Interstitial Drv	6	6	9	<DL	245	4	<DL	<DL	3
MC-338-537.64	Interstitial Drv	4	5	5	<DL	9	4	<DL	12	2
MC-344-179.8	Interstitial Drv	7	4	5	<DL	<DL	10	2	<DL	1
MC-344-179.8	Interstitial Drv	9	3	10	<DL	<DL	10	2	<DL	<DL
MC-344-179.8	Interstitial Drv	4	7	69	<DL	334	9	1	<DL	2
MC-344-179.8	Interstitial Drv	6	7	3	<DL	<DL	7	1	<DL	1
MC-413-258.26	Interstitial Drv	2	5	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	28	5	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	1	3	<DL	<DL	3	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	3	4	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	2	3	<DL	<DL	8	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	9	4	<DL	<DL	9	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	4	3	<DL	<DL	9	<DL	<DL	<DL	<DL
MC-413-649	Interstitial Drv	5	<DL	<DL	<DL	<DL	4	<DL	<DL	2
MC-415-173.4	Interstitial Drv	4	4	52	<DL	7	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	3	4	140	<DL	6	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	4	5	<DL	<DL	7	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	37	7	20	<DL	12	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	3	3	<DL	<DL	3	<DL	<DL	<DL
MC-415-389	Interstitial Drv	3	3	3	<DL	<DL	3	1	<DL	<DL
MC-415-389	Interstitial Drv	2	2	56	<DL	<DL	2	1	<DL	<DL
MC-415-389	Interstitial Drv	<DL	3	4	<DL	<DL	3	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	4	4	<DL	<DL	3	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	4	4	<DL	<DL	5	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	4	5	4	<DL	<DL	5	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	4	11	<DL	<DL	7	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	9	3	3	<DL	<DL	3	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	2	2	3	<DL	<DL	2	<DL	<DL	<DL
MC-415-490.78	Interstitial Drv	6	3	3	<DL	<DL	5	2	<DL	2
MC-415-490.78	Interstitial Drv	2	3	4	<DL	<DL	2	2	<DL	2
MC-415-490.78	Interstitial Drv	3	143	5	<DL	<DL	8	2	<DL	1
MC-415-490.78	Interstitial Drv	7	3	3	<DL	<DL	3	2	<DL	1
MC-415-490.78	Interstitial Drv	3	4	5	<DL	<DL	4	2	<DL	1
MAC-255-6.13	Detrital Tourmaline	<DL	21	110	<DL	372	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	76	416	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	13	8	11	59	<DL	5	<DL	25	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	10	21	<DL	<DL	4	<DL	11	<DL
MAC-246-333.8	APS	<DL	16	20	7	81	31	5	159	23
MAC-246-508.8	APS	35	162	243	333	501	180	16	260	42
MAC-246-508.8	APS	<DL	43	79	3	14	101	7	55	9
MAC-252-342.5	APS	<DL	707	452	305	569	231	35	827	71
MAC-252-342.5	APS	<DL	12	13	13	235	135	14	337	45
MAC-252-342.5	APS	<DL	56	20	36	185	156	18	207	52
MAC-252-342.5	APS	<DL	23	254	80	201	230	18	491	72
MAC-253-382	APS	<DL	3	2	5	374	70	10	309	26
MAC-253-382	APS	<DL	3	4	5	351	61	10	157	26
MAC-253-382	APS	<DL	3	4	7	364	99	7	143	43
MAC-253-507.5	APS	<DL	10	5	5	30	51	7	91	44
MAC-253-507.5	APS	<DL	6	4	1	15	104	9	134	41
MAC-253-507.5	APS	<DL	104	136	20	340	88	42	408	143
MAC-255-559	APS	27	13	16	10	34	155	13	209	18
MAC-255-559	APS	24	16	16	8	41	118	9	150	22
MC-336-570.5	APS	<DL	34	52	25	617	241	21	2,499	94
MC-434-328.83	APS	<DL	42	81	5	160	82	3	234	20
MC-434-328.83	APS	<DL	78	50	11	134	48	5	325	16
MC-434-328.83	APS	<DL	47	43	13	163	56	6	324	22

Sample No.	Mineral	60Ni SD	63Cu SD	65Cu SD	66Zn SD	67Zn SD	71Ga SD	72Ge SD	75As SD	77Se SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-434-328.83	APS	<DL	43	48	5	150	82	8	325	28
MC-434-328.83	APS	<DL	154	83	12	129	71	6	575	21
MAC-255-559	Monazite	160	84	9	62	44	504	111	135	223
MAC-255-559	Monazite	22	37	1	14	2	56	0	110	16
MAC-255-559	Monazite	51	3	46	52	74	272	78	54	201
MC-413-603.83	Monazite	504	27	27	21	119	35	7	195	26
MC-413-603.83	Monazite	65	375	363	26	204	98	15	458	56
MC-413-603.83	Monazite	1,592	220	320	37	168	92	9	141	45
MAC-255-564.36	Apatite	59	12	9	4	14	6	<DL	11	12
MAC-255-564.36	Apatite	17	15	13	<DL	15	20	<DL	31	12
MAC-255-564.36	Apatite	49	<DL	4	<DL	<DL	6	<DL	7	13
MAC-255-564.36	Apatite	75	44	34	<DL	<DL	<DL	<DL	78	11
MAC-255-564.36	Apatite	33	9	8	<DL	<DL	<DL	<DL	8	5
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	0	5	<DL
MAC-255-559	Pyrite	<DL	1	1	<DL	<DL	<DL	0	6	<DL
MAC-255-559	Pyrite	<DL	2	2	<DL	<DL	<DL	0	3	<DL
MAC-255-559	Pyrite	1	3	4	1	3	0	0	4	<DL
MC-336-564	Hematite	1	2	2	2	4	0	1	6	<DL
MC-336-564	Hematite	1	1	2	1	3	1	1	7	<DL
MC-413-623.78	Hematite	65	107	98	5	<DL	<DL	<DL	31	2
MC-413-623.78	Hematite	<DL	4	4	14	14	<DL	<DL	66	<DL
MC-413-623.78	Hematite	<DL	4	6	18	16	<DL	<DL	81	1
MC-413-623.78	Hematite	<DL	5	8	15	16	<DL	<DL	65	2
MC-413-623.78	Hematite	<DL	7	6	9	<DL	<DL	<DL	30	4
MC-413-623.78	Hematite	<DL	29	7	1	17	<DL	<DL	5	2
MC-413-623.78	Hematite	<DL	14	7	6	10	<DL	<DL	5	<DL
MC-413-623.78	Hematite	<DL	6	6	13	12	<DL	<DL	4	<DL
MC-413-623.78	Hematite	27	561	181,207	26	286	<DL	<DL	1,583	21
MC-413-623.78	Hematite	<DL	8	12	9	35	<DL	<DL	15	<DL
MC-413-623.78	Hematite	2	1	1	3	<DL	3	<DL	<DL	<DL
MAC-246-333.8	Rutile	3	12	13	6	9	<DL	<DL	45	1
MAC-246-333.8	Rutile	3	10	8	6	8	<DL	<DL	31	1
MAC-246-508.8	Rutile	1	1	1	<DL	3	<DL	0	3	<DL
MAC-252-342.5	Rutile	<DL	1	1	<DL	<DL	<DL	0	2	<DL
MAC-252-342.5	Rutile	<DL	1	1	<DL	<DL	<DL	0	1	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	7	15	29	108	63	<DL	<DL	138	2
MAC-246-508.8	Fe(Ti) oxide in Kao	10	18	10	16	14	<DL	<DL	62	3
MAC-246-508.8	Fe(Ti) oxide in Kao	7	20	24	16	15	<DL	<DL	88	1
MC-336-564	Fe-hydroxide vein	3	23	24	4	14	3	<DL	39	3
MC-336-564	Fe-hydroxide vein	11	205	277	33	860	2	<DL	24	1
MC-336-564	Fe-hydroxide vein	72	385	554	2	17	1	2	657	3
MC-415-197	Mn(Fe) oxide vein	3	13	23	3	17	3	<DL	6	2

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	77Ar Cl SD	82Se SD	83Kr SD	85Rb SD	88Sr SD	89Y SD	90Zr SD	93Nb SD	95Mo SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite				3	37	2	23	<DL	<DL
MAC-208-237	C1 Chlorite				2	121	2	19	<DL	<DL
MAC-208-237	C1 Chlorite				2	302	3	24	<DL	<DL
MAC-252-271.2	C1 Chlorite				6	39	<DL	80	<DL	<DL
MAC-252-271.2	C1 Chlorite				8	10	<DL	22	<DL	<DL
MAC-253-325	C1 Chlorite				2	56	<DL	10	<DL	<DL
MAC-253-325	C1 Chlorite				<DL	<DL	<DL	6	<DL	<DL
MAC-253-325	C1 Chlorite				4	<DL	<DL	4	<DL	<DL
MC-413-183.26	C1 Chlorite				<DL	<DL	<DL	5	<DL	<DL
MC-413-183.26	C1 Chlorite				<DL	<DL	<DL	1	<DL	<DL
MC-413-183.26	C1 Chlorite				<DL	<DL	<DL	2	<DL	<DL
MC-413-183.26	C1 Chlorite				<DL	<DL	<DL	1	<DL	<DL
MC-413-183.26	C1 Chlorite				<DL	<DL	<DL	2	<DL	<DL
MC-413-183.26	C1 Chlorite				<DL	<DL	<DL	1	<DL	<DL
MAC-208-487	C2 Chlorite		<DL		1	<DL	<DL	5	<DL	<DL
MAC-208-487	C2 Chlorite		<DL		1	<DL	<DL	4	<DL	<DL
MAC-208-487	C2 Chlorite		<DL		1	<DL	<DL	5	<DL	<DL
MAC-208-487	C2 Chlorite		<DL		5	64	3	25	<DL	<DL
MAC-208-572	C2 Chlorite		<DL		1	18	<DL	2	<DL	<DL
MAC-208-572	C2 Chlorite		<DL		1	10	<DL	3	<DL	<DL
MAC-208-572	C2 Chlorite		<DL		1	34	<DL	3	<DL	1
MAC-208-572	C2 Chlorite		<DL		1	26	<DL	1	<DL	<DL
MAC-208-572	C2 Chlorite		<DL		0	84	<DL	5	<DL	1
MAC-208-572	C2 Chlorite		<DL		0	75	<DL	2	<DL	0
MAC-246-475.33	C2 Chlorite				2	9	<DL	8	<DL	<DL
MAC-246-475.33	C2 Chlorite				2	13	<DL	3	<DL	<DL
MAC-246-475.33	C2 Chlorite				2	4	<DL	8	<DL	<DL
MAC-246-475.33	C2 Chlorite				3	11	<DL	21	<DL	<DL
MAC-255-559	C2 Chlorite				<DL	<DL	<DL	8	<DL	<DL
MAC-255-559	C2 Chlorite				<DL	<DL	<DL	5	<DL	<DL
MAC-255-559	C2 Chlorite				<DL	<DL	<DL	2	<DL	<DL
MAC-255-559	C2 Chlorite				<DL	<DL	<DL	1	<DL	<DL
MAC-255-559	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite				<DL	<DL	<DL	2	<DL	<DL
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite				<DL	29	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite				11	<DL	<DL	13	<DL	<DL
MC-336-570.5	C2 Chlorite		<DL		2	<DL	<DL	7	<DL	<DL
MC-336-570.5	C2 Chlorite		<DL		2	10	<DL	11	<DL	<DL
MC-336-570.5	C2 Chlorite				<DL	9	<DL	4	<DL	<DL
MC-336-570.5	C2 Chlorite				<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite				<DL	<DL	<DL	3	<DL	<DL
MAC-208-290.5	Illite				4	11	<DL	1	<DL	<DL
MAC-208-290.5	Illite				15	12	<DL	7	<DL	<DL
MAC-246-333.8	Illite				5	<DL	<DL	9	<DL	<DL
MAC-246-333.8	Illite				6	<DL	<DL	1	<DL	<DL
MAC-252-271.2	Illite				6	<DL	<DL	2	<DL	<DL
MAC-252-271.2	Illite				6	<DL	<DL	3	<DL	<DL
MAC-252-271.2	Illite				7	<DL	<DL	4	<DL	<DL
MAC-252-319.44	Illite				4	19	<DL	5	<DL	<DL
MAC-252-319.44	Illite				8	10	<DL	6	<DL	<DL
MAC-253-507.5	Illite				2	<DL	<DL	<DL	<DL	<DL
MAC-255-293.4	Illite		<DL		11	177	<DL	27	<DL	<DL

Sample No.	Mineral	77Ar Cl SD	82Se SD	83Kr SD	85Rb SD	88Sr SD	89Y SD	90Zr SD	93Nb SD	95Mo SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite		<DL		4	485	0	24	<DL	<DL
MAC-255-293.4	Illite		<DL		1	44	2	34	<DL	<DL
MAC-255-293.4	Illite		<DL		7	103	1	56	<DL	<DL
MAC-255-293.4	Illite		<DL		6	46	<DL	46	<DL	<DL
MAC-255-501.32	Illite				4	<DL	<DL	2	<DL	<DL
MAC-255-501.32	Illite				5	<DL	<DL	4	<DL	<DL
MAC-255-501.32	Illite				4	<DL	<DL	3	<DL	<DL
MAC-255-501.32	Illite				8	9	3	21	<DL	8
MAC-255-501.32	Illite				4	<DL	<DL	9	<DL	<DL
MAC-255-501.32	Illite				3	15	0	5	<DL	<DL
MAC-255-501.32	Illite				3	10	1	8	<DL	1
MC-336-506.8	Illite				12	14	<DL	67	<DL	<DL
MC-336-506.8	Illite				6	8	<DL	50	<DL	<DL
MC-336-506.8	Illite				3	5	<DL	5	<DL	<DL
MC-336-570.5	Illite				9	<DL	<DL	9	<DL	<DL
MC-338-101	Illite				10	<DL	<DL	3	<DL	<DL
MC-338-101	Illite				7	<DL	<DL	4	<DL	<DL
MC-338-101	Illite				24	13	<DL	13	<DL	<DL
MC-338-101	Illite				4	32	<DL	16	<DL	<DL
MC-338-319	Illite				6	83	<DL	10	<DL	<DL
MC-338-319	Illite				12	22	<DL	56	<DL	<DL
MC-338-319	Illite				21	10	<DL	31	<DL	<DL
MC-338-319	Illite				6	17	<DL	25	<DL	<DL
MC-338-559	Illite				16	35	<DL	4	<DL	<DL
MC-338-559	Illite				32	65	<DL	19	<DL	<DL
MC-338-559	Illite				16	69	<DL	40	<DL	<DL
MC-413-299	Illite				10	30	<DL	<DL	<DL	<DL
MC-413-299	Illite				5	<DL	<DL	5	<DL	<DL
MC-413-603.83	Illite				8	<DL	<DL	<DL	31	<DL
MC-413-603.83	Illite				13	<DL	<DL	25	<DL	<DL
MC-413-603.83	Illite				8	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite				2	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite				3	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite				2	61	<DL	97	<DL	<DL
MC-413-603.83	Illite				4	31	<DL	20	<DL	<DL
MC-413-603.83	Illite				4	<DL	<DL	37	<DL	<DL
MC-434-253.64	Illite		<DL		6	10	<DL	2	<DL	<DL
MC-434-253.64	Illite		<DL		11	27	<DL	14	<DL	<DL
MC-434-253.64	Illite		<DL		2	33	<DL	5	<DL	<DL
MC-434-54.07	Illite				11	<DL	<DL	8	<DL	<DL
MC-434-54.07	Illite				9	<DL	<DL	12	<DL	<DL
MAC-246-508.8	Drv Veins				<DL	3	<DL	2	<DL	<DL
MAC-246-508.8	Drv Veins				<DL	2	<DL	4	<DL	<DL
MAC-246-508.8	Drv Veins				<DL	2	<DL	2	<DL	<DL
MAC-246-508.8	Drv Veins				<DL	4	<DL	7	<DL	<DL
MAC-253-265.3	Drv Veins		6		<DL	2	<DL	2	<DL	<DL
MAC-253-265.3	Drv Veins		<DL		<DL	1	<DL	4	<DL	<DL
MAC-253-265.3	Drv Veins		5		<DL	1	<DL	6	<DL	<DL
MAC-253-265.3	Drv Veins		<DL		<DL	1	<DL	3	<DL	<DL
MAC-253-265.3	Drv Veins		<DL		<DL	13	<DL	7	<DL	<DL
MAC-253-538	Drv Veins		<DL		<DL	<DL	<DL	16	<DL	<DL
MAC-253-538	Drv Veins		<DL		3	<DL	<DL	8	<DL	<DL
MAC-253-538	Drv Veins		<DL		<DL	<DL	<DL	15	<DL	<DL
MAC-253-538	Drv Veins		<DL		<DL	<DL	<DL	10	<DL	<DL
MAC-253-538	Drv Veins		<DL		<DL	<DL	<DL	7	<DL	<DL
MC-344-100.1	Drv Veins		<DL		2	8	<DL	2	<DL	<DL
MC-344-100.1	Drv Veins		<DL		3	3	<DL	16	<DL	<DL
MC-344-100.1	Drv Veins		<DL		2	4	<DL	17	<DL	<DL
MC-344-100.1	Drv Veins		<DL		3	5	<DL	18	<DL	<DL

Sample No.	Mineral	77Ar Cl SD	82Se SD	83Kr SD	85Rb SD	88Sr SD	89Y SD	90Zr SD	93Nb SD	95Mo SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-344-100.1	Drv Veins		<DL		4	28	<DL	47	<DL	<DL
MC-344-100.1	Drv Veins		<DL		4	3	<DL	10	<DL	<DL
MC-344-100.1	Drv Veins		<DL		3	6	<DL	17	<DL	<DL
MC-415-497.66	Drv Veins		<DL		<DL	1	0	12	<DL	<DL
MC-415-497.66	Drv Veins		<DL		<DL	2	0	10	<DL	<DL
MC-415-497.66	Drv Veins		<DL		<DL	3	0	14	<DL	<DL
MC-415-497.66	Drv Veins		<DL		<DL	2	<DL	14	<DL	<DL
MAC-208-10.2	Interstitial Drv		<DL		<DL	23	8	146	<DL	<DL
MAC-208-10.2	Interstitial Drv		<DL		<DL	13	5	58	<DL	<DL
MAC-208-572	Interstitial Drv		<DL		<DL	3	<DL	2	<DL	<DL
MAC-208-572	Interstitial Drv		<DL		<DL	3	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv		<DL		<DL	26	<DL	4	<DL	<DL
MAC-208-572	Interstitial Drv		<DL		<DL	2	<DL	38	<DL	<DL
MAC-208-572	Interstitial Drv		<DL		<DL	7	<DL	8	<DL	<DL
MAC-246-142.86	Interstitial Drv		<DL		<DL	11	<DL	11	<DL	<DL
MAC-246-142.86	Interstitial Drv		<DL		<DL	2	<DL	14	<DL	<DL
MAC-246-142.86	Interstitial Drv		<DL		<DL	12	<DL	26	<DL	<DL
MAC-246-142.86	Interstitial Drv		<DL		<DL	6	<DL	6	<DL	<DL
MAC-246-142.86	Interstitial Drv		<DL		<DL	8	<DL	3	<DL	<DL
MAC-246-213.43	Interstitial Drv		<DL		<DL	26	<DL	32	<DL	<DL
MAC-246-213.43	Interstitial Drv		2		<DL	43	<DL	9	<DL	<DL
MAC-246-213.43	Interstitial Drv		<DL		<DL	26	<DL	8	<DL	<DL
MAC-246-4.33	Interstitial Drv		<DL		<DL	2	4	12	<DL	<DL
MAC-246-4.33	Interstitial Drv		<DL		<DL	11	<DL	7	<DL	<DL
MAC-246-4.33	Interstitial Drv		<DL		<DL	9	<DL	14	<DL	<DL
MAC-246-475.33	Interstitial Drv		<DL		<DL	<DL	<DL	3	<DL	<DL
MAC-246-475.33	Interstitial Drv		<DL		<DL	<DL	<DL	4	<DL	<DL
MAC-246-475.33	Interstitial Drv				<DL	2	<DL	7	<DL	<DL
MAC-246-475.33	Interstitial Drv		<DL		<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv		<DL		<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv		<DL		<DL	3	<DL	2	<DL	<DL
MAC-246-475.33	Interstitial Drv		<DL		<DL	<DL	<DL	3	<DL	<DL
MAC-246-499.02	Interstitial Drv		<DL		<DL	4	<DL	8	<DL	4
MAC-252-199.86	Interstitial Drv		<DL		<DL	10	<DL	6	<DL	<DL
MAC-252-199.86	Interstitial Drv		<DL		1	14	<DL	3	<DL	<DL
MAC-252-342.5	Interstitial Drv				<DL	6	<DL	6	<DL	<DL
MAC-252-342.5	Interstitial Drv				<DL	8	<DL	5	<DL	<DL
MAC-252-342.5	Interstitial Drv		<DL		<DL	<DL	<DL	92	<DL	<DL
MAC-252-342.5	Interstitial Drv		<DL		<DL	66	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv		<DL		<DL	<DL	<DL	10	<DL	<DL
MAC-252-342.5	Interstitial Drv		<DL		<DL	<DL	<DL	4	<DL	<DL
MAC-252-55.65	Interstitial Drv		<DL		<DL	12	<DL	5	<DL	<DL
MAC-252-55.65	Interstitial Drv		<DL		<DL	<DL	<DL	11	<DL	<DL
MAC-252-55.65	Interstitial Drv		<DL		<DL	25	<DL	12	<DL	<DL
MAC-253-205	Interstitial Drv		<DL		<DL	5	3	37	<DL	<DL
MAC-253-205	Interstitial Drv		<DL		<DL	11	2	52	<DL	<DL
MAC-253-205	Interstitial Drv		<DL		<DL	4	1	22	<DL	<DL
MAC-253-205	Interstitial Drv		<DL		<DL	5	3	32	<DL	<DL
MAC-253-205	Interstitial Drv		<DL		<DL	6	2	29	<DL	<DL
MAC-253-205	Interstitial Drv		<DL		3	9	<DL	35	<DL	<DL
MAC-253-205	Interstitial Drv		<DL		<DL	32	<DL	18	<DL	<DL
MAC-253-265.3	Interstitial Drv		<DL		<DL	1	<DL	1	<DL	<DL
MAC-253-265.3	Interstitial Drv		17		1	2	<DL	1	<DL	<DL
MAC-253-265.3	Interstitial Drv		<DL		1	3	<DL	8	<DL	<DL
MAC-255-6.13	Interstitial Drv		<DL		<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv		<DL		<DL	19	<DL	71	<DL	<DL
MAC-255-6.13	Interstitial Drv		<DL		<DL	<DL	8	117	<DL	<DL
MAC-255-6.13	Interstitial Drv		<DL		<DL	<DL	17	126	<DL	<DL
MC-338-537.64	Interstitial Drv		<DL		<DL	3	<DL	9	<DL	<DL

Sample No.	Mineral	77Ar Cl SD (ppm)	82Se SD (ppm)	83Kr SD (ppm)	85Rb SD (ppm)	88Sr SD (ppm)	89Y SD (ppm)	90Zr SD (ppm)	93Nb SD (ppm)	95Mo SD (ppm)
MC-338-537.64	Interstitial Drv		<DL		4	4	<DL	12	<DL	<DL
MC-338-537.64	Interstitial Drv		<DL		6	5	<DL	13	<DL	<DL
MC-338-537.64	Interstitial Drv		<DL		7	6	<DL	14	<DL	<DL
MC-338-537.64	Interstitial Drv		<DL		<DL	3	<DL	5	<DL	<DL
MC-338-537.64	Interstitial Drv		<DL		<DL	2	<DL	10	<DL	<DL
MC-344-179.8	Interstitial Drv		<DL		<DL	32	<DL	11	<DL	<DL
MC-344-179.8	Interstitial Drv		<DL		<DL	75	3	23	<DL	<DL
MC-344-179.8	Interstitial Drv		<DL		<DL	58	2	36	<DL	<DL
MC-344-179.8	Interstitial Drv		<DL		<DL	52	<DL	20	<DL	<DL
MC-413-258.26	Interstitial Drv		33		2	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv		39		7	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv		41		17	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv		67		6	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv		75		4	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv		56		4	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv		9		2	<DL	<DL	<DL	<DL	<DL
MC-413-649	Interstitial Drv		<DL		<DL	<DL	<DL	10	<DL	<DL
MC-415-173.4	Interstitial Drv		16		11	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv		13		5	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv		22		14	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv		33		31	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv		<DL		<DL	<DL	<DL	5	<DL	<DL
MC-415-389	Interstitial Drv		<DL		<DL	4	<DL	5	<DL	<DL
MC-415-389	Interstitial Drv		<DL		<DL	3	<DL	2	<DL	<DL
MC-415-389	Interstitial Drv		<DL		<DL	<DL	<DL	6	<DL	<DL
MC-415-389	Interstitial Drv		<DL		<DL	<DL	<DL	4	<DL	<DL
MC-415-432.38	Interstitial Drv		<DL		<DL	<DL	<DL	4	<DL	<DL
MC-415-432.38	Interstitial Drv		<DL		<DL	<DL	<DL	5	<DL	<DL
MC-415-432.38	Interstitial Drv		<DL		<DL	<DL	<DL	10	<DL	<DL
MC-415-432.38	Interstitial Drv		<DL		<DL	<DL	<DL	7	<DL	<DL
MC-415-432.38	Interstitial Drv		<DL		<DL	<DL	<DL	10	<DL	<DL
MC-415-490.78	Interstitial Drv		<DL		0	3	0	9	<DL	0
MC-415-490.78	Interstitial Drv		<DL		0	2	0	3	<DL	1
MC-415-490.78	Interstitial Drv		<DL		1	4	0	4	<DL	0
MC-415-490.78	Interstitial Drv		<DL		0	2	1	31	<DL	<DL
MC-415-490.78	Interstitial Drv		<DL		<DL	4	0	21	<DL	<DL
MAC-255-6.13	Detrital Tourmaline		<DL		<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline		<DL		<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline		<DL		<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline		<DL		<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	APS				<DL	12,520	22	15	<DL	<DL
MAC-246-508.8	APS				<DL	12,618	16	186	<DL	<DL
MAC-246-508.8	APS				<DL	4,529	4	23	<DL	<DL
MAC-252-342.5	APS		<DL		<DL	25,777	77	643	<DL	<DL
MAC-252-342.5	APS		<DL		4	17,423	40	634	<DL	<DL
MAC-252-342.5	APS		<DL		<DL	11,578	44	564	<DL	<DL
MAC-252-342.5	APS				<DL	17,676	77	62	<DL	<DL
MAC-253-382	APS				<DL	12,513	21	10	<DL	<DL
MAC-253-382	APS				3	11,081	49	29	<DL	<DL
MAC-253-382	APS				4	7,600	27	25	<DL	<DL
MAC-253-507.5	APS				1	1,266	7	15	<DL	<DL
MAC-253-507.5	APS				1	4,700	9	15	<DL	<DL
MAC-253-507.5	APS				13	14,338	62	238	<DL	<DL
MAC-255-559	APS				<DL	3,639	34	224	<DL	<DL
MAC-255-559	APS				<DL	1,909	49	611	<DL	<DL
MC-336-570.5	APS				8	18,422	18	665	<DL	<DL
MC-434-328.83	APS				<DL	27,128	15	31	<DL	<DL
MC-434-328.83	APS				<DL	19,711	16	40	<DL	<DL
MC-434-328.83	APS				<DL	23,689	38	76	<DL	<DL

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	77Ar Cl SD (ppm)	82Se SD (ppm)	83Kr SD (ppm)	85Rb SD (ppm)	88Sr SD (ppm)	89Y SD (ppm)	90Zr SD (ppm)	93Nb SD (ppm)	95Mo SD (ppm)
MC-434-328.83	APS				<DL	22,994	39	49	<DL	<DL
MC-434-328.83	APS				<DL	20,644	22	46	<DL	<DL
MAC-255-559	Monazite				<DL	482	2,665	863	<DL	13
MAC-255-559	Monazite				<DL	2,338	377	11,678	<DL	0
MAC-255-559	Monazite				<DL	378	1,499	1,717	<DL	4
MC-413-603.83	Monazite				<DL	6,071	160	12,478	<DL	7
MC-413-603.83	Monazite				<DL	4,240	98	4,640	<DL	63
MC-413-603.83	Monazite				<DL	1,637	43	5,136	<DL	9
MAC-255-564.36	Apatite				<DL	250	71	55	<DL	6
MAC-255-564.36	Apatite				<DL	1,068	199	12	<DL	11
MAC-255-564.36	Apatite				<DL	190	47	15	<DL	14
MAC-255-564.36	Apatite				<DL	91	104	12	<DL	8
MAC-255-564.36	Apatite				<DL	32	55	<DL	<DL	5
MAC-255-559	Pyrite		<DL		<DL	<DL	<DL	<DL	<DL	0
MAC-255-559	Pyrite		<DL		<DL	<DL	<DL	<DL	<DL	1
MAC-255-559	Pyrite		<DL		<DL	<DL	<DL	11	<DL	1
MAC-255-559	Pyrite		<DL		0	6	<DL	7	<DL	6
MC-336-564	Hematite		<DL		1	6	<DL	12	<DL	10
MC-336-564	Hematite		<DL		0	1	<DL	47	<DL	4
MC-413-623.78	Hematite				<DL	58	3	19	79	11
MC-413-623.78	Hematite				<DL	<DL	<DL	4	<DL	<DL
MC-413-623.78	Hematite				<DL	<DL	<DL	6	<DL	<DL
MC-413-623.78	Hematite				<DL	<DL	<DL	5	<DL	<DL
MC-413-623.78	Hematite				<DL	27	3	47	1,280	2
MC-413-623.78	Hematite				<DL	42	2	39	895	1
MC-413-623.78	Hematite				<DL	11	<DL	23	619	<DL
MC-413-623.78	Hematite				<DL	53	<DL	23	945	<DL
MC-413-623.78	Hematite				35	564	29	997	1,367	<DL
MC-413-623.78	Hematite				<DL	246	<DL	49	631	3
MC-413-623.78	Hematite				<DL	19	<DL	19	26	1
MAC-246-333.8	Rutile	<DL	<DL	<DL	1	1	1	14	<DL	1
MAC-246-333.8	Rutile	<DL	<DL	<DL	1	5	0	14	<DL	2
MAC-246-508.8	Rutile	<DL	<DL	<DL	0	3	<DL	9	<DL	1
MAC-252-342.5	Rutile	<DL	<DL	<DL	0	<DL	<DL	5	<DL	1
MAC-252-342.5	Rutile	<DL	<DL	<DL	0	<DL	<DL	1	<DL	0
MAC-246-508.8	Fe(Ti) oxide in Kao				2	<DL	<DL	16	<DL	4
MAC-246-508.8	Fe(Ti) oxide in Kao				<DL	<DL	<DL	11	<DL	2
MAC-246-508.8	Fe(Ti) oxide in Kao				<DL	<DL	<DL	31	<DL	3
MC-336-564	Fe-hydroxide vein				<DL	<DL	10	284	19	20
MC-336-564	Fe-hydroxide vein		<DL		1	12	13	14	<DL	13
MC-336-564	Fe-hydroxide vein				<DL	597	426	329	<DL	0
MC-415-197	Mn(Fe) oxide vein				<DL	<DL	2	44	6	4

Sample No.	Mineral	101Ru SD (ppm)	103Rh SD (ppm)	105Pd SD (ppm)	107Ag SD (ppm)	111Cd SD (ppm)	115In SD (ppm)	118Sn SD (ppm)	121Sb SD (ppm)	125Te SD (ppm)	133Cs SD (ppm)
MAC-208-237	C1 Chlorite				<DL		<DL	<DL	<DL		
MAC-208-237	C1 Chlorite				<DL		<DL	<DL	<DL		
MAC-208-237	C1 Chlorite				<DL		<DL	<DL	<DL		
MAC-252-271.2	C1 Chlorite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-271.2	C1 Chlorite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-253-325	C1 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-325	C1 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-325	C1 Chlorite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite		<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite		<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite		<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite		<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite		<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-183.26	C1 Chlorite		<DL	<DL	<DL		<DL	<DL	<DL		
MAC-208-487	C2 Chlorite				<DL		<DL	<DL	<DL		
MAC-208-487	C2 Chlorite				<DL		<DL	<DL	<DL		
MAC-208-487	C2 Chlorite				<DL		<DL	<DL	<DL		
MAC-208-487	C2 Chlorite				<DL		<DL	<DL	<DL		
MAC-208-572	C2 Chlorite				<DL		<DL	1	<DL		
MAC-208-572	C2 Chlorite				<DL		<DL	0	<DL		
MAC-208-572	C2 Chlorite				<DL		<DL	0	<DL		
MAC-208-572	C2 Chlorite				<DL		<DL	0	<DL		
MAC-208-572	C2 Chlorite				<DL		<DL	1	<DL		
MAC-208-572	C2 Chlorite				<DL		<DL	1	<DL		
MAC-246-475.33	C2 Chlorite				<DL		<DL	2	<DL		
MAC-246-475.33	C2 Chlorite				<DL		<DL	1	<DL		
MAC-246-475.33	C2 Chlorite				<DL		<DL	1	<DL		
MAC-246-475.33	C2 Chlorite				<DL		<DL	3	<DL		
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	C2 Chlorite			<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	1	<DL		
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	1	<DL		
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	2	<DL		
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	2	<DL		
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	<DL	<DL		
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	1	<DL		
MAC-255-564.36	C2 Chlorite				<DL	<DL	<DL	1	<DL		
MC-336-570.5	C2 Chlorite				<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite				<DL		<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite				<DL		<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite				<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite				<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	C2 Chlorite				<DL	<DL	<DL	<DL	<DL		
MAC-208-290.5	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-208-290.5	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-333.8	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-333.8	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-271.2	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-271.2	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-271.2	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-252-319.44	Illite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-252-319.44	Illite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-507.5	Illite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-255-293.4	Illite				<DL		<DL	<DL	<DL		

Appendix K
LA-ICP-MS Analytical Data

Sample No.	Mineral	101Ru SD (ppm)	103Rh SD (ppm)	105Pd SD (ppm)	107Ag SD (ppm)	111Cd SD (ppm)	115In SD (ppm)	118Sn SD (ppm)	121Sb SD (ppm)	125Te SD (ppm)	133Cs SD (ppm)
MAC-255-293.4	Illite				<DL		<DL	<DL	<DL		
MAC-255-293.4	Illite				<DL		<DL	<DL	<DL		
MAC-255-293.4	Illite				<DL		<DL	<DL	<DL		
MAC-255-293.4	Illite				<DL		<DL	14	<DL		
MAC-255-501.32	Illite			<DL	<DL		<DL	<DL	<DL		
MAC-255-501.32	Illite			<DL	<DL		<DL	<DL	<DL		
MAC-255-501.32	Illite			<DL	<DL		<DL	<DL	<DL		
MAC-255-501.32	Illite			<DL	<DL		<DL	<DL	<DL		
MAC-255-501.32	Illite			<DL	<DL		<DL	1	<DL		
MAC-255-501.32	Illite			<DL	<DL		<DL	0	<DL		
MAC-255-501.32	Illite			<DL	<DL		<DL	1	<DL		
MC-336-506.8	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MC-336-506.8	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MC-336-506.8	Illite		<DL		<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	Illite				<DL	<DL	<DL	<DL	<DL		
MC-338-101	Illite		<DL	<DL	<DL	<DL	<DL	2	<DL		
MC-338-101	Illite		<DL	<DL	<DL	<DL	<DL	1	<DL		
MC-338-101	Illite		<DL	<DL	<DL	<DL	<DL	2	<DL		
MC-338-101	Illite		<DL	<DL	<DL	<DL	<DL	4	<DL		
MC-338-319	Illite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-338-319	Illite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-338-319	Illite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-338-319	Illite		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MC-338-559	Illite		<DL	<DL	<DL		<DL	<DL	<DL		
MC-338-559	Illite		<DL	<DL	<DL		<DL	<DL	<DL		
MC-338-559	Illite		<DL	<DL	<DL		<DL	<DL	<DL		
MC-413-299	Illite				<DL	<DL	<DL	<DL	<DL		
MC-413-299	Illite				<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite			<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite			<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite			<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite			<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite			<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite			<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite			<DL	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Illite			<DL	<DL	<DL	<DL	<DL	<DL		
MC-434-253.64	Illite				<DL		<DL	<DL	<DL		
MC-434-253.64	Illite				<DL		<DL	<DL	<DL		
MC-434-253.64	Illite				<DL		<DL	<DL	<DL		
MC-434-54.07	Illite		<DL	<DL	<DL	<DL	<DL	3	<DL		
MC-434-54.07	Illite		<DL	<DL	<DL	<DL	<DL	17	<DL		
MAC-246-508.8	Drv Veins		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-508.8	Drv Veins		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-508.8	Drv Veins		<DL		<DL	<DL	<DL	<DL	<DL		
MAC-246-508.8	Drv Veins		<DL		<DL	<DL	<DL	5	<DL		
MAC-253-265.3	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-265.3	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-265.3	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-265.3	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-265.3	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins				<DL		<DL	<DL	<DL		
MAC-253-538	Drv Veins				<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins				<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins				<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins				<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins				<DL		<DL	<DL	<DL		

Sample No.	Mineral	101Ru SD (ppm)	103Rh SD (ppm)	105Pd SD (ppm)	107Ag SD (ppm)	111Cd SD (ppm)	115In SD (ppm)	118Sn SD (ppm)	121Sb SD (ppm)	125Te SD (ppm)	133Cs SD (ppm)
MC-344-100.1	Drv Veins				<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins				<DL		<DL	<DL	<DL		
MC-344-100.1	Drv Veins				<DL		<DL	<DL	<DL		
MC-415-497.66	Drv Veins				<DL		0	0	<DL		
MC-415-497.66	Drv Veins				<DL		0	0	<DL		
MC-415-497.66	Drv Veins				<DL		<DL	0	<DL		
MC-415-497.66	Drv Veins				<DL		<DL	<DL	<DL		
MAC-208-10.2	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-208-10.2	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-208-572	Interstitial Drv				<DL		<DL	1	<DL		
MAC-208-572	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-208-572	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-208-572	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-208-572	Interstitial Drv				<DL		<DL	1	<DL		
MAC-246-142.86	Interstitial Drv				<DL		<DL	<DL	0		
MAC-246-142.86	Interstitial Drv				<DL		<DL	<DL	0		
MAC-246-142.86	Interstitial Drv				<DL		<DL	<DL	0		
MAC-246-142.86	Interstitial Drv				<DL		<DL	<DL	0		
MAC-246-142.86	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-213.43	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-213.43	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-213.43	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-4.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-4.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-4.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-475.33	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-246-499.02	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-252-199.86	Interstitial Drv				<DL		<DL	<DL	0		
MAC-252-199.86	Interstitial Drv				<DL		<DL	<DL	0		
MAC-252-342.5	Interstitial Drv				<DL	<DL	<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv				<DL	<DL	<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-252-342.5	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-252-55.65	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-252-55.65	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-252-55.65	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-205	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-265.3	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-265.3	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-253-265.3	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-255-6.13	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-255-6.13	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-255-6.13	Interstitial Drv				<DL		<DL	<DL	<DL		
MAC-255-6.13	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv				<DL		<DL	<DL	<DL		

Sample No.	Mineral	101Ru SD (ppm)	103Rh SD (ppm)	105Pd SD (ppm)	107Ag SD (ppm)	111Cd SD (ppm)	115In SD (ppm)	118Sn SD (ppm)	121Sb SD (ppm)	125Te SD (ppm)	133Cs SD (ppm)
MC-338-537.64	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-338-537.64	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-344-179.8	Interstitial Drv				<DL		<DL	1	<DL		
MC-344-179.8	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-344-179.8	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-344-179.8	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv				0		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv				0		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv				0		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv				0		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv				0		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv				1		<DL	<DL	<DL		
MC-413-258.26	Interstitial Drv				0		<DL	<DL	<DL		
MC-413-649	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-415-173.4	Interstitial Drv				0		<DL	<DL	<DL		
MC-415-173.4	Interstitial Drv				0		<DL	<DL	<DL		
MC-415-173.4	Interstitial Drv				0		<DL	<DL	<DL		
MC-415-173.4	Interstitial Drv				1		<DL	<DL	<DL		
MC-415-389	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-415-389	Interstitial Drv				<DL		<DL	0	<DL		
MC-415-389	Interstitial Drv				<DL		<DL	0	<DL		
MC-415-389	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-415-389	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-415-432.38	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-415-432.38	Interstitial Drv				<DL		<DL	0	<DL		
MC-415-432.38	Interstitial Drv				<DL		<DL	<DL	<DL		
MC-415-432.38	Interstitial Drv				<DL		<DL	1	<DL		
MC-415-432.38	Interstitial Drv				<DL		<DL	0	<DL		
MC-415-490.78	Interstitial Drv				1		0	0	<DL		
MC-415-490.78	Interstitial Drv				0		0	0	<DL		
MC-415-490.78	Interstitial Drv				0		0	1	<DL		
MC-415-490.78	Interstitial Drv				0		0	0	<DL		
MC-415-490.78	Interstitial Drv				<DL		0	1	<DL		
MAC-255-6.13	Detrital Tourmaline				<DL		<DL	<DL	<DL		
MAC-255-6.13	Detrital Tourmaline				<DL		<DL	<DL	<DL		
MAC-255-6.13	Detrital Tourmaline				<DL		<DL	<DL	<DL		
MAC-255-6.13	Detrital Tourmaline				<DL		<DL	<DL	<DL		
MAC-246-333.8	APS		<DL		<DL	<DL	<DL	4	<DL		
MAC-246-508.8	APS		<DL		<DL	<DL	<DL	7	<DL		
MAC-246-508.8	APS		<DL		<DL	<DL	<DL	1	<DL		
MAC-252-342.5	APS				<DL		<DL	<DL	<DL		
MAC-252-342.5	APS				<DL		<DL	<DL	<DL		
MAC-252-342.5	APS				<DL		<DL	<DL	<DL		
MAC-252-342.5	APS				<DL	<DL	<DL	3	<DL		
MAC-253-382	APS				<DL		<DL	2	<DL		
MAC-253-382	APS				<DL		<DL	2	<DL		
MAC-253-382	APS				<DL		<DL	1	<DL		
MAC-253-507.5	APS		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-507.5	APS		<DL	<DL	<DL	<DL	<DL	<DL	<DL		
MAC-253-507.5	APS		<DL	4	<DL	<DL	<DL	3	<DL		
MAC-255-559	APS			2	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	APS			1	<DL	<DL	<DL	<DL	<DL		
MC-336-570.5	APS				<DL	<DL	<DL	<DL	<DL		
MC-434-328.83	APS		<DL		<DL	<DL	<DL	7	<DL		
MC-434-328.83	APS		<DL		<DL	<DL	<DL	6	<DL		
MC-434-328.83	APS		<DL		<DL	<DL	<DL	3	<DL		

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	101Ru SD (ppm)	103Rh SD (ppm)	105Pd SD (ppm)	107Ag SD (ppm)	111Cd SD (ppm)	115In SD (ppm)	118Sn SD (ppm)	121Sb SD (ppm)	125Te SD (ppm)	133Cs SD (ppm)
MC-434-328.83	APS		<DL		<DL	<DL	<DL	11	<DL		
MC-434-328.83	APS		<DL		<DL	<DL	<DL	79	<DL		
MAC-255-559	Monazite			7	<DL	<DL	<DL	<DL	<DL		
MAC-255-559	Monazite			3	2	<DL	<DL	<DL	<DL		
MAC-255-559	Monazite			6	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Monazite			3	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Monazite			3	<DL	<DL	<DL	<DL	<DL		
MC-413-603.83	Monazite			6	<DL	<DL	<DL	<DL	<DL		
MAC-255-564.36	Apatite				<DL		<DL	<DL	<DL		<DL
MAC-255-564.36	Apatite				<DL		<DL	<DL	<DL		<DL
MAC-255-564.36	Apatite				<DL		<DL	<DL	<DL		<DL
MAC-255-564.36	Apatite				<DL		<DL	<DL	<DL		<DL
MAC-255-564.36	Apatite				<DL		<DL	<DL	<DL		<DL
MAC-255-559	Pyrite				<DL		<DL	<DL	<DL		
MAC-255-559	Pyrite				<DL		<DL	<DL	<DL		
MAC-255-559	Pyrite				<DL		<DL	<DL	<DL		
MAC-255-559	Pyrite				<DL		<DL	<DL	<DL		
MC-336-564	Hematite				<DL		<DL	<DL	<DL		
MC-336-564	Hematite				<DL		<DL	<DL	<DL		
MC-413-623.78	Hematite			<DL	<DL	<DL	<DL	32	<DL		
MC-413-623.78	Hematite				<DL		<DL	<DL	<DL		<DL
MC-413-623.78	Hematite				<DL		<DL	<DL	<DL		<DL
MC-413-623.78	Hematite				<DL		<DL	<DL	<DL		<DL
MC-413-623.78	Hematite		<DL		<DL	<DL	<DL	63	36		
MC-413-623.78	Hematite		<DL		<DL	<DL	<DL	24	8		
MC-413-623.78	Hematite				<DL	<DL	<DL	49	73		
MC-413-623.78	Hematite				<DL	<DL	<DL	46	60		
MC-413-623.78	Hematite		<DL	<DL	<DL	<DL	<DL	93	254		
MC-413-623.78	Hematite		<DL		<DL	<DL	<DL	<DL	<DL		
MC-413-623.78	Hematite				<DL		<DL	7	0		
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao			<DL	<DL		<DL	<DL	<DL		
MAC-246-508.8	Fe(Ti) oxide in Kao			<DL	<DL		<DL	<DL	<DL		
MAC-246-508.8	Fe(Ti) oxide in Kao			<DL	<DL		<DL	<DL	<DL		
MC-336-564	Fe-hydroxide vein		<DL		<DL	<DL	<DL	4	<DL		
MC-336-564	Fe-hydroxide vein				<DL		<DL	<DL	<DL		
MC-336-564	Fe-hydroxide vein				1		<DL	<DL	<DL		<DL
MC-415-197	Mn(Fe) oxide vein		<DL		<DL	<DL	<DL	1	<DL		

Sample No.	Mineral	137Ba SD (ppm)	139La SD (ppm)	140Ce SD (ppm)	141Pr SD (ppm)	146Nd SD (ppm)	147Sm SD (ppm)	153Eu SD (ppm)	155Gd SD (ppm)	157Gd SD (ppm)
MAC-208-237	C1 Chlorite	102	3	2	<DL	2	<DL	<DL	<DL	<DL
MAC-208-237	C1 Chlorite	185	4	14	<DL	2	<DL	<DL	<DL	<DL
MAC-208-237	C1 Chlorite	195	10	41	2	7	3	<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL	<DL	12	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	74	<DL	38	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	28	24	<DL	13	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	7	16	<DL	4	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	5	8	<DL	3	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	23	46	<DL	11	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	10	22	<DL	6	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	38	124	6	29	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	27	187	7	13	3	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	4	<DL	6	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	17	22	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	27	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	13	18	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	42	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	29	8	<DL	<DL	2	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	11	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	15	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	11	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	13	<DL	2	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	23	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Illite	9	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	8	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	11	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	9	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	7	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-507.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	27	51	<DL	14	<DL	<DL	<DL	<DL

Sample No.	Mineral	137Ba SD	139La SD	140Ce SD	141Pr SD	146Nd SD	147Sm SD	153Eu SD	155Gd SD	157Gd SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite	<DL	4	8	<DL	8	<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	5	5	<DL	4	<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	11	69	<DL	6	<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	10	24	<DL	4	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	8	15	<DL	6	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	26	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	6	12	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	6	14	<DL	5	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	205	<DL	6	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	49	<DL	39	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	18	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	Illite	24	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	21	11	<DL	5	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	20	17	<DL	5	<DL	<DL	<DL	<DL
MC-338-319	Illite	12	11	37	<DL	8	<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL	<DL	10	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-319	Illite	5	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-319	Illite	5	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-559	Illite	13	7	17	<DL	5	<DL	<DL	<DL	<DL
MC-338-559	Illite	40	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-559	Illite	110	<DL	43	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-299	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-299	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	18	87	<DL	10	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	21	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	61	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	27	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	43	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	32	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	18	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	99	1	5	<DL	1	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	36	0	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	21	1	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	29	1	<DL	<DL	<DL	<DL	<DL	<DL	<DL

Sample No.	Mineral	137Ba SD (ppm)	139La SD (ppm)	140Ce SD (ppm)	141Pr SD (ppm)	146Nd SD (ppm)	147Sm SD (ppm)	153Eu SD (ppm)	155Gd SD (ppm)	157Gd SD (ppm)
MC-344-100.1	Drv Veins	46	11	18	<DL	7	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	59	0	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	45	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-497.66	Drv Veins	<DL	0	0	0	0	0	<DL	0	0
MC-415-497.66	Drv Veins	<DL	0	0	0	2	0	<DL	<DL	0
MC-415-497.66	Drv Veins	<DL	0	<DL	<DL	0	<DL	<DL	<DL	0
MC-415-497.66	Drv Veins	<DL	0	<DL	<DL	0	<DL	<DL	<DL	<DL
MAC-208-10.2	Interstitial Drv	24	10	10	2	4	4	<DL	4	<DL
MAC-208-10.2	Interstitial Drv	<DL	4	12	<DL	4	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	10	24	<DL	6	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	6	11	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	4	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	4	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	21	21	<DL	4	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	7	20	<DL	5	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	17	5	143	<DL	6	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	3	3	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	3	3	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-499.02	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	12	<DL	16	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	9	<DL	4	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
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MAC-252-55.65	Interstitial Drv	<DL	<DL	7	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	6	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	1	1	<DL	1	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	2	7	<DL	2	<DL	<DL	1	<DL
MAC-253-205	Interstitial Drv	<DL	1	4	<DL	1	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	1	4	<DL	2	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	5	15	<DL	1	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	40	1	1	<DL	1	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	3	17	1	7	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL

Sample No.	Mineral	137Ba SD	139La SD	140Ce SD	141Pr SD	146Nd SD	147Sm SD	153Eu SD	155Gd SD	157Gd SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-338-537.64	Interstitial Drv	43	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	62	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	71	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	5	17	<DL	13	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	32	29	<DL	14	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	16	56	4	11	2	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	15	107	<DL	7	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	3	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-649	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-490.78	Interstitial Drv	<DL	1	2	0	0	0	0	0	0
MC-415-490.78	Interstitial Drv	<DL	0	0	0	0	0	0	0	0
MC-415-490.78	Interstitial Drv	<DL	0	0	0	0	0	0	0	0
MC-415-490.78	Interstitial Drv	<DL	0	0	0	0	0	0	0	0
MC-415-490.78	Interstitial Drv	<DL	1	2	0	1	0	<DL	0	0
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	APS	586	695	1,916	128	588	56	6	67	48
MAC-246-508.8	APS	2,437	1,725	4,620	546	1,721	151	48	108	107
MAC-246-508.8	APS	598	555	4,224	352	739	20	14	87	23
MAC-252-342.5	APS	1,787	2,578	8,015	771	2,090	330	49	210	172
MAC-252-342.5	APS	1,353	1,740	8,955	586	1,453	251	30	134	110
MAC-252-342.5	APS	865	1,897	5,305	389	1,093	245	39	181	125
MAC-252-342.5	APS	1,203	2,644	7,385	738	2,306	415	55	236	224
MAC-253-382	APS	734	830	1,567	124	490	105	16	59	60
MAC-253-382	APS	600	856	2,267	256	750	143	24	91	97
MAC-253-382	APS	366	712	2,025	248	630	124	11	63	44
MAC-253-507.5	APS	94	316	2,308	319	1,638	261	10	88	96
MAC-253-507.5	APS	30	409	4,541	465	1,533	162	5	63	72
MAC-253-507.5	APS	1,541	2,254	5,802	1,080	5,210	1,022	53	332	356
MAC-255-559	APS	155	4,465	3,740	383	782	48	5	112	20
MAC-255-559	APS	127	3,143	3,558	337	619	39	3	88	13
MC-336-570.5	APS	2,090	3,057	20,644	539	1,404	328	32	135	101
MC-434-328.83	APS	520	557	4,738	207	265	39	9	22	27
MC-434-328.83	APS	800	514	3,246	161	451	50	9	40	34
MC-434-328.83	APS	759	776	3,788	215	723	85	12	60	56

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	137Ba SD	139La SD	140Ce SD	141Pr SD	146Nd SD	147Sm SD	153Eu SD	155Gd SD	157Gd SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-434-328.83	APS	989	1,054	5,393	244	993	127	15	74	73
MC-434-328.83	APS	870	761	3,454	222	662	102	14	67	51
MAC-255-559	Monazite	233	12,266	21,830	2,657	9,957	1,807	39	1,093	1,165
MAC-255-559	Monazite	71	199	298	58	127	5	1	40	0
MAC-255-559	Monazite	27	7,073	11,690	1,539	5,537	1,044	79	692	803
MC-413-603.83	Monazite	474	2,561	2,064	224	859	65	13	57	34
MC-413-603.83	Monazite	783	1,449	3,261	503	1,703	199	16	104	86
MC-413-603.83	Monazite	712	1,624	7,060	376	708	111	14	76	58
MAC-255-564.36	Apatite	9	115	116	10	42	24	4	27	28
MAC-255-564.36	Apatite	59	461	653	95	375	98	17	109	103
MAC-255-564.36	Apatite	10	64	96	16	76	24	4	29	33
MAC-255-564.36	Apatite	<DL	54	70	8	29	10	2	18	17
MAC-255-564.36	Apatite	<DL	6	11	3	14	6	2	5	8
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	19	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Hematite	19	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	10	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	12	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	14	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	15	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	12	<DL	2	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	5	<DL	1	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	478	134	196	35	129	31	<DL	<DL	<DL
MC-413-623.78	Hematite	9	17	31	<DL	19	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	8	30	<DL	6	<DL	<DL	<DL	<DL
MAC-246-333.8	Rutile	7	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Rutile	3	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Rutile	17	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	20	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	6	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	10	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	<DL	<DL	<DL	<DL	2	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	7,551	3	6	<DL	2	1	0	4	2
MC-336-564	Fe-hydroxide vein	2	91	170	23	130	5	2	55	10
MC-415-197	Mn(Fe) oxide vein	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL

Sample No.	Mineral	159Tb SD (ppm)	163Dy SD (ppm)	165Ho SD (ppm)	166Er SD (ppm)	169Tm SD (ppm)	172Yb SD (ppm)	175Lu SD (ppm)	178Hf SD (ppm)	181Ta SD (ppm)	182W SD (ppm)
MAC-208-237	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1	<DL	<DL
MAC-208-237	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1	<DL	<DL
MAC-208-237	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	0	<DL	0	0	<DL	1	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL	<DL	0	<DL	0	0	<DL	1	<DL	<DL
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MC-336-570.5	C2 Chlorite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-507.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL	<DL	0	<DL	0	0	<DL	1	<DL	<DL

Sample No.	Mineral	159Tb SD (ppm)	163Dy SD (ppm)	165Ho SD (ppm)	166Er SD (ppm)	169Tm SD (ppm)	172Yb SD (ppm)	175Lu SD (ppm)	178Hf SD (ppm)	181Ta SD (ppm)	182W SD (ppm)
MAC-255-293.4	Illite	<DL	<DL	0	<DL	0	0	<DL	1	<DL	<DL
MAC-255-293.4	Illite	<DL	<DL	0	<DL	0	0	<DL	2	<DL	<DL
MAC-255-293.4	Illite	<DL	<DL	0	<DL	0	1	<DL	2	<DL	<DL
MAC-255-293.4	Illite	<DL	<DL	0	<DL	0	0	<DL	3	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-501.32	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-506.8	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-570.5	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
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MC-338-319	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-559	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
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MC-413-299	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-299	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
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MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1	0	<DL
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL

Sample No.	Mineral	159Tb SD (ppm)	163Dy SD (ppm)	165Ho SD (ppm)	166Er SD (ppm)	169Tm SD (ppm)	172Yb SD (ppm)	175Lu SD (ppm)	178Hf SD (ppm)	181Ta SD (ppm)	182W SD (ppm)
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MC-344-100.1	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MC-415-497.66	Drv Veins	0	0	<DL	<DL	<DL	<DL	0	0	0	0
MC-415-497.66	Drv Veins	0	<DL	<DL	<DL	<DL	<DL	0	1	0	0
MC-415-497.66	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	0	0	0	0
MC-415-497.66	Drv Veins	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	0	0
MAC-208-10.2	Interstitial Drv	<DL	2	<DL	1	<DL	<DL	<DL	3	<DL	<DL
MAC-208-10.2	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	4	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-208-572	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	23
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-499.02	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-199.86	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	0	<DL	2	0	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1	0	<DL
MAC-253-205	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL

Sample No.	Mineral	159Tb SD (ppm)	163Dy SD (ppm)	165Ho SD (ppm)	166Er SD (ppm)	169Tm SD (ppm)	172Yb SD (ppm)	175Lu SD (ppm)	178Hf SD (ppm)	181Ta SD (ppm)	182W SD (ppm)
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-649	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL	<DL	<DL	0	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-389	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-432.38	Interstitial Drv	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-415-490.78	Interstitial Drv	0	0	0	0	0	0	0	0	0	0
MC-415-490.78	Interstitial Drv	0	0	0	0	<DL	0	0	0	0	0
MC-415-490.78	Interstitial Drv	0	0	0	0	<DL	0	0	0	0	0
MC-415-490.78	Interstitial Drv	0	0	0	0	<DL	0	0	1	0	0
MC-415-490.78	Interstitial Drv	0	1	<DL	0	<DL	0	0	1	0	0
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-333.8	APS	5	10	1	2	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	APS	4	14	<DL	<DL	<DL	<DL	<DL	7	<DL	<DL
MAC-246-508.8	APS	1	2	<DL	<DL	<DL	<DL	<DL	1	<DL	<DL
MAC-252-342.5	APS	11	27	<DL	5	<DL	<DL	<DL	9	<DL	<DL
MAC-252-342.5	APS	8	17	<DL	5	<DL	<DL	<DL	8	<DL	<DL
MAC-252-342.5	APS	7	17	<DL	3	<DL	<DL	<DL	11	<DL	<DL
MAC-252-342.5	APS	15	36	4	7	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-382	APS	4	12	2	3	<DL	1	<DL	<DL	<DL	<DL
MAC-253-382	APS	6	17	2	5	<DL	1	<DL	<DL	<DL	<DL
MAC-253-382	APS	4	12	2	4	<DL	1	<DL	<DL	<DL	<DL
MAC-253-507.5	APS	6	14	<DL	2	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-507.5	APS	4	8	1	2	<DL	<DL	<DL	<DL	<DL	<DL
MAC-253-507.5	APS	25	49	3	8	<DL	<DL	<DL	6	<DL	<DL
MAC-255-559	APS	<DL	9	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	APS	<DL	11	<DL	6	<DL	11	<DL	11	<DL	<DL
MC-336-570.5	APS	<DL	<DL	<DL	<DL	<DL	<DL	<DL	19	<DL	<DL
MC-434-328.83	APS	2	7	<DL	2	<DL	<DL	<DL	3	<DL	<DL
MC-434-328.83	APS	3	8	<DL	2	<DL	<DL	<DL	1	<DL	<DL
MC-434-328.83	APS	5	13	<DL	3	<DL	<DL	<DL	2	<DL	<DL

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	159Tb SD (ppm)	163Dy SD (ppm)	165Ho SD (ppm)	166Er SD (ppm)	169Tm SD (ppm)	172Yb SD (ppm)	175Lu SD (ppm)	178Hf SD (ppm)	181Ta SD (ppm)	182W SD (ppm)
MC-434-328.83	APS	7	17	<DL	3	<DL	<DL	<DL	2	<DL	<DL
MC-434-328.83	APS	4	10	<DL	2	<DL	<DL	<DL	1	<DL	<DL
MAC-255-559	Monazite	184	839	134	233	24	131	10	6	<DL	<DL
MAC-255-559	Monazite	2	23	2	10	4	67	7	216	<DL	<DL
MAC-255-559	Monazite	75	408	76	103	13	47	8	36	<DL	<DL
MC-413-603.83	Monazite	8	34	6	26	<DL	42	<DL	312	<DL	4
MC-413-603.83	Monazite	10	46	7	17	<DL	11	<DL	79	<DL	<DL
MC-413-603.83	Monazite	5	19	3	14	<DL	17	<DL	106	<DL	5
MAC-255-564.36	Apatite	5	26	5	14	<DL	10	<DL	<DL	<DL	<DL
MAC-255-564.36	Apatite	12	40	7	17	<DL	7	<DL	<DL	<DL	<DL
MAC-255-564.36	Apatite	4	17	2	3	<DL	6	<DL	<DL	<DL	<DL
MAC-255-564.36	Apatite	3	16	4	14	<DL	14	<DL	<DL	<DL	<DL
MAC-255-564.36	Apatite	2	7	3	11	<DL	8	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-255-559	Pyrite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1
MC-336-564	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2
MC-336-564	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	3
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2	21
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2	47	66
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2	14	46
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	28	39
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	26	75
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	27	61	614
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1	10	10
MC-413-623.78	Hematite	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2	<DL
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1	<DL	<DL
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0	<DL	<DL
MAC-246-508.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	<DL	<DL	<DL	<DL	<DL	<DL	<DL	7	<DL	13
MC-336-564	Fe-hydroxide vein	0	4	1	2	0	2	<DL	<DL	<DL	<DL
MC-336-564	Fe-hydroxide vein	15	116	27	62	8	42	5	6	<DL	1
MC-415-197	Mn(Fe) oxide vein	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2	<DL	5

Sample No.	Mineral	185Re SD (ppm)	189Os SD (ppm)	193Ir SD (ppm)	195Pt SD (ppm)	197Au SD (ppm)	202Hg SD (ppm)	205Tl SD (ppm)	206Pb SD (ppm)	207Pb SD (ppm)	208Pb SD (ppm)
MAC-208-237	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-237	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-237	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	5	<DL	1,015
MAC-252-271.2	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-271.2	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	16	48	31
MAC-253-325	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	35	43
MAC-253-325	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-325	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	1	<DL
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-487	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	5	<DL	<DL
MAC-208-572	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MAC-208-572	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-208-572	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MAC-208-572	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	1	<DL	1
MAC-208-572	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	1	<DL	1
MAC-208-572	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	1	<DL	0
MAC-246-475.33	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-246-475.33	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	4	2	2
MAC-246-475.33	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	7	5	<DL
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	16	<DL	<DL
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	<DL		0	33	<DL	<DL
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	23	<DL	<DL
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	15	<DL	<DL
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	18	<DL	<DL
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	18	<DL	<DL
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	35	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	5	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	9	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	7	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	10	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	8	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	7	<DL	<DL
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	4	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	1	2	<DL
MC-336-570.5	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	2	1	<DL
MC-336-570.5	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-336-570.5	C2 Chlorite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-290.5	Illite	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-246-333.8	Illite	<DL		<DL	<DL	<DL		0	<DL	<DL	<DL
MAC-246-333.8	Illite	<DL		<DL	<DL	<DL		0	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-271.2	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL		<DL	<DL	<DL		0	<DL	<DL	<DL
MAC-252-319.44	Illite	<DL		<DL	<DL	<DL		0	<DL	<DL	<DL
MAC-253-507.5	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	185Re SD	189Os SD	193Ir SD	195Pt SD	197Au SD	202Hg SD	205Tl SD	206Pb SD	207Pb SD	208Pb SD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-293.4	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	16
MAC-255-293.4	Illite	<DL		<DL	<DL	<DL		<DL	3	2	<DL
MAC-255-293.4	Illite	<DL		<DL	<DL	<DL		<DL	2	1	<DL
MAC-255-501.32	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MAC-255-501.32	Illite	<DL		<DL	<DL	<DL		<DL	5	<DL	<DL
MAC-255-501.32	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MAC-255-501.32	Illite	<DL		<DL	<DL	<DL		<DL	13	3	5
MAC-255-501.32	Illite	<DL		<DL	<DL	<DL		<DL	6	<DL	<DL
MAC-255-501.32	Illite	<DL		<DL	<DL	<DL		<DL	3	<DL	2
MAC-255-501.32	Illite	<DL		<DL	<DL	<DL		<DL	6	3	3
MC-336-506.8	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	2
MC-336-506.8	Illite	<DL		<DL	<DL	<DL		<DL	1	2	2
MC-336-506.8	Illite	<DL		<DL	<DL	<DL		<DL	39	8	17
MC-336-570.5	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-101	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-319	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-559	Illite	<DL		<DL	<DL	<DL		<DL	<DL	1	<DL
MC-338-559	Illite	<DL		<DL	<DL	<DL		<DL	<DL	4	<DL
MC-338-559	Illite	<DL		<DL	<DL	<DL		<DL	<DL	6	<DL
MC-413-299	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-299	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MC-413-603.83	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MC-413-603.83	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MC-413-603.83	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-603.83	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MC-413-603.83	Illite	<DL		<DL	<DL	<DL		<DL	3	<DL	<DL
MC-413-603.83	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MC-413-603.83	Illite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MC-434-253.64	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-434-253.64	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-434-54.07	Illite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	<DL		<DL	3	<DL	<DL
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	<DL		<DL	5	<DL	<DL
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	<DL		<DL	3	<DL	<DL
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	<DL		<DL	8	<DL	<DL
MAC-253-265.3	Drv Veins	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-253-265.3	Drv Veins	<DL		<DL	<DL	<DL		<DL	0	<DL	<DL
MAC-253-265.3	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-265.3	Drv Veins	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-538	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-344-100.1	Drv Veins	<DL		<DL	<DL	<DL		<DL	9	31	<DL
MC-344-100.1	Drv Veins	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MC-344-100.1	Drv Veins	<DL		<DL	<DL	<DL		<DL	4	<DL	<DL
MC-344-100.1	Drv Veins	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL

Appendix K
LA-ICP-MS Analytical Data

Sample No.	Mineral	185Re SD (ppm)	189Os SD (ppm)	193Ir SD (ppm)	195Pt SD (ppm)	197Au SD (ppm)	202Hg SD (ppm)	205Tl SD (ppm)	206Pb SD (ppm)	207Pb SD (ppm)	208Pb SD (ppm)
MC-344-100.1	Drv Veins	<DL		<DL	<DL	<DL		<DL	7	4	26
MC-344-100.1	Drv Veins	<DL		<DL	<DL	<DL		<DL	3	<DL	<DL
MC-344-100.1	Drv Veins	<DL		<DL	<DL	<DL		<DL	3	<DL	<DL
MC-415-497.66	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-415-497.66	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-415-497.66	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-415-497.66	Drv Veins	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-208-10.2	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	3	9	60
MAC-208-10.2	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	3	1	<DL
MAC-208-572	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-208-572	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-208-572	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MAC-208-572	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	4	<DL	20
MAC-208-572	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-213.43	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	1
MAC-246-4.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	0	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-246-4.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	3	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-499.02	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	6	<DL	0
MAC-252-199.86	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	4	3
MAC-252-199.86	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	2	<DL
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-252-55.65	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-205	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	0	<DL	<DL
MAC-253-205	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-253-205	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-253-205	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-253-205	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-253-205	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	0	1	<DL
MAC-253-205	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	2	28	5
MAC-253-265.3	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-253-265.3	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL		<DL	0	<DL		<DL	4	<DL	<DL

Sample No.	Mineral	185Re SD (ppm)	189Os SD (ppm)	193Ir SD (ppm)	195Pt SD (ppm)	197Au SD (ppm)	202Hg SD (ppm)	205Tl SD (ppm)	206Pb SD (ppm)	207Pb SD (ppm)	208Pb SD (ppm)
MC-338-537.64	Interstitial Drv	<DL		<DL	-5	<DL		<DL	3	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL		<DL	0	<DL		<DL	3	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL		<DL	0	<DL		<DL	3	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL		<DL	0	<DL		<DL	<DL	<DL	<DL
MC-338-537.64	Interstitial Drv	<DL		<DL	0	<DL		<DL	3	<DL	<DL
MC-344-179.8	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	<DL	1
MC-344-179.8	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	4	3	4
MC-344-179.8	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	3	2	2
MC-344-179.8	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	2	2	3
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	2		1	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	2		2	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	1		0	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	1		1	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	2		1	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	2		1	<DL	<DL	<DL
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	0		0	<DL	<DL	<DL
MC-413-649	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL		<DL	<DL	9		9	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL		<DL	<DL	2		2	<DL	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL		<DL	<DL	1		2	0	<DL	<DL
MC-415-173.4	Interstitial Drv	<DL		<DL	<DL	3		6	0	<DL	<DL
MC-415-389	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	1	<DL
MC-415-389	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	0	<DL
MC-415-389	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	0	<DL
MC-415-389	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	0	<DL
MC-415-389	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	0	<DL
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	1	<DL
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	0	<DL
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	0	<DL
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	0	<DL
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	0	<DL
MC-415-490.78	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	1	0	1
MC-415-490.78	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	0	<DL	0
MC-415-490.78	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	1
MC-415-490.78	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	0
MC-415-490.78	Interstitial Drv	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MAC-246-333.8	APS	<DL		<DL	<DL	<DL		0	29	26	47
MAC-246-508.8	APS	<DL		<DL	<DL	<DL		0	696	19	61
MAC-246-508.8	APS	<DL		<DL	<DL	<DL		0	140	44	31
MAC-252-342.5	APS	<DL		<DL	<DL	<DL		<DL	322	275	451
MAC-252-342.5	APS	<DL		<DL	<DL	<DL		<DL	142	122	178
MAC-252-342.5	APS	<DL		<DL	<DL	<DL		<DL	136	125	188
MAC-252-342.5	APS	<DL		<DL	<DL	<DL		<DL	189	192	230
MAC-253-382	APS	<DL		<DL	<DL	<DL		<DL	50	65	63
MAC-253-382	APS	<DL		<DL	<DL	<DL		<DL	62	67	77
MAC-253-382	APS	<DL		<DL	<DL	<DL		<DL	67	63	61
MAC-253-507.5	APS	<DL		<DL	<DL	<DL		<DL	8	8	10
MAC-253-507.5	APS	<DL		<DL	<DL	<DL		<DL	7	5	6
MAC-253-507.5	APS	<DL		<DL	<DL	<DL		<DL	179	104	201
MAC-255-559	APS	<DL		<DL	<DL	<DL		<DL	60	6	24
MAC-255-559	APS	<DL		<DL	<DL	<DL		<DL	30	1	11
MC-336-570.5	APS	<DL		<DL	<DL	<DL		<DL	137	137	232
MC-434-328.83	APS	<DL		<DL	<DL	<DL		<DL	97	101	87
MC-434-328.83	APS	<DL		<DL	<DL	<DL		<DL	121	81	127
MC-434-328.83	APS	<DL		<DL	<DL	<DL		<DL	118	104	160

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	185Re SD (ppm)	189Os SD (ppm)	193Ir SD (ppm)	195Pt SD (ppm)	197Au SD (ppm)	202Hg SD (ppm)	205Tl SD (ppm)	206Pb SD (ppm)	207Pb SD (ppm)	208Pb SD (ppm)
MC-434-328.83	APS	<DL		<DL	<DL	<DL		<DL	178	175	285
MC-434-328.83	APS	<DL		<DL	<DL	<DL		<DL	124	113	155
MAC-255-559	Monazite	<DL		<DL	<DL	<DL		0	1,165	128	501
MAC-255-559	Monazite	<DL		<DL	<DL	<DL		0	26	1	8
MAC-255-559	Monazite	<DL		<DL	<DL	<DL		0	404	45	580
MC-413-603.83	Monazite	<DL		<DL	<DL	<DL		0	126	48	71
MC-413-603.83	Monazite	<DL		<DL	<DL	<DL		0	265	188	249
MC-413-603.83	Monazite	<DL		<DL	<DL	<DL		<DL	87	36	109
MAC-255-564.36	Apatite	<DL		<DL	<DL	<DL		<DL	49	6	7
MAC-255-564.36	Apatite	<DL		<DL	<DL	<DL		<DL	37	5	9
MAC-255-564.36	Apatite	<DL		<DL	<DL	<DL		<DL	63	8	5
MAC-255-564.36	Apatite	<DL		<DL	<DL	<DL		1	191	40	53
MAC-255-564.36	Apatite	<DL		<DL	<DL	<DL		<DL	60	10	13
MAC-255-559	Pyrite	<DL		<DL	<DL	<DL		<DL	4	<DL	<DL
MAC-255-559	Pyrite	<DL		<DL	<DL	<DL		<DL	2	<DL	<DL
MAC-255-559	Pyrite	<DL		<DL	<DL	<DL		<DL	20	<DL	<DL
MAC-255-559	Pyrite	<DL		<DL	<DL	<DL		<DL	19	<DL	<DL
MC-336-564	Hematite	<DL		<DL	<DL	<DL		<DL	15	<DL	<DL
MC-336-564	Hematite	<DL		<DL	<DL	<DL		<DL	20	<DL	<DL
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		1	562	40	34
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	17	16	23
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	10	8	9
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	<DL	<DL	<DL
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	31	<DL	28
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		0	5	9	1
MC-413-623.78	Hematite	<DL		<DL	<DL	<DL		<DL	1	1	1
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	3	1	2
MAC-246-333.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	3	1	2
MAC-246-508.8	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	15	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	8	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	<DL	<DL	<DL	<DL	3	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	<DL	<DL		<DL	9	4	5
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	<DL	<DL		<DL	12	6	9
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	<DL	<DL		<DL	8	3	4
MC-336-564	Fe-hydroxide vein	<DL		<DL	<DL	<DL		<DL	33	3	2
MC-336-564	Fe-hydroxide vein	<DL		<DL	<DL	<DL		190	<DL	611	<DL
MC-336-564	Fe-hydroxide vein	<DL		<DL	<DL	<DL		0	290	83	205
MC-415-197	Mn(Fe) oxide vein	<DL		<DL	<DL	<DL		<DL	3	<DL	<DL

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	209Bi SD	220Bkg SD	232Th SD	238U SD		7Li LOD	9Be LOD	11B LOD	23Na LOD
		(ppm)	(ppm)	(ppm)	(ppm)		(ppm)	(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite	<DL		<DL	3	LOD	11	8	6	29,923
MAC-208-237	C1 Chlorite	<DL		1	6	LOD	11	8	7	30,101
MAC-208-237	C1 Chlorite	<DL		5	15	LOD	16	12	9	43,467
MAC-252-271.2	C1 Chlorite	<DL		6	<DL	LOD	27	43	43	109,311
MAC-252-271.2	C1 Chlorite	<DL		<DL	<DL	LOD	16	26	26	66,011
MAC-253-325	C1 Chlorite	<DL		<DL	<DL	LOD	31	26	53	63,851
MAC-253-325	C1 Chlorite	<DL		<DL	<DL	LOD	41	34	68	82,873
MAC-253-325	C1 Chlorite	<DL		<DL	<DL	LOD	35	29	59	71,188
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	LOD	15	12	15	39,382
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	LOD	6	5	6	15,971
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	LOD	8	6	8	21,165
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	LOD	10	8	10	25,942
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	LOD	10	8	9	25,132
MC-413-183.26	C1 Chlorite	<DL		<DL	<DL	LOD	8	6	7	19,774
MAC-208-487	C2 Chlorite	<DL		<DL	<DL	LOD	14			
MAC-208-487	C2 Chlorite	<DL		<DL	<DL	LOD	15			
MAC-208-487	C2 Chlorite	<DL		<DL	<DL	LOD	15			
MAC-208-487	C2 Chlorite	<DL		7	3	LOD	18			
MAC-208-572	C2 Chlorite	<DL		3	1	LOD	4			
MAC-208-572	C2 Chlorite	<DL		4	0	LOD	4			
MAC-208-572	C2 Chlorite	<DL		<DL	<DL	LOD	4			
MAC-208-572	C2 Chlorite	<DL		<DL	<DL	LOD	3			
MAC-208-572	C2 Chlorite	<DL		5	0	LOD	3			
MAC-208-572	C2 Chlorite	<DL		2	0	LOD	3			
MAC-246-475.33	C2 Chlorite	<DL		<DL	2	LOD	5		59	
MAC-246-475.33	C2 Chlorite	<DL		<DL	1	LOD	4		53	
MAC-246-475.33	C2 Chlorite	<DL		<DL	2	LOD	7		83	
MAC-246-475.33	C2 Chlorite	<DL		<DL	8	LOD	6		78	
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	LOD	16	10	30	41,414
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	LOD	13	8	24	33,866
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	LOD	13	8	24	32,783
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	LOD	12	8	22	31,175
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	LOD	12	8	22	31,321
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	LOD	11	7	19	26,934
MAC-255-559	C2 Chlorite	<DL		<DL	<DL	LOD	12	7	21	29,425
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	LOD	15		31	
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	LOD	13		25	
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	LOD	12		24	
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	LOD	17		34	
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	LOD	16		32	
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	LOD	14		27	
MAC-255-564.36	C2 Chlorite	<DL		<DL	<DL	LOD	13		27	
MC-336-570.5	C2 Chlorite	<DL		<DL	<DL	LOD	30		59	
MC-336-570.5	C2 Chlorite	<DL		<DL	13	LOD	9			
MC-336-570.5	C2 Chlorite	<DL		<DL	<DL	LOD	8			
MC-336-570.5	C2 Chlorite	<DL		<DL	2	LOD	14		27	
MC-336-570.5	C2 Chlorite	<DL		<DL	3	LOD	13		27	
MC-336-570.5	C2 Chlorite	<DL		<DL	4	LOD	15		30	
MAC-208-290.5	Illite	<DL		<DL	0	LOD	8	9	11	38,071
MAC-208-290.5	Illite	<DL		<DL	<DL	LOD	20	20	25	89,278
MAC-246-333.8	Illite	<DL		<DL	<DL	LOD	20	17	316	40,160
MAC-246-333.8	Illite	<DL		<DL	<DL	LOD	13	11	203	25,891
MAC-252-271.2	Illite	<DL		<DL	<DL	LOD	8	13	12	31,790
MAC-252-271.2	Illite	<DL		<DL	<DL	LOD	8	13	13	32,474
MAC-252-271.2	Illite	<DL		<DL	<DL	LOD	8	13	12	31,675
MAC-252-319.44	Illite	<DL		<DL	<DL	LOD	15	13	25	30,421
MAC-252-319.44	Illite	<DL		<DL	<DL	LOD	17	14	28	34,258
MAC-253-507.5	Illite	<DL		<DL	<DL	LOD	15	10	0	38,486
MAC-255-293.4	Illite	<DL		4	<DL	LOD	14			

Sample No.	Mineral	209Bi SD	220Bkg SD	232Th SD	238U SD		7Li LOD	9Be LOD	11B LOD	23Na LOD
		(ppm)	(ppm)	(ppm)	(ppm)		(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite	<DL		4	<DL	LOD	9			
MAC-255-293.4	Illite	<DL		3	<DL	LOD	10			
MAC-255-293.4	Illite	<DL		5	<DL	LOD	13			
MAC-255-293.4	Illite	<DL		<DL	<DL	LOD	16			
MAC-255-501.32	Illite	<DL		<DL	<DL	LOD	15	16	42	29,604
MAC-255-501.32	Illite	<DL		<DL	<DL	LOD	13	15	38	26,675
MAC-255-501.32	Illite	<DL		<DL	<DL	LOD	13	15	38	26,397
MAC-255-501.32	Illite	<DL		3	11	LOD	15	17	44	30,754
MAC-255-501.32	Illite	<DL		<DL	3	LOD	15	17	43	30,312
MAC-255-501.32	Illite	<DL		<DL	1	LOD	13	15	39	27,406
MAC-255-501.32	Illite	<DL		4	3	LOD	13	15	39	27,035
MC-336-506.8	Illite	<DL		<DL	2	LOD	14	15	18	64,010
MC-336-506.8	Illite	<DL		<DL	<DL	LOD	15	16	19	69,472
MC-336-506.8	Illite	<DL		<DL	<DL	LOD	13	13	16	57,216
MC-336-570.5	Illite	<DL		<DL	<DL	LOD	19		39	
MC-338-101	Illite	<DL		<DL	<DL	LOD	26	17	1	67,605
MC-338-101	Illite	<DL		<DL	<DL	LOD	20	13	1	52,613
MC-338-101	Illite	<DL		<DL	<DL	LOD	35	23	1	89,851
MC-338-101	Illite	<DL		<DL	<DL	LOD	29	19	1	75,319
MC-338-319	Illite	<DL		33	<DL	LOD	18	18	33	39,329
MC-338-319	Illite	<DL		6	<DL	LOD	22	23	42	49,556
MC-338-319	Illite	<DL		2	<DL	LOD	19	20	36	43,060
MC-338-319	Illite	<DL		1	<DL	LOD	21	21	39	46,597
MC-338-559	Illite	<DL		<DL	<DL	LOD	14	11	14	36,951
MC-338-559	Illite	<DL		<DL	<DL	LOD	45	35	43	115,536
MC-338-559	Illite	<DL		<DL	<DL	LOD	36	28	34	91,794
MC-413-299	Illite	<DL		<DL	<DL	LOD	46	38	178	54,371
MC-413-299	Illite	<DL		<DL	<DL	LOD	27	23	106	32,310
MC-413-603.83	Illite	<DL		<DL	<DL	LOD	15	9	27	37,631
MC-413-603.83	Illite	<DL		<DL	<DL	LOD	20	12	36	49,761
MC-413-603.83	Illite	<DL		<DL	<DL	LOD	15	10	28	38,711
MC-413-603.83	Illite	<DL		<DL	<DL	LOD	22	14	40	55,747
MC-413-603.83	Illite	<DL		<DL	<DL	LOD	19	12	34	47,545
MC-413-603.83	Illite	<DL		49	<DL	LOD	22	14	40	55,765
MC-413-603.83	Illite	<DL		15	<DL	LOD	16	10	30	41,501
MC-413-603.83	Illite	<DL		<DL	<DL	LOD	16	10	30	41,501
MC-434-253.64	Illite	<DL		<DL	<DL	LOD	11			
MC-434-253.64	Illite	<DL		<DL	<DL	LOD	17			
MC-434-253.64	Illite	<DL		<DL	<DL	LOD	18			
MC-434-54.07	Illite	<DL		<DL	<DL	LOD	30	30	56	66,062
MC-434-54.07	Illite	<DL		<DL	<DL	LOD	30	30	56	66,015
MAC-246-508.8	Drv Veins	<DL		<DL	<DL	LOD	26	22	410	52,214
MAC-246-508.8	Drv Veins	<DL		<DL	2	LOD	20	17	313	39,797
MAC-246-508.8	Drv Veins	<DL		<DL	3	LOD	18	15	279	35,444
MAC-246-508.8	Drv Veins	<DL		<DL	3	LOD	18	15	276	35,068
MAC-253-265.3	Drv Veins	<DL		<DL	1	LOD	5			
MAC-253-265.3	Drv Veins	<DL		<DL	1	LOD	5			
MAC-253-265.3	Drv Veins	<DL		<DL	<DL	LOD	5			
MAC-253-265.3	Drv Veins	<DL		<DL	<DL	LOD	4			
MAC-253-265.3	Drv Veins	<DL		<DL	2	LOD	4			
MAC-253-538	Drv Veins	<DL		<DL	<DL	LOD	36			
MAC-253-538	Drv Veins	<DL		<DL	<DL	LOD	29			
MAC-253-538	Drv Veins	<DL		<DL	<DL	LOD	39			
MAC-253-538	Drv Veins	<DL		<DL	<DL	LOD	34			
MAC-253-538	Drv Veins	<DL		<DL	<DL	LOD	30			
MC-344-100.1	Drv Veins	<DL		1	<DL	LOD	7			
MC-344-100.1	Drv Veins	<DL		0	11	LOD	7			
MC-344-100.1	Drv Veins	<DL		1	7	LOD	8			
MC-344-100.1	Drv Veins	<DL		1	6	LOD	8			

Sample No.	Mineral	209Bi SD (ppm)	220Bkg SD (ppm)	232Th SD (ppm)	238U SD (ppm)		7Li LOD (ppm)	9Be LOD (ppm)	11B LOD (ppm)	23Na LOD (ppm)
MC-344-100.1	Drv Veins	<DL		3	4	LOD	8			
MC-344-100.1	Drv Veins	<DL		0	2	LOD	7			
MC-344-100.1	Drv Veins	<DL		0	6	LOD	9			
MC-415-497.66	Drv Veins	<DL		<DL	<DL	LOD	40			
MC-415-497.66	Drv Veins	<DL		<DL	<DL	LOD	32			
MC-415-497.66	Drv Veins	<DL		<DL	<DL	LOD	32			
MC-415-497.66	Drv Veins	<DL		<DL	<DL	LOD	30			
MAC-208-10.2	Interstitial Drv	<DL		2	17	LOD	3			
MAC-208-10.2	Interstitial Drv	<DL		2	4	LOD	6			
MAC-208-572	Interstitial Drv	<DL		<DL	<DL	LOD	3			
MAC-208-572	Interstitial Drv	<DL		1	<DL	LOD	5			
MAC-208-572	Interstitial Drv	<DL		1	<DL	LOD	4			
MAC-208-572	Interstitial Drv	<DL		<DL	1	LOD	4			
MAC-208-572	Interstitial Drv	<DL		<DL	1	LOD	3			
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	LOD	39			
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	LOD	25			
MAC-246-142.86	Interstitial Drv	<DL		2	4	LOD	23			
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	LOD	26			
MAC-246-142.86	Interstitial Drv	<DL		<DL	<DL	LOD	22			
MAC-246-213.43	Interstitial Drv	<DL		<DL	<DL	LOD	12			
MAC-246-213.43	Interstitial Drv	<DL		<DL	<DL	LOD	7			
MAC-246-213.43	Interstitial Drv	<DL		<DL	<DL	LOD	7			
MAC-246-4.33	Interstitial Drv	<DL		<DL	<DL	LOD	5			
MAC-246-4.33	Interstitial Drv	<DL		<DL	<DL	LOD	6			
MAC-246-4.33	Interstitial Drv	<DL		<DL	<DL	LOD	4			
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	LOD	21			
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	LOD	16			
MAC-246-475.33	Interstitial Drv	<DL		<DL	1	LOD	7		94	
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	LOD	19			
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	LOD	19			
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	LOD	10			
MAC-246-475.33	Interstitial Drv	<DL		<DL	<DL	LOD	14			
MAC-246-499.02	Interstitial Drv	<DL		<DL	6	LOD	4			
MAC-252-199.86	Interstitial Drv	<DL		<DL	<DL	LOD	53			
MAC-252-199.86	Interstitial Drv	<DL		<DL	<DL	LOD	38			
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	LOD	36	30	137	42,060
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	LOD	28	24	110	33,541
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	LOD	130			
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	LOD	72			
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	LOD	37			
MAC-252-342.5	Interstitial Drv	<DL		<DL	<DL	LOD	26			
MAC-252-55.65	Interstitial Drv	<DL		<DL	<DL	LOD	35			
MAC-252-55.65	Interstitial Drv	<DL		<DL	<DL	LOD	30			
MAC-252-55.65	Interstitial Drv	<DL		<DL	<DL	LOD	29			
MAC-253-205	Interstitial Drv	<DL		0	3	LOD	4			
MAC-253-205	Interstitial Drv	<DL		1	2	LOD	5			
MAC-253-205	Interstitial Drv	<DL		1	2	LOD	5			
MAC-253-205	Interstitial Drv	<DL		1	2	LOD	6			
MAC-253-205	Interstitial Drv	<DL		1	3	LOD	5			
MAC-253-205	Interstitial Drv	<DL		1	<DL	LOD	6			
MAC-253-205	Interstitial Drv	<DL		2	<DL	LOD	7			
MAC-253-265.3	Interstitial Drv	<DL		<DL	<DL	LOD	12			
MAC-253-265.3	Interstitial Drv	<DL		<DL	<DL	LOD	10			
MAC-253-265.3	Interstitial Drv	<DL		<DL	<DL	LOD	7			
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	LOD	36			
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	LOD	42			
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	LOD	40			
MAC-255-6.13	Interstitial Drv	<DL		<DL	<DL	LOD	55			
MC-338-537.64	Interstitial Drv	<DL		<DL	8	LOD	13			

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	209Bi SD (ppm)	220Bkg SD (ppm)	232Th SD (ppm)	238U SD (ppm)		7Li LOD (ppm)	9Be LOD (ppm)	11B LOD (ppm)	23Na LOD (ppm)
MC-338-537.64	Interstitial Drv	<DL		<DL	4	LOD	6			
MC-338-537.64	Interstitial Drv	<DL		<DL	6	LOD	6			
MC-338-537.64	Interstitial Drv	<DL		<DL	5	LOD	6			
MC-338-537.64	Interstitial Drv	<DL		<DL	<DL	LOD	14			
MC-338-537.64	Interstitial Drv	<DL		<DL	5	LOD	9			
MC-344-179.8	Interstitial Drv	<DL		6	1	LOD	4			
MC-344-179.8	Interstitial Drv	<DL		5	1	LOD	5			
MC-344-179.8	Interstitial Drv	<DL		7	2	LOD	4			
MC-344-179.8	Interstitial Drv	<DL		5	1	LOD	4			
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	LOD	6			
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	LOD	6			
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	LOD	4			
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	LOD	5			
MC-413-258.26	Interstitial Drv	11		<DL	<DL	LOD	3			
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	LOD	4			
MC-413-258.26	Interstitial Drv	<DL		<DL	<DL	LOD	3			
MC-413-649	Interstitial Drv	<DL		22	<DL	LOD	14			
MC-415-173.4	Interstitial Drv	<DL		<DL	<DL	LOD	4			
MC-415-173.4	Interstitial Drv	<DL		<DL	<DL	LOD	4			
MC-415-173.4	Interstitial Drv	<DL		<DL	<DL	LOD	4			
MC-415-173.4	Interstitial Drv	<DL		<DL	<DL	LOD	4			
MC-415-389	Interstitial Drv	<DL		<DL	<DL	LOD	9			
MC-415-389	Interstitial Drv	<DL		<DL	<DL	LOD	6			
MC-415-389	Interstitial Drv	<DL		<DL	<DL	LOD	6			
MC-415-389	Interstitial Drv	<DL		<DL	<DL	LOD	11			
MC-415-389	Interstitial Drv	<DL		<DL	<DL	LOD	10			
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	LOD	8			
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	LOD	6			
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	LOD	9			
MC-415-432.38	Interstitial Drv	<DL		<DL	<DL	LOD	6			
MC-415-432.38	Interstitial Drv	<DL		<DL	0	LOD	5			
MC-415-490.78	Interstitial Drv	0		<DL	<DL	LOD	64			
MC-415-490.78	Interstitial Drv	0		<DL	<DL	LOD	36			
MC-415-490.78	Interstitial Drv	0		<DL	<DL	LOD	51			
MC-415-490.78	Interstitial Drv	0		<DL	<DL	LOD	41			
MC-415-490.78	Interstitial Drv	0		<DL	<DL	LOD	30			
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	LOD	53			
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	LOD	40			
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	LOD	30			
MAC-255-6.13	Detrital Tourmaline	<DL		<DL	<DL	LOD	34			
MAC-246-333.8	APS	1		109	13	LOD	18	15	282	35,845
MAC-246-508.8	APS	<DL		31	88	LOD	61	51	944	120,103
MAC-246-508.8	APS	13		78	22	LOD	17	15	269	34,203
MAC-252-342.5	APS	<DL		1,445	36	LOD	45			
MAC-252-342.5	APS	<DL		461	7	LOD	54			
MAC-252-342.5	APS	<DL		503	9	LOD	43			
MAC-252-342.5	APS	<DL		316	15	LOD	31	26	121	37,157
MAC-253-382	APS	<DL		50	21	LOD	15	11	9	40,246
MAC-253-382	APS	<DL		74	33	LOD	13	9	7	33,365
MAC-253-382	APS	<DL		82	9	LOD	14	10	8	36,289
MAC-253-507.5	APS	<DL		18	17	LOD	62	6	0	22,074
MAC-253-507.5	APS	<DL		8	7	LOD	40	6	0	22,074
MAC-253-507.5	APS	<DL		1,065	89	LOD	37	24	1	96,725
MAC-255-559	APS	<DL		2,036	31	LOD	20	13	37	51,783
MAC-255-559	APS	<DL		533	57	LOD	22	14	41	56,493
MC-336-570.5	APS	<DL		688	33	LOD	81		162	
MC-434-328.83	APS	<DL		54	5	LOD	13	20	20	50,946
MC-434-328.83	APS	<DL		66	4	LOD	11	17	17	43,975
MC-434-328.83	APS	<DL		128	5	LOD	12	19	19	48,981

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	209Bi SD	220Bkg SD	232Th SD	238U SD			7Li LOD	9Be LOD	11B LOD	23Na LOD
		(ppm)	(ppm)	(ppm)	(ppm)			(ppm)	(ppm)	(ppm)	(ppm)
MC-434-328.83	APS	<DL		140	6		LOD	11	17	17	43,901
MC-434-328.83	APS	<DL		84	5		LOD	9	15	15	38,144
MAC-255-559	Monazite	<DL		12,613	620		LOD	11	7	21	28,786
MAC-255-559	Monazite	<DL		1,372	20		LOD	11	7	21	28,786
MAC-255-559	Monazite	<DL		5,293	181		LOD	11	7	21	28,786
MC-413-603.83	Monazite	<DL		6,510	650		LOD	31	19	56	77,837
MC-413-603.83	Monazite	<DL		26,417	671		LOD	26	17	48	66,608
MC-413-603.83	Monazite	<DL		25,996	894		LOD	34	22	62	85,986
MAC-255-564.36	Apatite	<DL		116	107		LOD	11		21	
MAC-255-564.36	Apatite	<DL		295	120		LOD	11		21	
MAC-255-564.36	Apatite	<DL		94	73		LOD	11		21	
MAC-255-564.36	Apatite	<DL		38	39		LOD	11		21	
MAC-255-564.36	Apatite	<DL		43	108		LOD	11		21	
MAC-255-559	Pyrite	<DL		<DL	<DL		LOD	3			
MAC-255-559	Pyrite	<DL		<DL	<DL		LOD	3			
MAC-255-559	Pyrite	<DL		<DL	2		LOD	3			
MAC-255-559	Pyrite	<DL		1	1		LOD	3			
MC-336-564	Hematite	<DL		<DL	1		LOD	3			
MC-336-564	Hematite	<DL		<DL	8		LOD	3			
MC-413-623.78	Hematite	<DL		65	376		LOD	11	7	21	28,786
MC-413-623.78	Hematite	<DL		<DL	<DL		LOD	11		21	
MC-413-623.78	Hematite	<DL		<DL	<DL		LOD	11		21	
MC-413-623.78	Hematite	<DL		<DL	<DL		LOD	11		21	
MC-413-623.78	Hematite	<DL		23	5		LOD	27	22	411	52,306
MC-413-623.78	Hematite	<DL		4	0		LOD	22	18	338	42,950
MC-413-623.78	Hematite	<DL		5	<DL		LOD	30	25	115	35,318
MC-413-623.78	Hematite	<DL		3	<DL		LOD	29	24	112	34,270
MC-413-623.78	Hematite	<DL		80	105		LOD	121	79	3	313,030
MC-413-623.78	Hematite	<DL		3	9		LOD	27	23	419	53,326
MC-413-623.78	Hematite	<DL		11	1		LOD	3		33	
MAC-246-333.8	Rutile	<DL	<DL	<DL	88	0	<DL	6	7	17	11,911
MAC-246-333.8	Rutile	<DL	<DL	<DL	32	0	<DL	6	7	17	11,911
MAC-246-508.8	Rutile	<DL	<DL	<DL	2	0	<DL	2	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	1	0	<DL	2	<DL	<DL	<DL
MAC-252-342.5	Rutile	<DL	<DL	<DL	0	0	<DL	2	<DL	<DL	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	97		LOD	10	11	28	19,868
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	124		LOD	10	11	28	19,868
MAC-246-508.8	Fe(Ti) oxide in Kao	<DL		<DL	130		LOD	10	11	28	19,868
MC-336-564	Fe-hydroxide vein	<DL		3	110		LOD	15	12	226	28,725
MC-336-564	Fe-hydroxide vein	<DL		<DL	8		LOD	3			
MC-336-564	Fe-hydroxide vein	1		1,999	355		LOD	11		21	
MC-415-197	Mn(Fe) oxide vein	<DL		1	22		LOD	14	12	221	28,069

Sample No.	Mineral	24Mg LOD (ppm)	27Al LOD (ppm)	29Si LOD (ppm)	31P LOD (ppm)	33S LOD (ppm)	39K LOD (ppm)	43Ca LOD (ppm)	44Ca LOD (ppm)
MAC-208-237	C1 Chlorite	105	9,908	372,371	127	1,018	1,711	22,941	18,824
MAC-208-237	C1 Chlorite	106	9,967	374,580	128	1,024	1,721	23,077	18,936
MAC-208-237	C1 Chlorite	153	14,393	540,913	184	1,479	2,485	33,324	27,345
MAC-252-271.2	C1 Chlorite	461	54,252	1,156,461	491	3,008	6,051	93,939	87,545
MAC-252-271.2	C1 Chlorite	279	32,761	698,361	296	1,816	3,654	56,727	52,866
MAC-253-325	C1 Chlorite	425	21,131	663,936	273	1,867	2,002	49,243	38,814
MAC-253-325	C1 Chlorite	552	27,425	861,725	354	2,423	2,598	63,913	50,376
MAC-253-325	C1 Chlorite	474	23,559	740,227	304	2,081	2,232	54,902	43,274
MC-413-183.26	C1 Chlorite	143	15,379	447,967	220	1,189	3,567	31,438	29,937
MC-413-183.26	C1 Chlorite	58	6,237	181,665	89	482	1,447	12,749	12,141
MC-413-183.26	C1 Chlorite	77	8,265	240,745	118	639	1,917	16,895	16,089
MC-413-183.26	C1 Chlorite	94	10,130	295,092	145	783	2,350	20,709	19,721
MC-413-183.26	C1 Chlorite	91	9,814	285,873	141	759	2,277	20,062	19,105
MC-413-183.26	C1 Chlorite	72	7,722	224,931	111	597	1,791	15,785	15,032
MAC-208-487	C2 Chlorite	321	1,681	344,603	111	0		49,355	51,161
MAC-208-487	C2 Chlorite	344	1,805	369,938	119	0		52,983	54,923
MAC-208-487	C2 Chlorite	329	1,722	352,945	114	0		50,550	52,400
MAC-208-487	C2 Chlorite	412	2,161	442,831	143	0		63,423	65,745
MAC-208-572	C2 Chlorite	92	9,341	347,905	46	0		81,103	73,152
MAC-208-572	C2 Chlorite	81	8,232	306,585	41	0		71,470	64,464
MAC-208-572	C2 Chlorite	81	8,245	307,068	41	0		71,583	64,565
MAC-208-572	C2 Chlorite	63	6,361	236,922	31	0		55,231	49,816
MAC-208-572	C2 Chlorite	61	6,157	229,297	30	0		53,453	48,213
MAC-208-572	C2 Chlorite	59	5,970	222,345	29	0		51,832	46,751
MAC-246-475.33	C2 Chlorite	83	6,712	291,533	91	934		19,612	16,613
MAC-246-475.33	C2 Chlorite	74	6,035	262,133	82	840		17,634	14,937
MAC-246-475.33	C2 Chlorite	118	9,564	415,400	129	1,331		27,945	23,671
MAC-246-475.33	C2 Chlorite	110	8,937	388,161	121	1,244		26,112	22,119
MAC-255-559	C2 Chlorite	152	12,312	411,194	310	1,003	1,597	29,310	25,493
MAC-255-559	C2 Chlorite	125	10,068	336,254	254	821	1,306	23,968	20,847
MAC-255-559	C2 Chlorite	121	9,746	325,496	245	794	1,264	23,201	20,180
MAC-255-559	C2 Chlorite	115	9,268	309,533	233	755	1,202	22,063	19,190
MAC-255-559	C2 Chlorite	115	9,312	310,988	234	759	1,208	22,167	19,280
MAC-255-559	C2 Chlorite	99	8,008	267,427	202	653	1,038	19,062	16,580
MAC-255-559	C2 Chlorite	108	8,748	292,159	220	713	1,134	20,825	18,113
MAC-255-564.36	C2 Chlorite	512	30,108	474,689	77	1,011		38,755	15,884
MAC-255-564.36	C2 Chlorite	425	24,987	393,959	64	839		32,164	13,182
MAC-255-564.36	C2 Chlorite	407	23,960	377,765	61	805		30,842	12,641
MAC-255-564.36	C2 Chlorite	568	33,399	526,578	86	1,122		42,991	17,620
MAC-255-564.36	C2 Chlorite	542	31,872	502,498	82	1,071		41,025	16,814
MAC-255-564.36	C2 Chlorite	455	26,745	421,665	69	898		34,426	14,109
MAC-255-564.36	C2 Chlorite	449	26,409	416,377	68	887		33,994	13,933
MC-336-570.5	C2 Chlorite	985	57,927	913,295	149	1,946		74,564	30,560
MC-336-570.5	C2 Chlorite	217	12,000	465,713	178	0		94,084	88,811
MC-336-570.5	C2 Chlorite	188	10,420	404,409	155	0		81,700	77,120
MC-336-570.5	C2 Chlorite	453	26,651	420,182	68	895		34,305	14,060
MC-336-570.5	C2 Chlorite	446	26,240	413,707	67	881		33,776	13,843
MC-336-570.5	C2 Chlorite	500	29,428	463,976	75	989		37,880	15,525
MAC-208-290.5	Illite	778	12,870	419,159	253	1,166	3,086	32,450	31,303
MAC-208-290.5	Illite	1,825	30,182	982,947	593	2,734	7,236	76,096	73,406
MAC-246-333.8	Illite	247	12,683	374,970	73	1,238	2,123	28,000	25,261
MAC-246-333.8	Illite	159	8,177	241,745	47	798	1,369	18,052	16,286
MAC-252-271.2	Illite	134	15,778	336,326	143	875	1,760	27,320	25,460
MAC-252-271.2	Illite	137	16,117	343,556	146	894	1,798	27,907	26,007
MAC-252-271.2	Illite	134	15,721	335,110	142	872	1,754	27,221	25,368
MAC-252-319.44	Illite	203	10,067	316,325	130	889	954	23,461	18,492
MAC-252-319.44	Illite	228	11,337	356,215	146	1,002	1,074	26,420	20,824
MAC-253-507.5	Illite	79	15,821	428,236	180	1,216	1,043	31,365	16,990
MAC-255-293.4	Illite	325	18,023	699,454	267	0		141,305	133,385

Sample No.	Mineral	24Mg LOD	27Al LOD	29Si LOD	31P LOD	33S LOD	39K LOD	43Ca LOD	44Ca LOD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite	210	11,620	450,968	172	0		91,106	85,999
MAC-255-293.4	Illite	249	13,806	535,804	205	0		108,244	102,177
MAC-255-293.4	Illite	305	16,872	654,794	250	0		132,283	124,868
MAC-255-293.4	Illite	390	21,626	839,311	321	0		169,559	160,055
MAC-255-501.32	Illite	12	9,089	359,971	151	1,039	321	22,376	19,303
MAC-255-501.32	Illite	11	8,190	324,353	136	936	289	20,162	17,393
MAC-255-501.32	Illite	11	8,105	320,974	135	927	286	19,952	17,212
MAC-255-501.32	Illite	12	9,442	373,951	157	1,080	334	23,245	20,053
MAC-255-501.32	Illite	12	9,307	368,583	155	1,064	329	22,911	19,765
MAC-255-501.32	Illite	11	8,414	333,239	140	962	297	20,714	17,870
MAC-255-501.32	Illite	11	8,301	328,736	138	949	293	20,434	17,628
MC-336-506.8	Illite	1,309	21,639	704,746	425	1,960	5,188	54,559	52,630
MC-336-506.8	Illite	1,420	23,486	764,876	461	2,128	5,631	59,214	57,121
MC-336-506.8	Illite	1,170	19,343	629,943	380	1,752	4,638	48,768	47,044
MC-336-570.5	Illite	647	38,054	599,967	98	1,278		48,983	20,076
MC-338-101	Illite	138	27,792	752,242	317	2,136	1,832	55,096	29,845
MC-338-101	Illite	107	21,629	585,429	246	1,662	1,426	42,878	23,227
MC-338-101	Illite	184	36,937	999,779	421	2,839	2,435	73,226	39,666
MC-338-101	Illite	154	30,963	838,075	353	2,380	2,041	61,383	33,251
MC-338-319	Illite	185	10,134	418,439	652	1,100	2,714	26,098	27,193
MC-338-319	Illite	233	12,769	527,249	822	1,386	3,420	32,884	34,264
MC-338-319	Illite	203	11,096	458,142	714	1,205	2,972	28,574	29,773
MC-338-319	Illite	219	12,007	495,775	773	1,304	3,216	30,921	32,219
MC-338-559	Illite	134	14,429	420,314	207	1,115	3,347	29,497	28,089
MC-338-559	Illite	419	45,116	1,314,202	647	3,488	10,466	92,229	87,827
MC-338-559	Illite	333	35,845	1,044,145	514	2,771	8,315	73,277	69,780
MC-413-299	Illite	315	16,402	706,388	151	1,934	3,812	38,091	33,573
MC-413-299	Illite	187	9,747	419,775	89	1,149	2,265	22,636	19,951
MC-413-603.83	Illite	138	11,188	373,637	282	912	1,451	26,632	23,164
MC-413-603.83	Illite	183	14,794	494,071	373	1,206	1,918	35,217	30,631
MC-413-603.83	Illite	142	11,509	384,360	290	938	1,492	27,397	23,829
MC-413-603.83	Illite	205	16,574	553,506	417	1,351	2,149	39,453	34,316
MC-413-603.83	Illite	175	14,135	472,072	356	1,152	1,833	33,649	29,267
MC-413-603.83	Illite	205	16,579	553,686	417	1,351	2,150	39,466	34,327
MC-413-603.83	Illite	153	12,338	412,059	311	1,006	1,600	29,371	25,546
MC-413-603.83	Illite	153	12,338	412,059	311	1,006	1,600	29,371	25,546
MC-434-253.64	Illite	242	1,270	260,200	84	0		37,267	38,631
MC-434-253.64	Illite	376	1,972	404,226	130	0		57,894	60,013
MC-434-253.64	Illite	410	2,147	440,003	142	0		63,018	65,325
MC-434-54.07	Illite	311	17,022	702,868	1,095	1,848	4,559	43,838	45,677
MC-434-54.07	Illite	310	17,010	702,370	1,095	1,847	4,556	43,807	45,645
MAC-246-508.8	Drv Veins	321	16,490	487,520	95	1,609	2,761	36,405	32,844
MAC-246-508.8	Drv Veins	245	12,568	371,580	72	1,227	2,104	27,747	25,033
MAC-246-508.8	Drv Veins	218	11,194	330,938	64	1,093	1,874	24,712	22,295
MAC-246-508.8	Drv Veins	215	11,075	327,433	64	1,081	1,854	24,451	22,059
MAC-253-265.3	Drv Veins	42	1,850	242,177	203	0		46,654	43,338
MAC-253-265.3	Drv Veins	40	1,767	231,281	194	0		44,555	41,388
MAC-253-265.3	Drv Veins	41	1,812	237,219	199	0		45,699	42,451
MAC-253-265.3	Drv Veins	33	1,465	191,782	161	0		36,946	34,320
MAC-253-265.3	Drv Veins	31	1,381	180,718	151	0		34,815	32,340
MAC-253-538	Drv Veins	365	18,607	530,721	1,831	0		108,634	103,739
MAC-253-538	Drv Veins	288	14,654	417,965	1,442	0		85,554	81,699
MAC-253-538	Drv Veins	388	19,750	563,320	1,943	0		115,307	110,111
MAC-253-538	Drv Veins	341	17,384	495,835	1,710	0		101,493	96,920
MAC-253-538	Drv Veins	302	15,396	439,129	1,515	0		89,886	85,836
MC-344-100.1	Drv Veins	81	6,893	530,331	218	0		86,727	88,253
MC-344-100.1	Drv Veins	87	7,448	573,046	235	0		93,713	95,361
MC-344-100.1	Drv Veins	96	8,215	632,094	259	0		103,369	105,188
MC-344-100.1	Drv Veins	98	8,354	642,786	264	0		105,118	106,967

Sample No.	Mineral	24Mg LOD	27Al LOD	29Si LOD	31P LOD	33S LOD	39K LOD	43Ca LOD	44Ca LOD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-344-100.1	Drv Veins	104	8,874	682,784	280	0		111,659	113,623
MC-344-100.1	Drv Veins	91	7,747	596,065	245	0		97,477	99,192
MC-344-100.1	Drv Veins	106	9,057	696,830	286	0		113,956	115,961
MC-415-497.66	Drv Veins	232	3,606	292,052	3,116	0		44,291	41,788
MC-415-497.66	Drv Veins	186	2,891	234,134	2,498	0		35,507	33,501
MC-415-497.66	Drv Veins	187	2,898	234,729	2,504	0		35,597	33,586
MC-415-497.66	Drv Veins	173	2,687	217,607	2,321	0		33,001	31,136
MAC-208-10.2	Interstitial Drv	120	888	311,390	403	0		31,230	30,394
MAC-208-10.2	Interstitial Drv	214	1,591	558,189	723	0		55,982	54,483
MAC-208-572	Interstitial Drv	63	6,348	236,403	31	0		55,110	49,707
MAC-208-572	Interstitial Drv	101	10,203	380,007	50	0		88,586	79,902
MAC-208-572	Interstitial Drv	79	7,992	297,652	39	0		69,388	62,586
MAC-208-572	Interstitial Drv	81	8,177	304,540	40	0		70,994	64,034
MAC-208-572	Interstitial Drv	62	6,319	235,333	31	0		54,860	49,482
MAC-246-142.86	Interstitial Drv	187	2,709	395,745	6,567	0		72,550	74,770
MAC-246-142.86	Interstitial Drv	121	1,748	255,323	4,237	0		46,807	48,240
MAC-246-142.86	Interstitial Drv	109	1,578	230,480	3,825	0		42,253	43,546
MAC-246-142.86	Interstitial Drv	125	1,803	263,448	4,372	0		48,296	49,775
MAC-246-142.86	Interstitial Drv	106	1,530	223,504	3,709	0		40,974	42,228
MAC-246-213.43	Interstitial Drv	99	4,429	579,763	486	0		111,688	103,750
MAC-246-213.43	Interstitial Drv	60	2,649	346,756	290	0		66,801	62,053
MAC-246-213.43	Interstitial Drv	55	2,449	320,563	269	0		61,755	57,366
MAC-246-4.33	Interstitial Drv	169	1,253	439,618	569	0		44,091	42,909
MAC-246-4.33	Interstitial Drv	197	1,460	512,234	663	0		51,374	49,997
MAC-246-4.33	Interstitial Drv	140	1,038	363,946	471	0		36,501	35,523
MAC-246-475.33	Interstitial Drv	415	25,504	945,548	153	0		175,193	164,172
MAC-246-475.33	Interstitial Drv	314	19,333	716,745	116	0		132,800	124,446
MAC-246-475.33	Interstitial Drv	133	10,822	470,039	146	1,506		31,620	26,785
MAC-246-475.33	Interstitial Drv	369	22,703	841,695	137	0		155,951	146,141
MAC-246-475.33	Interstitial Drv	377	23,207	860,375	140	0		159,412	149,384
MAC-246-475.33	Interstitial Drv	197	12,105	448,789	73	0		83,153	77,922
MAC-246-475.33	Interstitial Drv	265	16,316	604,908	98	0		112,079	105,028
MAC-246-499.02	Interstitial Drv	88	1,042	248,485	32	0		42,393	46,911
MAC-252-199.86	Interstitial Drv	257	3,720	543,493	9,019	0		99,635	102,685
MAC-252-199.86	Interstitial Drv	185	2,666	389,538	6,464	0		71,412	73,598
MAC-252-342.5	Interstitial Drv	243	12,688	546,438	116	1,496	2,949	29,466	25,971
MAC-252-342.5	Interstitial Drv	194	10,118	435,769	93	1,193	2,351	23,498	20,711
MAC-252-342.5	Interstitial Drv	1,306	66,559	1,898,425	6,548	0		388,591	371,082
MAC-252-342.5	Interstitial Drv	718	36,575	1,043,202	3,598	0		213,534	203,913
MAC-252-342.5	Interstitial Drv	369	18,827	536,981	1,852	0		109,915	104,963
MAC-252-342.5	Interstitial Drv	263	13,410	382,476	1,319	0		78,289	74,762
MAC-252-55.65	Interstitial Drv	480	254	328,542	160	0		56,427	57,072
MAC-252-55.65	Interstitial Drv	409	216	280,108	136	0		48,108	48,658
MAC-252-55.65	Interstitial Drv	399	211	273,035	133	0		46,894	47,430
MAC-253-205	Interstitial Drv	52	4,485	345,097	142	0		56,435	57,428
MAC-253-205	Interstitial Drv	64	5,484	421,910	173	0		68,997	70,211
MAC-253-205	Interstitial Drv	65	5,565	428,171	176	0		70,021	71,252
MAC-253-205	Interstitial Drv	75	6,437	495,268	203	0		80,993	82,418
MAC-253-205	Interstitial Drv	66	5,666	435,958	179	0		71,294	72,548
MAC-253-205	Interstitial Drv	71	6,102	469,453	193	0		76,772	78,122
MAC-253-205	Interstitial Drv	88	7,528	579,224	238	0		94,723	96,390
MAC-253-265.3	Interstitial Drv	96	4,279	560,186	469	0		107,917	100,247
MAC-253-265.3	Interstitial Drv	85	3,796	496,883	416	0		95,722	88,919
MAC-253-265.3	Interstitial Drv	59	2,644	346,099	290	0		66,674	61,935
MAC-255-6.13	Interstitial Drv	499	264	341,569	166	0		58,664	59,335
MAC-255-6.13	Interstitial Drv	581	307	397,851	193	0		68,331	69,112
MAC-255-6.13	Interstitial Drv	551	291	377,184	183	0		64,781	65,521
MAC-255-6.13	Interstitial Drv	763	404	522,896	254	0		89,807	90,833
MC-338-537.64	Interstitial Drv	290	6,475	515,219	64	0		95,868	92,709

Sample No.	Mineral	24Mg LOD (ppm)	27Al LOD (ppm)	29Si LOD (ppm)	31P LOD (ppm)	33S LOD (ppm)	39K LOD (ppm)	43Ca LOD (ppm)	44Ca LOD (ppm)
MC-338-537.64	Interstitial Drv	131	2,924	232,658	29	0		43,291	41,865
MC-338-537.64	Interstitial Drv	140	3,123	248,461	31	0		46,232	44,708
MC-338-537.64	Interstitial Drv	136	3,034	241,386	30	0		44,915	43,435
MC-338-537.64	Interstitial Drv	309	6,903	549,246	68	0		102,200	98,832
MC-338-537.64	Interstitial Drv	191	4,258	338,793	42	0		63,040	60,963
MC-344-179.8	Interstitial Drv	91	9,259	344,842	46	0		80,389	72,508
MC-344-179.8	Interstitial Drv	104	10,515	391,601	52	0		91,289	82,339
MC-344-179.8	Interstitial Drv	84	8,470	315,443	42	0		73,535	66,326
MC-344-179.8	Interstitial Drv	78	7,924	295,118	39	0		68,797	62,053
MC-413-258.26	Interstitial Drv	239	8,623	559,307	259	0		107,072	102,093
MC-413-258.26	Interstitial Drv	225	8,099	525,329	243	0		100,568	95,891
MC-413-258.26	Interstitial Drv	146	5,251	340,564	157	0		65,197	62,165
MC-413-258.26	Interstitial Drv	175	6,317	409,744	189	0		78,440	74,793
MC-413-258.26	Interstitial Drv	136	4,890	317,208	147	0		60,726	57,902
MC-413-258.26	Interstitial Drv	151	5,425	351,892	163	0		67,365	64,233
MC-413-258.26	Interstitial Drv	129	4,632	300,437	139	0		57,515	54,840
MC-413-649	Interstitial Drv	407	23,210	1,027,637	194	0		175,539	174,428
MC-415-173.4	Interstitial Drv	157	5,639	365,740	169	0		70,017	66,761
MC-415-173.4	Interstitial Drv	138	4,971	322,454	149	0		61,730	58,859
MC-415-173.4	Interstitial Drv	150	5,418	351,395	163	0		67,270	64,142
MC-415-173.4	Interstitial Drv	149	5,370	348,318	161	0		66,681	63,580
MC-415-389	Interstitial Drv	183	19,491	1,089,502	1,782	0		133,951	124,250
MC-415-389	Interstitial Drv	117	12,465	696,778	1,140	0		85,667	79,462
MC-415-389	Interstitial Drv	117	12,416	694,042	1,135	0		85,330	79,150
MC-415-389	Interstitial Drv	233	24,797	1,386,139	2,268	0		170,422	158,079
MC-415-389	Interstitial Drv	197	20,909	1,168,757	1,912	0		143,695	133,288
MC-415-432.38	Interstitial Drv	156	16,597	927,731	1,518	0		114,062	105,801
MC-415-432.38	Interstitial Drv	115	12,248	684,632	1,120	0		84,173	78,077
MC-415-432.38	Interstitial Drv	184	19,542	1,092,388	1,787	0		134,306	124,579
MC-415-432.38	Interstitial Drv	122	12,924	722,411	1,182	0		88,818	82,386
MC-415-432.38	Interstitial Drv	113	12,048	673,451	1,102	0		82,799	76,802
MC-415-490.78	Interstitial Drv	369	5,735	464,480	4,955	0		70,440	66,459
MC-415-490.78	Interstitial Drv	211	3,280	265,671	2,834	0		40,290	38,013
MC-415-490.78	Interstitial Drv	296	4,594	372,082	3,969	0		56,427	53,239
MC-415-490.78	Interstitial Drv	237	3,674	297,586	3,175	0		45,130	42,579
MC-415-490.78	Interstitial Drv	175	2,716	219,965	2,347	0		33,358	31,473
MAC-255-6.13	Detrital Tourmaline	739	391	506,230	246	0		86,945	87,938
MAC-255-6.13	Detrital Tourmaline	547	289	374,819	182	0		64,375	65,111
MAC-255-6.13	Detrital Tourmaline	409	216	280,262	136	0		48,135	48,685
MAC-255-6.13	Detrital Tourmaline	467	247	320,060	156	0		54,970	55,598
MAC-246-333.8	APS	220	11,320	334,685	65	1,105	1,895	24,992	22,547
MAC-246-508.8	APS	738	37,930	1,121,393	218	3,702	6,350	83,739	75,547
MAC-246-508.8	APS	210	10,802	319,351	62	1,054	1,808	23,847	21,514
MAC-252-342.5	APS	453	23,112	659,217	2,274	0		134,936	128,856
MAC-252-342.5	APS	545	27,796	792,803	2,735	0		162,280	154,968
MAC-252-342.5	APS	431	21,985	627,060	2,163	0		128,354	122,570
MAC-252-342.5	APS	215	11,209	482,743	103	1,322	2,605	26,031	22,944
MAC-253-382	APS	142	13,326	500,827	171	1,369	2,301	30,855	25,318
MAC-253-382	APS	117	11,047	415,196	141	1,135	1,907	25,579	20,989
MAC-253-382	APS	128	12,016	451,590	154	1,235	2,075	27,821	22,829
MAC-253-507.5	APS	45	9,074	245,621	103	697	598	17,990	9,745
MAC-253-507.5	APS	45	9,074	245,621	103	697	598	17,990	9,745
MAC-253-507.5	APS	198	39,763	1,076,266	453	3,056	2,621	78,828	42,701
MAC-255-559	APS	190	15,395	514,150	388	1,255	1,996	36,648	31,876
MAC-255-559	APS	208	16,796	560,915	423	1,369	2,178	39,982	34,775
MC-336-570.5	APS	2,699	158,765	2,503,142	407	5,333		204,363	83,759
MC-434-328.83	APS	215	25,284	538,979	229	1,402	2,820	43,781	40,801
MC-434-328.83	APS	186	21,825	465,234	198	1,210	2,434	37,791	35,219
MC-434-328.83	APS	207	24,309	518,191	220	1,348	2,712	42,092	39,227

Sample No.	Mineral	24Mg LOD	27Al LOD	29Si LOD	31P LOD	33S LOD	39K LOD	43Ca LOD	44Ca LOD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MC-434-328.83	APS	185	21,788	464,449	197	1,208	2,430	37,727	35,159
MC-434-328.83	APS	161	18,931	403,544	171	1,050	2,112	32,780	30,549
MAC-255-559	Monazite	106	8,558	285,812	216	697	1,110	20,372	17,719
MAC-255-559	Monazite	106	8,558	285,812	216	697	1,110	20,372	17,719
MAC-255-559	Monazite	106	8,558	285,812	216	697	1,110	20,372	17,719
MC-413-603.83	Monazite	286	23,141	772,834	583	1,886	3,001	55,087	47,913
MC-413-603.83	Monazite	245	19,803	661,344	499	1,614	2,568	47,140	41,001
MC-413-603.83	Monazite	316	25,564	853,747	644	2,083	3,315	60,854	52,930
MAC-255-564.36	Apatite	353	20,762	327,346	53	697		26,725	10,953
MAC-255-564.36	Apatite	353	20,762	327,346	53	697		26,725	10,953
MAC-255-564.36	Apatite	353	20,762	327,346	53	697		26,725	10,953
MAC-255-564.36	Apatite	353	20,762	327,346	53	697		26,725	10,953
MAC-255-564.36	Apatite	353	20,762	327,346	53	697		26,725	10,953
MAC-255-559	Pyrite	38	3,755	143,398	376	0		34,713	37,322
MAC-255-559	Pyrite	38	3,755	143,398	376	0		34,713	37,322
MAC-255-559	Pyrite	38	3,755	143,398	376	0		34,713	37,322
MAC-255-559	Pyrite	38	3,755	143,398	376	0		34,713	37,322
MC-336-564	Hematite	38	3,755	143,398	376	0		34,713	37,322
MC-336-564	Hematite	38	3,755	143,398	376	0		34,713	37,322
MC-413-623.78	Hematite	106	8,558	285,812	216	697	1,110	20,372	17,719
MC-413-623.78	Hematite	353	20,762	327,346	53	697		26,725	10,953
MC-413-623.78	Hematite	353	20,762	327,346	53	697		26,725	10,953
MC-413-623.78	Hematite	353	20,762	327,346	53	697		26,725	10,953
MC-413-623.78	Hematite	321	16,519	488,379	95	1,612	2,766	36,469	32,902
MC-413-623.78	Hematite	264	13,564	401,020	78	1,324	2,271	29,946	27,016
MC-413-623.78	Hematite	204	10,654	458,852	98	1,256	2,476	24,743	21,808
MC-413-623.78	Hematite	198	10,338	445,233	95	1,219	2,402	24,009	21,161
MC-413-623.78	Hematite	640	128,683	3,483,100	1,466	9,890	8,484	255,110	138,193
MC-413-623.78	Hematite	328	16,841	497,898	97	1,644	2,820	37,180	33,543
MC-413-623.78	Hematite	47	3,800	165,055	51	529		11,103	9,405
MAC-246-333.8	Rutile	5	3,657	144,834	61	418	129	9,003	7,767
MAC-246-333.8	Rutile	5	3,657	144,834	61	418	129	9,003	7,767
MAC-246-508.8	Rutile	23	2,251	85,968	226	0	<DL	20,810	22,375
MAC-252-342.5	Rutile	23	2,251	85,968	226	0	<DL	20,810	22,375
MAC-252-342.5	Rutile	23	2,251	85,968	226	0	<DL	20,810	22,375
MAC-246-508.8	Fe(Ti) oxide in Kao	8	6,100	241,588	102	697	216	15,017	12,955
MAC-246-508.8	Fe(Ti) oxide in Kao	8	6,100	241,588	102	697	216	15,017	12,955
MAC-246-508.8	Fe(Ti) oxide in Kao	8	6,100	241,588	102	697	216	15,017	12,955
MC-336-564	Fe-hydroxide vein	177	9,072	268,203	52	885	1,519	20,028	18,069
MC-336-564	Fe-hydroxide vein	38	3,755	143,398	376	0		34,713	37,322
MC-336-564	Fe-hydroxide vein	353	20,762	327,346	53	697		26,725	10,953
MC-415-197	Mn(Fe) oxide vein	172	8,865	262,079	51	865	1,484	19,570	17,656

Sample No.	Mineral	45Sc LOD	47Ti LOD	51V LOD	52Cr LOD	55Mn LOD	57Fe LOD	59Co LOD	60Ni LOD	63Cu LOD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-208-237	C1 Chlorite	5	70	10	5	16	415	9	14	19
MAC-208-237	C1 Chlorite	5	70	11	5	16	417	9	14	19
MAC-208-237	C1 Chlorite	7	101	15	7	23	602	13	21	28
MAC-252-271.2	C1 Chlorite	26	649	37	19	106	3,036	36	56	47
MAC-252-271.2	C1 Chlorite	16	392	22	11	64	1,833	22	34	28
MAC-253-325	C1 Chlorite	33	313	38	17	135	2,281	33	50	43
MAC-253-325	C1 Chlorite	43	406	49	22	175	2,961	42	65	56
MAC-253-325	C1 Chlorite	37	349	42	19	150	2,543	36	56	48
MC-413-183.26	C1 Chlorite	10	120	22	10	31	1,058	19	37	25
MC-413-183.26	C1 Chlorite	4	49	9	4	13	429	8	15	10
MC-413-183.26	C1 Chlorite	5	65	12	5	17	568	10	20	14
MC-413-183.26	C1 Chlorite	6	79	14	6	20	697	13	24	17
MC-413-183.26	C1 Chlorite	6	77	14	6	20	675	12	24	16
MC-413-183.26	C1 Chlorite	5	60	11	5	16	531	10	19	13
MAC-208-487	C2 Chlorite	14	73	16	17	38	954	16	20	26
MAC-208-487	C2 Chlorite	15	78	17	19	40	1,024	17	21	27
MAC-208-487	C2 Chlorite	14	74	16	18	39	977	16	20	26
MAC-208-487	C2 Chlorite	18	93	20	22	48	1,226	20	25	33
MAC-208-572	C2 Chlorite	1	13	8	4	52	2,114	7	15	15
MAC-208-572	C2 Chlorite	1	12	7	4	46	1,863	6	13	13
MAC-208-572	C2 Chlorite	1	12	7	4	46	1,866	6	13	13
MAC-208-572	C2 Chlorite	1	9	5	3	35	1,440	4	10	10
MAC-208-572	C2 Chlorite	0	9	5	3	34	1,393	4	10	10
MAC-208-572	C2 Chlorite	0	8	5	3	33	1,351	4	10	10
MAC-246-475.33	C2 Chlorite	1,528	80	6	7	33	206	7	4	13
MAC-246-475.33	C2 Chlorite	1,374	71	6	6	30	185	6	4	12
MAC-246-475.33	C2 Chlorite	2,178	113	9	10	48	293	10	6	18
MAC-246-475.33	C2 Chlorite	2,035	106	8	10	45	274	9	6	17
MAC-255-559	C2 Chlorite	28	278	20	18	116	2,840	17	39	25
MAC-255-559	C2 Chlorite	23	227	16	15	95	2,323	14	32	20
MAC-255-559	C2 Chlorite	22	220	15	14	92	2,248	13	31	19
MAC-255-559	C2 Chlorite	21	209	15	14	87	2,138	13	29	19
MAC-255-559	C2 Chlorite	21	210	15	14	88	2,148	13	29	19
MAC-255-559	C2 Chlorite	18	181	13	12	75	1,847	11	25	16
MAC-255-559	C2 Chlorite	20	197	14	13	82	2,018	12	28	17
MAC-255-564.36	C2 Chlorite	5,882	116	22	4	83	2,186	21	36	35
MAC-255-564.36	C2 Chlorite	4,881	96	18	3	69	1,814	17	30	29
MAC-255-564.36	C2 Chlorite	4,681	92	18	3	66	1,739	17	29	28
MAC-255-564.36	C2 Chlorite	6,524	128	25	4	92	2,424	23	40	39
MAC-255-564.36	C2 Chlorite	6,226	122	23	4	87	2,314	22	39	37
MAC-255-564.36	C2 Chlorite	5,225	103	20	3	73	1,941	19	32	31
MAC-255-564.36	C2 Chlorite	5,159	101	19	3	72	1,917	18	32	31
MC-336-570.5	C2 Chlorite	11,316	222	43	7	159	4,205	40	70	67
MC-336-570.5	C2 Chlorite	4	32	8	9	70	1,016	16	17	15
MC-336-570.5	C2 Chlorite	3	28	7	8	61	882	14	14	13
MC-336-570.5	C2 Chlorite	5,206	102	20	3	73	1,935	18	32	31
MC-336-570.5	C2 Chlorite	5,126	101	19	3	72	1,905	18	32	30
MC-336-570.5	C2 Chlorite	5,749	113	22	4	81	2,136	20	36	34
MAC-208-290.5	Illite	3	139	9	1	41	837	12	14	17
MAC-208-290.5	Illite	8	326	22	3	96	1,962	29	32	40
MAC-246-333.8	Illite	16	143	20	7	50	2,231	16	20	25
MAC-246-333.8	Illite	10	92	13	4	32	1,438	10	13	16
MAC-252-271.2	Illite	8	189	11	6	31	883	11	16	14
MAC-252-271.2	Illite	8	193	11	6	31	902	11	17	14
MAC-252-271.2	Illite	8	188	11	6	31	880	11	16	14
MAC-252-319.44	Illite	16	149	18	8	64	1,087	16	24	20
MAC-252-319.44	Illite	18	168	20	9	72	1,224	18	27	23
MAC-253-507.5	Illite	6	43	11	9	55	175	11	20	20
MAC-255-293.4	Illite	6	49	12	14	105	1,526	24	25	22

Sample No.	Mineral	45Sc LOD	47Ti LOD	51V LOD	52Cr LOD	55Mn LOD	57Fe LOD	59Co LOD	60Ni LOD	63Cu LOD
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
MAC-255-293.4	Illite	4	31	8	9	68	984	15	16	14
MAC-255-293.4	Illite	5	37	9	11	80	1,169	18	19	17
MAC-255-293.4	Illite	6	46	11	13	98	1,429	22	23	21
MAC-255-293.4	Illite	7	58	15	17	126	1,831	28	30	27
MAC-255-501.32	Illite	14	64	16	4	25	185	15	26	21
MAC-255-501.32	Illite	13	58	15	4	23	166	14	23	19
MAC-255-501.32	Illite	12	57	15	4	22	165	14	23	19
MAC-255-501.32	Illite	14	66	17	4	26	192	16	27	22
MAC-255-501.32	Illite	14	65	17	4	26	189	16	26	21
MAC-255-501.32	Illite	13	59	15	4	23	171	14	24	19
MAC-255-501.32	Illite	13	58	15	4	23	169	14	23	19
MC-336-506.8	Illite	6	233	16	2	69	1,407	21	23	28
MC-336-506.8	Illite	6	253	17	3	75	1,527	22	25	31
MC-336-506.8	Illite	5	209	14	2	62	1,257	19	21	25
MC-336-570.5	Illite	7,434	146	28	5	104	2,762	26	46	44
MC-338-101	Illite	11	76	19	16	97	307	19	36	35
MC-338-101	Illite	9	59	14	12	75	239	15	28	27
MC-338-101	Illite	15	102	25	21	129	408	25	47	46
MC-338-101	Illite	12	85	21	17	108	342	21	40	39
MC-338-319	Illite	2	91	19	46	25	1,105	19	24	22
MC-338-319	Illite	3	114	24	58	32	1,392	24	30	28
MC-338-319	Illite	3	99	20	51	27	1,209	21	26	25
MC-338-319	Illite	3	108	22	55	30	1,309	23	28	27
MC-338-559	Illite	9	113	21	9	29	992	18	35	24
MC-338-559	Illite	28	353	64	29	91	3,103	56	108	74
MC-338-559	Illite	22	281	51	23	72	2,465	44	86	59
MC-413-299	Illite	31	180	50	43	103	2,220	39	52	48
MC-413-299	Illite	18	107	30	25	61	1,319	23	31	29
MC-413-603.83	Illite	25	252	18	17	105	2,581	15	35	22
MC-413-603.83	Illite	34	334	23	22	139	3,413	20	47	30
MC-413-603.83	Illite	26	259	18	17	108	2,655	16	36	23
MC-413-603.83	Illite	38	374	26	25	156	3,823	23	52	33
MC-413-603.83	Illite	32	319	22	21	133	3,261	19	44	28
MC-413-603.83	Illite	38	374	26	25	156	3,825	23	52	33
MC-413-603.83	Illite	28	278	20	18	116	2,846	17	39	25
MC-413-603.83	Illite	28	278	20	18	116	2,846	17	39	25
MC-434-253.64	Illite	10	55	12	13	28	721	12	15	19
MC-434-253.64	Illite	16	85	19	20	44	1,119	19	23	30
MC-434-253.64	Illite	18	93	20	22	48	1,218	20	25	33
MC-434-54.07	Illite	4	152	31	78	42	1,855	32	40	38
MC-434-54.07	Illite	4	152	31	78	42	1,854	32	40	38
MAC-246-508.8	Drv Veins	20	185	26	9	65	2,901	21	26	33
MAC-246-508.8	Drv Veins	15	141	20	6	50	2,211	16	20	25
MAC-246-508.8	Drv Veins	14	126	18	6	44	1,969	14	18	22
MAC-246-508.8	Drv Veins	14	125	18	6	44	1,948	14	17	22
MAC-253-265.3	Drv Veins	4	67	4	1	30	1,419	7	10	16
MAC-253-265.3	Drv Veins	3	64	3	1	28	1,355	7	10	16
MAC-253-265.3	Drv Veins	4	66	3	1	29	1,390	7	10	16
MAC-253-265.3	Drv Veins	3	53	3	0	24	1,124	6	8	13
MAC-253-265.3	Drv Veins	3	50	3	0	22	1,059	5	8	12
MAC-253-538	Drv Veins	29	245	36	29	122	4,179	31	49	40
MAC-253-538	Drv Veins	23	193	28	23	96	3,291	24	39	32
MAC-253-538	Drv Veins	31	260	38	31	129	4,436	33	52	43
MAC-253-538	Drv Veins	27	229	34	27	114	3,905	29	46	38
MAC-253-538	Drv Veins	24	202	30	24	101	3,458	26	41	33
MC-344-100.1	Drv Veins	0	45	3	1	39	2,752	5	9	26
MC-344-100.1	Drv Veins	0	49	4	2	42	2,974	5	10	28
MC-344-100.1	Drv Veins	1	54	4	2	46	3,281	6	11	31
MC-344-100.1	Drv Veins	1	55	4	2	47	3,336	6	11	32

Sample No.	Mineral	45Sc LOD (ppm)	47Ti LOD (ppm)	51V LOD (ppm)	52Cr LOD (ppm)	55Mn LOD (ppm)	57Fe LOD (ppm)	59Co LOD (ppm)	60Ni LOD (ppm)	63Cu LOD (ppm)
MC-344-100.1	Drv Veins	1	58	4	2	50	3,544	6	12	34
MC-344-100.1	Drv Veins	1	51	4	2	44	3,094	6	10	29
MC-344-100.1	Drv Veins	1	59	4	2	51	3,617	6	12	34
MC-415-497.66	Drv Veins	3	98	0	2	9	1,559	2	13	12
MC-415-497.66	Drv Veins	2	79	0	1	7	1,249	2	10	9
MC-415-497.66	Drv Veins	2	79	0	1	7	1,253	2	10	9
MC-415-497.66	Drv Veins	2	73	0	1	6	1,161	2	9	9
MAC-208-10.2	Interstitial Drv	8	197	10	22	73	2,878	11	16	13
MAC-208-10.2	Interstitial Drv	14	353	18	40	131	5,159	20	28	23
MAC-208-572	Interstitial Drv	1	9	5	3	35	1,437	4	10	10
MAC-208-572	Interstitial Drv	1	14	8	5	57	2,309	7	17	16
MAC-208-572	Interstitial Drv	1	11	7	4	44	1,809	6	13	13
MAC-208-572	Interstitial Drv	1	11	7	4	45	1,851	6	13	13
MAC-208-572	Interstitial Drv	1	9	5	3	35	1,430	4	10	10
MAC-246-142.86	Interstitial Drv	12	86	11	2	33	1,827	18	18	21
MAC-246-142.86	Interstitial Drv	8	55	7	1	22	1,179	12	11	14
MAC-246-142.86	Interstitial Drv	7	50	7	1	19	1,064	11	10	12
MAC-246-142.86	Interstitial Drv	8	57	7	1	22	1,216	12	12	14
MAC-246-142.86	Interstitial Drv	7	48	6	1	19	1,032	10	10	12
MAC-246-213.43	Interstitial Drv	9	160	8	1	71	3,397	17	25	39
MAC-246-213.43	Interstitial Drv	5	96	5	1	43	2,031	10	15	23
MAC-246-213.43	Interstitial Drv	5	89	5	1	39	1,878	9	14	22
MAC-246-4.33	Interstitial Drv	11	278	14	31	103	4,063	16	22	18
MAC-246-4.33	Interstitial Drv	13	324	17	36	120	4,734	19	26	21
MAC-246-4.33	Interstitial Drv	9	230	12	26	85	3,364	13	18	15
MAC-246-475.33	Interstitial Drv	12	265	37	159	248	3,426	27	43	102
MAC-246-475.33	Interstitial Drv	9	201	28	120	188	2,597	20	32	77
MAC-246-475.33	Interstitial Drv	2,464	128	10	12	54	332	11	7	21
MAC-246-475.33	Interstitial Drv	11	236	33	141	221	3,050	24	38	90
MAC-246-475.33	Interstitial Drv	11	241	34	145	225	3,118	25	39	92
MAC-246-475.33	Interstitial Drv	6	126	18	75	118	1,626	13	20	48
MAC-246-475.33	Interstitial Drv	8	170	24	102	158	2,192	17	27	65
MAC-246-499.02	Interstitial Drv	2	309	8	3	69	1,789	8	8	16
MAC-252-199.86	Interstitial Drv	17	118	15	3	46	2,509	25	24	29
MAC-252-199.86	Interstitial Drv	12	84	11	2	33	1,798	18	17	21
MAC-252-342.5	Interstitial Drv	24	139	39	33	80	1,717	30	40	37
MAC-252-342.5	Interstitial Drv	19	111	31	26	64	1,369	24	32	30
MAC-252-342.5	Interstitial Drv	104	875	129	104	436	14,950	111	176	145
MAC-252-342.5	Interstitial Drv	57	481	71	57	239	8,215	61	97	79
MAC-252-342.5	Interstitial Drv	29	248	36	29	123	4,229	31	50	41
MAC-252-342.5	Interstitial Drv	21	176	26	21	88	3,012	22	36	29
MAC-252-55.65	Interstitial Drv	8	389	32	52	331	5,940	40	76	48
MAC-252-55.65	Interstitial Drv	7	332	28	44	282	5,064	34	65	41
MAC-252-55.65	Interstitial Drv	7	324	27	43	275	4,936	33	63	40
MAC-253-205	Interstitial Drv	0	29	2	1	25	1,791	3	6	17
MAC-253-205	Interstitial Drv	0	36	3	1	31	2,190	4	7	21
MAC-253-205	Interstitial Drv	0	37	3	1	31	2,222	4	7	21
MAC-253-205	Interstitial Drv	0	42	3	1	36	2,570	5	9	24
MAC-253-205	Interstitial Drv	0	37	3	1	32	2,263	4	8	21
MAC-253-205	Interstitial Drv	0	40	3	1	34	2,437	4	8	23
MAC-253-205	Interstitial Drv	0	49	4	2	42	3,006	5	10	29
MAC-253-265.3	Interstitial Drv	8	155	8	1	69	3,282	16	24	38
MAC-253-265.3	Interstitial Drv	8	137	7	1	61	2,911	15	21	33
MAC-253-265.3	Interstitial Drv	5	96	5	1	43	2,028	10	15	23
MAC-255-6.13	Interstitial Drv	9	405	34	54	344	6,176	41	79	50
MAC-255-6.13	Interstitial Drv	10	472	39	62	401	7,193	48	92	58
MAC-255-6.13	Interstitial Drv	9	447	37	59	380	6,819	46	87	55
MAC-255-6.13	Interstitial Drv	13	620	51	82	527	9,454	63	121	76
MC-338-537.64	Interstitial Drv	6	20	15	4	71	2,127	22	24	56

Sample No.	Mineral	45Sc LOD (ppm)	47Ti LOD (ppm)	51V LOD (ppm)	52Cr LOD (ppm)	55Mn LOD (ppm)	57Fe LOD (ppm)	59Co LOD (ppm)	60Ni LOD (ppm)	63Cu LOD (ppm)
MC-338-537.64	Interstitial Drv	3	9	7	2	32	960	10	11	25
MC-338-537.64	Interstitial Drv	3	10	7	2	34	1,026	11	12	27
MC-338-537.64	Interstitial Drv	3	9	7	2	33	996	10	11	26
MC-338-537.64	Interstitial Drv	6	21	16	4	76	2,267	23	26	60
MC-338-537.64	Interstitial Drv	4	13	10	3	47	1,399	14	16	37
MC-344-179.8	Interstitial Drv	1	13	8	4	51	2,095	7	15	15
MC-344-179.8	Interstitial Drv	1	15	9	5	58	2,380	7	17	17
MC-344-179.8	Interstitial Drv	1	12	7	4	47	1,917	6	14	14
MC-344-179.8	Interstitial Drv	1	11	6	4	44	1,793	6	13	13
MC-413-258.26	Interstitial Drv	9	269	11	10	51	4,015	12	15	21
MC-413-258.26	Interstitial Drv	8	252	10	10	48	3,771	12	14	20
MC-413-258.26	Interstitial Drv	6	164	7	6	31	2,445	7	9	13
MC-413-258.26	Interstitial Drv	7	197	8	8	38	2,942	9	11	16
MC-413-258.26	Interstitial Drv	5	152	6	6	29	2,277	7	8	12
MC-413-258.26	Interstitial Drv	6	169	7	7	32	2,526	8	9	13
MC-413-258.26	Interstitial Drv	5	144	6	6	28	2,157	7	8	11
MC-413-649	Interstitial Drv	16	193	20	24	164	898	17	27	842
MC-415-173.4	Interstitial Drv	6	176	7	7	34	2,626	8	10	14
MC-415-173.4	Interstitial Drv	5	155	6	6	30	2,315	7	8	12
MC-415-173.4	Interstitial Drv	6	169	7	7	32	2,523	8	9	13
MC-415-173.4	Interstitial Drv	6	167	7	7	32	2,501	8	9	13
MC-415-389	Interstitial Drv	24	251	28	5	17	4,438	9	27	19
MC-415-389	Interstitial Drv	15	161	18	3	11	2,838	6	17	12
MC-415-389	Interstitial Drv	15	160	18	3	11	2,827	6	17	12
MC-415-389	Interstitial Drv	31	319	35	6	22	5,646	12	35	25
MC-415-389	Interstitial Drv	26	269	30	5	19	4,760	10	29	21
MC-415-432.38	Interstitial Drv	21	214	23	4	15	3,779	8	23	16
MC-415-432.38	Interstitial Drv	15	158	17	3	11	2,789	6	17	12
MC-415-432.38	Interstitial Drv	24	252	28	5	17	4,449	9	27	19
MC-415-432.38	Interstitial Drv	16	166	18	3	12	2,942	6	18	13
MC-415-432.38	Interstitial Drv	15	155	17	3	11	2,743	6	17	12
MC-415-490.78	Interstitial Drv	5	156	1	3	14	2,479	4	20	18
MC-415-490.78	Interstitial Drv	3	90	0	1	8	1,418	2	12	11
MC-415-490.78	Interstitial Drv	4	125	1	2	11	1,986	3	16	15
MC-415-490.78	Interstitial Drv	3	100	0	2	9	1,588	2	13	12
MC-415-490.78	Interstitial Drv	2	74	0	1	6	1,174	2	10	9
MAC-255-6.13	Detrital Tourmaline	13	600	50	80	510	9,153	61	117	73
MAC-255-6.13	Detrital Tourmaline	9	444	37	59	378	6,777	45	87	54
MAC-255-6.13	Detrital Tourmaline	7	332	28	44	283	5,067	34	65	41
MAC-255-6.13	Detrital Tourmaline	8	379	31	50	323	5,787	39	74	46
MAC-246-333.8	APS	14	127	18	6	45	1,991	14	18	23
MAC-246-508.8	APS	47	427	61	20	149	6,672	47	60	75
MAC-246-508.8	APS	13	121	17	6	43	1,900	13	17	21
MAC-252-342.5	APS	36	304	45	36	151	5,191	39	61	50
MAC-252-342.5	APS	43	366	54	43	182	6,243	46	74	60
MAC-252-342.5	APS	34	289	43	34	144	4,938	37	58	48
MAC-252-342.5	APS	21	123	34	29	70	1,517	27	35	33
MAC-253-382	APS	7	94	14	7	22	558	12	19	26
MAC-253-382	APS	5	78	12	6	18	462	10	16	21
MAC-253-382	APS	6	84	13	6	20	503	11	17	23
MAC-253-507.5	APS	4	25	6	5	32	100	6	12	11
MAC-253-507.5	APS	4	25	6	5	32	100	6	12	11
MAC-253-507.5	APS	16	109	27	22	139	439	27	51	50
MAC-255-559	APS	35	347	24	23	145	3,551	21	48	31
MAC-255-559	APS	38	379	27	25	158	3,874	23	53	34
MC-336-570.5	APS	31,015	609	117	20	436	11,525	110	192	184
MC-434-328.83	APS	12	302	17	9	49	1,415	17	26	22
MC-434-328.83	APS	10	261	15	8	43	1,221	15	22	19
MC-434-328.83	APS	12	291	17	9	47	1,360	16	25	21

Sample No.	Mineral	45Sc LOD (ppm)	47Ti LOD (ppm)	51V LOD (ppm)	52Cr LOD (ppm)	55Mn LOD (ppm)	57Fe LOD (ppm)	59Co LOD (ppm)	60Ni LOD (ppm)	63Cu LOD (ppm)
MC-434-328.83	APS	10	261	15	8	43	1,219	15	22	19
MC-434-328.83	APS	9	226	13	7	37	1,059	13	19	16
MAC-255-559	Monazite	19	193	14	13	81	1,974	12	27	17
MAC-255-559	Monazite	19	193	14	13	81	1,974	12	27	17
MAC-255-559	Monazite	19	193	14	13	81	1,974	12	27	17
MC-413-603.83	Monazite	53	522	37	34	218	5,338	32	73	46
MC-413-603.83	Monazite	45	446	31	29	187	4,568	27	62	40
MC-413-603.83	Monazite	58	576	41	38	241	5,897	35	80	51
MAC-255-564.36	Apatite	4,056	80	15	3	57	1,507	14	25	24
MAC-255-564.36	Apatite	4,056	80	15	3	57	1,507	14	25	24
MAC-255-564.36	Apatite	4,056	80	15	3	57	1,507	14	25	24
MAC-255-564.36	Apatite	4,056	80	15	3	57	1,507	14	25	24
MAC-255-564.36	Apatite	4,056	80	15	3	57	1,507	14	25	24
MAC-255-559	Pyrite	2	36	6	5	20	487	4	4	9
MAC-255-559	Pyrite	2	36	6	5	20	487	4	4	9
MAC-255-559	Pyrite	2	36	6	5	20	487	4	4	9
MAC-255-559	Pyrite	2	36	6	5	20	487	4	4	9
MC-336-564	Hematite	2	36	6	5	20	487	4	4	9
MC-336-564	Hematite	2	36	6	5	20	487	4	4	9
MC-413-623.78	Hematite	19	193	14	13	81	1,974	12	27	17
MC-413-623.78	Hematite	4,056	80	15	3	57	1,507	14	25	24
MC-413-623.78	Hematite	4,056	80	15	3	57	1,507	14	25	24
MC-413-623.78	Hematite	4,056	80	15	3	57	1,507	14	25	24
MC-413-623.78	Hematite	20	186	26	9	65	2,906	21	26	33
MC-413-623.78	Hematite	17	153	22	7	53	2,386	17	21	27
MC-413-623.78	Hematite	20	117	33	28	67	1,442	25	34	31
MC-413-623.78	Hematite	20	114	32	27	65	1,399	24	33	30
MC-413-623.78	Hematite	51	354	86	72	448	1,421	87	165	161
MC-413-623.78	Hematite	21	189	27	9	66	2,962	21	27	33
MC-413-623.78	Hematite	865	45	4	4	19	117	4	2	7
MAC-246-333.8	Rutile	6	26	7	2	10	74	6	10	8
MAC-246-333.8	Rutile	6	26	7	2	10	74	6	10	8
MAC-246-508.8	Rutile	1	22	3	3	12	292	2	2	5
MAC-252-342.5	Rutile	1	22	3	3	12	292	2	2	5
MAC-252-342.5	Rutile	1	22	3	3	12	292	2	2	5
MAC-246-508.8	Fe(Ti) oxide in Kao	9	43	11	3	17	124	10	17	14
MAC-246-508.8	Fe(Ti) oxide in Kao	9	43	11	3	17	124	10	17	14
MAC-246-508.8	Fe(Ti) oxide in Kao	9	43	11	3	17	124	10	17	14
MC-336-564	Fe-hydroxide vein	11	102	15	5	36	1,596	11	14	18
MC-336-564	Fe-hydroxide vein	2	36	6	5	20	487	4	4	9
MC-336-564	Fe-hydroxide vein	4,056	80	15	3	57	1,507	14	25	24
MC-415-197	Mn(Fe) oxide vein	11	100	14	5	35	1,559	11	14	18

Sample No.	Mineral	65Cu LOD (ppm)	66Zn LOD (ppm)	67Zn LOD (ppm)	71Ga LOD (ppm)	72Ge LOD (ppm)	75As LOD (ppm)	77Se LOD (ppm)	77Ar Cl LOD (ppm)	82Se LOD (ppm)	83Kr LOD (ppm)
MAC-208-237	C1 Chlorite	15	10	1,362	16	11	1	2		11	
MAC-208-237	C1 Chlorite	15	10	1,371	16	11	1	2		11	
MAC-208-237	C1 Chlorite	22	15	1,979	23	16	1	3		16	
MAC-252-271.2	C1 Chlorite	59	51	17	44	20	1	4		31	
MAC-252-271.2	C1 Chlorite	36	31	10	27	12	0	2		18	
MAC-253-325	C1 Chlorite	37	39	655	44	23	2	1		11	
MAC-253-325	C1 Chlorite	47	50	849	58	30	3	2		15	
MAC-253-325	C1 Chlorite	41	43	730	50	25	3	2		13	
MC-413-183.26	C1 Chlorite	23	9	10	25	15	6	2		16	
MC-413-183.26	C1 Chlorite	9	4	4	10	6	3	1		7	
MC-413-183.26	C1 Chlorite	12	5	5	14	8	3	1		9	
MC-413-183.26	C1 Chlorite	15	6	7	17	10	4	1		11	
MC-413-183.26	C1 Chlorite	15	6	7	16	10	4	1		10	
MC-413-183.26	C1 Chlorite	12	5	5	13	8	3	1		8	
MAC-208-487	C2 Chlorite	24	11	14	17	8	17	0		3	
MAC-208-487	C2 Chlorite	25	12	16	18	9	18	0		4	
MAC-208-487	C2 Chlorite	24	12	15	17	8	17	0		4	
MAC-208-487	C2 Chlorite	30	15	19	21	10	22	0		4	
MAC-208-572	C2 Chlorite	17	32	31	8	1	7	0		0	
MAC-208-572	C2 Chlorite	15	28	27	7	1	7	0		0	
MAC-208-572	C2 Chlorite	15	28	27	7	1	7	0		0	
MAC-208-572	C2 Chlorite	11	22	21	6	1	5	0		0	
MAC-208-572	C2 Chlorite	11	21	20	6	1	5	0		0	
MAC-208-572	C2 Chlorite	11	20	20	5	1	5	0		0	
MAC-246-475.33	C2 Chlorite	13	19	17	7	7	12	1		18	
MAC-246-475.33	C2 Chlorite	12	17	15	7	6	11	1		17	
MAC-246-475.33	C2 Chlorite	19	27	24	10	9	17	2		26	
MAC-246-475.33	C2 Chlorite	18	25	23	10	9	16	2		25	
MAC-255-559	C2 Chlorite	31	27	42	28	15	22	1		11	
MAC-255-559	C2 Chlorite	25	22	34	23	12	18	1		9	
MAC-255-559	C2 Chlorite	24	22	33	22	12	18	1		9	
MAC-255-559	C2 Chlorite	23	21	32	21	11	17	1		8	
MAC-255-559	C2 Chlorite	23	21	32	21	11	17	1		8	
MAC-255-559	C2 Chlorite	20	18	27	18	9	14	1		7	
MAC-255-559	C2 Chlorite	22	19	30	20	10	16	1		8	
MAC-255-564.36	C2 Chlorite	30	26	25	31	14	9	1		12	
MAC-255-564.36	C2 Chlorite	25	22	21	25	11	8	1		10	
MAC-255-564.36	C2 Chlorite	24	21	20	24	11	7	1		9	
MAC-255-564.36	C2 Chlorite	33	29	28	34	15	10	1		13	
MAC-255-564.36	C2 Chlorite	31	28	27	33	14	10	1		12	
MAC-255-564.36	C2 Chlorite	26	23	23	27	12	8	1		10	
MAC-255-564.36	C2 Chlorite	26	23	22	27	12	8	1		10	
MC-336-570.5	C2 Chlorite	57	50	49	59	26	18	2		23	
MC-336-570.5	C2 Chlorite	76	86	0	18	10	1	1		1	
MC-336-570.5	C2 Chlorite	66	74	0	16	8	1	1		1	
MC-336-570.5	C2 Chlorite	26	23	23	27	12	8	1		10	
MC-336-570.5	C2 Chlorite	26	23	22	27	12	8	1		10	
MC-336-570.5	C2 Chlorite	29	26	25	30	13	9	1		12	
MAC-208-290.5	Illite	17	15	9	11	6	10	1		15	
MAC-208-290.5	Illite	41	35	21	27	13	23	3		35	
MAC-246-333.8	Illite	25	29	25	23	12	3	1		42	
MAC-246-333.8	Illite	16	19	16	15	8	2	0		27	
MAC-252-271.2	Illite	17	15	5	13	6	0	1		9	
MAC-252-271.2	Illite	17	15	5	13	6	0	1		9	
MAC-252-271.2	Illite	17	15	5	13	6	0	1		9	
MAC-252-319.44	Illite	17	18	312	21	11	1	1		5	
MAC-252-319.44	Illite	20	21	351	24	12	1	1		6	
MAC-253-507.5	Illite	18	30	21	24	9	5	1		4	
MAC-255-293.4	Illite	114	128	0	27	15	1	1		1	

Appendix K
LA-ICP-MS Analytical Data

Sample No.	Mineral	65Cu LOD (ppm)	66Zn LOD (ppm)	67Zn LOD (ppm)	71Ga LOD (ppm)	72Ge LOD (ppm)	75As LOD (ppm)	77Se LOD (ppm)	77Ar Cl LOD (ppm)	82Se LOD (ppm)	83Kr LOD (ppm)
MAC-255-293.4	Illite	73	83	0	17	9	1	1		1	
MAC-255-293.4	Illite	87	98	0	21	11	1	1		1	
MAC-255-293.4	Illite	106	120	0	25	14	1	1		1	
MAC-255-293.4	Illite	136	154	0	32	17	2	2		1	
MAC-255-501.32	Illite	25	24	7	22	12	4	1		22	
MAC-255-501.32	Illite	23	22	6	19	11	4	1		20	
MAC-255-501.32	Illite	23	21	6	19	11	4	1		20	
MAC-255-501.32	Illite	26	25	7	22	12	4	1		23	
MAC-255-501.32	Illite	26	25	7	22	12	4	1		23	
MAC-255-501.32	Illite	24	22	6	20	11	4	1		21	
MAC-255-501.32	Illite	23	22	6	20	11	4	1		20	
MC-336-506.8	Illite	29	25	15	19	10	16	2		25	
MC-336-506.8	Illite	32	27	16	21	10	18	2		27	
MC-336-506.8	Illite	26	22	13	17	9	15	2		22	
MC-336-570.5	Illite	38	33	32	39	17	12	1		15	
MC-338-101	Illite	32	52	37	42	16	9	2		7	
MC-338-101	Illite	25	41	29	33	12	7	2		6	
MC-338-101	Illite	43	69	49	56	21	13	3		10	
MC-338-101	Illite	36	58	41	47	18	11	2		8	
MC-338-319	Illite	26	24	6	23	13	14	2		9	
MC-338-319	Illite	32	30	8	29	16	18	2		12	
MC-338-319	Illite	28	26	7	25	14	15	2		10	
MC-338-319	Illite	30	29	7	27	15	17	2		11	
MC-338-559	Illite	22	9	10	24	14	6	2		15	
MC-338-559	Illite	68	27	30	75	44	19	7		48	
MC-338-559	Illite	54	21	24	59	35	15	5		38	
MC-413-299	Illite	52	66	17	56	27	15	3		21	
MC-413-299	Illite	31	39	10	33	16	9	2		13	
MC-413-603.83	Illite	28	25	38	25	13	20	1		10	
MC-413-603.83	Illite	37	33	51	33	17	27	2		13	
MC-413-603.83	Illite	29	25	39	26	14	21	1		10	
MC-413-603.83	Illite	41	37	57	37	20	30	2		15	
MC-413-603.83	Illite	35	31	48	32	17	26	2		13	
MC-413-603.83	Illite	41	37	57	37	20	30	2		15	
MC-413-603.83	Illite	31	27	42	28	15	22	1		11	
MC-413-603.83	Illite	31	27	42	28	15	22	1		11	
MC-434-253.64	Illite	18	9	11	13	6	13	0		3	
MC-434-253.64	Illite	28	13	17	20	9	20	0		4	
MC-434-253.64	Illite	30	15	18	21	10	22	0		4	
MC-434-54.07	Illite	43	40	10	39	21	23	3		16	
MC-434-54.07	Illite	43	40	10	39	21	23	3		16	
MAC-246-508.8	Drv Veins	32	38	33	30	16	4	1		55	
MAC-246-508.8	Drv Veins	24	29	25	23	12	3	1		42	
MAC-246-508.8	Drv Veins	22	25	22	21	11	3	1		37	
MAC-246-508.8	Drv Veins	21	25	22	20	11	3	1		37	
MAC-253-265.3	Drv Veins	19	14	9	8	4	10	0		1	
MAC-253-265.3	Drv Veins	18	13	9	7	4	9	0		1	
MAC-253-265.3	Drv Veins	19	13	9	7	4	10	0		1	
MAC-253-265.3	Drv Veins	15	11	7	6	3	8	0		1	
MAC-253-265.3	Drv Veins	14	10	7	6	3	7	0		1	
MAC-253-538	Drv Veins	31	107	39	43	20	30	2		4	
MAC-253-538	Drv Veins	25	84	31	34	16	24	2		3	
MAC-253-538	Drv Veins	33	113	42	46	21	32	2		4	
MAC-253-538	Drv Veins	29	100	37	40	19	28	2		3	
MAC-253-538	Drv Veins	26	88	32	36	17	25	2		3	
MC-344-100.1	Drv Veins	19	26	53	6	6	33	1		2	
MC-344-100.1	Drv Veins	21	28	58	7	6	36	1		2	
MC-344-100.1	Drv Veins	23	31	64	7	7	39	1		2	
MC-344-100.1	Drv Veins	23	32	65	8	7	40	1		2	

Sample No.	Mineral	65Cu LOD (ppm)	66Zn LOD (ppm)	67Zn LOD (ppm)	71Ga LOD (ppm)	72Ge LOD (ppm)	75As LOD (ppm)	77Se LOD (ppm)	77Ar Cl LOD (ppm)	82Se LOD (ppm)	83Kr LOD (ppm)
MC-344-100.1	Drv Veins	25	34	69	8	7	42	1		2	
MC-344-100.1	Drv Veins	22	30	60	7	6	37	1		2	
MC-344-100.1	Drv Veins	25	35	70	8	7	43	1		2	
MC-415-497.66	Drv Veins	9	87	102	9	8	87	1		0	
MC-415-497.66	Drv Veins	7	69	82	7	6	70	1		0	
MC-415-497.66	Drv Veins	7	70	82	7	7	70	1		0	
MC-415-497.66	Drv Veins	7	64	76	7	6	65	1		0	
MAC-208-10.2	Interstitial Drv	10	34	10	13	5	6	0		7	
MAC-208-10.2	Interstitial Drv	18	61	19	23	9	11	0		13	
MAC-208-572	Interstitial Drv	11	22	21	6	1	5	0		0	
MAC-208-572	Interstitial Drv	18	35	34	9	1	8	0		0	
MAC-208-572	Interstitial Drv	14	27	27	7	1	6	0		0	
MAC-208-572	Interstitial Drv	15	28	27	7	1	6	0		0	
MAC-208-572	Interstitial Drv	11	22	21	6	1	5	0		0	
MAC-246-142.86	Interstitial Drv	25	16	35	19	11	3	2		10	
MAC-246-142.86	Interstitial Drv	16	10	23	12	7	2	1		6	
MAC-246-142.86	Interstitial Drv	14	9	21	11	7	2	1		6	
MAC-246-142.86	Interstitial Drv	16	11	24	13	8	2	1		6	
MAC-246-142.86	Interstitial Drv	14	9	20	11	6	2	1		5	
MAC-246-213.43	Interstitial Drv	45	32	22	18	10	23	1		2	
MAC-246-213.43	Interstitial Drv	27	19	13	11	6	14	0		1	
MAC-246-213.43	Interstitial Drv	25	18	12	10	6	13	0		1	
MAC-246-4.33	Interstitial Drv	14	48	15	18	7	9	0		10	
MAC-246-4.33	Interstitial Drv	16	56	17	21	8	10	0		12	
MAC-246-4.33	Interstitial Drv	12	40	12	15	6	7	0		9	
MAC-246-475.33	Interstitial Drv	52	100	814	38	18	56	1		4	
MAC-246-475.33	Interstitial Drv	39	75	617	29	13	42	1		3	
MAC-246-475.33	Interstitial Drv	22	31	27	12	11	19	2		30	
MAC-246-475.33	Interstitial Drv	46	89	724	34	16	50	1		3	
MAC-246-475.33	Interstitial Drv	47	91	741	35	16	51	1		3	
MAC-246-475.33	Interstitial Drv	25	47	386	18	8	26	0		2	
MAC-246-475.33	Interstitial Drv	33	64	521	25	11	36	0		2	
MAC-246-499.02	Interstitial Drv	29	11	3	7	6	5	2		1	
MAC-252-199.86	Interstitial Drv	34	22	48	26	16	4	2		13	
MAC-252-199.86	Interstitial Drv	24	16	35	19	11	3	2		9	
MAC-252-342.5	Interstitial Drv	40	51	13	43	21	12	2		16	
MAC-252-342.5	Interstitial Drv	32	41	10	35	16	9	2		13	
MAC-252-342.5	Interstitial Drv	112	382	140	154	72	107	7		13	
MAC-252-342.5	Interstitial Drv	61	210	77	85	40	59	4		7	
MAC-252-342.5	Interstitial Drv	32	108	40	44	20	30	2		4	
MAC-252-342.5	Interstitial Drv	22	77	28	31	15	22	2		3	
MAC-252-55.65	Interstitial Drv	73	47	56	51	29	17	1		2	
MAC-252-55.65	Interstitial Drv	62	40	48	44	25	14	1		2	
MAC-252-55.65	Interstitial Drv	60	39	47	43	24	14	1		2	
MAC-253-205	Interstitial Drv	12	17	35	4	4	21	0		1	
MAC-253-205	Interstitial Drv	15	21	43	5	4	26	0		1	
MAC-253-205	Interstitial Drv	16	21	43	5	4	27	0		1	
MAC-253-205	Interstitial Drv	18	25	50	6	5	31	1		2	
MAC-253-205	Interstitial Drv	16	22	44	5	5	27	0		1	
MAC-253-205	Interstitial Drv	17	23	47	5	5	29	1		2	
MAC-253-205	Interstitial Drv	21	29	58	7	6	36	1		2	
MAC-253-265.3	Interstitial Drv	44	31	21	18	10	22	1		2	
MAC-253-265.3	Interstitial Drv	39	28	19	16	9	20	0		2	
MAC-253-265.3	Interstitial Drv	27	19	13	11	6	14	0		1	
MAC-255-6.13	Interstitial Drv	76	49	59	53	30	18	1		2	
MAC-255-6.13	Interstitial Drv	88	57	68	62	35	21	2		3	
MAC-255-6.13	Interstitial Drv	84	54	65	59	33	19	2		3	
MAC-255-6.13	Interstitial Drv	116	75	90	82	46	27	2		4	
MC-338-537.64	Interstitial Drv	39	210	18	27	22	20	1		1	

Sample No.	Mineral	65Cu LOD (ppm)	66Zn LOD (ppm)	67Zn LOD (ppm)	71Ga LOD (ppm)	72Ge LOD (ppm)	75As LOD (ppm)	77Se LOD (ppm)	77Ar Cl LOD (ppm)	82Se LOD (ppm)	83Kr LOD (ppm)
MC-338-537.64	Interstitial Drv	18	95	8	12	10	9	0		1	
MC-338-537.64	Interstitial Drv	19	101	8	13	11	10	0		1	
MC-338-537.64	Interstitial Drv	18	98	8	12	10	10	0		1	
MC-338-537.64	Interstitial Drv	42	223	19	28	23	22	1		1	
MC-338-537.64	Interstitial Drv	26	138	12	18	14	13	1		1	
MC-344-179.8	Interstitial Drv	17	32	31	8	1	7	0		0	
MC-344-179.8	Interstitial Drv	19	36	35	9	1	8	0		0	
MC-344-179.8	Interstitial Drv	15	29	28	8	1	7	0		0	
MC-344-179.8	Interstitial Drv	14	27	26	7	1	6	0		0	
MC-413-258.26	Interstitial Drv	21	101	77	10	5	26	1		1	
MC-413-258.26	Interstitial Drv	20	95	72	9	5	24	1		1	
MC-413-258.26	Interstitial Drv	13	62	47	6	3	16	0		0	
MC-413-258.26	Interstitial Drv	15	74	56	7	4	19	1		1	
MC-413-258.26	Interstitial Drv	12	57	43	6	3	14	0		0	
MC-413-258.26	Interstitial Drv	13	64	48	6	3	16	0		0	
MC-413-258.26	Interstitial Drv	11	54	41	5	3	14	0		0	
MC-413-649	Interstitial Drv	188	892	4,962	21	9	18	1		2	
MC-415-173.4	Interstitial Drv	14	66	50	6	3	17	0		0	
MC-415-173.4	Interstitial Drv	12	58	44	6	3	15	0		0	
MC-415-173.4	Interstitial Drv	13	64	48	6	3	16	0		0	
MC-415-173.4	Interstitial Drv	13	63	48	6	3	16	0		0	
MC-415-389	Interstitial Drv	21	69	750	9	5	224	4		2	
MC-415-389	Interstitial Drv	13	44	480	6	3	143	3		1	
MC-415-389	Interstitial Drv	13	44	478	6	3	143	3		1	
MC-415-389	Interstitial Drv	26	88	955	11	7	285	6		3	
MC-415-389	Interstitial Drv	22	74	805	9	6	241	5		2	
MC-415-432.38	Interstitial Drv	18	59	639	7	5	191	4		2	
MC-415-432.38	Interstitial Drv	13	44	472	5	3	141	3		1	
MC-415-432.38	Interstitial Drv	21	69	752	9	5	225	4		2	
MC-415-432.38	Interstitial Drv	14	46	498	6	4	149	3		1	
MC-415-432.38	Interstitial Drv	13	43	464	5	3	139	3		1	
MC-415-490.78	Interstitial Drv	14	138	162	14	13	138	1		0	
MC-415-490.78	Interstitial Drv	8	79	93	8	7	79	1		0	
MC-415-490.78	Interstitial Drv	11	110	130	11	10	111	1		0	
MC-415-490.78	Interstitial Drv	9	88	104	9	8	89	1		0	
MC-415-490.78	Interstitial Drv	7	65	77	7	6	66	1		0	
MAC-255-6.13	Detrital Tourmaline	112	72	87	79	45	26	2		4	
MAC-255-6.13	Detrital Tourmaline	83	54	64	59	33	19	2		3	
MAC-255-6.13	Detrital Tourmaline	62	40	48	44	25	14	1		2	
MAC-255-6.13	Detrital Tourmaline	71	46	55	50	28	17	1		2	
MAC-246-333.8	APS	22	26	23	21	11	3	1		38	
MAC-246-508.8	APS	74	86	75	70	37	9	2		127	
MAC-246-508.8	APS	21	25	21	20	11	2	1		36	
MAC-252-342.5	APS	39	133	49	54	25	37	3		5	
MAC-252-342.5	APS	47	160	59	64	30	45	3		6	
MAC-252-342.5	APS	37	126	46	51	24	35	2		4	
MAC-252-342.5	APS	36	45	11	38	18	10	2		14	
MAC-253-382	APS	21	14	1,832	21	15	1	3		15	
MAC-253-382	APS	17	11	1,519	17	12	1	2		12	
MAC-253-382	APS	19	12	1,652	19	14	1	3		13	
MAC-253-507.5	APS	11	17	12	14	5	3	1		2	
MAC-253-507.5	APS	11	17	12	14	5	3	1		2	
MAC-253-507.5	APS	46	75	53	60	23	14	3		10	
MAC-255-559	APS	38	34	53	35	18	28	2		14	
MAC-255-559	APS	42	37	57	38	20	30	2		15	
MC-336-570.5	APS	156	138	134	162	72	49	6		62	
MC-434-328.83	APS	27	24	8	21	9	0	2		14	
MC-434-328.83	APS	24	21	7	18	8	0	1		12	
MC-434-328.83	APS	26	23	8	20	9	0	2		14	

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	65Cu LOD (ppm)	66Zn LOD (ppm)	67Zn LOD (ppm)	71Ga LOD (ppm)	72Ge LOD (ppm)	75As LOD (ppm)	77Se LOD (ppm)	77Ar Cl LOD (ppm)	82Se LOD (ppm)	83Kr LOD (ppm)
MC-434-328.83	APS	24	20	7	18	8	0	1		12	
MC-434-328.83	APS	21	18	6	15	7	0	1		11	
MAC-255-559	Monazite	21	19	29	19	10	15	1		8	
MAC-255-559	Monazite	21	19	29	19	10	15	1		8	
MAC-255-559	Monazite	21	19	29	19	10	15	1		8	
MC-413-603.83	Monazite	58	51	79	52	27	42	2		21	
MC-413-603.83	Monazite	49	44	68	44	23	36	2		18	
MC-413-603.83	Monazite	64	57	87	57	30	46	3		23	
MAC-255-564.36	Apatite	20	18	18	21	9	6	1		8	
MAC-255-564.36	Apatite	20	18	18	21	9	6	1		8	
MAC-255-564.36	Apatite	20	18	18	21	9	6	1		8	
MAC-255-564.36	Apatite	20	18	18	21	9	6	1		8	
MAC-255-564.36	Apatite	20	18	18	21	9	6	1		8	
MAC-255-559	Pyrite	9	8	0	6	2	9	1		6	
MAC-255-559	Pyrite	9	8	0	6	2	9	1		6	
MAC-255-559	Pyrite	9	8	0	6	2	9	1		6	
MAC-255-559	Pyrite	9	8	0	6	2	9	1		6	
MC-336-564	Hematite	9	8	0	6	2	9	1		6	
MC-336-564	Hematite	9	8	0	6	2	9	1		6	
MC-413-623.78	Hematite	21	19	29	19	10	15	1		8	
MC-413-623.78	Hematite	20	18	18	21	9	6	1		8	
MC-413-623.78	Hematite	20	18	18	21	9	6	1		8	
MC-413-623.78	Hematite	20	18	18	21	9	6	1		8	
MC-413-623.78	Hematite	32	38	33	30	16	4	1		55	
MC-413-623.78	Hematite	26	31	27	25	13	3	1		45	
MC-413-623.78	Hematite	34	43	11	36	17	10	2		14	
MC-413-623.78	Hematite	33	42	11	35	17	9	2		13	
MC-413-623.78	Hematite	150	241	170	195	74	44	10		33	
MC-413-623.78	Hematite	33	38	34	31	16	4	1		56	
MC-413-623.78	Hematite	8	11	10	4	4	7	1		10	
MAC-246-333.8	Rutile	10	10	3	9	5	2	0	<DL	9	<DL
MAC-246-333.8	Rutile	10	10	3	9	5	2	0	<DL	9	<DL
MAC-246-508.8	Rutile	5	5	0	4	1	5	0	<DL	3	<DL
MAC-252-342.5	Rutile	5	5	0	4	1	5	0	<DL	3	<DL
MAC-252-342.5	Rutile	5	5	0	4	1	5	0	<DL	3	<DL
MAC-246-508.8	Fe(Ti) oxide in Kao	17	16	4	15	8	3	1		15	
MAC-246-508.8	Fe(Ti) oxide in Kao	17	16	4	15	8	3	1		15	
MAC-246-508.8	Fe(Ti) oxide in Kao	17	16	4	15	8	3	1		15	
MC-336-564	Fe-hydroxide vein	18	21	18	17	9	2	0		30	
MC-336-564	Fe-hydroxide vein	9	8	0	6	2	9	1		6	
MC-336-564	Fe-hydroxide vein	20	18	18	21	9	6	1		8	
MC-415-197	Mn(Fe) oxide vein	17	20	18	16	9	2	0		30	

Sample No.	Mineral	85Rb LOD (ppm)	88Sr LOD (ppm)	89Y LOD (ppm)	90Zr LOD (ppm)	93Nb LOD (ppm)	95Mo LOD (ppm)	101Ru LOD (ppm)	103Rh LOD (ppm)	105Pd LOD (ppm)	107Ag LOD (ppm)
MAC-208-237	C1 Chlorite	9	13	11	6	0	8				8
MAC-208-237	C1 Chlorite	9	13	11	6	0	8				8
MAC-208-237	C1 Chlorite	13	19	16	8	1	12				11
MAC-252-271.2	C1 Chlorite	36	64	34	22	13	29		10		16
MAC-252-271.2	C1 Chlorite	22	39	21	13	8	17		6		10
MAC-253-325	C1 Chlorite	37	79	33	29	20	33		6	7	19
MAC-253-325	C1 Chlorite	48	102	43	37	27	42		8	9	24
MAC-253-325	C1 Chlorite	41	88	37	32	23	36		7	8	21
MC-413-183.26	C1 Chlorite	17	32	16	11	12	18		4	4	12
MC-413-183.26	C1 Chlorite	7	13	7	4	5	7		2	2	5
MC-413-183.26	C1 Chlorite	9	17	9	6	6	9		2	2	6
MC-413-183.26	C1 Chlorite	11	21	11	7	8	12		3	3	8
MC-413-183.26	C1 Chlorite	11	20	10	7	8	11		2	3	8
MC-413-183.26	C1 Chlorite	8	16	8	6	6	9		2	2	6
MAC-208-487	C2 Chlorite	16	23	11	7	10	11				8
MAC-208-487	C2 Chlorite	17	25	12	8	11	12				8
MAC-208-487	C2 Chlorite	16	24	11	7	10	12				8
MAC-208-487	C2 Chlorite	20	30	14	9	13	15				10
MAC-208-572	C2 Chlorite	3	14	11	11	15	3				2
MAC-208-572	C2 Chlorite	3	12	9	9	13	3				2
MAC-208-572	C2 Chlorite	3	12	9	9	13	3				2
MAC-208-572	C2 Chlorite	2	9	7	7	10	2				2
MAC-208-572	C2 Chlorite	2	9	7	7	10	2				1
MAC-208-572	C2 Chlorite	2	9	7	7	9	2				1
MAC-246-475.33	C2 Chlorite	8	13	14	13	0	7		3	4	3
MAC-246-475.33	C2 Chlorite	7	12	13	12	0	6		3	3	3
MAC-246-475.33	C2 Chlorite	11	19	21	19	0	10		4	5	5
MAC-246-475.33	C2 Chlorite	11	17	19	17	0	9		4	5	4
MAC-255-559	C2 Chlorite	18	49	20	18	22	17			4	15
MAC-255-559	C2 Chlorite	15	40	16	15	18	14			3	12
MAC-255-559	C2 Chlorite	14	39	16	14	18	14			3	12
MAC-255-559	C2 Chlorite	14	37	15	14	17	13			3	11
MAC-255-559	C2 Chlorite	14	37	15	14	17	13			3	11
MAC-255-559	C2 Chlorite	12	32	13	12	14	11			2	10
MAC-255-559	C2 Chlorite	13	35	14	13	16	12			3	11
MAC-255-564.36	C2 Chlorite	18	44	20	22	16	13				11
MAC-255-564.36	C2 Chlorite	15	37	17	18	13	11				9
MAC-255-564.36	C2 Chlorite	14	35	16	17	12	11				9
MAC-255-564.36	C2 Chlorite	20	49	23	24	17	15				12
MAC-255-564.36	C2 Chlorite	19	47	22	23	17	14				12
MAC-255-564.36	C2 Chlorite	16	40	18	19	14	12				10
MAC-255-564.36	C2 Chlorite	16	39	18	19	14	12				10
MC-336-570.5	C2 Chlorite	34	86	39	41	30	26				21
MC-336-570.5	C2 Chlorite	12	31	14	3	17	10				7
MC-336-570.5	C2 Chlorite	10	27	12	3	14	8				6
MC-336-570.5	C2 Chlorite	16	39	18	19	14	12				10
MC-336-570.5	C2 Chlorite	16	39	18	19	14	12				10
MC-336-570.5	C2 Chlorite	17	43	20	21	15	13				11
MAC-208-290.5	Illite	10	17	11	7	3	6		4		5
MAC-208-290.5	Illite	24	40	26	16	7	15		9		13
MAC-246-333.8	Illite	18	41	20	15	12	16		4		9
MAC-246-333.8	Illite	11	27	13	10	8	10		3		6
MAC-252-271.2	Illite	11	19	10	6	4	8		3		5
MAC-252-271.2	Illite	11	19	10	6	4	9		3		5
MAC-252-271.2	Illite	11	19	10	6	4	8		3		5
MAC-252-319.44	Illite	18	38	16	14	10	16		3	3	9
MAC-252-319.44	Illite	20	42	18	15	11	18		3	4	10
MAC-253-507.5	Illite	11	21	13	11	2	12		4	5	7
MAC-255-293.4	Illite	17	47	20	5	25	15				10

Sample No.	Mineral	85Rb LOD (ppm)	88Sr LOD (ppm)	89Y LOD (ppm)	90Zr LOD (ppm)	93Nb LOD (ppm)	95Mo LOD (ppm)	101Ru LOD (ppm)	103Rh LOD (ppm)	105Pd LOD (ppm)	107Ag LOD (ppm)
MAC-255-293.4	Illite	11	30	13	3	16	9				7
MAC-255-293.4	Illite	13	36	16	4	19	11				8
MAC-255-293.4	Illite	16	44	19	5	23	14				10
MAC-255-293.4	Illite	21	56	25	6	30	18				12
MAC-255-501.32	Illite	15	26	16	13	9	11			4	6
MAC-255-501.32	Illite	13	24	14	12	8	10			4	5
MAC-255-501.32	Illite	13	24	14	12	8	10			3	5
MAC-255-501.32	Illite	15	27	16	14	10	11			4	6
MAC-255-501.32	Illite	15	27	16	14	10	11			4	6
MAC-255-501.32	Illite	14	24	15	12	9	10			4	5
MAC-255-501.32	Illite	13	24	14	12	9	10			4	5
MC-336-506.8	Illite	17	29	18	11	5	11		6		9
MC-336-506.8	Illite	19	31	20	12	5	12		7		10
MC-336-506.8	Illite	15	26	16	10	4	10		6		8
MC-336-570.5	Illite	23	56	26	27	20	17				14
MC-338-101	Illite	19	37	22	19	4	21		7	8	12
MC-338-101	Illite	15	29	17	15	3	17		5	6	9
MC-338-101	Illite	25	50	30	25	5	29		9	11	16
MC-338-101	Illite	21	42	25	21	4	24		8	9	13
MC-338-319	Illite	15	28	17	13	11	19		4	4	7
MC-338-319	Illite	18	36	22	16	14	24		5	5	9
MC-338-319	Illite	16	31	19	14	12	21		4	5	8
MC-338-319	Illite	17	34	20	15	13	23		4	5	9
MC-338-559	Illite	16	30	15	10	11	17		4	4	11
MC-338-559	Illite	49	93	47	32	35	52		11	13	35
MC-338-559	Illite	39	74	37	26	28	41		9	10	28
MC-413-299	Illite	44	69	38	33	17	37				25
MC-413-299	Illite	26	41	22	20	10	22				15
MC-413-603.83	Illite	17	45	18	16	20	16			3	14
MC-413-603.83	Illite	22	59	24	22	27	21			5	18
MC-413-603.83	Illite	17	46	19	17	21	16			4	14
MC-413-603.83	Illite	25	66	27	24	30	24			5	20
MC-413-603.83	Illite	21	56	23	21	26	20			4	17
MC-413-603.83	Illite	25	66	27	24	30	24			5	20
MC-413-603.83	Illite	18	49	20	18	22	18			4	15
MC-413-603.83	Illite	18	49	20	18	22	18			4	15
MC-434-253.64	Illite	12	17	8	5	8	9				6
MC-434-253.64	Illite	18	27	13	8	12	13				9
MC-434-253.64	Illite	20	29	14	9	13	14				10
MC-434-54.07	Illite	25	48	29	21	19	32		6	7	12
MC-434-54.07	Illite	25	48	29	21	19	32		6	7	12
MAC-246-508.8	Drv Veins	23	54	26	19	15	20		5		11
MAC-246-508.8	Drv Veins	18	41	20	15	12	16		4		9
MAC-246-508.8	Drv Veins	16	36	18	13	10	14		4		8
MAC-246-508.8	Drv Veins	15	36	17	13	10	14		4		8
MAC-253-265.3	Drv Veins	7	6	9	4	7	8				5
MAC-253-265.3	Drv Veins	7	6	9	4	6	7				4
MAC-253-265.3	Drv Veins	7	6	9	4	7	8				4
MAC-253-265.3	Drv Veins	6	5	7	3	5	6				4
MAC-253-265.3	Drv Veins	5	5	7	3	5	6				3
MAC-253-538	Drv Veins	28	63	28	19	34	25				18
MAC-253-538	Drv Veins	22	50	22	15	26	20				14
MAC-253-538	Drv Veins	30	67	29	20	36	27				19
MAC-253-538	Drv Veins	26	59	26	18	31	23				17
MAC-253-538	Drv Veins	23	52	23	16	28	21				15
MC-344-100.1	Drv Veins	7	2	10	6	2	6				4
MC-344-100.1	Drv Veins	7	2	10	7	2	6				4
MC-344-100.1	Drv Veins	8	3	12	7	3	7				5
MC-344-100.1	Drv Veins	8	3	12	8	3	7				5

Sample No.	Mineral	85Rb LOD (ppm)	88Sr LOD (ppm)	89Y LOD (ppm)	90Zr LOD (ppm)	93Nb LOD (ppm)	95Mo LOD (ppm)	101Ru LOD (ppm)	103Rh LOD (ppm)	105Pd LOD (ppm)	107Ag LOD (ppm)
MC-344-100.1	Drv Veins	9	3	12	8	3	8				5
MC-344-100.1	Drv Veins	7	2	11	7	2	7				4
MC-344-100.1	Drv Veins	9	3	13	8	3	8				5
MC-415-497.66	Drv Veins	4	2	7	4	1	5				3
MC-415-497.66	Drv Veins	3	2	5	3	0	4				2
MC-415-497.66	Drv Veins	3	2	5	3	0	4				2
MC-415-497.66	Drv Veins	3	2	5	3	0	4				2
MAC-208-10.2	Interstitial Drv	11	27	9	5	17	7				3
MAC-208-10.2	Interstitial Drv	19	49	16	10	30	13				5
MAC-208-572	Interstitial Drv	2	9	7	7	10	2				2
MAC-208-572	Interstitial Drv	4	15	12	12	16	3				2
MAC-208-572	Interstitial Drv	3	12	9	9	13	3				2
MAC-208-572	Interstitial Drv	3	12	9	9	13	3				2
MAC-208-572	Interstitial Drv	2	9	7	7	10	2				2
MAC-246-142.86	Interstitial Drv	17	20	15	15	7	13				9
MAC-246-142.86	Interstitial Drv	11	13	10	10	4	8				6
MAC-246-142.86	Interstitial Drv	10	12	9	9	4	8				5
MAC-246-142.86	Interstitial Drv	12	13	10	10	5	9				6
MAC-246-142.86	Interstitial Drv	10	11	8	9	4	7				5
MAC-246-213.43	Interstitial Drv	17	15	22	10	16	18				11
MAC-246-213.43	Interstitial Drv	10	9	13	6	10	11				6
MAC-246-213.43	Interstitial Drv	10	8	12	5	9	10				6
MAC-246-4.33	Interstitial Drv	15	39	13	8	24	10				4
MAC-246-4.33	Interstitial Drv	18	45	15	9	28	12				4
MAC-246-4.33	Interstitial Drv	12	32	10	6	20	8				3
MAC-246-475.33	Interstitial Drv	25	55	24	16	17	30				16
MAC-246-475.33	Interstitial Drv	19	42	18	12	13	22				12
MAC-246-475.33	Interstitial Drv	13	21	23	21	0	11		5	6	5
MAC-246-475.33	Interstitial Drv	22	49	21	14	15	26				14
MAC-246-475.33	Interstitial Drv	23	50	21	15	16	27				15
MAC-246-475.33	Interstitial Drv	12	26	11	8	8	14				8
MAC-246-475.33	Interstitial Drv	16	35	15	10	11	19				10
MAC-246-499.02	Interstitial Drv	8	17	13	5	4	6				2
MAC-252-199.86	Interstitial Drv	24	28	20	21	9	18				12
MAC-252-199.86	Interstitial Drv	17	20	15	15	7	13				9
MAC-252-342.5	Interstitial Drv	34	53	29	26	13	29				19
MAC-252-342.5	Interstitial Drv	27	42	23	21	11	23				15
MAC-252-342.5	Interstitial Drv	100	226	98	67	120	90				64
MAC-252-342.5	Interstitial Drv	55	124	54	37	66	49				35
MAC-252-342.5	Interstitial Drv	28	64	28	19	34	25				18
MAC-252-342.5	Interstitial Drv	20	46	20	14	24	18				13
MAC-252-55.65	Interstitial Drv	34	59	21	30	43	38				24
MAC-252-55.65	Interstitial Drv	29	50	18	26	37	32				21
MAC-252-55.65	Interstitial Drv	28	49	18	25	36	31				20
MAC-253-205	Interstitial Drv	4	1	6	4	1	4				3
MAC-253-205	Interstitial Drv	5	2	8	5	2	5				3
MAC-253-205	Interstitial Drv	5	2	8	5	2	5				3
MAC-253-205	Interstitial Drv	6	2	9	6	2	5				4
MAC-253-205	Interstitial Drv	5	2	8	5	2	5				3
MAC-253-205	Interstitial Drv	6	2	9	6	2	5				4
MAC-253-205	Interstitial Drv	7	2	11	7	2	6				4
MAC-253-265.3	Interstitial Drv	17	15	21	9	16	18				10
MAC-253-265.3	Interstitial Drv	15	13	19	8	14	16				9
MAC-253-265.3	Interstitial Drv	10	9	13	6	10	11				6
MAC-255-6.13	Interstitial Drv	36	61	22	32	45	39				25
MAC-255-6.13	Interstitial Drv	41	71	26	37	52	46				29
MAC-255-6.13	Interstitial Drv	39	67	24	35	50	43				28
MAC-255-6.13	Interstitial Drv	55	94	34	48	69	60				38
MC-338-537.64	Interstitial Drv	23	28	22	15	11	27				20

Sample No.	Mineral	85Rb LOD (ppm)	88Sr LOD (ppm)	89Y LOD (ppm)	90Zr LOD (ppm)	93Nb LOD (ppm)	95Mo LOD (ppm)	101Ru LOD (ppm)	103Rh LOD (ppm)	105Pd LOD (ppm)	107Ag LOD (ppm)
MC-338-537.64	Interstitial Drv	10	13	10	7	5	12				9
MC-338-537.64	Interstitial Drv	11	13	11	7	5	13				10
MC-338-537.64	Interstitial Drv	11	13	10	7	5	13				10
MC-338-537.64	Interstitial Drv	24	30	23	16	12	29				22
MC-338-537.64	Interstitial Drv	15	18	14	10	7	18				13
MC-344-179.8	Interstitial Drv	3	13	11	10	15	3				2
MC-344-179.8	Interstitial Drv	4	15	12	12	17	3				3
MC-344-179.8	Interstitial Drv	3	12	10	10	13	3				2
MC-344-179.8	Interstitial Drv	3	12	9	9	13	3				2
MC-413-258.26	Interstitial Drv	8	36	15	4	19	7				6
MC-413-258.26	Interstitial Drv	8	34	14	3	18	6				6
MC-413-258.26	Interstitial Drv	5	22	9	2	12	4				4
MC-413-258.26	Interstitial Drv	6	27	11	3	14	5				4
MC-413-258.26	Interstitial Drv	5	21	8	2	11	4				3
MC-413-258.26	Interstitial Drv	5	23	9	2	12	4				4
MC-413-258.26	Interstitial Drv	5	20	8	2	10	4				3
MC-413-649	Interstitial Drv	18	44	19	15	16	18				8
MC-415-173.4	Interstitial Drv	6	24	10	2	12	4				4
MC-415-173.4	Interstitial Drv	5	21	9	2	11	4				3
MC-415-173.4	Interstitial Drv	5	23	9	2	12	4				4
MC-415-173.4	Interstitial Drv	5	23	9	2	12	4				4
MC-415-389	Interstitial Drv	8	51	17	8	19	3				2
MC-415-389	Interstitial Drv	5	33	11	5	12	2				1
MC-415-389	Interstitial Drv	5	32	11	5	12	2				1
MC-415-389	Interstitial Drv	11	65	22	10	25	3				2
MC-415-389	Interstitial Drv	9	55	18	8	21	3				2
MC-415-432.38	Interstitial Drv	7	43	15	7	16	2				1
MC-415-432.38	Interstitial Drv	5	32	11	5	12	2				1
MC-415-432.38	Interstitial Drv	8	51	17	8	19	3				2
MC-415-432.38	Interstitial Drv	6	34	11	5	13	2				1
MC-415-432.38	Interstitial Drv	5	31	11	5	12	2				1
MC-415-490.78	Interstitial Drv	6	3	10	6	1	8				5
MC-415-490.78	Interstitial Drv	4	2	6	3	0	5				3
MC-415-490.78	Interstitial Drv	5	3	8	5	1	7				4
MC-415-490.78	Interstitial Drv	4	2	7	4	1	5				3
MC-415-490.78	Interstitial Drv	3	2	5	3	0	4				2
MAC-255-6.13	Detrital Tourmaline	53	91	33	47	66	58				37
MAC-255-6.13	Detrital Tourmaline	39	67	24	35	49	43				28
MAC-255-6.13	Detrital Tourmaline	29	50	18	26	37	32				21
MAC-255-6.13	Detrital Tourmaline	33	57	21	30	42	37				23
MAC-246-333.8	APS	16	37	18	13	10	14		4		8
MAC-246-508.8	APS	53	123	60	45	35	47		12		26
MAC-246-508.8	APS	15	35	17	13	10	13		3		7
MAC-252-342.5	APS	35	79	34	23	42	31				22
MAC-252-342.5	APS	42	94	41	28	50	37				27
MAC-252-342.5	APS	33	75	33	22	40	30				21
MAC-252-342.5	APS	30	47	26	23	12	26				17
MAC-253-382	APS	12	18	15	8	1	11				10
MAC-253-382	APS	10	15	12	6	0	9				8
MAC-253-382	APS	11	16	13	7	0	10				9
MAC-253-507.5	APS	6	12	7	6	1	7		2	3	4
MAC-253-507.5	APS	6	12	7	6	1	7		2	3	4
MAC-253-507.5	APS	27	54	32	27	6	31		10	11	17
MAC-255-559	APS	23	61	25	22	28	22			5	19
MAC-255-559	APS	25	67	27	24	30	24			5	21
MC-336-570.5	APS	94	235	108	114	82	71				58
MC-434-328.83	APS	17	30	16	10	6	13		5		7
MC-434-328.83	APS	15	26	14	9	5	12		4		6
MC-434-328.83	APS	16	29	15	10	6	13		4		7

Sample No.	Mineral	85Rb LOD (ppm)	88Sr LOD (ppm)	89Y LOD (ppm)	90Zr LOD (ppm)	93Nb LOD (ppm)	95Mo LOD (ppm)	101Ru LOD (ppm)	103Rh LOD (ppm)	105Pd LOD (ppm)	107Ag LOD (ppm)
MC-434-328.83	APS	15	26	14	9	5	12		4		6
MC-434-328.83	APS	13	22	12	8	5	10		3		6
MAC-255-559	Monazite	13	34	14	12	15	12			3	11
MAC-255-559	Monazite	13	34	14	12	15	12			3	11
MAC-255-559	Monazite	13	34	14	12	15	12			3	11
MC-413-603.83	Monazite	34	92	37	34	42	33			7	29
MC-413-603.83	Monazite	29	79	32	29	36	28			6	24
MC-413-603.83	Monazite	38	102	41	37	46	36			8	32
MAC-255-564.36	Apatite	12	31	14	15	11	9				8
MAC-255-564.36	Apatite	12	31	14	15	11	9				8
MAC-255-564.36	Apatite	12	31	14	15	11	9				8
MAC-255-564.36	Apatite	12	31	14	15	11	9				8
MAC-255-564.36	Apatite	12	31	14	15	11	9				8
MAC-255-559	Pyrite	3	10	8	5	4	3				3
MAC-255-559	Pyrite	3	10	8	5	4	3				3
MAC-255-559	Pyrite	3	10	8	5	4	3				3
MAC-255-559	Pyrite	3	10	8	5	4	3				3
MC-336-564	Hematite	3	10	8	5	4	3				3
MC-336-564	Hematite	3	10	8	5	4	3				3
MC-413-623.78	Hematite	13	34	14	12	15	12			3	11
MC-413-623.78	Hematite	12	31	14	15	11	9				8
MC-413-623.78	Hematite	12	31	14	15	11	9				8
MC-413-623.78	Hematite	12	31	14	15	11	9				8
MC-413-623.78	Hematite	23	54	26	19	15	20		5		11
MC-413-623.78	Hematite	19	44	21	16	13	17		4		9
MC-413-623.78	Hematite	28	45	25	22	11	24				16
MC-413-623.78	Hematite	28	43	24	21	11	24				16
MC-413-623.78	Hematite	87	174	104	88	18	99		32	37	56
MC-413-623.78	Hematite	23	55	26	20	16	21		5		11
MC-413-623.78	Hematite	4	7	8	7	0	4		2	2	2
MAC-246-333.8	Rutile	6	11	6	5	4	4	<DL	<DL	2	2
MAC-246-333.8	Rutile	6	11	6	5	4	4	<DL	<DL	2	2
MAC-246-508.8	Rutile	2	6	5	3	2	2	<DL	<DL	<DL	2
MAC-252-342.5	Rutile	2	6	5	3	2	2	<DL	<DL	<DL	2
MAC-252-342.5	Rutile	2	6	5	3	2	2	<DL	<DL	<DL	2
MAC-246-508.8	Fe(Ti) oxide in Kao	10	18	11	9	6	7			3	4
MAC-246-508.8	Fe(Ti) oxide in Kao	10	18	11	9	6	7			3	4
MAC-246-508.8	Fe(Ti) oxide in Kao	10	18	11	9	6	7			3	4
MC-336-564	Fe-hydroxide vein	13	29	14	11	8	11		3		6
MC-336-564	Fe-hydroxide vein	3	10	8	5	4	3				3
MC-336-564	Fe-hydroxide vein	12	31	14	15	11	9				8
MC-415-197	Mn(Fe) oxide vein	12	29	14	10	8	11		3		6

Sample No.	Mineral	111Cd LOD (ppm)	115In LOD (ppm)	118Sn LOD (ppm)	121Sb LOD (ppm)	125Te LOD (ppm)	133Cs LOD (ppm)	137Ba LOD (ppm)	139La LOD (ppm)	140Ce LOD (ppm)	141Pr LOD (ppm)
MAC-208-237	C1 Chlorite		16	8	12			2	10	11	10
MAC-208-237	C1 Chlorite		16	8	12			2	10	11	10
MAC-208-237	C1 Chlorite		23	12	18			3	14	15	15
MAC-252-271.2	C1 Chlorite	303	42	27	24			42	33	32	42
MAC-252-271.2	C1 Chlorite	183	25	16	15			25	20	19	25
MAC-253-325	C1 Chlorite	188	29	26	37			38	29	33	32
MAC-253-325	C1 Chlorite	244	37	34	48			49	37	43	42
MAC-253-325	C1 Chlorite	210	32	29	41			42	32	37	36
MC-413-183.26	C1 Chlorite		17	13	13			20	16	20	21
MC-413-183.26	C1 Chlorite		7	5	5			8	7	8	8
MC-413-183.26	C1 Chlorite		9	7	7			11	9	11	11
MC-413-183.26	C1 Chlorite		11	9	9			13	11	13	14
MC-413-183.26	C1 Chlorite		11	9	8			13	10	13	13
MC-413-183.26	C1 Chlorite		9	7	7			10	8	10	10
MAC-208-487	C2 Chlorite		16	12	12			20	11	14	14
MAC-208-487	C2 Chlorite		17	13	13			22	12	15	15
MAC-208-487	C2 Chlorite		16	13	13			21	12	15	15
MAC-208-487	C2 Chlorite		20	16	16			26	14	18	18
MAC-208-572	C2 Chlorite		4	7	13			24	7	8	12
MAC-208-572	C2 Chlorite		3	6	12			21	7	7	11
MAC-208-572	C2 Chlorite		3	6	12			21	7	7	11
MAC-208-572	C2 Chlorite		2	4	9			16	5	5	8
MAC-208-572	C2 Chlorite		2	4	9			16	5	5	8
MAC-208-572	C2 Chlorite		2	4	8			15	5	5	8
MAC-246-475.33	C2 Chlorite	94	7	6	1			15	10	11	10
MAC-246-475.33	C2 Chlorite	85	6	6	1			14	9	10	9
MAC-246-475.33	C2 Chlorite	134	10	9	1			22	14	16	15
MAC-246-475.33	C2 Chlorite	125	9	8	1			20	13	15	14
MAC-255-559	C2 Chlorite	101	17	16	18			57	19	18	19
MAC-255-559	C2 Chlorite	83	14	13	15			47	15	15	15
MAC-255-559	C2 Chlorite	80	14	13	15			45	15	14	15
MAC-255-559	C2 Chlorite	76	13	12	14			43	14	13	14
MAC-255-559	C2 Chlorite	76	13	12	14			43	14	13	14
MAC-255-559	C2 Chlorite	66	11	10	12			37	12	12	12
MAC-255-559	C2 Chlorite	72	12	11	13			41	13	13	13
MAC-255-564.36	C2 Chlorite	102	17	13	18			22	18	18	20
MAC-255-564.36	C2 Chlorite	85	14	11	15			18	15	15	17
MAC-255-564.36	C2 Chlorite	81	13	10	14			18	14	15	16
MAC-255-564.36	C2 Chlorite	113	19	14	20			25	20	20	23
MAC-255-564.36	C2 Chlorite	108	18	13	19			23	19	19	22
MAC-255-564.36	C2 Chlorite	90	15	11	16			20	16	16	18
MAC-255-564.36	C2 Chlorite	89	15	11	15			19	16	16	18
MC-336-570.5	C2 Chlorite	196	32	24	34			43	35	35	39
MC-336-570.5	C2 Chlorite		12	11	5			39	13	16	16
MC-336-570.5	C2 Chlorite		10	9	4			34	11	14	14
MC-336-570.5	C2 Chlorite	90	15	11	16			20	16	16	18
MC-336-570.5	C2 Chlorite	89	15	11	15			19	16	16	18
MC-336-570.5	C2 Chlorite	100	16	12	17			22	18	18	20
MAC-208-290.5	Illite	117	9	9	5			5	8	8	9
MAC-208-290.5	Illite	275	20	20	11			11	19	19	21
MAC-246-333.8	Illite	125	19	10	16			23	20	18	19
MAC-246-333.8	Illite	80	12	7	10			15	13	12	13
MAC-252-271.2	Illite	88	12	8	7			12	9	9	12
MAC-252-271.2	Illite	90	13	8	7			13	10	10	12
MAC-252-271.2	Illite	88	12	8	7			12	9	9	12
MAC-252-319.44	Illite	90	14	13	18			18	14	16	15
MAC-252-319.44	Illite	101	15	14	20			20	15	18	17
MAC-253-507.5	Illite	122	14	9	5			11	9	13	13
MAC-255-293.4	Illite		18	16	7			58	19	24	24

Sample No.	Mineral	111Cd LOD (ppm)	115In LOD (ppm)	118Sn LOD (ppm)	121Sb LOD (ppm)	125Te LOD (ppm)	133Cs LOD (ppm)	137Ba LOD (ppm)	139La LOD (ppm)	140Ce LOD (ppm)	141Pr LOD (ppm)
MAC-255-293.4	Illite		12	10	5			37	12	16	15
MAC-255-293.4	Illite		14	12	6			44	14	18	18
MAC-255-293.4	Illite		17	15	7			54	18	23	22
MAC-255-293.4	Illite		22	20	9			70	23	29	28
MAC-255-501.32	Illite		15	10	7			13	15	15	19
MAC-255-501.32	Illite		13	9	6			12	13	13	17
MAC-255-501.32	Illite		13	9	6			12	13	13	17
MAC-255-501.32	Illite		15	11	7			14	15	16	20
MAC-255-501.32	Illite		15	11	7			14	15	15	19
MAC-255-501.32	Illite		14	10	6			12	14	14	18
MAC-255-501.32	Illite		13	9	6			12	14	14	17
MC-336-506.8	Illite	197	14	14	8			8	14	14	15
MC-336-506.8	Illite	214	16	16	9			8	15	15	16
MC-336-506.8	Illite	176	13	13	7			7	12	12	13
MC-336-570.5	Illite	129	21	16	22			28	23	23	26
MC-338-101	Illite	215	24	16	10			20	17	23	22
MC-338-101	Illite	167	19	13	7			16	13	18	17
MC-338-101	Illite	286	32	22	13			27	22	30	30
MC-338-101	Illite	240	27	18	11			22	19	25	25
MC-338-319	Illite	111	19	11	17			1	14	15	16
MC-338-319	Illite	140	24	13	21			1	18	18	20
MC-338-319	Illite	121	21	12	19			1	15	16	17
MC-338-319	Illite	131	23	13	20			1	17	17	19
MC-338-559	Illite		16	13	12			19	15	19	20
MC-338-559	Illite		51	39	39			58	47	58	61
MC-338-559	Illite		41	31	31			46	37	46	49
MC-413-299	Illite	195	39	33	35			43	33	39	38
MC-413-299	Illite	116	23	20	21			26	20	23	23
MC-413-603.83	Illite	92	16	14	17			52	17	16	17
MC-413-603.83	Illite	121	21	19	22			69	23	21	23
MC-413-603.83	Illite	94	16	15	17			53	18	17	18
MC-413-603.83	Illite	136	23	21	25			77	25	24	25
MC-413-603.83	Illite	116	20	18	21			66	22	20	22
MC-413-603.83	Illite	136	23	21	25			77	25	24	25
MC-413-603.83	Illite	101	17	16	18			57	19	18	19
MC-413-603.83	Illite	101	17	16	18			57	19	18	19
MC-434-253.64	Illite		12	9	9			15	8	11	11
MC-434-253.64	Illite		18	15	14			24	13	17	17
MC-434-253.64	Illite		20	16	16			26	14	18	18
MC-434-54.07	Illite	186	32	18	29			1	23	24	26
MC-434-54.07	Illite	186	32	18	29			1	23	24	26
MAC-246-508.8	Drv Veins	162	24	13	21			30	26	24	25
MAC-246-508.8	Drv Veins	124	19	10	16			23	20	18	19
MAC-246-508.8	Drv Veins	110	17	9	14			20	17	16	17
MAC-246-508.8	Drv Veins	109	16	9	14			20	17	16	17
MAC-253-265.3	Drv Veins		6	7	6			10	8	7	10
MAC-253-265.3	Drv Veins		6	7	6			10	8	6	10
MAC-253-265.3	Drv Veins		6	7	6			10	8	7	10
MAC-253-265.3	Drv Veins		5	6	5			8	6	5	8
MAC-253-265.3	Drv Veins		5	5	4			8	6	5	8
MAC-253-538	Drv Veins		30	22	30			47	21	28	27
MAC-253-538	Drv Veins		24	17	24			37	17	22	21
MAC-253-538	Drv Veins		32	23	32			50	23	30	29
MAC-253-538	Drv Veins		28	21	28			44	20	26	25
MAC-253-538	Drv Veins		25	18	25			39	18	23	22
MC-344-100.1	Drv Veins		11	7	7			3	3	7	7
MC-344-100.1	Drv Veins		12	8	8			3	3	8	8
MC-344-100.1	Drv Veins		13	9	9			3	4	9	8
MC-344-100.1	Drv Veins		13	9	9			3	4	9	9

Sample No.	Mineral	111Cd LOD (ppm)	115In LOD (ppm)	118Sn LOD (ppm)	121Sb LOD (ppm)	125Te LOD (ppm)	133Cs LOD (ppm)	137Ba LOD (ppm)	139La LOD (ppm)	140Ce LOD (ppm)	141Pr LOD (ppm)
MC-344-100.1	Drv Veins		14	9	9			4	4	10	9
MC-344-100.1	Drv Veins		12	8	8			3	3	8	8
MC-344-100.1	Drv Veins		14	10	10			4	4	10	9
MC-415-497.66	Drv Veins		3	4	53			11	1	3	5
MC-415-497.66	Drv Veins		3	4	43			9	1	2	4
MC-415-497.66	Drv Veins		3	4	43			9	1	2	4
MC-415-497.66	Drv Veins		3	3	40			8	1	2	3
MAC-208-10.2	Interstitial Drv		8	7	9			29	7	11	10
MAC-208-10.2	Interstitial Drv		14	12	15			52	13	19	19
MAC-208-572	Interstitial Drv		2	4	9			16	5	5	8
MAC-208-572	Interstitial Drv		4	7	14			26	8	8	13
MAC-208-572	Interstitial Drv		3	6	11			20	6	7	10
MAC-208-572	Interstitial Drv		3	6	12			21	7	7	11
MAC-208-572	Interstitial Drv		2	4	9			16	5	5	8
MAC-246-142.86	Interstitial Drv		19	14	2			18	22	21	24
MAC-246-142.86	Interstitial Drv		13	9	1			11	14	13	15
MAC-246-142.86	Interstitial Drv		11	8	1			10	13	12	14
MAC-246-142.86	Interstitial Drv		13	9	1			12	14	14	16
MAC-246-142.86	Interstitial Drv		11	8	1			10	12	12	14
MAC-246-213.43	Interstitial Drv		15	17	14			25	20	16	24
MAC-246-213.43	Interstitial Drv		9	10	9			15	12	10	15
MAC-246-213.43	Interstitial Drv		9	9	8			14	11	9	13
MAC-246-4.33	Interstitial Drv		11	10	12			41	11	15	15
MAC-246-4.33	Interstitial Drv		13	11	14			48	12	17	17
MAC-246-4.33	Interstitial Drv		9	8	10			34	9	12	12
MAC-246-475.33	Interstitial Drv		25	20	23			37	21	23	28
MAC-246-475.33	Interstitial Drv		19	15	18			28	16	17	21
MAC-246-475.33	Interstitial Drv	152	11	10	1			25	16	18	16
MAC-246-475.33	Interstitial Drv		22	17	21			33	19	20	25
MAC-246-475.33	Interstitial Drv		22	18	21			34	19	21	26
MAC-246-475.33	Interstitial Drv		12	9	11			18	10	11	13
MAC-246-475.33	Interstitial Drv		16	13	15			24	14	15	18
MAC-246-499.02	Interstitial Drv		10	7	4			15	8	9	10
MAC-252-199.86	Interstitial Drv		27	19	2			24	30	28	33
MAC-252-199.86	Interstitial Drv		19	14	2			17	21	20	24
MAC-252-342.5	Interstitial Drv	151	30	26	27			33	26	30	30
MAC-252-342.5	Interstitial Drv	120	24	20	22			27	20	24	24
MAC-252-342.5	Interstitial Drv		109	79	107			168	76	101	97
MAC-252-342.5	Interstitial Drv		60	43	59			92	42	56	53
MAC-252-342.5	Interstitial Drv		31	22	30			47	22	29	27
MAC-252-342.5	Interstitial Drv		22	16	22			34	15	20	20
MAC-252-55.65	Interstitial Drv		37	29	44			97	31	33	35
MAC-252-55.65	Interstitial Drv		31	25	37			83	26	28	29
MAC-252-55.65	Interstitial Drv		31	25	37			81	25	28	29
MAC-253-205	Interstitial Drv		7	5	5			2	2	5	5
MAC-253-205	Interstitial Drv		9	6	6			2	2	6	6
MAC-253-205	Interstitial Drv		9	6	6			2	2	6	6
MAC-253-205	Interstitial Drv		10	7	7			3	3	7	7
MAC-253-205	Interstitial Drv		9	6	6			2	2	6	6
MAC-253-205	Interstitial Drv		9	6	7			2	3	7	6
MAC-253-205	Interstitial Drv		12	8	8			3	3	8	8
MAC-253-265.3	Interstitial Drv		15	16	14			24	19	16	24
MAC-253-265.3	Interstitial Drv		13	14	12			21	17	14	21
MAC-253-265.3	Interstitial Drv		9	10	9			15	12	10	15
MAC-255-6.13	Interstitial Drv		38	31	46			101	32	35	36
MAC-255-6.13	Interstitial Drv		44	36	53			117	37	40	42
MAC-255-6.13	Interstitial Drv		42	34	50			111	35	38	40
MAC-255-6.13	Interstitial Drv		58	47	70			154	49	53	55
MC-338-537.64	Interstitial Drv		30	22	27			17	17	20	25

Sample No.	Mineral	111Cd LOD (ppm)	115In LOD (ppm)	118Sn LOD (ppm)	121Sb LOD (ppm)	125Te LOD (ppm)	133Cs LOD (ppm)	137Ba LOD (ppm)	139La LOD (ppm)	140Ce LOD (ppm)	141Pr LOD (ppm)
MC-338-537.64	Interstitial Drv		13	10	12			8	8	9	11
MC-338-537.64	Interstitial Drv		14	10	13			8	8	10	12
MC-338-537.64	Interstitial Drv		14	10	13			8	8	10	12
MC-338-537.64	Interstitial Drv		32	23	29			18	18	22	27
MC-338-537.64	Interstitial Drv		19	14	18			11	11	13	17
MC-344-179.8	Interstitial Drv		4	6	13			23	7	8	12
MC-344-179.8	Interstitial Drv		4	7	15			27	8	9	14
MC-344-179.8	Interstitial Drv		3	6	12			21	7	7	11
MC-344-179.8	Interstitial Drv		3	6	11			20	6	7	10
MC-413-258.26	Interstitial Drv		9	13	3			40	12	11	12
MC-413-258.26	Interstitial Drv		9	12	2			38	11	10	12
MC-413-258.26	Interstitial Drv		6	8	2			25	7	7	8
MC-413-258.26	Interstitial Drv		7	9	2			30	9	8	9
MC-413-258.26	Interstitial Drv		5	7	1			23	7	6	7
MC-413-258.26	Interstitial Drv		6	8	2			25	8	7	8
MC-413-258.26	Interstitial Drv		5	7	1			22	6	6	7
MC-413-649	Interstitial Drv		17	12	12			95	17	19	21
MC-415-173.4	Interstitial Drv		6	8	2			26	8	7	8
MC-415-173.4	Interstitial Drv		5	7	1			23	7	6	7
MC-415-173.4	Interstitial Drv		6	8	2			25	7	7	8
MC-415-173.4	Interstitial Drv		6	8	2			25	7	7	8
MC-415-389	Interstitial Drv		13	4	4			21	9	13	15
MC-415-389	Interstitial Drv		8	2	3			14	6	8	10
MC-415-389	Interstitial Drv		8	2	3			14	6	8	10
MC-415-389	Interstitial Drv		17	5	5			27	12	16	19
MC-415-389	Interstitial Drv		14	4	5			23	10	14	16
MC-415-432.38	Interstitial Drv		11	3	4			18	8	11	13
MC-415-432.38	Interstitial Drv		8	2	3			13	6	8	9
MC-415-432.38	Interstitial Drv		13	4	4			21	10	13	15
MC-415-432.38	Interstitial Drv		9	2	3			14	6	9	10
MC-415-432.38	Interstitial Drv		8	2	3			13	6	8	9
MC-415-490.78	Interstitial Drv		5	7	84			18	2	4	7
MC-415-490.78	Interstitial Drv		3	4	48			10	1	2	4
MC-415-490.78	Interstitial Drv		4	6	68			14	1	3	6
MC-415-490.78	Interstitial Drv		3	5	54			12	1	3	5
MC-415-490.78	Interstitial Drv		3	3	40			9	1	2	4
MAC-255-6.13	Detrital Tourmaline		57	45	68			149	47	51	53
MAC-255-6.13	Detrital Tourmaline		42	34	50			111	35	38	39
MAC-255-6.13	Detrital Tourmaline		31	25	38			83	26	28	29
MAC-255-6.13	Detrital Tourmaline		36	29	43			94	30	33	34
MAC-246-333.8	APS	111	17	9	14			20	18	16	17
MAC-246-508.8	APS	373	56	31	48			68	59	55	58
MAC-246-508.8	APS	106	16	9	14			19	17	16	17
MAC-252-342.5	APS		38	27	37			58	26	35	34
MAC-252-342.5	APS		45	33	45			70	32	42	40
MAC-252-342.5	APS		36	26	35			55	25	33	32
MAC-252-342.5	APS	133	27	23	24			30	23	27	26
MAC-253-382	APS		21	11	16			3	13	14	14
MAC-253-382	APS		18	9	14			2	11	12	11
MAC-253-382	APS		19	10	15			2	12	13	12
MAC-253-507.5	APS	70	8	5	3			7	5	7	7
MAC-253-507.5	APS	70	8	5	3			7	5	7	7
MAC-253-507.5	APS	308	34	23	14			29	24	33	32
MAC-255-559	APS	126	22	20	23			72	23	22	23
MAC-255-559	APS	138	24	22	25			78	26	24	26
MC-336-570.5	APS	537	88	67	93			117	96	96	107
MC-434-328.83	APS	141	20	12	11			20	15	15	20
MC-434-328.83	APS	122	17	11	10			17	13	13	17
MC-434-328.83	APS	136	19	12	11			19	15	14	19

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	111Cd LOD (ppm)	115In LOD (ppm)	118Sn LOD (ppm)	121Sb LOD (ppm)	125Te LOD (ppm)	133Cs LOD (ppm)	137Ba LOD (ppm)	139La LOD (ppm)	140Ce LOD (ppm)	141Pr LOD (ppm)
MC-434-328.83	APS	122	17	11	10			17	13	13	17
MC-434-328.83	APS	106	15	9	9			15	11	11	15
MAC-255-559	Monazite	70	12	11	13			40	13	12	13
MAC-255-559	Monazite	70	12	11	13			40	13	12	13
MAC-255-559	Monazite	70	12	11	13			40	13	12	13
MC-413-603.83	Monazite	190	33	30	35			108	35	33	35
MC-413-603.83	Monazite	163	28	25	30			92	30	29	30
MC-413-603.83	Monazite	210	36	33	38			119	39	37	39
MAC-255-564.36	Apatite	70	12	9	12			15	13	13	14
MAC-255-564.36	Apatite	70	12	9	12			15	13	13	14
MAC-255-564.36	Apatite	70	12	9	12			15	13	13	14
MAC-255-564.36	Apatite	70	12	9	12			15	13	13	14
MAC-255-564.36	Apatite	70	12	9	12			15	13	13	14
MAC-255-559	Pyrite		5	3	4			18	5	5	7
MAC-255-559	Pyrite		5	3	4			18	5	5	7
MAC-255-559	Pyrite		5	3	4			18	5	5	7
MAC-255-559	Pyrite		5	3	4			18	5	5	7
MC-336-564	Hematite		5	3	4			18	5	5	7
MC-336-564	Hematite		5	3	4			18	5	5	7
MC-413-623.78	Hematite	70	12	11	13			40	13	12	13
MC-413-623.78	Hematite	70	12	9	12			15	13	13	14
MC-413-623.78	Hematite	70	12	9	12			15	13	13	14
MC-413-623.78	Hematite	70	12	9	12			15	13	13	14
MC-413-623.78	Hematite	162	24	13	21			30	26	24	25
MC-413-623.78	Hematite	133	20	11	17			24	21	20	21
MC-413-623.78	Hematite	127	25	22	23			28	22	26	25
MC-413-623.78	Hematite	123	25	21	22			27	21	25	24
MC-413-623.78	Hematite	996	112	76	44			93	77	106	104
MC-413-623.78	Hematite	166	25	14	22			30	26	24	26
MC-413-623.78	Hematite	53	4	4	0			9	6	6	6
MAC-246-333.8	Rutile	<DL	6	4	3	<DL	<DL	5	6	6	8
MAC-246-333.8	Rutile	<DL	6	4	3	<DL	<DL	5	6	6	8
MAC-246-508.8	Rutile	<DL	3	2	2	<DL	<DL	11	3	3	4
MAC-252-342.5	Rutile	<DL	3	2	2	<DL	<DL	11	3	3	4
MAC-252-342.5	Rutile	<DL	3	2	2	<DL	<DL	11	3	3	4
MAC-246-508.8	Fe(Ti) oxide in Kao		10	7	5			9	10	10	13
MAC-246-508.8	Fe(Ti) oxide in Kao		10	7	5			9	10	10	13
MAC-246-508.8	Fe(Ti) oxide in Kao		10	7	5			9	10	10	13
MC-336-564	Fe-hydroxide vein	89	13	7	12			16	14	13	14
MC-336-564	Fe-hydroxide vein		5	3	4			18	5	5	7
MC-336-564	Fe-hydroxide vein	70	12	9	12			15	13	13	14
MC-415-197	Mn(Fe) oxide vein	87	13	7	11			16	14	13	14

Sample No.	Mineral	146Nd LOD (ppm)	147Sm LOD (ppm)	153Eu LOD (ppm)	155Gd LOD (ppm)	157Gd LOD (ppm)	159Tb LOD (ppm)	163Dy LOD (ppm)	165Ho LOD (ppm)	166Er LOD (ppm)	169Tm LOD (ppm)
MAC-208-237	C1 Chlorite	10	8	10	13	11	12	11	11	8	11
MAC-208-237	C1 Chlorite	10	8	10	13	11	12	11	11	8	12
MAC-208-237	C1 Chlorite	15	12	15	19	16	17	16	16	12	17
MAC-252-271.2	C1 Chlorite	30	31	30	37	43	36	37	43	25	35
MAC-252-271.2	C1 Chlorite	18	19	18	23	26	21	22	26	15	21
MAC-253-325	C1 Chlorite	25	35	30	32	32	34	36	41	28	34
MAC-253-325	C1 Chlorite	32	45	39	41	42	44	47	53	37	44
MAC-253-325	C1 Chlorite	28	39	33	36	36	38	40	46	32	38
MC-413-183.26	C1 Chlorite	16	15	18	17	17	13	11	18	12	17
MC-413-183.26	C1 Chlorite	6	6	7	7	7	5	5	7	5	7
MC-413-183.26	C1 Chlorite	8	8	10	9	9	7	6	9	7	9
MC-413-183.26	C1 Chlorite	10	10	12	11	12	9	7	12	8	12
MC-413-183.26	C1 Chlorite	10	10	11	11	11	8	7	11	8	11
MC-413-183.26	C1 Chlorite	8	8	9	9	9	7	6	9	6	9
MAC-208-487	C2 Chlorite	11	10	14	13	14	13	13	13	6	13
MAC-208-487	C2 Chlorite	12	11	15	13	15	14	14	14	6	14
MAC-208-487	C2 Chlorite	11	10	14	13	14	13	13	13	6	13
MAC-208-487	C2 Chlorite	14	13	18	16	18	16	17	17	7	17
MAC-208-572	C2 Chlorite	7	7	6	11	10	12	11	16	8	16
MAC-208-572	C2 Chlorite	6	6	5	10	9	10	10	14	7	14
MAC-208-572	C2 Chlorite	6	6	5	10	9	10	10	14	7	14
MAC-208-572	C2 Chlorite	5	5	4	8	7	8	8	11	6	11
MAC-208-572	C2 Chlorite	5	5	4	7	7	8	7	10	5	10
MAC-208-572	C2 Chlorite	4	5	4	7	7	8	7	10	5	10
MAC-246-475.33	C2 Chlorite	13	20	13	19	19	17	19	17	13	16
MAC-246-475.33	C2 Chlorite	12	18	12	17	17	15	17	16	12	15
MAC-246-475.33	C2 Chlorite	19	28	19	27	27	25	27	25	18	24
MAC-246-475.33	C2 Chlorite	17	26	17	25	25	23	25	23	17	22
MAC-255-559	C2 Chlorite	17	19	16	21	26	22	27	22	21	26
MAC-255-559	C2 Chlorite	14	16	13	17	21	18	22	18	17	21
MAC-255-559	C2 Chlorite	14	15	13	17	21	18	21	17	16	21
MAC-255-559	C2 Chlorite	13	14	12	16	20	17	20	16	15	20
MAC-255-559	C2 Chlorite	13	15	12	16	20	17	20	16	16	20
MAC-255-559	C2 Chlorite	11	12	11	14	17	14	17	14	13	17
MAC-255-559	C2 Chlorite	12	14	12	15	19	16	19	15	15	19
MAC-255-564.36	C2 Chlorite	18	20	17	19	23	19	22	22	18	23
MAC-255-564.36	C2 Chlorite	15	17	14	15	19	16	18	18	15	19
MAC-255-564.36	C2 Chlorite	14	16	14	15	19	15	17	17	14	18
MAC-255-564.36	C2 Chlorite	20	22	19	21	26	21	24	24	20	25
MAC-255-564.36	C2 Chlorite	19	21	18	20	25	20	23	23	19	24
MAC-255-564.36	C2 Chlorite	16	18	15	17	21	17	19	19	16	20
MAC-255-564.36	C2 Chlorite	16	18	15	16	20	16	19	19	16	20
MC-336-570.5	C2 Chlorite	34	39	33	36	45	36	42	42	34	44
MC-336-570.5	C2 Chlorite	7	12	14	11	13	14	12	12	8	14
MC-336-570.5	C2 Chlorite	6	10	12	10	11	12	10	11	7	12
MC-336-570.5	C2 Chlorite	16	18	15	17	21	17	19	19	16	20
MC-336-570.5	C2 Chlorite	16	17	15	16	20	16	19	19	16	20
MC-336-570.5	C2 Chlorite	17	20	17	18	23	18	21	21	18	22
MAC-208-290.5	Illite	8	13	11	16	12	11	13	13	13	12
MAC-208-290.5	Illite	19	30	25	38	27	27	30	31	30	28
MAC-246-333.8	Illite	17	21	19	22	22	17	25	20	16	19
MAC-246-333.8	Illite	11	13	12	14	14	11	16	13	10	12
MAC-252-271.2	Illite	9	9	9	11	13	10	11	12	7	10
MAC-252-271.2	Illite	9	9	9	11	13	11	11	13	7	10
MAC-252-271.2	Illite	9	9	9	11	13	10	11	12	7	10
MAC-252-319.44	Illite	12	16	14	15	15	16	17	20	13	16
MAC-252-319.44	Illite	13	19	16	17	17	18	19	22	15	18
MAC-253-507.5	Illite	11	15	13	16	15	14	15	18	11	15
MAC-255-293.4	Illite	11	18	22	17	20	21	17	18	11	21

Sample No.	Mineral	146Nd LOD (ppm)	147Sm LOD (ppm)	153Eu LOD (ppm)	155Gd LOD (ppm)	157Gd LOD (ppm)	159Tb LOD (ppm)	163Dy LOD (ppm)	165Ho LOD (ppm)	166Er LOD (ppm)	169Tm LOD (ppm)
MAC-255-293.4	Illite	7	11	14	11	13	14	11	12	7	13
MAC-255-293.4	Illite	8	14	17	13	15	16	13	14	9	16
MAC-255-293.4	Illite	10	17	20	16	18	20	16	17	11	20
MAC-255-293.4	Illite	13	21	26	20	24	25	21	22	14	25
MAC-255-501.32	Illite	15	15	18	21	20	17	18	14	12	16
MAC-255-501.32	Illite	14	14	17	19	18	15	16	12	11	14
MAC-255-501.32	Illite	14	14	16	19	18	15	16	12	11	14
MAC-255-501.32	Illite	16	16	19	22	21	17	19	14	13	16
MAC-255-501.32	Illite	16	16	19	22	20	17	18	14	13	16
MAC-255-501.32	Illite	14	14	17	20	18	15	16	13	12	15
MAC-255-501.32	Illite	14	14	17	20	18	15	16	13	11	14
MC-336-506.8	Illite	14	22	18	27	20	19	22	22	22	20
MC-336-506.8	Illite	15	24	20	30	21	21	23	24	24	22
MC-336-506.8	Illite	12	19	16	24	17	17	19	20	19	18
MC-336-570.5	Illite	22	25	22	24	29	24	27	27	23	29
MC-338-101	Illite	20	26	22	28	26	25	26	32	20	26
MC-338-101	Illite	16	20	17	22	20	19	20	25	16	20
MC-338-101	Illite	26	34	30	37	35	33	35	42	27	34
MC-338-101	Illite	22	29	25	31	29	27	29	35	22	28
MC-338-319	Illite	15	14	17	13	17	14	16	15	11	17
MC-338-319	Illite	19	18	21	17	21	18	20	18	14	21
MC-338-319	Illite	16	16	18	15	19	16	17	16	12	18
MC-338-319	Illite	18	17	20	16	20	17	18	17	13	20
MC-338-559	Illite	15	14	17	16	16	12	11	17	12	16
MC-338-559	Illite	46	45	52	50	51	38	33	52	36	51
MC-338-559	Illite	37	36	42	39	41	30	26	41	29	41
MC-413-299	Illite	39	43	41	43	37	40	47	42	39	45
MC-413-299	Illite	23	26	24	25	22	24	28	25	23	27
MC-413-603.83	Illite	16	17	15	19	24	20	24	20	19	24
MC-413-603.83	Illite	21	23	19	25	32	27	32	26	25	31
MC-413-603.83	Illite	16	18	15	20	25	21	25	20	19	24
MC-413-603.83	Illite	23	26	22	28	35	30	36	29	28	35
MC-413-603.83	Illite	20	22	19	24	30	25	31	25	24	30
MC-413-603.83	Illite	23	26	22	28	35	30	36	29	28	35
MC-413-603.83	Illite	17	19	16	21	26	22	27	22	21	26
MC-413-603.83	Illite	17	19	16	21	26	22	27	22	21	26
MC-434-253.64	Illite	8	8	11	9	11	10	10	10	4	10
MC-434-253.64	Illite	13	12	16	15	17	15	15	15	7	15
MC-434-253.64	Illite	14	13	18	16	18	16	16	16	7	17
MC-434-54.07	Illite	25	24	28	22	29	24	26	25	19	28
MC-434-54.07	Illite	25	24	28	22	29	24	26	25	19	28
MAC-246-508.8	Drv Veins	22	27	25	28	28	22	33	26	21	24
MAC-246-508.8	Drv Veins	17	20	19	21	21	17	25	20	16	19
MAC-246-508.8	Drv Veins	15	18	17	19	19	15	22	17	14	17
MAC-246-508.8	Drv Veins	15	18	17	19	19	15	22	17	14	16
MAC-253-265.3	Drv Veins	7	8	9	10	9	11	9	10	7	12
MAC-253-265.3	Drv Veins	7	8	8	10	9	11	9	10	7	11
MAC-253-265.3	Drv Veins	7	8	8	10	9	11	9	10	7	11
MAC-253-265.3	Drv Veins	6	7	7	8	7	9	7	8	5	9
MAC-253-265.3	Drv Veins	5	6	6	8	7	8	7	8	5	9
MAC-253-538	Drv Veins	24	24	24	24	27	27	26	26	20	27
MAC-253-538	Drv Veins	19	19	19	19	21	21	20	21	15	22
MAC-253-538	Drv Veins	26	25	26	26	28	28	28	28	21	29
MAC-253-538	Drv Veins	23	22	23	23	25	25	24	25	18	26
MAC-253-538	Drv Veins	20	20	20	20	22	22	21	22	16	23
MC-344-100.1	Drv Veins	4	5	4	5	7	11	6	10	5	13
MC-344-100.1	Drv Veins	4	6	5	6	8	12	6	11	5	14
MC-344-100.1	Drv Veins	4	6	5	7	9	13	7	12	6	15
MC-344-100.1	Drv Veins	4	6	5	7	9	13	7	12	6	15

Sample No.	Mineral	146Nd LOD (ppm)	147Sm LOD (ppm)	153Eu LOD (ppm)	155Gd LOD (ppm)	157Gd LOD (ppm)	159Tb LOD (ppm)	163Dy LOD (ppm)	165Ho LOD (ppm)	166Er LOD (ppm)	169Tm LOD (ppm)
MC-344-100.1	Drv Veins	5	7	6	7	10	14	7	13	6	16
MC-344-100.1	Drv Veins	4	6	5	6	8	12	6	11	6	14
MC-344-100.1	Drv Veins	5	7	6	7	10	14	8	13	7	17
MC-415-497.66	Drv Veins	2	3	5	5	5	8	6	10	6	14
MC-415-497.66	Drv Veins	1	3	4	4	4	6	5	8	5	11
MC-415-497.66	Drv Veins	1	3	4	4	4	6	5	8	5	11
MC-415-497.66	Drv Veins	1	3	4	4	4	6	4	8	5	11
MAC-208-10.2	Interstitial Drv	11	8	9	9	7	10	8	10	4	9
MAC-208-10.2	Interstitial Drv	19	14	17	16	13	17	15	17	6	16
MAC-208-572	Interstitial Drv	5	5	4	8	7	8	7	11	6	11
MAC-208-572	Interstitial Drv	8	8	7	12	11	13	12	17	9	17
MAC-208-572	Interstitial Drv	6	6	5	9	9	10	9	14	7	14
MAC-208-572	Interstitial Drv	6	6	5	10	9	10	10	14	7	14
MAC-208-572	Interstitial Drv	5	5	4	7	7	8	7	11	6	11
MAC-246-142.86	Interstitial Drv	22	24	24	29	26	27	30	30	21	31
MAC-246-142.86	Interstitial Drv	14	15	16	19	17	18	19	19	14	20
MAC-246-142.86	Interstitial Drv	13	14	14	17	15	16	17	17	12	18
MAC-246-142.86	Interstitial Drv	15	16	16	19	17	18	20	20	14	20
MAC-246-142.86	Interstitial Drv	13	13	14	16	15	16	17	17	12	17
MAC-246-213.43	Interstitial Drv	17	20	21	25	23	26	22	25	17	28
MAC-246-213.43	Interstitial Drv	10	12	12	15	14	16	13	15	10	17
MAC-246-213.43	Interstitial Drv	9	11	11	14	12	15	12	14	9	16
MAC-246-4.33	Interstitial Drv	15	11	13	12	10	13	12	14	5	13
MAC-246-4.33	Interstitial Drv	18	13	15	14	12	16	14	16	6	15
MAC-246-4.33	Interstitial Drv	13	9	11	10	9	11	10	11	4	11
MAC-246-475.33	Interstitial Drv	21	22	23	24	24	24	25	24	20	25
MAC-246-475.33	Interstitial Drv	16	17	17	18	18	18	19	18	15	19
MAC-246-475.33	Interstitial Drv	21	32	21	31	30	28	31	28	21	27
MAC-246-475.33	Interstitial Drv	19	20	20	22	21	22	22	21	17	22
MAC-246-475.33	Interstitial Drv	19	20	21	22	22	22	22	22	18	22
MAC-246-475.33	Interstitial Drv	10	11	11	12	11	12	12	11	9	12
MAC-246-475.33	Interstitial Drv	14	14	15	16	15	16	16	15	13	16
MAC-246-499.02	Interstitial Drv	8	9	9	11	11	12	12	13	10	13
MAC-252-199.86	Interstitial Drv	31	33	34	40	36	38	41	41	29	42
MAC-252-199.86	Interstitial Drv	22	23	24	29	25	27	29	29	21	30
MAC-252-342.5	Interstitial Drv	30	33	31	33	29	31	36	32	30	35
MAC-252-342.5	Interstitial Drv	24	27	25	26	23	25	29	26	24	28
MAC-252-342.5	Interstitial Drv	87	85	86	88	96	95	93	94	70	98
MAC-252-342.5	Interstitial Drv	48	47	47	48	53	52	51	52	39	54
MAC-252-342.5	Interstitial Drv	25	24	24	25	27	27	26	27	20	28
MAC-252-342.5	Interstitial Drv	17	17	17	18	19	19	19	19	14	20
MAC-252-55.65	Interstitial Drv	33	38	34	34	34	31	37	34	29	36
MAC-252-55.65	Interstitial Drv	28	32	29	29	29	27	31	29	25	30
MAC-252-55.65	Interstitial Drv	28	31	28	28	28	26	31	28	24	30
MAC-253-205	Interstitial Drv	2	3	3	4	5	7	4	6	3	8
MAC-253-205	Interstitial Drv	3	4	3	4	6	9	5	8	4	10
MAC-253-205	Interstitial Drv	3	4	3	4	6	9	5	8	4	10
MAC-253-205	Interstitial Drv	3	5	4	5	7	10	5	9	5	12
MAC-253-205	Interstitial Drv	3	4	4	4	6	9	5	8	4	11
MAC-253-205	Interstitial Drv	3	5	4	5	7	9	5	9	4	11
MAC-253-205	Interstitial Drv	4	6	5	6	8	12	6	11	5	14
MAC-253-265.3	Interstitial Drv	17	19	20	24	22	26	21	24	16	27
MAC-253-265.3	Interstitial Drv	15	17	18	21	19	23	18	21	14	24
MAC-253-265.3	Interstitial Drv	10	12	12	15	13	16	13	15	10	17
MAC-255-6.13	Interstitial Drv	34	39	36	35	35	32	38	35	30	37
MAC-255-6.13	Interstitial Drv	40	46	41	41	41	38	45	41	35	43
MAC-255-6.13	Interstitial Drv	38	43	39	39	39	36	42	39	34	41
MAC-255-6.13	Interstitial Drv	53	60	54	54	54	50	58	53	47	57
MC-338-537.64	Interstitial Drv	18	22	18	18	20	27	21	25	23	29

Sample No.	Mineral	146Nd LOD (ppm)	147Sm LOD (ppm)	153Eu LOD (ppm)	155Gd LOD (ppm)	157Gd LOD (ppm)	159Tb LOD (ppm)	163Dy LOD (ppm)	165Ho LOD (ppm)	166Er LOD (ppm)	169Tm LOD (ppm)
MC-338-537.64	Interstitial Drv	8	10	8	8	9	12	10	11	10	13
MC-338-537.64	Interstitial Drv	9	10	9	9	10	13	10	12	11	14
MC-338-537.64	Interstitial Drv	8	10	8	9	10	13	10	12	11	13
MC-338-537.64	Interstitial Drv	19	23	19	20	22	29	23	27	24	31
MC-338-537.64	Interstitial Drv	12	14	12	12	13	18	14	17	15	19
MC-344-179.8	Interstitial Drv	7	7	6	11	10	12	11	16	8	16
MC-344-179.8	Interstitial Drv	8	8	7	12	12	13	12	18	9	18
MC-344-179.8	Interstitial Drv	6	7	6	10	9	11	10	14	7	14
MC-344-179.8	Interstitial Drv	6	6	5	9	9	10	9	13	7	13
MC-413-258.26	Interstitial Drv	12	11	10	14	16	13	11	15	9	16
MC-413-258.26	Interstitial Drv	12	10	10	13	15	12	10	14	8	15
MC-413-258.26	Interstitial Drv	8	7	6	9	10	8	7	9	5	10
MC-413-258.26	Interstitial Drv	9	8	8	11	11	10	8	11	6	12
MC-413-258.26	Interstitial Drv	7	6	6	8	9	7	6	8	5	9
MC-413-258.26	Interstitial Drv	8	7	6	9	10	8	7	9	5	10
MC-413-258.26	Interstitial Drv	7	6	6	8	8	7	6	8	5	8
MC-413-649	Interstitial Drv	23	23	17	21	20	23	20	23	12	24
MC-415-173.4	Interstitial Drv	8	7	7	9	10	9	7	10	6	10
MC-415-173.4	Interstitial Drv	7	6	6	8	9	8	6	9	5	9
MC-415-173.4	Interstitial Drv	8	7	6	9	10	8	7	9	5	10
MC-415-173.4	Interstitial Drv	8	7	6	9	10	8	7	9	5	10
MC-415-389	Interstitial Drv	12	14	11	13	15	21	15	21	11	22
MC-415-389	Interstitial Drv	7	9	7	9	9	13	10	14	7	14
MC-415-389	Interstitial Drv	7	9	7	9	9	13	10	13	7	14
MC-415-389	Interstitial Drv	15	18	14	17	19	26	19	27	15	28
MC-415-389	Interstitial Drv	12	15	11	14	16	22	16	23	12	24
MC-415-432.38	Interstitial Drv	10	12	9	11	12	17	13	18	10	19
MC-415-432.38	Interstitial Drv	7	9	7	8	9	13	10	13	7	14
MC-415-432.38	Interstitial Drv	12	14	11	13	15	21	15	21	11	22
MC-415-432.38	Interstitial Drv	8	10	7	9	10	14	10	14	8	15
MC-415-432.38	Interstitial Drv	7	9	7	8	9	13	9	13	7	14
MC-415-490.78	Interstitial Drv	3	6	7	8	7	13	9	17	10	23
MC-415-490.78	Interstitial Drv	2	3	4	5	4	7	5	10	6	13
MC-415-490.78	Interstitial Drv	2	4	6	7	6	10	7	13	8	18
MC-415-490.78	Interstitial Drv	2	4	5	5	5	8	6	11	7	15
MC-415-490.78	Interstitial Drv	1	3	4	4	4	6	4	8	5	11
MAC-255-6.13	Detrital Tourmaline	51	58	53	52	52	48	57	52	45	55
MAC-255-6.13	Detrital Tourmaline	38	43	39	38	39	36	42	38	33	41
MAC-255-6.13	Detrital Tourmaline	28	32	29	29	29	27	31	29	25	30
MAC-255-6.13	Detrital Tourmaline	32	37	33	33	33	30	36	33	28	35
MAC-246-333.8	APS	15	18	17	19	19	15	22	18	14	17
MAC-246-508.8	APS	51	62	57	65	65	50	75	59	47	56
MAC-246-508.8	APS	15	18	16	18	18	14	21	17	14	16
MAC-252-342.5	APS	30	29	30	30	33	33	32	33	24	34
MAC-252-342.5	APS	36	35	36	37	40	40	39	39	29	41
MAC-252-342.5	APS	29	28	28	29	32	31	31	31	23	32
MAC-252-342.5	APS	26	29	28	29	25	27	32	28	27	31
MAC-253-382	APS	14	11	13	17	15	16	14	15	11	15
MAC-253-382	APS	11	9	11	14	12	13	12	13	9	13
MAC-253-382	APS	12	10	12	16	13	14	13	14	10	14
MAC-253-507.5	APS	7	8	7	9	8	8	8	10	7	8
MAC-253-507.5	APS	7	8	7	9	8	8	8	10	7	8
MAC-253-507.5	APS	29	37	32	40	37	35	37	45	29	37
MAC-255-559	APS	22	24	20	26	33	28	33	27	26	33
MAC-255-559	APS	24	26	22	29	36	30	36	30	28	36
MC-336-570.5	APS	94	106	90	98	123	99	114	114	94	119
MC-434-328.83	APS	14	15	14	17	20	17	17	20	12	16
MC-434-328.83	APS	12	13	12	15	17	14	15	17	10	14
MC-434-328.83	APS	14	14	13	17	19	16	17	19	11	16

Sample No.	Mineral	146Nd LOD (ppm)	147Sm LOD (ppm)	153Eu LOD (ppm)	155Gd LOD (ppm)	157Gd LOD (ppm)	159Tb LOD (ppm)	163Dy LOD (ppm)	165Ho LOD (ppm)	166Er LOD (ppm)	169Tm LOD (ppm)
MC-434-328.83	APS	12	13	12	15	17	14	15	17	10	14
MC-434-328.83	APS	11	11	10	13	15	12	13	15	9	12
MAC-255-559	Monazite	12	13	11	15	18	15	19	15	14	18
MAC-255-559	Monazite	12	13	11	15	18	15	19	15	14	18
MAC-255-559	Monazite	12	13	11	15	18	15	19	15	14	18
MC-413-603.83	Monazite	33	36	30	40	49	42	50	41	39	49
MC-413-603.83	Monazite	28	31	26	34	42	36	43	35	33	42
MC-413-603.83	Monazite	36	40	34	44	55	46	55	45	43	54
MAC-255-564.36	Apatite	12	14	12	13	16	13	15	15	12	16
MAC-255-564.36	Apatite	12	14	12	13	16	13	15	15	12	16
MAC-255-564.36	Apatite	12	14	12	13	16	13	15	15	12	16
MAC-255-564.36	Apatite	12	14	12	13	16	13	15	15	12	16
MAC-255-564.36	Apatite	12	14	12	13	16	13	15	15	12	16
MAC-255-559	Pyrite	6	6	5	9	7	8	8	7	5	7
MAC-255-559	Pyrite	6	6	5	9	7	8	8	7	5	7
MAC-255-559	Pyrite	6	6	5	9	7	8	8	7	5	7
MAC-255-559	Pyrite	6	6	5	9	7	8	8	7	5	7
MC-336-564	Hematite	6	6	5	9	7	8	8	7	5	7
MC-336-564	Hematite	6	6	5	9	7	8	8	7	5	7
MC-413-623.78	Hematite	12	13	11	15	18	15	19	15	14	18
MC-413-623.78	Hematite	12	14	12	13	16	13	15	15	12	16
MC-413-623.78	Hematite	12	14	12	13	16	13	15	15	12	16
MC-413-623.78	Hematite	12	14	12	13	16	13	15	15	12	16
MC-413-623.78	Hematite	22	27	25	28	28	22	33	26	21	25
MC-413-623.78	Hematite	18	22	20	23	23	18	27	21	17	20
MC-413-623.78	Hematite	25	28	26	28	24	26	30	27	25	29
MC-413-623.78	Hematite	24	27	26	27	23	25	29	26	25	28
MC-413-623.78	Hematite	92	119	104	131	120	114	120	146	93	118
MC-413-623.78	Hematite	23	27	25	29	29	22	33	26	21	25
MC-413-623.78	Hematite	7	11	7	11	11	10	11	10	7	9
MAC-246-333.8	Rutile	6	6	7	9	8	7	7	6	5	6
MAC-246-333.8	Rutile	6	6	7	9	8	7	7	6	5	6
MAC-246-508.8	Rutile	4	4	3	5	4	5	5	4	3	4
MAC-252-342.5	Rutile	4	4	3	5	4	5	5	4	3	4
MAC-252-342.5	Rutile	4	4	3	5	4	5	5	4	3	4
MAC-246-508.8	Fe(Ti) oxide in Kao	10	10	12	14	13	11	12	9	8	11
MAC-246-508.8	Fe(Ti) oxide in Kao	10	10	12	14	13	11	12	9	8	11
MAC-246-508.8	Fe(Ti) oxide in Kao	10	10	12	14	13	11	12	9	8	11
MC-336-564	Fe-hydroxide vein	12	15	14	16	15	12	18	14	11	13
MC-336-564	Fe-hydroxide vein	6	6	5	9	7	8	8	7	5	7
MC-336-564	Fe-hydroxide vein	12	14	12	13	16	13	15	15	12	16
MC-415-197	Mn(Fe) oxide vein	12	14	13	15	15	12	18	14	11	13

Sample No.	Mineral	172Yb LOD (ppm)	175Lu LOD (ppm)	178Hf LOD (ppm)	181Ta LOD (ppm)	182W LOD (ppm)	185Re LOD (ppm)	189Os LOD (ppm)	193Ir LOD (ppm)	195Pt LOD (ppm)
MAC-208-237	C1 Chlorite	10	13	8	8	18	1		2	5
MAC-208-237	C1 Chlorite	10	13	8	8	18	1		2	5
MAC-208-237	C1 Chlorite	14	19	12	12	26	2		3	7
MAC-252-271.2	C1 Chlorite	34	40	30	29	40	3		55	30
MAC-252-271.2	C1 Chlorite	21	24	18	18	24	2		33	18
MAC-253-325	C1 Chlorite	39	40	25	26	32	1		9	11
MAC-253-325	C1 Chlorite	50	51	32	34	42	2		12	15
MAC-253-325	C1 Chlorite	43	44	28	30	36	1		10	13
MC-413-183.26	C1 Chlorite	17	15	9	15	15	1		108	82
MC-413-183.26	C1 Chlorite	7	6	4	6	6	1		44	33
MC-413-183.26	C1 Chlorite	9	8	5	8	8	1		58	44
MC-413-183.26	C1 Chlorite	11	10	6	10	10	1		71	54
MC-413-183.26	C1 Chlorite	11	9	6	10	9	1		69	52
MC-413-183.26	C1 Chlorite	9	7	5	8	7	1		54	41
MAC-208-487	C2 Chlorite	13	10	8	10	16	11		15,850	800
MAC-208-487	C2 Chlorite	14	11	8	11	17	12		17,015	859
MAC-208-487	C2 Chlorite	13	10	8	11	16	11		16,233	819
MAC-208-487	C2 Chlorite	17	13	10	13	20	14		20,368	1,028
MAC-208-572	C2 Chlorite	10	14	11	10	6	5		29	5
MAC-208-572	C2 Chlorite	9	13	9	8	6	4		26	5
MAC-208-572	C2 Chlorite	9	13	9	8	6	4		26	5
MAC-208-572	C2 Chlorite	7	10	7	7	4	3		20	3
MAC-208-572	C2 Chlorite	7	9	7	6	4	3		19	3
MAC-208-572	C2 Chlorite	7	9	7	6	4	3		19	3
MAC-246-475.33	C2 Chlorite	18	19	14	12	9	1		3	51
MAC-246-475.33	C2 Chlorite	16	17	12	10	8	1		2	46
MAC-246-475.33	C2 Chlorite	26	28	20	16	12	1		4	73
MAC-246-475.33	C2 Chlorite	24	26	18	15	11	1		4	68
MAC-255-559	C2 Chlorite	27	29	19	20	20	3		8	3
MAC-255-559	C2 Chlorite	22	23	16	16	17	2		6	2
MAC-255-559	C2 Chlorite	21	23	15	16	16	2		6	2
MAC-255-559	C2 Chlorite	20	21	14	15	15	2		6	2
MAC-255-559	C2 Chlorite	20	22	14	15	15	2		6	2
MAC-255-559	C2 Chlorite	18	19	12	13	13	2		5	2
MAC-255-559	C2 Chlorite	19	20	14	14	14	2		5	2
MAC-255-564.36	C2 Chlorite	21	22	16	17	20	2		13	35
MAC-255-564.36	C2 Chlorite	18	18	13	14	16	1		11	29
MAC-255-564.36	C2 Chlorite	17	17	13	13	16	1		10	28
MAC-255-564.36	C2 Chlorite	23	24	18	18	22	2		15	38
MAC-255-564.36	C2 Chlorite	22	23	17	18	21	2		14	37
MAC-255-564.36	C2 Chlorite	19	19	14	15	17	1		12	31
MAC-255-564.36	C2 Chlorite	19	19	14	15	17	1		12	30
MC-336-570.5	C2 Chlorite	41	42	31	32	38	3		25	67
MC-336-570.5	C2 Chlorite	8	14	7	10	10	4		1	15
MC-336-570.5	C2 Chlorite	7	12	6	9	8	3		1	13
MC-336-570.5	C2 Chlorite	19	19	14	15	17	1		12	31
MC-336-570.5	C2 Chlorite	18	19	14	14	17	1		11	30
MC-336-570.5	C2 Chlorite	21	21	16	16	19	1		13	34
MAC-208-290.5	Illite	13	13	10	11	8	0		18	17
MAC-208-290.5	Illite	31	30	23	25	20	1		43	41
MAC-246-333.8	Illite	24	21	10	15	14	2		20	50
MAC-246-333.8	Illite	15	14	7	10	9	1		13	32
MAC-252-271.2	Illite	10	12	9	8	11	1		16	9
MAC-252-271.2	Illite	10	12	9	9	12	1		16	9
MAC-252-271.2	Illite	10	12	9	8	11	1		16	9
MAC-252-319.44	Illite	18	19	12	13	15	1		4	5
MAC-252-319.44	Illite	21	21	13	14	17	1		5	6
MAC-253-507.5	Illite	17	17	14	11	12	2		33	19
MAC-255-293.4	Illite	12	21	10	15	14	6		2	23

Sample No.	Mineral	172Yb LOD (ppm)	175Lu LOD (ppm)	178Hf LOD (ppm)	181Ta LOD (ppm)	182W LOD (ppm)	185Re LOD (ppm)	189Os LOD (ppm)	193Ir LOD (ppm)	195Pt LOD (ppm)
MAC-255-293.4	Illite	8	13	7	10	9	4		1	15
MAC-255-293.4	Illite	9	16	8	11	11	5		2	17
MAC-255-293.4	Illite	11	20	10	14	13	6		2	21
MAC-255-293.4	Illite	15	25	12	18	17	7		2	27
MAC-255-501.32	Illite	19	19	11	14	17	1		15	5
MAC-255-501.32	Illite	17	17	10	12	15	1		13	4
MAC-255-501.32	Illite	17	17	10	12	15	1		13	4
MAC-255-501.32	Illite	20	20	11	14	18	1		15	5
MAC-255-501.32	Illite	20	20	11	14	17	1		15	5
MAC-255-501.32	Illite	18	18	10	13	16	1		14	4
MAC-255-501.32	Illite	18	18	10	12	16	1		13	4
MC-336-506.8	Illite	22	22	16	18	14	1		31	29
MC-336-506.8	Illite	24	23	18	20	15	1		34	32
MC-336-506.8	Illite	20	19	14	16	13	1		28	26
MC-336-570.5	Illite	27	27	20	21	25	2		17	44
MC-338-101	Illite	31	30	24	19	21	3		57	34
MC-338-101	Illite	24	23	19	15	17	2		44	26
MC-338-101	Illite	41	40	32	25	28	4		76	45
MC-338-101	Illite	34	33	27	21	24	3		64	38
MC-338-319	Illite	19	15	10	14	23	1		3	17
MC-338-319	Illite	24	19	12	18	29	1		4	21
MC-338-319	Illite	21	16	11	16	25	1		3	19
MC-338-319	Illite	23	18	12	17	27	1		3	20
MC-338-559	Illite	16	14	9	14	14	1		101	77
MC-338-559	Illite	51	43	28	44	43	4		317	240
MC-338-559	Illite	41	34	22	35	34	3		252	191
MC-413-299	Illite	44	38	31	35	40	4		27	34
MC-413-299	Illite	26	23	19	21	24	2		16	20
MC-413-603.83	Illite	24	26	17	18	18	2		7	2
MC-413-603.83	Illite	32	34	23	24	24	3		9	3
MC-413-603.83	Illite	25	27	18	18	19	2		7	2
MC-413-603.83	Illite	36	38	26	27	27	3		10	3
MC-413-603.83	Illite	31	33	22	23	23	3		9	3
MC-413-603.83	Illite	36	38	26	27	27	3		10	3
MC-413-603.83	Illite	27	29	19	20	20	3		8	3
MC-413-603.83	Illite	27	29	19	20	20	3		8	3
MC-434-253.64	Illite	10	8	6	8	12	8		11,968	604
MC-434-253.64	Illite	15	12	9	12	19	13		18,592	938
MC-434-253.64	Illite	17	13	10	13	20	14		20,238	1,021
MC-434-54.07	Illite	33	25	16	24	39	2		5	29
MC-434-54.07	Illite	33	25	16	24	39	2		5	29
MAC-246-508.8	Drv Veins	31	28	13	20	19	2		26	65
MAC-246-508.8	Drv Veins	24	21	10	15	14	2		20	49
MAC-246-508.8	Drv Veins	21	19	9	14	13	1		18	44
MAC-246-508.8	Drv Veins	21	19	9	13	13	1		18	44
MAC-253-265.3	Drv Veins	9	12	7	9	6	0		9	4
MAC-253-265.3	Drv Veins	9	12	7	8	6	0		8	4
MAC-253-265.3	Drv Veins	9	12	7	8	6	0		9	4
MAC-253-265.3	Drv Veins	7	10	6	7	5	0		7	3
MAC-253-265.3	Drv Veins	7	9	5	6	5	0		7	3
MAC-253-538	Drv Veins	25	29	19	21	27	13		8	92
MAC-253-538	Drv Veins	20	23	15	17	21	10		7	73
MAC-253-538	Drv Veins	26	31	20	23	29	14		9	98
MAC-253-538	Drv Veins	23	27	18	20	25	12		8	86
MAC-253-538	Drv Veins	21	24	16	18	22	11		7	76
MC-344-100.1	Drv Veins	5	8	8	4	9	20		110	35
MC-344-100.1	Drv Veins	6	9	9	5	10	22		119	38
MC-344-100.1	Drv Veins	6	10	10	5	11	24		132	41
MC-344-100.1	Drv Veins	6	10	10	5	11	25		134	42

Sample No.	Mineral	172Yb LOD (ppm)	175Lu LOD (ppm)	178Hf LOD (ppm)	181Ta LOD (ppm)	182W LOD (ppm)	185Re LOD (ppm)	189Os LOD (ppm)	193Ir LOD (ppm)	195Pt LOD (ppm)
MC-344-100.1	Drv Veins	7	11	10	5	12	26		142	45
MC-344-100.1	Drv Veins	6	9	9	5	10	23		124	39
MC-344-100.1	Drv Veins	7	11	11	6	12	27		145	46
MC-415-497.66	Drv Veins	8	8	4	2	0	23		318	234
MC-415-497.66	Drv Veins	6	6	3	2	0	18		255	187
MC-415-497.66	Drv Veins	6	6	3	2	0	18		256	188
MC-415-497.66	Drv Veins	6	6	3	2	0	17		237	174
MAC-208-10.2	Interstitial Drv	7	10	5	6	5	1		10	11
MAC-208-10.2	Interstitial Drv	13	18	10	10	9	1		18	20
MAC-208-572	Interstitial Drv	7	10	7	6	4	3		20	3
MAC-208-572	Interstitial Drv	11	16	12	10	7	5		32	6
MAC-208-572	Interstitial Drv	9	12	9	8	5	4		25	4
MAC-208-572	Interstitial Drv	9	13	9	8	6	4		26	4
MAC-208-572	Interstitial Drv	7	10	7	6	4	3		20	3
MAC-246-142.86	Interstitial Drv	30	30	23	24	21	3		43	16
MAC-246-142.86	Interstitial Drv	19	19	15	16	13	2		28	10
MAC-246-142.86	Interstitial Drv	17	18	13	14	12	2		25	9
MAC-246-142.86	Interstitial Drv	20	20	15	16	14	2		28	10
MAC-246-142.86	Interstitial Drv	17	17	13	14	12	2		24	9
MAC-246-213.43	Interstitial Drv	22	29	17	21	15	0		21	10
MAC-246-213.43	Interstitial Drv	13	18	10	12	9	0		13	6
MAC-246-213.43	Interstitial Drv	12	16	10	11	8	0		12	5
MAC-246-4.33	Interstitial Drv	10	14	8	8	7	1		14	16
MAC-246-4.33	Interstitial Drv	12	16	9	9	8	1		16	18
MAC-246-4.33	Interstitial Drv	8	12	6	7	6	1		12	13
MAC-246-475.33	Interstitial Drv	22	26	16	21	30	14		189	233
MAC-246-475.33	Interstitial Drv	17	19	12	16	23	11		143	177
MAC-246-475.33	Interstitial Drv	29	31	22	19	14	1		4	83
MAC-246-475.33	Interstitial Drv	20	23	15	19	26	13		168	208
MAC-246-475.33	Interstitial Drv	20	23	15	19	27	13		172	212
MAC-246-475.33	Interstitial Drv	11	12	8	10	14	7		90	111
MAC-246-475.33	Interstitial Drv	14	16	11	14	19	9		121	149
MAC-246-499.02	Interstitial Drv	13	13	9	11	7	1		458	3,613
MAC-252-199.86	Interstitial Drv	41	41	31	33	28	4		59	21
MAC-252-199.86	Interstitial Drv	29	30	22	24	20	3		42	15
MAC-252-342.5	Interstitial Drv	34	29	24	27	31	3		21	26
MAC-252-342.5	Interstitial Drv	27	23	19	21	25	2		17	21
MAC-252-342.5	Interstitial Drv	89	104	69	77	97	46		30	330
MAC-252-342.5	Interstitial Drv	49	57	38	42	53	25		16	182
MAC-252-342.5	Interstitial Drv	25	30	19	22	27	13		8	93
MAC-252-342.5	Interstitial Drv	18	21	14	15	20	9		6	67
MAC-252-55.65	Interstitial Drv	36	36	26	34	37	19		6	21
MAC-252-55.65	Interstitial Drv	31	30	22	29	31	16		6	18
MAC-252-55.65	Interstitial Drv	30	30	22	28	30	16		5	17
MAC-253-205	Interstitial Drv	3	5	5	3	6	13		72	23
MAC-253-205	Interstitial Drv	4	7	6	3	7	16		88	28
MAC-253-205	Interstitial Drv	4	7	7	3	7	16		89	28
MAC-253-205	Interstitial Drv	5	8	8	4	9	19		103	32
MAC-253-205	Interstitial Drv	4	7	7	3	8	17		91	29
MAC-253-205	Interstitial Drv	5	7	7	4	8	18		98	31
MAC-253-205	Interstitial Drv	6	9	9	5	10	22		121	38
MAC-253-265.3	Interstitial Drv	22	28	17	20	14	0		20	9
MAC-253-265.3	Interstitial Drv	19	25	15	18	12	0		18	8
MAC-253-265.3	Interstitial Drv	13	17	10	12	9	0		13	6
MAC-255-6.13	Interstitial Drv	38	37	27	35	38	20		7	22
MAC-255-6.13	Interstitial Drv	44	43	31	41	44	23		8	25
MAC-255-6.13	Interstitial Drv	42	41	30	38	42	22		7	24
MAC-255-6.13	Interstitial Drv	58	57	41	53	58	30		10	33
MC-338-537.64	Interstitial Drv	22	25	16	17	23	3		16	7

Sample No.	Mineral	172Yb LOD (ppm)	175Lu LOD (ppm)	178Hf LOD (ppm)	181Ta LOD (ppm)	182W LOD (ppm)	185Re LOD (ppm)	189Os LOD (ppm)	193Ir LOD (ppm)	195Pt LOD (ppm)
MC-338-537.64	Interstitial Drv	10	11	7	8	10	1		7	3
MC-338-537.64	Interstitial Drv	11	12	8	8	11	1		8	3
MC-338-537.64	Interstitial Drv	10	12	7	8	11	1		7	3
MC-338-537.64	Interstitial Drv	23	26	17	19	25	3		17	7
MC-338-537.64	Interstitial Drv	14	16	10	11	15	2		10	4
MC-344-179.8	Interstitial Drv	10	14	11	9	6	5		29	5
MC-344-179.8	Interstitial Drv	12	16	12	11	7	5		33	6
MC-344-179.8	Interstitial Drv	9	13	10	9	6	4		27	5
MC-344-179.8	Interstitial Drv	9	12	9	8	5	4		25	4
MC-413-258.26	Interstitial Drv	11	16	9	10	8	2		19	35
MC-413-258.26	Interstitial Drv	11	15	9	9	8	2		18	33
MC-413-258.26	Interstitial Drv	7	10	6	6	5	1		11	21
MC-413-258.26	Interstitial Drv	8	11	7	7	6	1		14	26
MC-413-258.26	Interstitial Drv	6	9	5	6	5	1		11	20
MC-413-258.26	Interstitial Drv	7	10	6	6	5	1		12	22
MC-413-258.26	Interstitial Drv	6	8	5	5	4	1		10	19
MC-413-649	Interstitial Drv	19	23	14	17	17	4		12	7
MC-415-173.4	Interstitial Drv	7	10	6	6	5	1		12	23
MC-415-173.4	Interstitial Drv	6	9	5	6	5	1		11	20
MC-415-173.4	Interstitial Drv	7	10	6	6	5	1		12	22
MC-415-173.4	Interstitial Drv	7	10	6	6	5	1		12	22
MC-415-389	Interstitial Drv	15	24	12	8	4	0		10	18
MC-415-389	Interstitial Drv	9	16	7	5	2	0		6	11
MC-415-389	Interstitial Drv	9	15	7	5	2	0		6	11
MC-415-389	Interstitial Drv	19	31	15	10	5	0		13	22
MC-415-389	Interstitial Drv	16	26	12	8	4	0		11	19
MC-415-432.38	Interstitial Drv	12	21	10	7	3	0		9	15
MC-415-432.38	Interstitial Drv	9	15	7	5	2	0		6	11
MC-415-432.38	Interstitial Drv	15	24	12	8	4	0		10	18
MC-415-432.38	Interstitial Drv	10	16	8	5	3	0		7	12
MC-415-432.38	Interstitial Drv	9	15	7	5	2	0		6	11
MC-415-490.78	Interstitial Drv	12	12	6	3	1	36		506	372
MC-415-490.78	Interstitial Drv	7	7	3	2	0	21		290	213
MC-415-490.78	Interstitial Drv	10	10	4	3	1	29		406	298
MC-415-490.78	Interstitial Drv	8	8	4	2	0	23		324	238
MC-415-490.78	Interstitial Drv	6	6	3	2	0	17		240	176
MAC-255-6.13	Detrital Tourmaline	56	55	40	52	56	29		10	32
MAC-255-6.13	Detrital Tourmaline	41	41	30	38	42	21		7	24
MAC-255-6.13	Detrital Tourmaline	31	30	22	29	31	16		6	18
MAC-255-6.13	Detrital Tourmaline	35	35	25	33	36	18		6	20
MAC-246-333.8	APS	21	19	9	14	13	1		18	45
MAC-246-508.8	APS	72	64	30	46	43	5		60	149
MAC-246-508.8	APS	20	18	9	13	12	1		17	43
MAC-252-342.5	APS	31	36	24	27	34	16		10	115
MAC-252-342.5	APS	37	44	29	32	40	19		12	138
MAC-252-342.5	APS	29	34	23	25	32	15		10	109
MAC-252-342.5	APS	30	26	22	24	27	3		19	23
MAC-253-382	APS	13	18	11	11	24	2		3	7
MAC-253-382	APS	11	15	9	9	20	1		3	6
MAC-253-382	APS	12	16	10	10	21	2		3	6
MAC-253-507.5	APS	10	10	8	6	7	1		19	11
MAC-253-507.5	APS	10	10	8	6	7	1		19	11
MAC-253-507.5	APS	44	43	34	27	30	4		82	48
MAC-255-559	APS	34	36	24	25	25	3		9	3
MAC-255-559	APS	37	39	26	27	28	3		10	4
MC-336-570.5	APS	111	114	85	87	103	8		69	183
MC-434-328.83	APS	16	19	14	14	18	2		26	14
MC-434-328.83	APS	14	16	12	12	16	1		22	12
MC-434-328.83	APS	15	18	13	13	18	2		25	13

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	172Yb LOD (ppm)	175Lu LOD (ppm)	178Hf LOD (ppm)	181Ta LOD (ppm)	182W LOD (ppm)	185Re LOD (ppm)	189Os LOD (ppm)	193Ir LOD (ppm)	195Pt LOD (ppm)
MC-434-328.83	APS	14	16	12	12	16	1		22	12
MC-434-328.83	APS	12	14	10	10	14	1		19	10
MAC-255-559	Monazite	19	20	13	14	14	2		5	2
MAC-255-559	Monazite	19	20	13	14	14	2		5	2
MAC-255-559	Monazite	19	20	13	14	14	2		5	2
MC-413-603.83	Monazite	51	54	36	37	38	5		14	5
MC-413-603.83	Monazite	43	46	31	32	33	4		12	4
MC-413-603.83	Monazite	56	59	40	41	42	5		16	5
MAC-255-564.36	Apatite	15	15	11	11	14	1		9	24
MAC-255-564.36	Apatite	15	15	11	11	14	1		9	24
MAC-255-564.36	Apatite	15	15	11	11	14	1		9	24
MAC-255-564.36	Apatite	15	15	11	11	14	1		9	24
MAC-255-564.36	Apatite	15	15	11	11	14	1		9	24
MAC-255-559	Pyrite	8	8	5	5	5	1		10	20
MAC-255-559	Pyrite	8	8	5	5	5	1		10	20
MAC-255-559	Pyrite	8	8	5	5	5	1		10	20
MAC-255-559	Pyrite	8	8	5	5	5	1		10	20
MC-336-564	Hematite	8	8	5	5	5	1		10	20
MC-336-564	Hematite	8	8	5	5	5	1		10	20
MC-413-623.78	Hematite	19	20	13	14	14	2		5	2
MC-413-623.78	Hematite	15	15	11	11	14	1		9	24
MC-413-623.78	Hematite	15	15	11	11	14	1		9	24
MC-413-623.78	Hematite	15	15	11	11	14	1		9	24
MC-413-623.78	Hematite	31	28	13	20	19	2		26	65
MC-413-623.78	Hematite	26	23	11	16	15	2		22	53
MC-413-623.78	Hematite	28	25	20	23	26	2		18	22
MC-413-623.78	Hematite	27	24	20	22	25	2		17	21
MC-413-623.78	Hematite	142	138	111	88	99	13		264	157
MC-413-623.78	Hematite	32	28	13	20	19	2		27	66
MC-413-623.78	Hematite	10	11	8	7	5	0		1	29
MAC-246-333.8	Rutile	8	8	4	5	7	0	<DL	6	2
MAC-246-333.8	Rutile	8	8	4	5	7	0	<DL	6	2
MAC-246-508.8	Rutile	5	5	3	3	3	0	<DL	6	12
MAC-252-342.5	Rutile	5	5	3	3	3	0	<DL	6	12
MAC-252-342.5	Rutile	5	5	3	3	3	0	<DL	6	12
MAC-246-508.8	Fe(Ti) oxide in Kao	13	13	7	9	11	0		10	3
MAC-246-508.8	Fe(Ti) oxide in Kao	13	13	7	9	11	0		10	3
MAC-246-508.8	Fe(Ti) oxide in Kao	13	13	7	9	11	0		10	3
MC-336-564	Fe-hydroxide vein	17	15	7	11	10	1		14	36
MC-336-564	Fe-hydroxide vein	8	8	5	5	5	1		10	20
MC-336-564	Fe-hydroxide vein	15	15	11	11	14	1		9	24
MC-415-197	Mn(Fe) oxide vein	17	15	7	11	10	1		14	35

Sample No.	Mineral	197Au LOD (ppm)	202Hg LOD (ppm)	205Tl LOD (ppm)	206Pb LOD (ppm)	207Pb LOD (ppm)	208Pb LOD (ppm)	209Bi LOD (ppm)	220Bkg LOD (ppm)	232Th LOD (ppm)	238U LOD (ppm)
MAC-208-237	C1 Chlorite	9		0	12	13	12	13		9	11
MAC-208-237	C1 Chlorite	9		0	12	13	12	14		9	11
MAC-208-237	C1 Chlorite	14		0	17	19	17	20		14	16
MAC-252-271.2	C1 Chlorite	15		1	37	37	41	38		33	44
MAC-252-271.2	C1 Chlorite	9		1	22	22	25	23		20	26
MAC-253-325	C1 Chlorite	10		0	38	36	41	23		29	35
MAC-253-325	C1 Chlorite	13		1	49	47	53	30		38	45
MAC-253-325	C1 Chlorite	11		1	42	40	45	26		33	39
MC-413-183.26	C1 Chlorite	9		1	21	6	16	16		12	19
MC-413-183.26	C1 Chlorite	4		0	9	2	6	6		5	8
MC-413-183.26	C1 Chlorite	5		0	11	3	8	9		6	10
MC-413-183.26	C1 Chlorite	6		0	14	4	10	11		8	12
MC-413-183.26	C1 Chlorite	6		0	13	4	10	10		8	12
MC-413-183.26	C1 Chlorite	5		0	11	3	8	8		6	9
MAC-208-487	C2 Chlorite	50		1	18	16	23	12		11	16
MAC-208-487	C2 Chlorite	54		1	19	17	24	13		11	18
MAC-208-487	C2 Chlorite	51		1	18	16	23	12		11	17
MAC-208-487	C2 Chlorite	64		1	23	20	29	15		14	21
MAC-208-572	C2 Chlorite	5		0	7	7	7	9		10	4
MAC-208-572	C2 Chlorite	4		0	6	6	6	8		8	4
MAC-208-572	C2 Chlorite	4		0	6	6	6	8		8	4
MAC-208-572	C2 Chlorite	3		0	5	5	5	6		7	3
MAC-208-572	C2 Chlorite	3		0	4	5	5	6		6	3
MAC-208-572	C2 Chlorite	3		0	4	4	4	6		6	3
MAC-246-475.33	C2 Chlorite	5		0	8	6	9	7		15	6
MAC-246-475.33	C2 Chlorite	5		0	7	6	8	7		13	5
MAC-246-475.33	C2 Chlorite	7		0	11	9	13	10		21	8
MAC-246-475.33	C2 Chlorite	7		0	11	8	12	10		19	8
MAC-255-559	C2 Chlorite	10		1	28	32	49	19		21	22
MAC-255-559	C2 Chlorite	8		1	23	26	40	16		17	18
MAC-255-559	C2 Chlorite	8		1	22	25	39	15		16	17
MAC-255-559	C2 Chlorite	8		1	21	24	37	14		16	16
MAC-255-559	C2 Chlorite	8		1	21	24	37	14		16	16
MAC-255-559	C2 Chlorite	7		0	18	21	32	12		13	14
MAC-255-559	C2 Chlorite	7		0	20	22	35	14		15	15
MAC-255-564.36	C2 Chlorite	11		1	23	21	20	14		14	17
MAC-255-564.36	C2 Chlorite	9		0	19	18	16	12		12	14
MAC-255-564.36	C2 Chlorite	9		0	18	17	16	11		11	13
MAC-255-564.36	C2 Chlorite	12		1	25	24	22	16		15	18
MAC-255-564.36	C2 Chlorite	12		1	24	23	21	15		15	17
MAC-255-564.36	C2 Chlorite	10		0	20	19	18	13		12	15
MAC-255-564.36	C2 Chlorite	10		0	20	19	17	13		12	14
MC-336-570.5	C2 Chlorite	21		1	44	41	38	28		27	32
MC-336-570.5	C2 Chlorite	8		0	8	6	18	11		9	17
MC-336-570.5	C2 Chlorite	7		0	7	5	15	10		8	15
MC-336-570.5	C2 Chlorite	10		0	20	19	17	13		12	15
MC-336-570.5	C2 Chlorite	10		0	20	19	17	13		12	14
MC-336-570.5	C2 Chlorite	11		0	22	21	19	14		14	16
MAC-208-290.5	Illite	6		0	7	7	6	8		9	7
MAC-208-290.5	Illite	14		1	16	17	15	18		21	16
MAC-246-333.8	Illite	9		0	22	20	20	15		10	16
MAC-246-333.8	Illite	6		0	14	13	13	10		6	10
MAC-252-271.2	Illite	4		0	11	11	12	11		10	13
MAC-252-271.2	Illite	4		0	11	11	12	11		10	13
MAC-252-271.2	Illite	4		0	11	11	12	11		10	13
MAC-252-319.44	Illite	5		0	18	17	19	11		14	17
MAC-252-319.44	Illite	5		0	20	19	22	12		16	19
MAC-253-507.5	Illite	5		1	18	18	14	12		13	12
MAC-255-293.4	Illite	12		1	12	9	26	17		14	26

Sample No.	Mineral	197Au LOD (ppm)	202Hg LOD (ppm)	205Tl LOD (ppm)	206Pb LOD (ppm)	207Pb LOD (ppm)	208Pb LOD (ppm)	209Bi LOD (ppm)	220Bkg LOD (ppm)	232Th LOD (ppm)	238U LOD (ppm)
MAC-255-293.4	Illite	8		0	8	6	17	11		9	17
MAC-255-293.4	Illite	9		0	9	7	20	13		11	20
MAC-255-293.4	Illite	11		1	11	9	25	16		13	24
MAC-255-293.4	Illite	14		1	15	11	32	20		16	31
MAC-255-501.32	Illite	4		0	15	14	16	14		16	15
MAC-255-501.32	Illite	4		0	14	12	14	12		14	14
MAC-255-501.32	Illite	4		0	14	12	14	12		14	14
MAC-255-501.32	Illite	4		0	16	14	16	14		17	16
MAC-255-501.32	Illite	4		0	16	14	16	14		16	16
MAC-255-501.32	Illite	4		0	14	13	14	13		15	14
MAC-255-501.32	Illite	4		0	14	13	14	12		15	14
MC-336-506.8	Illite	10		1	12	12	10	13		15	12
MC-336-506.8	Illite	11		1	13	13	11	14		16	13
MC-336-506.8	Illite	9		1	10	11	9	12		14	11
MC-336-570.5	Illite	14		1	29	27	25	18		18	21
MC-338-101	Illite	8		1	31	31	25	22		22	21
MC-338-101	Illite	6		1	24	24	19	17		17	17
MC-338-101	Illite	11		1	41	42	33	29		30	28
MC-338-101	Illite	9		1	35	35	28	24		25	24
MC-338-319	Illite	20		0	21	16	17	15		8	19
MC-338-319	Illite	25		0	26	21	21	19		10	23
MC-338-319	Illite	22		0	23	18	19	16		8	20
MC-338-319	Illite	23		0	25	19	20	17		9	22
MC-338-559	Illite	9		0	20	5	15	15		11	17
MC-338-559	Illite	27		1	62	16	46	47		35	54
MC-338-559	Illite	22		1	49	13	36	37		28	43
MC-413-299	Illite	19		1	47	43	43	35		35	33
MC-413-299	Illite	11		0	28	26	26	21		21	19
MC-413-603.83	Illite	9		1	26	29	45	17		19	20
MC-413-603.83	Illite	12		1	34	38	59	23		25	26
MC-413-603.83	Illite	9		1	26	29	46	18		19	20
MC-413-603.83	Illite	14		1	38	42	66	26		28	29
MC-413-603.83	Illite	12		1	32	36	57	22		24	25
MC-413-603.83	Illite	14		1	38	42	66	26		28	29
MC-413-603.83	Illite	10		1	28	32	49	19		21	22
MC-413-603.83	Illite	10		1	28	32	49	19		21	22
MC-434-253.64	Illite	38		0	13	12	17	9		8	12
MC-434-253.64	Illite	59		1	21	19	27	14		12	19
MC-434-253.64	Illite	64		1	23	20	29	15		13	21
MC-434-54.07	Illite	33		1	35	27	28	25		13	31
MC-434-54.07	Illite	33		1	35	27	28	25		13	31
MAC-246-508.8	Drv Veins	11		0	29	26	26	20		13	21
MAC-246-508.8	Drv Veins	9		0	22	20	20	15		10	16
MAC-246-508.8	Drv Veins	8		0	19	18	17	14		9	14
MAC-246-508.8	Drv Veins	8		0	19	17	17	13		9	14
MAC-253-265.3	Drv Veins	3		0	9	8	10	9		11	11
MAC-253-265.3	Drv Veins	3		0	9	8	10	8		10	10
MAC-253-265.3	Drv Veins	3		0	9	8	10	9		10	11
MAC-253-265.3	Drv Veins	3		0	7	7	8	7		8	9
MAC-253-265.3	Drv Veins	2		0	7	6	8	7		8	8
MAC-253-538	Drv Veins	14		1	38	36	36	22		24	29
MAC-253-538	Drv Veins	11		1	30	28	28	17		19	23
MAC-253-538	Drv Veins	15		1	40	38	38	24		26	31
MAC-253-538	Drv Veins	13		1	35	34	33	21		23	27
MAC-253-538	Drv Veins	12		1	31	30	30	18		20	24
MC-344-100.1	Drv Veins	7		0	7	6	10	4		4	11
MC-344-100.1	Drv Veins	8		0	8	7	11	5		5	12
MC-344-100.1	Drv Veins	8		0	8	7	12	5		5	13
MC-344-100.1	Drv Veins	8		0	9	8	13	5		5	13

Sample No.	Mineral	197Au LOD (ppm)	202Hg LOD (ppm)	205Tl LOD (ppm)	206Pb LOD (ppm)	207Pb LOD (ppm)	208Pb LOD (ppm)	209Bi LOD (ppm)	220Bkg LOD (ppm)	232Th LOD (ppm)	238U LOD (ppm)
MC-344-100.1	Drv Veins	9		0	9	8	13	6		5	14
MC-344-100.1	Drv Veins	8		0	8	7	12	5		5	12
MC-344-100.1	Drv Veins	9		0	9	8	14	6		6	14
MC-415-497.66	Drv Veins	80		0	10	8	8	3		14	11
MC-415-497.66	Drv Veins	64		0	8	6	6	3		11	9
MC-415-497.66	Drv Veins	64		0	8	6	6	3		11	9
MC-415-497.66	Drv Veins	59		0	7	6	6	2		10	9
MAC-208-10.2	Interstitial Drv	6		0	6	6	10	7		13	6
MAC-208-10.2	Interstitial Drv	10		1	10	11	19	12		23	11
MAC-208-572	Interstitial Drv	3		0	5	5	5	6		7	3
MAC-208-572	Interstitial Drv	5		0	7	8	8	10		11	4
MAC-208-572	Interstitial Drv	4		0	6	6	6	7		8	3
MAC-208-572	Interstitial Drv	4		0	6	6	6	8		8	4
MAC-208-572	Interstitial Drv	3		0	5	5	5	6		7	3
MAC-246-142.86	Interstitial Drv	7		1	50	19	25	16		25	29
MAC-246-142.86	Interstitial Drv	4		0	33	12	16	10		16	19
MAC-246-142.86	Interstitial Drv	4		0	29	11	14	9		14	17
MAC-246-142.86	Interstitial Drv	4		0	34	12	16	11		16	19
MAC-246-142.86	Interstitial Drv	4		0	29	10	14	9		14	16
MAC-246-213.43	Interstitial Drv	8		1	22	20	25	21		26	26
MAC-246-213.43	Interstitial Drv	5		1	13	12	15	13		15	15
MAC-246-213.43	Interstitial Drv	4		0	12	11	14	12		14	14
MAC-246-4.33	Interstitial Drv	8		0	8	9	15	10		18	9
MAC-246-4.33	Interstitial Drv	10		1	10	10	17	11		21	10
MAC-246-4.33	Interstitial Drv	7		0	7	7	12	8		15	7
MAC-246-475.33	Interstitial Drv	17		0	31	31	31	24		46	30
MAC-246-475.33	Interstitial Drv	13		0	23	24	24	18		35	23
MAC-246-475.33	Interstitial Drv	8		0	13	10	15	12		24	9
MAC-246-475.33	Interstitial Drv	15		0	27	28	28	21		41	27
MAC-246-475.33	Interstitial Drv	15		0	28	28	29	22		42	27
MAC-246-475.33	Interstitial Drv	8		0	14	15	15	11		22	14
MAC-246-475.33	Interstitial Drv	11		0	20	20	20	15		29	19
MAC-246-499.02	Interstitial Drv	9		0	8	4	4	6		310	9
MAC-252-199.86	Interstitial Drv	9		1	69	25	34	22		34	40
MAC-252-199.86	Interstitial Drv	7		1	50	18	24	16		24	29
MAC-252-342.5	Interstitial Drv	15		1	36	33	33	27		27	25
MAC-252-342.5	Interstitial Drv	12		0	29	26	27	21		22	20
MAC-252-342.5	Interstitial Drv	51		4	136	129	128	79		86	103
MAC-252-342.5	Interstitial Drv	28		2	74	71	70	44		47	57
MAC-252-342.5	Interstitial Drv	14		1	38	36	36	22		24	29
MAC-252-342.5	Interstitial Drv	10		1	27	26	26	16		17	21
MAC-252-55.65	Interstitial Drv	28		1	55	56	79	35		37	39
MAC-252-55.65	Interstitial Drv	24		1	47	48	68	30		31	33
MAC-252-55.65	Interstitial Drv	23		1	46	47	66	29		31	32
MAC-253-205	Interstitial Drv	5		0	5	4	7	3		3	7
MAC-253-205	Interstitial Drv	6		0	6	5	8	3		3	9
MAC-253-205	Interstitial Drv	6		0	6	5	8	3		3	9
MAC-253-205	Interstitial Drv	7		0	7	6	10	4		4	10
MAC-253-205	Interstitial Drv	6		0	6	5	8	4		3	9
MAC-253-205	Interstitial Drv	6		0	6	6	9	4		4	10
MAC-253-205	Interstitial Drv	8		0	8	7	11	5		5	12
MAC-253-265.3	Interstitial Drv	8		1	21	20	24	20		25	25
MAC-253-265.3	Interstitial Drv	7		1	19	17	21	18		22	22
MAC-253-265.3	Interstitial Drv	5		1	13	12	15	13		15	15
MAC-255-6.13	Interstitial Drv	29		1	57	58	83	37		38	41
MAC-255-6.13	Interstitial Drv	34		1	67	68	96	43		45	47
MAC-255-6.13	Interstitial Drv	32		1	63	64	91	40		42	45
MAC-255-6.13	Interstitial Drv	44		2	88	89	126	56		59	62
MC-338-537.64	Interstitial Drv	12		1	40	39	42	31		4	33

Appendix K

LA-ICP-MS Analytical Data

Sample No.	Mineral	197Au LOD (ppm)	202Hg LOD (ppm)	205Tl LOD (ppm)	206Pb LOD (ppm)	207Pb LOD (ppm)	208Pb LOD (ppm)	209Bi LOD (ppm)	220Bkg LOD (ppm)	232Th LOD (ppm)	238U LOD (ppm)
MC-338-537.64	Interstitial Drv	5		0	18	18	19	14		2	15
MC-338-537.64	Interstitial Drv	6		0	19	19	20	15		2	16
MC-338-537.64	Interstitial Drv	6		0	19	18	20	14		2	15
MC-338-537.64	Interstitial Drv	13		1	43	42	45	33		4	35
MC-338-537.64	Interstitial Drv	8		0	27	26	28	20		3	22
MC-344-179.8	Interstitial Drv	5		0	7	7	7	9		10	4
MC-344-179.8	Interstitial Drv	5		0	8	8	8	10		11	5
MC-344-179.8	Interstitial Drv	4		0	6	6	6	8		9	4
MC-344-179.8	Interstitial Drv	4		0	6	6	6	7		8	3
MC-413-258.26	Interstitial Drv	2		1	10	7	21	14		19	10
MC-413-258.26	Interstitial Drv	2		1	9	7	20	13		18	10
MC-413-258.26	Interstitial Drv	2		0	6	4	13	8		12	6
MC-413-258.26	Interstitial Drv	2		1	7	5	15	10		14	8
MC-413-258.26	Interstitial Drv	1		0	5	4	12	8		11	6
MC-413-258.26	Interstitial Drv	2		0	6	5	13	9		12	6
MC-413-258.26	Interstitial Drv	1		0	5	4	11	7		10	6
MC-413-649	Interstitial Drv	9		1	25	24	25	14		18	24
MC-415-173.4	Interstitial Drv	2		0	6	5	14	9		13	7
MC-415-173.4	Interstitial Drv	1		0	6	4	12	8		11	6
MC-415-173.4	Interstitial Drv	2		0	6	5	13	9		12	6
MC-415-173.4	Interstitial Drv	2		0	6	4	13	9		12	6
MC-415-389	Interstitial Drv	13		0	6	1	16	10		13	6
MC-415-389	Interstitial Drv	9		0	4	0	11	6		8	4
MC-415-389	Interstitial Drv	9		0	4	0	11	6		8	4
MC-415-389	Interstitial Drv	17		1	8	1	21	12		17	8
MC-415-389	Interstitial Drv	14		1	7	1	18	11		14	6
MC-415-432.38	Interstitial Drv	11		0	5	0	14	8		11	5
MC-415-432.38	Interstitial Drv	8		0	4	0	10	6		8	4
MC-415-432.38	Interstitial Drv	13		0	6	1	17	10		13	6
MC-415-432.38	Interstitial Drv	9		0	4	0	11	7		9	4
MC-415-432.38	Interstitial Drv	8		0	4	0	10	6		8	4
MC-415-490.78	Interstitial Drv	127		0	16	12	13	5		22	18
MC-415-490.78	Interstitial Drv	72		0	9	7	7	3		13	10
MC-415-490.78	Interstitial Drv	101		0	13	10	10	4		18	15
MC-415-490.78	Interstitial Drv	81		0	10	8	8	3		14	12
MC-415-490.78	Interstitial Drv	60		0	7	6	6	2		11	9
MAC-255-6.13	Detrital Tourmaline	43		2	85	86	122	54		57	60
MAC-255-6.13	Detrital Tourmaline	32		1	63	64	91	40		42	45
MAC-255-6.13	Detrital Tourmaline	24		1	47	48	68	30		31	33
MAC-255-6.13	Detrital Tourmaline	27		1	54	55	77	34		36	38
MAC-246-333.8	APS	8		0	20	18	18	14		9	14
MAC-246-508.8	APS	26		1	66	60	59	46		30	48
MAC-246-508.8	APS	7		0	19	17	17	13		8	14
MAC-252-342.5	APS	18		1	47	45	44	28		30	36
MAC-252-342.5	APS	21		1	57	54	53	33		36	43
MAC-252-342.5	APS	17		1	45	43	42	26		29	34
MAC-252-342.5	APS	13		0	32	29	29	24		24	22
MAC-253-382	APS	13		0	16	17	16	18		13	14
MAC-253-382	APS	10		0	13	14	13	15		10	12
MAC-253-382	APS	11		0	14	16	14	16		11	13
MAC-253-507.5	APS	3		0	10	10	8	7		7	7
MAC-253-507.5	APS	3		0	10	10	8	7		7	7
MAC-253-507.5	APS	12		1	44	45	35	31		32	31
MAC-255-559	APS	13		1	35	39	62	24		26	27
MAC-255-559	APS	14		1	38	43	67	26		28	29
MC-336-570.5	APS	59		3	120	112	104	76		73	87
MC-434-328.83	APS	7		1	17	17	19	18		16	20
MC-434-328.83	APS	6		0	15	15	17	15		13	18
MC-434-328.83	APS	7		0	17	16	18	17		15	20

Sample No.	Mineral	197Au LOD (ppm)	202Hg LOD (ppm)	205Tl LOD (ppm)	206Pb LOD (ppm)	207Pb LOD (ppm)	208Pb LOD (ppm)	209Bi LOD (ppm)	220Bkg LOD (ppm)	232Th LOD (ppm)	238U LOD (ppm)
MC-434-328.83	APS	6		0	15	15	17	15		13	18
MC-434-328.83	APS	5		0	13	13	14	13		12	15
MAC-255-559	Monazite	7		0	20	22	34	13		14	15
MAC-255-559	Monazite	7		0	20	22	34	13		14	15
MAC-255-559	Monazite	7		0	20	22	34	13		14	15
MC-413-603.83	Monazite	19		1	53	59	93	36		39	41
MC-413-603.83	Monazite	16		1	45	51	79	31		33	35
MC-413-603.83	Monazite	21		1	58	66	102	40		43	45
MAC-255-564.36	Apatite	8		0	16	15	14	10		10	11
MAC-255-564.36	Apatite	8		0	16	15	14	10		10	11
MAC-255-564.36	Apatite	8		0	16	15	14	10		10	11
MAC-255-564.36	Apatite	8		0	16	15	14	10		10	11
MAC-255-564.36	Apatite	8		0	16	15	14	10		10	11
MAC-255-559	Pyrite	5		0	9	7	13	6		6	4
MAC-255-559	Pyrite	5		0	9	7	13	6		6	4
MAC-255-559	Pyrite	5		0	9	7	13	6		6	4
MAC-255-559	Pyrite	5		0	9	7	13	6		6	4
MC-336-564	Hematite	5		0	9	7	13	6		6	4
MC-336-564	Hematite	5		0	9	7	13	6		6	4
MC-413-623.78	Hematite	7		0	20	22	34	13		14	15
MC-413-623.78	Hematite	8		0	16	15	14	10		10	11
MC-413-623.78	Hematite	8		0	16	15	14	10		10	11
MC-413-623.78	Hematite	8		0	16	15	14	10		10	11
MC-413-623.78	Hematite	11		0	29	26	26	20		13	21
MC-413-623.78	Hematite	9		0	24	21	21	16		11	17
MC-413-623.78	Hematite	12		0	31	28	28	23		23	21
MC-413-623.78	Hematite	12		0	30	27	27	22		22	21
MC-413-623.78	Hematite	37		4	144	145	114	101		103	99
MC-413-623.78	Hematite	11		0	29	27	26	20		13	21
MC-413-623.78	Hematite	3		0	4	4	5	4		8	3
MAC-246-333.8	Rutile	2	<DL	0	6	6	6	5	<DL	6	6
MAC-246-333.8	Rutile	2	<DL	0	6	6	6	5	<DL	6	6
MAC-246-508.8	Rutile	3	<DL	0	5	4	8	4	<DL	4	2
MAC-252-342.5	Rutile	3	<DL	0	5	4	8	4	<DL	4	2
MAC-252-342.5	Rutile	3	<DL	0	5	4	8	4	<DL	4	2
MAC-246-508.8	Fe(Ti) oxide in Kao	3		0	10	9	10	9		11	10
MAC-246-508.8	Fe(Ti) oxide in Kao	3		0	10	9	10	9		11	10
MAC-246-508.8	Fe(Ti) oxide in Kao	3		0	10	9	10	9		11	10
MC-336-564	Fe-hydroxide vein	6		0	16	14	14	11		7	11
MC-336-564	Fe-hydroxide vein	5		0	9	7	13	6		6	4
MC-336-564	Fe-hydroxide vein	8		0	16	15	14	10		10	11
MC-415-197	Mn(Fe) oxide vein	6		0	15	14	14	11		7	11